PRELIMINARY RISK ASSESSMENT REPORT, LAND SOUTH OF BRYN LANE, WREXHAM

TE1891-TE-00-XX-RP-GE-001-V02

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FINAL

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EXECUTIVE SUMMARY

Introduction	Tier Environmental was commissioned by Mauna Kea to undertake a desk study and Phase I Preliminary Risk Assessment of the proposed commercial / industrial development at Land South of Bryn Lane, Wrexham. The purpose of this investigation was to establish land use history and review the available information to determine the geoenvironmental setting of the site and develop a preliminary conceptual site model with due consideration of potential soil and groundwater contamination, hazardous ground gases and mining.
Proposed land use	Under current proposals the development will comprise a single rectangular commercial unit with associated parking and HGV loading to the rear.
Site location and surrounding land uses	The site is located at 'Land South of Bryn Lane', Wrexham, LL13 9XG (approx.) and comprises a broadly undeveloped plot laid to grass. The site is set within mixed commercial/industrial areas to the east, west and south with agricultural land use to the north.
Site history	The site was part of Ridley Farm from earliest records in 1873 with farm buildings located in the north and split across 4 No. fields to the south. A well is recorded just north of the site within the farm and a pond is located in the centre of the north of the site. A road (later Bryn Lane) forms the northern boundary of the site. The plans suggest small scale expansion of the farm by 1912 and 1964 before being removed by the 1982 mapping. A clothes factory is shown on site, and extending east off site, from 1949 until between 1982-1989 when all on site buildings and hardstanding are no longer shown; the pond is also infilled during this development cycle. A small square bunded feature in the northeast of the site, present from 1964 mapping, remains on site and was identified as a concrete shelter or possible pill box associated with the nearby ordnance factory (ROF Wrexham). The site remains undeveloped to present day with the exception of the possible pill box in the northeast of the site. The wider site comprises agricultural fields until 1949 when factories and works begin to be developed. Multiple ponds are noted within 250m of the site including immediately north, 20m west, 85m southeast and 90m northeast, gradually infilled as development expands. By 1949 a mineral rail is present running west to southeast immediately south of the site associated with another works 90m south of the site. By 1974 a new works is constructed 130m west of the site and a tank is recorded 40m west with associated drain channel. Additional tanks or other circular features are recorded southwest of the site by 1982 associated with a water treatment facility. The land west of the site is developed sometime between 2003 and 2006 and the Net World Sports unit 450m east of the site is constructed from 2021.
Geology, hydrogeology and hydrology	The Devensian Till is classified as a Secondary Undifferentiated Aquifer, and the bedrock geology is classified as a Secondary A Aquifer (for the Salop Formation) with a Principal Aquifer (Kinnerton Sandstone Formation) located 60m north of the site. There is an inferred fault located beneath the site orientated from southwest to northeast associated with these two bedrock formations. The site is within a Source Protection Zone Total Catchment 3 associated with the Principal Aquifer, and the nearest surface water receptor comprises an on site drainage feature. There are no potable or non-potable water abstractions located within 1km of the Site. The low permeability cohesive Till deposits have been proven to depths of circa 15.00m bgl in previous Tier investigations for land north of the site, and are recorded to depths of circa 26.0 to 38.0m bgl in nearby BGS records which is considered sufficient to provide protection of the underlying bedrock aquifers from any vertical migration of potential contaminants of concern. On this basis the controlled waters sensitivity is considered to be low.
Ground gases	There are no landfills recorded within close proximity to the site. A number of historic pond features have been infilled during developed of the wider area, including an on-site pond infilled in the mid 1940s, however these are not considered to pose a ground gas risk to the site. Made Ground is anticipated given the historic land uses as a farm and factory which is the primary ground gas source. The farm may also have had associated cess pits.
Radon requirements	Basic radon protection measures are not currently required for the proposed development on this site.
Ecological sensitivity	The site does not lie within an ecologically sensitive area.
Potential contaminative features	On site Made Ground associated with historic land use as a farm and clothing factory. Surrounding land uses including the wider ROF Wrexham facility which may have partially included the site boundary.
Mining and quarrying	The site is not located within a mining area or an area subject to historic quarrying.
Previous investigations	Tier Environmental has previously completed Ground Investigations for an area of land north of Bryn Lane in 2023 and 450m east of the site (for the main Net World Sports facility) in 2021. The investigations comprised trial pitting, cable percussive boreholes and window sample boreholes and generally determine topsoil and limited Made Ground over Till.
Phosphorus	The site falls within a Phosphorus Sensitive SAC Freshwater catchment area associated with the River Dee. As such, due consideration during drainage strategy / design should be given with respect to this designation and any mitigation / avoidance measures.
Unexploded ordnance	Publicly available online Zetica UXO Risk mapping indicates the site is within a low risk area. The Local Authority have provided information stating the site is on land that was formerly used by the Ministry of Defence (MoD) for the

	manufacture of explosives as part of the Royal Ordnance Factory (ROF) Wrexham which covered an area of over 1,400 acres, although the study site was on the periphery and OS plans indicate that it was not used for the manufacture/storage of explosives. A previous Detailed Unexploded Risk Assessment completed for the land to the north of the current site boundary by 1st Line Defence Ltd (Ref: DA18240-00, dated July 2023) under Tier project TE1749 and TE1750, recorded a low risk for that site area. The report acknowledged that whilst the ROF could have contributed to localised contamination through burial/disposal/burning, there was no specific evidence. In addition they state the ROF was 300m south of the site boundary which would also place the current red line boundary beyond the ROF Wrexham perimeter.
Other issues	A water main is understood to cross the site in the southeast, a HV cable runs along the south of the site and dog legs into the west of the site, a drain is located along the southern site boundary, and a BT cable intersects the eastern site boundary.
Waste soils classification	Based on the history of the site and the anticipated potential contaminants of concern, it is considered possible that hazardous waste soil materials may be present beneath some areas of the site; however, this will be subject to confirmatory investigation, sampling, laboratory analysis and waste classification in accordance with the Guidance on the Classification and Assessment of Waste (WM3).
Materials re-use	Subject to volumetric fill requirements and a future assessment of suitability of re-use (both chemically and geotechnically), some materials may be considered for potential re-use in line with an appropriate end-of-waste protocol such as WRAP Quality Protocol for Aggregates from Inert Waste, U1 Exemption or a Materials Management Plan in accordance with the CL:AIRE Definition of Waste Code of Practice (DoWCoP). Please note that any previously landfilled or mining waste materials may not be appropriately subject to consideration under DoWCoP and may not be re-used under DoWCoP unless sufficient lines of evidence and agreement with the local Environment Agency Waste Team can be sought beforehand. In addition, Section 4.10 of this report includes statements with respect to re-use of excavated and stockpiled clean naturally occurring soils within the site and re-use on other sites. These statements are designed to provide a clear intention to reuse any clean, naturally occurring soils derived from future excavations at this site (which may also include temporary future stockpiling these materials).
Further works	A Ground Investigation to comprise: • 1 No. days trial pitting (approximately 10 No. trial pits) to determine the nature and extent of Made Ground and natural deposits across the site, facilitate soil sampling for environmental and geotechnical testing. • 1 No. day window sample drilling (approximately 5 No. locations) and installation of monitoring wells for gas and groundwater (if encountered) monitoring purposes and to facilitate soil sampling for environmental and geotechnical testing. • 3 No. cable percussive boreholes to circa 10m bgl to facilitate in-situ testing and installation of ground gas/groundwater monitoring wells. • *In situ* geotechnical testing to assist with foundation design and recommendations. • Geoenvironmental chemical testing on selected soil samples for metals, pH, speciated PAH, speciated TPH, phenol, sulphate, TOC and asbestos screens in order to assess potential risks to human health based on historical land uses on and within close proximity to the site and to assist with basic waste characterisation. • The Control of Asbestos Regulations 2012 should be adhered to. A summary of complying with CAR: risk assessments, licensing and training is provided in Appendix I.

1. INTRODUCTION

Tier Environmental was commissioned by Mauna Kea to undertake a Land Contamination Risk Management (LCRM) Preliminary Risk Assessment for an area of land referred to as Land South of Bryn Lane, located at Bryn Lane, Wrexham, LL13 9XG (approx.) (the "site").

The full title of this report, a *'Stage 1 - LCRM Tier 1 Preliminary Risk Assessment Report'*, is in accordance with that described in the Land Contamination Risk Management guidance (available at https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm) which has superseded CLR 11.

1.1. Proposed Development

Under current proposals the development will comprise a single rectangular commercial unit with associated parking and HGV loading to the rear, as presented in Appendix A. Soft landscaping will be limited to the north and eastern perimeters of the site. As such, in accordance with the *'Updated technical background to the CLEA model'* (Environment Agency, 2009) and *'Suitable 4 Use Levels'* (LQM / CIEH 2015) the proposed generic land use for this development is commercial / industrial.

1.2. Previous Reports

The following previous pertinent reports for land in the vicinity of the site have been produced by Tier Environmental:

- A Ground Investigation Report for Net World Sports, Wrexham (Ref:TE1456GIR1.3, dated July 2021)
- A Ground Investigation Report for Bryne Lane (Outline Planning) Wrexham (Ref: TE1749-TE-00-XX-RP-GE-001-V04, dated October 2023)
- A Ground Investigation Report for Bryne Lane (Detailed Planning) Wrexham (Ref: TE1750-TE-00-XX-RP-GE-001-V07, dated January 2024)

For clarity, reports TE1456 were completed for an area of land circa 250m east of the site.

1.3. Objectives

Taking into account the proposed development of the site, the objectives of this appraisal were:

- To determine the historical and current land use.
- To establish the environmental setting of the site.
- To evaluate whether past mining or other extractive industries could have an influence on the site.
- To determine likely ground and groundwater conditions.
- To determine the potential risks to human health and the wider environment.
- To determine potential risks posed to the site from hazardous ground gases and / or vapours.
- To derive a Preliminary Conceptual Site Model.

1.4. Assumptions

The following assumptions are made in this report:

- It is assumed that ground levels will not change significantly from those described in this report or a shown on proposed development drawings. If this is not the case, then amendments to the recommendations made in this report may be required.
- Any references to observations of suspected asbestos-containing materials are for information only and should be verified by a suitably qualified asbestos specialist and/or confirmed by laboratory analysis.
- The use of the term 'Topsoil' within this report is based on a visual identification only and that these materials have not been classified in accordance with BS3882:2015.
- The use of the terms ‘shallow’ and ‘deep’ within this report (from a geotechnical perspective) assume *typically* between ground level to circa 3.00m below ground level (bgl) for ‘shallow’ and greater than 3.00m bgl regarded as ‘deep’;
- The comments and opinions presented in this report are based on the findings of the desk study, and a review of ground conditions encountered during previous intrusive investigation works, performed by Tier Environmental. There may be other conditions prevailing on the site which have not been revealed by this investigation and which have not been taken into account by this report at this stage.
- Responsibility cannot be accepted for any conditions not revealed by this investigation. Any diagram or opinion on the possible configuration of the findings is conjectural and given for guidance only. Confirmation of ground conditions should be undertaken if deemed necessary.

This report has been prepared for the sole use of Mauna Kea. No other third party may rely upon or reproduce the contents of this report without the written approval of Tier Environmental. If any unauthorised third party comes into possession of this report, they rely on it entirely at their own risk and the authors do not owe them any Duty of Care or Skill.

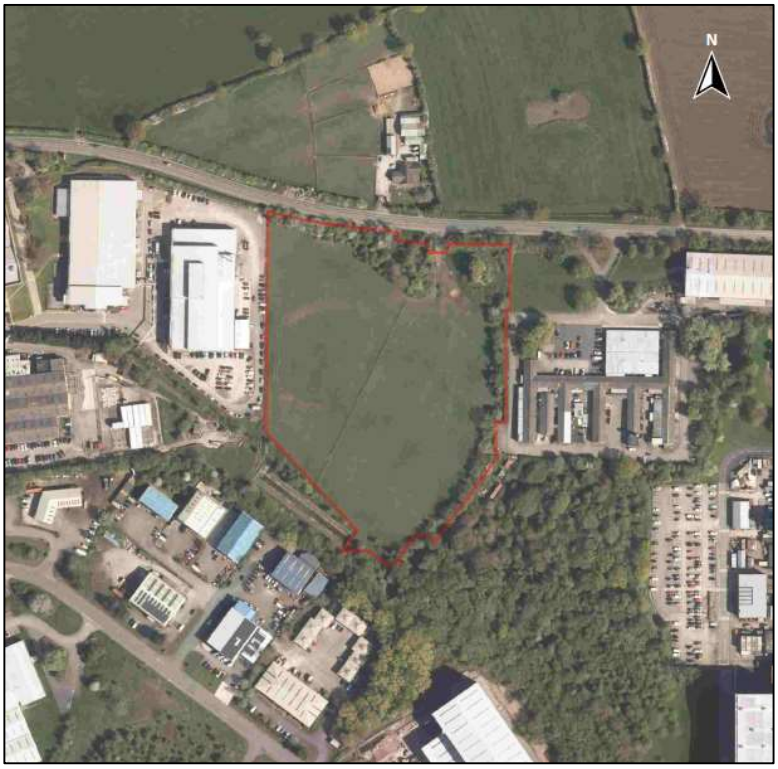
2. SITE DETAILS AND DESCRIPTION

Table 2.1 Current Site Overview.

Site name	Land South of Bryn Lane
Site address	Land South of Bryn Lane, Wrexham, LL13 9XG (approx.). A site location plan is included as Drawing No. TE1891-TE-00-XX-DR-GE-001-V01 within Appendix A.
National Grid Reference (NGR)	338465 350752
Approximate site area	3.21 ha
Site shape	The site is pentagonal in shape.
Current land use on the site	The site comprises an broadly undeveloped plot laid to grass. A fence post runs north east-south west through the centre of the site. A feature in the north east of the site comprises a partially buried concrete shelter with corrugated roof. Vegetation is particularly dense in the north and north east of the site. A review of available service drawings indicates a water main is located in the south, a HV cable runs along the south of the site and dog legs into the west of the site, a drain is located along the southern site boundary, and a BT cable intersects the eastern site boundary.
Surrounding land uses	The site is set within a mixed commercial/industrial areas to the east, west and south with agricultural land use to the north.
General topography and ground levels	A topographic survey confirmed the site is at 30.29 m AOD in the north of the site and 29.12m AOD in the south.

An aerial photograph (from the Groundsure report) of the site and site boundary is shown below. Relevant site photographs are presented in Appendix B.

Figure 2.1 Recent Aerial Photograph from Groundsure



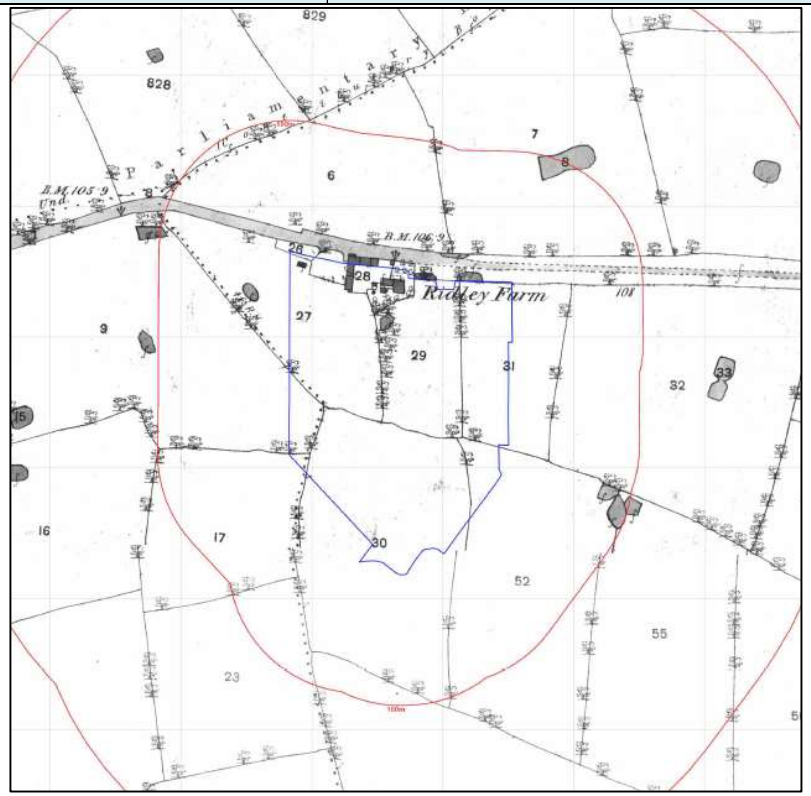
3. SITE HISTORY

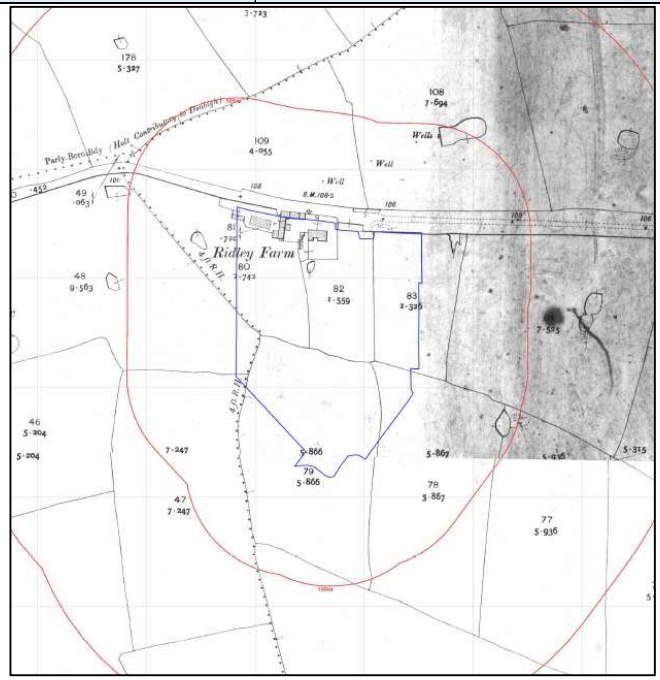
3.1. Site History Review

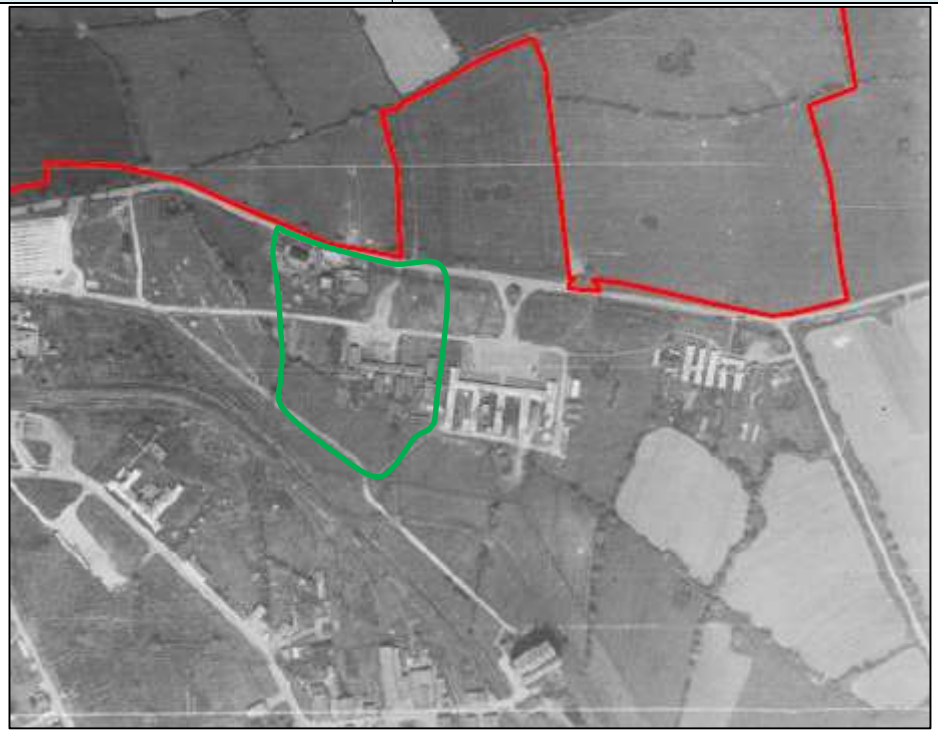
Extracts of Ordnance Survey (OS) plans dated from 1873 to 2024 were reviewed. These were obtained as part of the Groundsure report for the site, which is presented in Appendix C. In addition historic aerial photography on Google Earth has been reviewed.

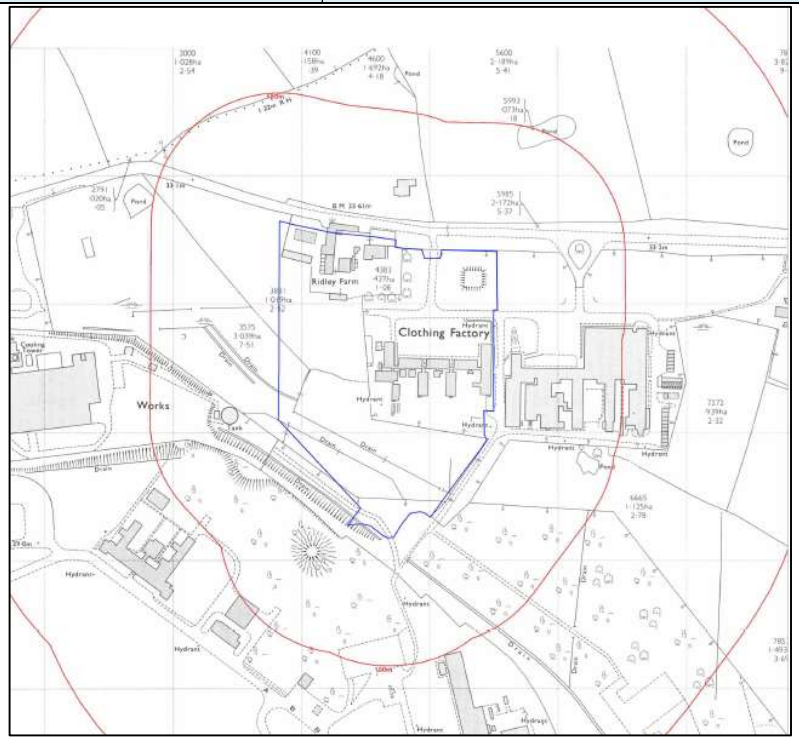
Table 3.1 below presents a summary of the main aspects of the site relevant to the current and proposed future end uses. It is not the intention of this report to describe in detail all of the changes that have occurred on or adjacent to the site, where these are not relevant to the land use.

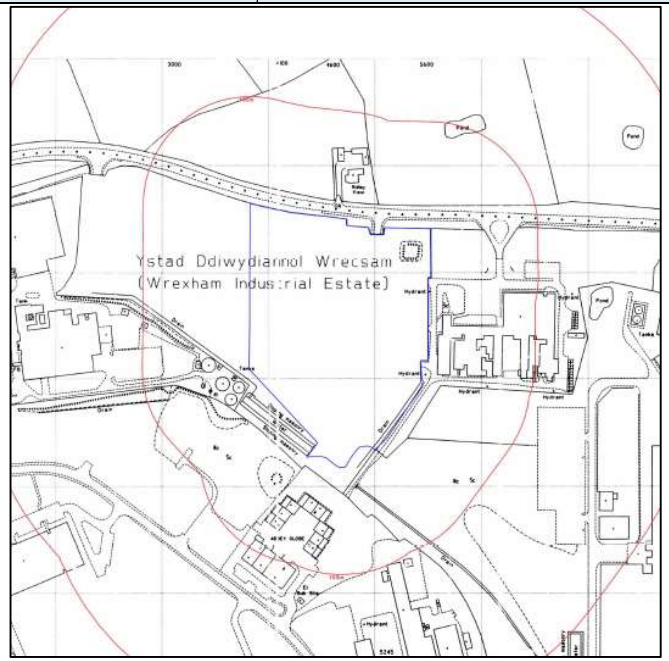
Table 3.1 Site History.

Time Period	On-site features	Off-site features
Pre-1900	 1873 1:2,500	
	• The site is part of Ridley Farm with farm buildings located in the north and split across 4 No. fields to the south. • A well is recorded just north of the site within the farm. • A pond is located in the centre of the north of the site	• The wider site comprises agricultural fields • A road (later Ridley Wood Road)n from the northern boundary of the site. • Multiple ponds are noted within 250m of the site including immediately north, 20m west, 85m southeast and 90m north east. • By 1899 4 No. wells are recorded north of the site between 20-90m

Time Period	On-site features	Off-site features
1900 to 1939 (Pre-war period)	 1912 1:2,500	
	• The farm has expanded slightly across the north of the site.	• No significant changes

<table>
<tr><th>Time Period</th><th colspan="2">On-site features</th><th>Off-site features</th></tr>
<tr><td rowspan="2">Second World War Period (1939 to 1945)</td><td colspan="2"> 
Closest imagery from 1946 (from DA18240-00, dated July 2023)</td><td></td></tr>
<tr><td colspan="2">• The site (outline in green) is shown to be occupied by buildings concurrent with post war mapping. The site is not recorded to have ben part of the nearby ROF Wrexham.</td><td>• The wider area broadly reflects post war mapping. ROF Wrexham is known to be located across land to the south of the site.</td></tr>
</table>

Time Period	On-site features	Off-site features
1945-1980 (Post war period)	 1974 1:2,500	
	• By 1949 buildings have been constructed in the east of the site, extending off site to the east. These are later labelled as a 'clothing factory. • The onsite pond is infilled as part of this development. • Ridley Farm extends slightly by the 1960s. • By 1964 a square bunded feature (possible pill box) is recorded in the northeast of the site.	• By 1949 a mineral rail is present running west to southeast immediately south of the site associated with another works 90m south of the site. • By 1974 a new works is constructed 130m west of the site and a tank is recorded 40m west with associated drain channel. • Operation of the ROF Wrexham ceased in t 1945. Shortly after the war the site was sold for development as an Industrial Estate; a number of buildings previously associated with the ROF changed land use.

Time Period	On-site features	Off-site features
1980 – 2000 (Late 20th century period)	 1993 1:2,500	
	• By 1982 the farm is no longer present. • Between 1982 and 1989 the factory building is removed. • The site remains soft landscaping to present day with the bunded feature in the northeast. • The site is labelled as within Wrexham Industrial Estate by 1989.	• Additional tanks or other circular features are recorded southwest of the site by 1982 associated with a water treatment facility. • Tanks are also noted 160m east of the site

Time Period	On-site features	Off-site features
2000 to 2025 (Modern day period)	 2024 1:10,000	
	• The site remains unchanged.	• The land west of the site is developed sometime between 2003 and 2006. • The Net World Sports unit 450m east of the site is constructed from 2021.

3.2. Preliminary Unexploded Ordnance Risk Assessment

Publicly available online Zetica UXO Risk mapping indicates the site is within a low risk area. A potential Luftwaffe target was located circa 300m south of the site associated with a munitions factory. The Local Authority have provided information stating the site is on land that was formerly used by the Ministry of Defence (MoD) for the manufacture of explosives as part of the Royal Ordnance Factory (ROF) Wrexham which covered an area of over 1400 acres. Operational; in 1941, it consisted of a number if production buildings, widely spaced to minimise and damage should an accidental explosion occur. Operation of the ROF ceased on 11 August 1945. Shortly after the war the site was sold for development as an Industrial Estate.

A previous Detailed Unexploded Risk Assessment completed for the land to the north of the current site boundary by 1st Line Defence Ltd (Ref: DA18240-00, dated July 2023) under Tier project TE1749 and TE1750, recorded a low risk for that site area. The report acknowledged that whilst the ROF could have contributed to localised contamination through burial/disposal/burning, there was no specific evidence. In addition they state the ROF was 300m south of the site boundary which would also place the current red line boundary beyond the ROF Wrexham perimeter.

Therefore, and in line with CIRIA C681: Unexploded ordnance (UXO) A guide for the construction industry, a preliminary UXO risk assessment has been completed.

Table 3.2 Preliminary UXO Risk Assessment.

	Yes/no	Comments
Is the site indicated to have been directly bombed?	No	There are no records of a direct bomb drop on site.
Is the site within an area recorded to have been bombed?	No	The area was not a priority target for the Luftwaffe but there were recorded historic targeted land uses.
Could the site have been a high-risk target?	Yes	Possibly part of the wider Royal Ordnance Factory (ROF,) Wrexham which covered an area of over 1400 acres
Any development cycles since 1945?	Yes	Site developed circa 1949
Mitigating Factors	Yes	Post war development.
Preliminary assessment of UXO Risk	Low	The site is not at risk from Axis and Allied munitions.
Further works?	No	A detailed UXO Risk assessment is likely not required.

4. ENVIRONMENTAL SETTING

4.1. Geology

Table 4.1 Geological Summary.

Maps and publications referenced	Groundsure, Tier Environmental Report (Ref: TE1749-TE-00-XX-RP-GE-001-V04, dated October 2023 and TE-00-XX-RP-GE-001-V07, dated January 2024)
Made ground / artificial ground	The site is shown to be located within an area of 'landscaped Ground' according to the Groundsure report. Given the history of development on the site, the presence of Made Ground is anticipated. An area of 'Made Ground' is recorded 55m SE. The 2023 TE report for land just north of Bryn Lane recorded topsoil to depths of 0.18m to 0.55m bgl or Made Ground to depths of between 0.25m to 1.10m bgl.
Drift geology	The site is underlain by Till Deposits. The 2023 TE report for land just north of Bryn Lane recorded natural soils of Devensian Till, described as a firm becoming stiff and locally very stiff Clay. A more weathered horizon of brown clay was recorded in the order of 0.25m to 1.40m thick overlying the dark grey unweathered Till which was proven to the maximum drilled depth of 15.15m bgl. Sand lenses were also recorded near surface to 0.45m and 1.35m bgl. Localised areas of soft organic clays and peat are described within the east of the site within an infilled pond from depths of 0.33m to 1.90m bgl to depths of between 1.25m to 2.80m bgl.
Solid geology	Salop Formation (Mudstone)
Dip of solid strata	Not determined
Faults	60m NW
Coal seams	None shown to outcrop or subcrop on or in the immediate vicinity of the site.

4.2. Mining and Quarrying

Table 4.2 Coal Mining Activities.

	Yes/No	**Comments**
Is the site in an area of potential shallow coal workings?	No	Source: Mining Remediation Authority
Is the site in a high risk development area?	No	Source: Mining Remediation Authority
Are there any known shafts, adits, tips, lagoons, or opencast workings likely to affect the site?	No	Source: Mining Remediation Authority
Is exploratory work required to investigate the potential risk from shallow mining or quarrying?	No	

Table 4.3 Other Extractive Industries.

	Yes/No	Comments
Superficial drift deposits		
Evidence of extraction on or within 250 m of the site?	No	Source: Groundsure Report
Action required?	No	
Solid Strata		
Any evidence of mineral extraction on or within 250 m of the site?	No	Source: Groundsure Report
Action required?	No	

Other, undocumented mineral workings on or close to the site cannot be completely dismissed.

4.3. Hydrogeology

Table 4.4 Groundwater Occurrence and Abstraction.

	Presence/location	Comments
Environment Agency aquifer designation – Superficial Deposits	Till	Secondary Undifferentiated
Environment Agency aquifer designation – Bedrock	On site	Secondary A Aquifer
	61m NW	Principal Aquifer
Groundwater vulnerability	Superficial	Vulnerability: Low Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low
	Bedrock	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
Anticipated groundwater depth(s)	On site	Groundwater in the TE 2023 investigation just north of Bryn Lane was encountered between 0.20 to 7.30m bgl, with a shallow body of between circa 0.20-3.10m and a deeper body of between circa 4.50m to 7.30m bgl in the cable percussive boreholes. Trial pits recorded limited light seepage and some shallow inflow from Made Ground soils.
Direction of flow	South	Anticipated based on local topography.
Current licensed abstractions – potable	NR	Source: Groundsure Report
Current licensed abstractions – non-potable	NR (within 1500m)	Source: Groundsure Report
Private wells	One site	Possible historic well in the north of the farm from earliest records.
	20-90m N	By 1899 4 No. wells are recorded
Source Protection Zones	On site	Source Protection Zone 3 – Total Catchment

	Presence/location	Comments
Springs	NR	Source: Groundsure Report

NR - none recorded.

For definition of Source Protection Zones, see Appendix G.

4.4. Hydrology

Table 4.5 Surface Water Features.

	Presence/location	Comments
Nearest surface water feature	On site	Drain located along the south east boundary
Other surface water features	7m SW to 21m S	Further drains
Canals, ponds, lakes, etc.	NR	Source: Groundsure Report
Water Framework Directive (WFD) Surface Water Bodies	NR	Source: Groundsure Report
Licensed surface water abstractions	NR	Source: Groundsure Report
Surface run-off and site drainage	On site	The site currently comprises soft landscaping and it is anticipated that waters drain direct to the ground with surplus runoff using the drains located on and surrounding site.

NR - none recorded. Environment Agency GQA assessments: A = very good to E = poor

4.5. Flood Risk Summary

Table 4.6 below represents a summary of the flood risk data contained within the Groundsure report obtained for the site.

Table 4.6 Flood Risk Summary

	Presence/location	Comments
Risk of Flooding from Rivers and Sea (RoFRaS)	NR	Source: Groundsure Report
Historical Flood Events	NR	Source: Groundsure Report
Flood Defences	NR	Source: Groundsure Report
Areas Benefiting from Flood Defences	NR	Source: Groundsure Report
Flood Storage Areas	NR	Source: Groundsure Report
Records of Flood Zone 2	NR	Source: Groundsure Report
Records of Flood Zone 3	NR	Source: Groundsure Report
Surface water flooding	On site (south only)	1 in 30 year (0.30-1.0m)
Groundwater flooding	On site	Low Risk

NR - none recorded

4.6. Environmental Designations

Table 4.7 Summary of Environmental Designations.

	Presence/location	Comments
Sites of Special Scientific Interest (SSSI)	NR	Source: Groundsure Report
Conserved wetland sites (Ramsar sites)	NR	Source: Groundsure Report
Special Areas of Conservation (SAC)	NR	Source: Groundsure Report
Special Protection Areas (SPA)	NR	Source: Groundsure Report
National Nature Reserves (NNR)	NR	Source: Groundsure Report
Local Nature Reserves (LNR)	NR	Source: Groundsure Report
Designated Ancient Woodland	NR	Source: Groundsure Report
Biosphere Reserves	NR	Source: Groundsure Report
Forest Parks	NR	Source: Groundsure Report
Marine Conservation Zones	NR	Source: Groundsure Report
Green Belt	NR	Source: Groundsure Report
Proposed Ramsar sites	NR	Source: Groundsure Report
Possible Special Areas of Conservation (pSAC)	NR	Source: Groundsure Report
Potential Special Protection Areas (pSPA)	NR	Source: Groundsure Report
Nitrate Sensitive Areas	NR	Source: Groundsure Report
Nitrate Vulnerable Zones	NR	Source: Groundsure Report
SSSI Units	NR	Source: Groundsure Report

NR - none recorded

4.7. Landfill and Waste Management Activity

Table 4.8 Waste Management Activities.

	Presence/location	Comments
Active or recent landfill	NR	Source: Groundsure Report
Historical landfill (BGS records)	NR	Source: Groundsure Report
Historical landfill (LA/mapping records)	NR	Source: Groundsure Report
Historical landfill (EA/NRW records)	NR	Source: Groundsure Report
Historical waste sites	NR	Source: Groundsure Report
Licensed waste sites	14m E (11 No. records between 2007-2023)	Bryn Lane Composting Facility Type of Site: Material Recycling Treatment Facility
Waste exemptions	60m SW	Storage of waste in secure containers
	66m SW	Use of waste derived biodiesel as fuel, Storage of sludge

	Presence/location	Comments
Evidence of other landfilling or potential infilling on or within 250m of site	On site	Historic pond infilled during development of the factory circa 1949. Multiple other ponds within 250m infilled during development of wider area.
Walkover evidence of fly-tipping on site?	Yes	Structure in northeast of site in disrepair and heavily overgrown with rubble noted.
Is a landfill/ground gas risk assessment required?	Yes	Ground gas risk assessment required for on-site Made Ground associated with historic land uses.

NR - none recorded

4.8. Local Industrial Land Uses

Other potentially contaminative activities are shown in Table 4.9 below with those features considered pertinent to the conceptual site model highlighted in **bold**. The entries relate to activities within *circa* 250 m of the site, with the exception of COMAH facilities where the assessment is extended to a distance of *circa* 500m from the site.

Table 4.9 Other Potentially Contaminative Processes in the Locality

	Location	Comments
Recent industrial land uses	4m E	Business Parks/Industrial Estate
	18m E	Aviation Engineers
	30m S, 115m E	Industrial Engineers
	30m S	Hydraulic Engineers
	30m S	Special Purpose machinery and equipment
	44m S	Animal Fees, Pet Foods, Hay and Straw
	74m SW, 135m SW	General Construction Supplies
	81m S	Precision Engineers
	81m NW	Electricity Substation
	85m SE	Vehicle Repair, Testing and Servicing
	91m SW	Textiles, Fabrics, Silk and Machinery
	91m SW	Office and Shop Equipment
	110m S	Alcoholic Drinks
	119m S	Electrical Engineers
	153m W	Industrial Repairs and Servicing
	196m E, 196m E, 249m SE	Tank
	221m W	Medical Equipment, Supplies and Pharmaceuticals
Current or recent petrol stations	NR	Source: Groundsure Report
Electricity cables	NR	Source: Groundsure Report
Gas pipelines	NR	Source: Groundsure Report
Sites determined as Contaminated Land	NR	Source: Groundsure Report
Control of Major Accident Hazards (COMAH)	NR	Source: Groundsure Report
Regulated explosive sites	NR	Source: Groundsure Report
Hazardous substance storage/usage	NR	Source: Groundsure Report

	Location	Comments
Historical licensed industrial activities (IPC)	NR	Source: Groundsure Report
Licensed industrial activities (Part A(1))	NR	Source: Groundsure Report
Licensed pollutant release (Part A(2)/B)	67m S	Pector Limited, Redwither Business Park Process: Animal Feed Compound
Radioactive Substance Authorisations	NR	Source: Groundsure Report
Licensed Discharges to controlled waters	NR	Source: Groundsure Report
Pollutant release to surface waters (Red List)	NR	Source: Groundsure Report
Pollutant release to public sewer	NR	Source: Groundsure Report
List 1 Dangerous Substances	NR	Source: Groundsure Report
List 2 Dangerous Substances	207m SW	Hoya Lens Uk Ltd, Abbey Road, Wrexham Receiving Water: No data Authorised Substances: Chromium, Copper, Lead, Nickel, Zinc
Pollution Incidents (EA/NRW)	236m W	Incident Date: 19/12/2013 Pollutant Description: Other Inorganic Chemical or Product Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
Pollution inventory substances	NR	Source: Groundsure Report
Pollution inventory waste transfers	NR	Source: Groundsure Report
Pollution inventory radioactive waste	NR	Source: Groundsure Report

NR - none recorded

COMAH – Control of Major Accident Hazards (regulations); NIHHS – Notification of Installations Handling Hazardous Substances (regulations)

4.9. Radon Risk

Table 4.10 Radon Risk Status.

	Comments
Estimated properties affected	Less than 1% of properties above the Action Level
Does a basement (or converted cellar/basement) form part of the proposed development?	As stated within BR 211, basements represent areas that are more at risk because the walls are in contact with the ground as well as the floor. This, coupled with reduced natural ventilation below ground level, increases the risk of elevated radon levels. All basements are therefore considered under BR 211 to be at increased risk of elevated levels of radon regardless of geographic location. Currently, no basements or converted cellars / basements are proposed for the development and therefore no additional consideration of potential increased risk needs to be made; however, this should be revisited in the event that the proposals change to include for a basement.
Radon Protection Measures required?	No

4.10. Waste Classification and Materials Re-Use

If the site is to be redeveloped and materials are disposed off site, the material exported from the site to landfill should be hauled by a register waste character in accordance with Duty of Care Regulations 1991 and the Hazardous Waste Regulations 2005.

Based on the history of the site and the anticipated potential contaminants of concern, it is considered possible that hazardous waste soil materials may be present beneath some areas of the site; however, this will be subject to confirmatory investigation, sampling, laboratory analysis and waste classification in accordance with the Guidance on the Classification and Assessment of Waste (WM3).

It will be necessary to register the site in advance of the intended reclamation works with the Environment Agency before disposal to landfill can take place. There will be requirement for the waste producer to provide appropriate Waste Acceptance Criteria (WAC) testing of the Soils for disposal to ensure that the soils are appropriately classified and that the landfill is licensed to receive such soils. A consignment note shall be completed, signed and retained by all parties involved. The consignment note shall state the volume of waste, a physical description of the material and statement of its chemical composition. The waste consignment notes shall be kept by the contractor for a period of at least two years.

Subject to volumetric fill requirements and a future assessment of suitability of re-use (both chemically and geotechnically), some materials may be considered for potential re-use in line with an appropriate end-of-waste protocol such as WRAP Quality Protocol for Aggregates from Inert Waste, U1 Exemption or a Materials Management Plan in accordance with the CL:AIRE Definition of Waste Code of Practice (DoWCoP). Please note that any previously landfilled or mining waste materials may not be appropriately subject to consideration under DoWCoP and may not be re-used under DoWCoP unless sufficient lines of evidence and agreement with the local Environment Agency Waste Team can be sought beforehand.

Re-Use of Excavated and Stockpiled Clean Naturally Occurring Soils on Other Sites

In addition, Tier Environmental are aware that CL:AIRE is classing stockpiled clean, naturally occurring soils as waste, unless their final destination is identified in a Materials Management Plan, before they are excavated. However, Tier Environmental consider that any clean naturally occurring soils arising from enabling works, earthworks or construction activities would be regarded as an asset and the default assumption for this site (prior to excavation and stockpiling) is not the intention to discard these materials where they may be reasonably re-used on this, or another, development site. Stockpiling is a recognised, recommended means of safely storing soils. Whilst there may be advantages to leaving soils in-situ, stripping topsoil and subsoil prior to earthworks is a routine construction activity. Tier Environmental consider that it is not unreasonable to state that in the event that the developer owns another site where the construction phase is ongoing, soils can be transferred between their sites as an owned product and never become waste.

The above paragraph above is therefore considered a clear intention to reuse any clean, naturally occurring soils derived from excavations at this site (which may also include temporary stockpiling these materials). It is considered; however, that in addition to this the following must be adhered to:

- Reuse does need to occur within a ‘reasonable’ timeframe (12 No. months); and,
- If soils are transferred to a third party (another developer), there needs to be some contractual agreement in place, as in this situation it is important to have something in place confirming that surplus soils are required by the third party.

Re-Use of Excavated and Stockpiled Clean Naturally Occurring Soils Within The Site They Are Excavated From

Further to the above, where soils are naturally occurring, uncontaminated and re-used on the site they are excavated from, they fall outside of the Waste Framework Directive (WFD) i.e. they will not be classified as a waste Currently the CL:AIRE Definition of Waste Code of Practice states the

following which appears to support this position: *"If the material is waste an Environmental Permit will be required to lawfully deposit or re-use it unless the material is "uncontaminated soil and other naturally occurring material excavated in the course of construction activities where it is certain that the material will be used for the purposes of construction in its natural state on the site from which it was excavated", which is excluded from waste regulation by the Waste Framework Directive (2008)."*

4.11. Regulator Provided Information

Relevant searches for the site have been conducted by Natural Resources Wales, the Local Authority and Fire Service, and the information has been summarised below:

Natural Resources Wales

A review of the information links issued by Natural Resources Wales did not record any new data for the site.

Local Authority

Wrexham Borough Council provided the following response:

- There are no records of any landfills within 250m of the site.
- The Contaminated Land Team does not yet have a comprehensive database regarding historic land use or contamination, however the limited information available to the Contaminated Land Team indicates that the above property is on land that was formerly used by the Ministry of Defence (MoD) for the manufacture of explosives. The limited records held by this Department, associated with this former use, are summarised as follows:
    - The Royal Ordnance Factory (ROF) Wrexham was the largest explosives factory in the area;
    - The site covered an area of over 1400 acres and was served by its own railway;
    - It became operation in 1941, about a year after the facility was constructed. It consisted of a number if production buildings, widely spaced to minimise and damage should an accidental explosion occur;
    - Two units were built for the manufacture of solventless cordite also known as Cordite W;
    - Operation of the ROF ceased on 11 August 1945. Shortly after the war the site was sold for development as an Industrial Estate;
    - Cordite is produced by the incorporation of Nitrocellulose (guncotton) with Nitro-glycerine in the presence of a solvent to assist gelatinisation, although at Wrexham Carbamite was introduced as a suitable stabiliser instead of solvents. The cordite produced at Wrexham was 'flashless', produced by the inclusion of a large proportion of finely divided Nitroguanidine (Picrite);
    - Further information of contamination issues associated with the manufacture of explosives is contained in the Environment Agency document 'Land Contamination: Technical Guidance on Special Sites: Explosive Manufacturing & Processing Sites' Research & Development Technical Report P5-042/TR/03, dated June 2001.
- The former Department of Industry Profiles and Contaminated Land Research (CLR) Report 8: Potential Contaminants for the Assessment of Land identify historical munitions sites as sites that may have ground contamination, therefore the Council will be required to consider the former MoD land under its duties of implementing Part 2A of the Environmental Protection Act 1990.
- Due to the historic use of the land it is likely that the above property will need to be considered further by this Department under Part 2A. It should be noted that the fact that the area is likely to be considered under Part 2A does not necessarily mean that it will be determined as 'Contaminated Land' as any future assessment undertaken may find that there is no significant risk. Unfortunately it is not possible to advise you of a likely time when such an assessment may take place since it will be subject to financial resources and prioritisation against other potential contaminated sites in the Borough that also require assessment.

- Some sites on the Industrial Estate have had ground contamination issues assessed. These have mainly been the result of a planning condition requiring a contamination assessment for the development of the site. Some assessments have shown no contamination to have been present, whilst others have shown some contamination that has required remediation measures for its safe development. In many of these cases the contamination was not necessarily due to the sites former use by Royal Ordnance but by subsequent operations on the site or made ground.
- In addition the site being on former MoD land the Landmark Information Group historical maps have marked the north eastern section of the site as a 'factory or works – use not specified' (1992), there is a 'Tank' (1992) located to the south west of the site and three 'water fill' (1881,1954 and 1954) on the northern section.
- There are no records of any odour complaints on the site, however there are records of odour complaints (2016 and 2018) from industrial units on the industrial estate.

Fire Service

North Wales Fire and Rescue Service did not find any fire related incidents for the site boundary.

The responses received have been provided in Appendix D.

5. PREVIOUS INVESTIGATION FINDINGS

The following previous pertinent reports for land adjacent to the site have been produced by Tier Environmental:

- A Ground Investigation Report for Net World Sports, Wrexham (Ref:TE1456GIR1.3, dated July 2021)
- A Ground Investigation Report for Bryne Lane (Outline Planning) Wrexham (Ref: TE1749-TE-00-XX-RP-GE-001-V04, dated October 2023)
- A Ground Investigation Report for Bryne Lane (Detailed Planning) Wrexham (Ref: TE1750-TE-00-XX-RP-GE-001-V07, dated January 2024)

For clarity, reports TE1456 were completed for an area of land circa 250m east of the site.

Table 5.1 Tier Environmental 2021 Report Review Summary

Site history	Historical maps and third party information states the Site has been historically undeveloped and has been used for agricultural purposes.
Potential contaminative features identified	No significant potentially contaminative features have been identified on the Site.
Mining and quarrying	The Site Is not located within a mining area or an area subject to historic quarrying.
Previous investigations referenced in the report	A Geo-Environmental Desk Study was conducted for the Site by Shepherd Gilmour Environmental Ltd in October 2011. Conclusions of this desk study identified potential contamination sources associated with Made Ground within infilled ponds, potential ground gas associated with unknown Made Ground deposits and impacts on of Site from trade effluent discharges into the tertiary river adjacent to the southern Site boundary.
Fieldwork	Tier Environmental conducted 3 No. days fieldwork on 6th, 9th and 10th April 2021 which comprised: • 1 No. day window sample drilling (WS1 to WS4 and WS6) to depths between 3.50m bgl and 5.45m bgl to determine the nature and extent of soil and groundwater and obtain samples for geo-environmental and geotechnical analysis. • 3 No. cable percussive boreholes (CP1 to CP3) to depths between 10.00m bgl and 10.45m bgl to determine the nature and extent of soil and groundwater and obtain samples for geo-environmental and geotechnical analysis. Excavation of 6 No. hand dug pits (HDP1 to HDP6) to obtain shallow soil samples for geo-environmental analysis.
Laboratory testing	Samples of soil were submitted for analysis of a range of metal, other inorganic and organic components including asbestos. Geotechnical testing was scheduled on selected samples. All testing was undertaken at accredited laboratories.
Ground conditions	Topsoil was encountered at ground level in all exploratory hole locations to depths between 0.23m bgl to 0.38m bgl. Underlying the Topsoil was firm to stiff, locally very stiff clay (Till). Till was encountered in all exploratory hole locations to a maximum depth of 10.45m bgl, however the base of this unit was not encountered
Ground stability	The ground across the Site was stable.
Foundations and floor slab recommendations	The preferred, most economic foundation solution is likely to be shallow spread foundations (pads or strip) within the Till and it is proposed that floor slabs are ground bearing.
Sulphate class	It is considered that a Design Sulphate Class of DS-1 and ACEC Class AC-1 is appropriate for buried concrete at the Site within the topsoil and a Design Sulphate Class of DS-2 and ACEC Class AC-2 is appropriate for buried concrete at the Site within the Till.
Contamination – Human Health	No measured soil concentrations of potential contaminants of concern have been reported in excess of Generic Assessment Criteria (GACs) protective of human health appropriate to commercial site end use
Gas protection	A Gas Screening Value of 0.0045 l/hr has been calculated, derived using the maximum recorded carbon dioxide concentration of 1.5 %v/v and the maximum peak flow rate of 0.3 l/hr. Assessment of this gas screening value alone places the Site in a Characteristic Situation 1 – Very Low risk scenario in accordance with CIRIA C665 for which ground gas protection measures are not required. The results of carbon monoxide and hydrogen sulphide monitoring has determined that neither gas has been detected.

Radon Requirements	Data from UKRadon.org indicates that the majority of the Site lies within an area where less than 1% of the properties lie above the action level, therefore no radon protection measures are required. However, the north-western corner of the Site falls into an area where 1% - 3% of the properties lie above the action level. This is most likely the result of the bedrock Salop Formation, which is shown on the BGS records to be overlain by approx. 30m to 40m of superficial Till, meaning radon is unlikely to affect this area. however, although unlikely, any proposed buildings with basement levels in the north-western corner of the Site which falls into the 1% to 3% action level, should have a Visqueen (or equivalent) barrier membrane installed.

Table 5.2 Tier Environmental 2023 Report Review Summary

Tier Environmental was commissioned by Net World Sports to undertake a Ground Investigation for the areas in which full and partial planning permission was sought for the site on Bryn Lane, Wrexham. The purpose of the investigation was to determine the nature and extent of soil and groundwater beneath the Site for the purposes of environmental and geotechnical assessment.

Proposed land use	The proposals comprise a commercial development, including industrial and storage & distribution uses, and ancillary retail/hotel floorspace with associated roadways, pavements and parking areas. As part of the proposals there are areas of soft landscaping across the site.
Site location and surrounding land uses	The site is located at Land North of Bryn Lane, Wrexham, LL13 9UT. The Site is currently in use as agricultural fields, with surrounding land uses comprising both residential to the north and industrial to the south of Bryn Lane. There are no nearby significant current land uses in the vicinity of the Site.
Previous investigations	Tier Environmental have previously conducted a Preliminary Risk Assessment for the Site: report reference: "TE1624-TE-00-XX-RP-GE-001-V03" dated June 2023. The PRA covers both the outline planning and detailed planning areas of the Site.
Fieldwork	Fieldwork was conducted between 5th and 23rd of June 2023, supervised by a suitably qualified Tier Environmental Engineer and comprised a combined: • 38 No. machine excavated trial pits to depths between 1.90m bgl and 4.00m bgl. • 15 No. hand excavated trial pits to depths between 1.00m bgl and 1.20m bgl. • 11 No. cable percussive boreholes to depths between 10.00m bgl and 15.45m bgl. • 24 No. window sample boreholes to depths between 2.38m bgl and 5.45m bgl.
Laboratory testing	Samples of soil and groundwater were submitted for analysis of a range of metal, other inorganic and organic components including asbestos. Geotechnical testing was scheduled on selected samples. All testing was undertaken at accredited laboratories.
Ground conditions	The site is broadly underlain site wide by topsoil to depths of 0.18m to 0.55m bgl or Made Ground to depths of between 0.25m to 1.10m bgl, principally in the east of the site. These are underlain by natural soils comprised of Devensian Till, described as a firm becoming stiff and locally very stiff Clay. A more weathered horizon of brown clay was recorded in the order of 0.25m to 1.40m thick overlying the dark grey unweathered Till which was proven to the maximum drilled depth of 15.15m bgl. Sand lenses were also recorded near surface to 0.45m and 1.35m bgl. Localised areas of soft organic clays and peat are described within the east of the site within an infilled pond from depths of 0.33m to 1.90m bgl to depths of between 1.25m to 2.80m bgl. Groundwater was encountered between 0.20 to 7.30m bgl, with a shallow body of between circa 0.20-3.10m and a deeper body of between circa 4.50m to 7.30m bgl in the cable percussive boreholes. Trial pits recorded limited light seepage and some shallow inflow from Made Ground soils.
Ground stability	No geotechnical or stability issues were highlighted in the desk study review. Ground conditions were stable across the majority of Site. Locally softer cohesive materials associated with a former infilled pond were observed in the east of the Site but the trial pits both within this area and other areas across the Site were observed to be stable during the trial pitting works and no spalling was observed
Foundations and floor slabs	Given the encountered ground conditions and the nature of the proposed development, the most likely foundation solution would be a pads or similar traditional shallow foundations. Based on the range of shear strengths derived from *in-situ* shear testing, an allowable bearing capacity of circa 150-170kN/m^2 could be achieved at 1.20m bgl. Localised over excavation of organic rich Made Ground soils and Peat as recorded in TP117 and TP118 in the east of the site under proposed Unit 2 (which would not be considered suitable as a founding stratum and would arise to differential settlements beyond tolerable limits) may be required, with deepening of foundations or engineered replacement with suitable material. Piles could be considered where loadings cannot be transferred to shallow soils.

Earthworks	The sulphate test results concur with the general understanding that Quaternary deposits, such as glacial Till, are unlikely to contain high sulphate/sulphide levels because conditions during deposition were not anaerobic, although some deposition of sulphates may have occurred during formation. It is therefore considered that the Till is likely to be suitable for improvement/stabilisation with lime and/or cement but the specialist contractor should undertake confirmatory bench trials prior to the commencement of the works, including the CBR mould (BS EN 13286-47) and the accelerated swell tests (BS EN 13286-49).
Sulphate class	The conclusion of the assessment is that a DS-4m and ACEC Class AC-4m may be required for buried concrete design purposes within Made Ground soils and for natural soils, based on results from groundwater testing. Further testing and detailed analysis may be considered to attempt to reduce this class. This class is being driven by elevated sulphate within 'deeper' groundwater sampled from the cable percussive boreholes. It should be noted that the level of 3200 mg/l is only just exceeding the threshold of 3000 mg/l for a DS-3 class. and for natural soils, based on results from groundwater testing, however this is further discussed below: Due consideration has been given to the minimum and maximum groundwater levels encountered during monitoring, and the depths at which the groundwater samples were obtained. Based on this further analysis of the results; it is recommended that for buried concrete design purposes in soils or groundwater between ground level and 2.50m bgl; a classification of DS-2 and ACEC Class AC-2 is adopted. For any concrete to be buried at depths below 2.50m bgl, these may also remain as a DS-2/AC-2 classification only if groundwater is not encountered. If groundwater is encountered, then based on the results, these would have to be designed to comply with a DS-3 and ACEC Class-3 specification. If buried concrete is required to go to a depth at or below 6.00m bgl, then a DS-4m and ACEC Class AC-4m will need to be adopted for the buried design concrete purposes based on the recorded water soluble sulphate concentration recorded in CP101 at 6.00m bgl
Phosphorus	The Site is located within the River Dee and Bala Lake Designated Special Area of Conservation (SAC). The drainage strategy/design for the proposed development should therefore incorporate appropriate on-site and/or off-site mitigation measures which should be agreed with the regulatory authorities. The proposed development will involve the development of the majority of the site, with buildings and hardstanding proposed and demolishing the farm buildings at Little Acorns and Honey Suckle Cottage off Francis Lane. Not only will this act to inhibit infiltration into the ground, it will also largely remove the source of agricultural phosphate from the site. The site won topsoil will be reused within the development within screening bunds and soft landscaping, but agricultural fertilisers and manure will no longer be used on the site. Wastewater drainage from the proposed development will be either via the on-site combined sewer and the Five Fords WwTW or on-site wastewater treatment and discharge to the on-site surface water drainage system.
Contamination – Human Health	No measured soil concentrations of potential contaminants of concern have been reported in excess of Generic Assessment Criteria (GACs) protective of human health appropriate to the proposed land use. On this basis , it is not considered that the site represents a potential risk to end-users. Of the 37 No. of Made Ground samples submitted for asbestos screening, none were reported to contain asbestos.
Contamination – Controlled Waters	From a conceptual site model perspective, the Devensian Till is classified as a Secondary Undifferentiated Aquifer, and the bedrock geology is classified as a Principal Aquifer associated with Kinnerton Sandstone Formation in the western/northern parts of the Site and a Secondary A Aquifer associated with the Salop Formation comprising mudstone in the southern / southeastern part of the Site. There is an inferred fault located beneath the site orientated from southwest to northeast associated with these two bedrock formations. The site is within a Source Protection Zone Total Catchment 3 associated with the Principal Aquifer, and the nearest surface water receptor comprises an underground water course 110m west. There are no potable or non-potable water abstractions located within 1km of the Site. The low permeability cohesive Till deposits have been proven to depths of circa 15.00m bgl in this investigation and are recorded to depths of circa 26.0 to 38.0m bgl in nearby BGS records which is considered sufficient to provide protection of the underlying bedrock aquifers from any vertical migration of potential contaminants of concern. In addition, it is not considered that the proposed shallow foundation solution will form any preferential pathways to the underlying Principal Aquifer. On this basis the controlled waters sensitivity is considered to be low. Measured groundwater concentrations of copper, chromium, nickel, zinc, anthracene, Sum PAHs, fluoranthene, benzo(a)pyrene, total ammonia and electrical conductivity are not considered to present a risk to the controlled waters environment for the following reasons: • The potential for significant dilution between the Site and nearby significant water bodies; • The low sensitivity of the controlled waters environment; • The localised nature of those soil leachate concentrations in excess of the WQS and the absence of any reported widespread leachable concentrations; • The fact that the Site will incorporate buildings / hardstanding and a dedicated drainage system that shall reduce infiltration rates through the soils; • The absence of any nearby potable or non-potable groundwater abstractions;

	• The protection offered to the underlying Principal Aquifer by the presence of >10.0m of low permeability cohesive Till soils. • The absence of a nearby viable surface water body where a consumption of fish by humans exposure scenario would be realised for fluoranthene and benzo(a)pyrene.
Gas protection	Based on the WS105 being installed in a historically infilled pond, Tier have zoned the site into the proposed Unit 2 zone and the remainder of the site zone. For the Unit 2 Zone, a Gas Screening Value of 1.32 l/hr has been recorded based on a maximum peak methane concentration of 60.1%v/v and the maximum peak flow rate of 2.2 l/hr. Assessment of this gas screening value alone places **the Unit 2 Zone in a Characteristic Situation 3 – Moderate Risk Scenario in accordance with CIRIA C665 for which ground gas protection measures are required**. This is driven, however, by an instance of elevated peak methane from well WS105 only. This location targeted a historic infilled pond and logs described soils of organic clays and peat; this is considered the primary source for this elevated methane and carbon dioxide. It is anticipated that these materials will be removed as part of enabling works due to them being geotechnically unsuitable; this will remove the source of the elevated methane and carbon dioxide, effectively placing the Unit 2 Zone in the same Zone as the remainder of the site, i.e. a **Characteristic Situation 1 – Very Low Risk Scenario**. However, this would only be applicable if these soils are removed; if the soils remain then the whole of Unit 2 must remain classified as a CS3. For the remainder of the site Zone, a Gas Screening Value of 0.062 l/hr has been recorded based on a maximum carbon dioxide concentration of 15.4%v/v and a representative steady flow rate of 0.4l/hr. Assessment of this gas screening value alone places **the remainder of the Site Zone in a Characteristic Situation 1 – Very Low Risk Scenario for which no ground gas protection measures are required.**
Radon Requirements	The majority of the Site lies within an area where less than 1% of the properties are above the action level whereby no radon protection measures are required. The south of the site is within an area where 1-3% of properties are above the action levels and therefore confirmation that no basic radon protection measures are required should be confirmed with the Local Building Control Office. UK Radon indicates testing/protection may be required for high risk locations i.e. basements
Other issues	A gas main runs through the Site in the East (oriented north to south) which meant excavations and boreholes could not be undertaken within this area; a recommended exclusion zone of 30m and compulsory 15m exclusion zone either side of the main was enforced by Wales and Western Utilities. Based on ecological sensitivity following an assessment on the Site; it was not possible to conduct intrusive investigations in the close proximity of existing trees, hedgerows and ponds. Tier Environmental did not undertake any machine operated intrusive investigation within 10m of these features.
Further works	Confirmation of the locations of the gas main that is to be diverted and the existing combined sewer. A specialist stabilisation contractor should undertake confirmatory bench trials prior to the commencement of the works, including the CBR mould (BS EN 13286-47) and the accelerated swell tests (BS EN 13286-49).
Waste Soils Classification	Basic waste characterisation has determined that all Made Ground soils are non-hazardous. WAC testing has not been completed as part of these works and final waste disposal routes should be confirmed prior to removal from site. It is anticipated that natural soils will be suitable for disposal to an inert waste landfill.
Materials re-use	Subject to volumetric cut and fill requirements the majority of Made Ground materials and all of natural soil materials and may be considered chemically suitable for potential re-use subject to careful management and placement of materials and in line with an appropriate end-of-waste protocol such as WRAP Quality Protocol for Aggregates from Inert Waste, U1 Exemption or a Materials Management Plan in accordance with the CL:AIRE Definition of Waste Code of Practice (DoWCoP). Suitability for re-use would also be subject to confirmation of the geotechnical suitability depending on whether the materials are to be re-used in load bearing areas. This would need to be detailed in a supporting document.

6. GROUND GAS CONCEPTUAL SITE MODEL CONSIDERATION

6.1. Potential Ground Gas Sources and Gas Generation Potential

BS 8576:2013 outlines the importance of determining the ***gas generation potential*** on a given site by examining the potential source's characteristics, such as the type of waste or organic content, that could produce hazardous gases like methane or carbon dioxide. However, ***risk assessment is a separate step***, which considers pathways and receptors, using factors like Gas Screening Values (GSV) to estimate potential exposure and impact on receptors.

As such, it is important to delineate "generation potential" (linked to source characteristics) from "risk" (dependent on exposure likelihood and receptor sensitivity).

Tier Environmental has used material type descriptions and generation potential designations alongside the risk of lateral migration determinations from a combination of BS 8576:2013 and The Local Authority Guide to Ground Gas, CIEH (2008) and assessed their presence or otherwise for this site in the table below.

For further information of current site use, current surrounding land use, site history and surrounding land use history please refer to Section 3 and 4.

Table 6.1 Potential Ground Gas Source Generation Potential (from BS 8576:2013 and The Local Authority Guide to Ground Gas, CIEH (2008))

BS 8576:2013 Generation Potential of Source		Risk of Lateral Migration (from The Local Authority Guide to Ground Gas, CIEH (2008))	Potential On-Site Source?	Potential Off-Site Source?
Generation Potential	**Material Types**			
Very low	Natural carbonate soil and strata, e.g. chalk and limestone.	Negligible	No	No
	Natural soil strata with a low degradable organic content, e.g. alluvium	Negligible	No	No
	In-filled pond less than 15 m diameter, in-filled before 1930s to 1940s.	Negligible	Yes	Yes
	Made ground with low degradable organic content (e.g. up to 5% organic material such as pieces of wood, pieces of paper, rags, etc. with a high proportion of ash and no food or other easily degradable waste).	Negligible	Yes – possibly associated with infilled pond and historic land use as a farm	Yes- possibly associated with infilled ponds and historic land use as a farms
	Mine workings shallow or shaft (where there is clear evidence that they are flooded). (Gas in coal is historically generated and is trapped or adsorbed so the actual current generation rate is very low but it accumulates in workings and large volumes can be emitted very quickly.)	Variable – depends on extent of workings, geology and hydrogeology	No	No
	Inert landfill sites. (Lack of regulation in the past means that most sites are never entirely inert – they can include timber, plasterboard and even domestic refuse and consequently care is needed when assessing such sites. They might require a higher risk classification.)	Low	No	No
	Hydrocarbon impacted soils (anaerobic degradation)	Negligible	Yes – unknown potential hydrocarbons associated with historic factory	Yes – unknown potential hydrocarbons associated with historic factories
Very low / low	Natural soil strata with a high degradable organic content (DOC) e.g. peat (note: gas in peat is historically generated and is trapped or adsorbed in the soil so the actual current generation rate is very low)	Negligible	No	No
Low *	Made ground with total organic carbon (TOC) up to 6% (e.g. dock silt. No food or other easily degradable waste).	Negligible	No	No
	Foundry sand (includes phenolic binders, rags and wood that decay, albeit at low rates).	Very low	No	No
	Landfill 1945 to mid 1960s (see also “moderate”).	Low/moderate – depends on geology	No	No
Moderate	Sewage sludge / cess pits.	Very low	Yes – possibly associated historic land use as a farm	Yes – possibly associated historic agricultural land uses
	Mine workings – unflooded, more than 50 years since last worked (gas is liberated from coal when mine workings are excavated; this continues for up to about 50 years).	Variable – depends on extent of workings, geology and hydrogeology	No	No
	Landfill 1945 to mid 1960s (this could also be “low” or, if disturbed, “high”).	Low/moderate – depends on geology	No	No
High	Landfill mid 1960s to early 1990s.	Moderate to very high	No	No
	Mine workings – unflooded – less than 50 years since last worked.	Variable – depends on extent of workings, geology and hydrogeology	No	No
Very High	Municipal landfill sites.	Moderate to very high or Low (assuming site has engineered containment systems)	No	No
	Landfill early 1990s onwards.	Low (assuming site has engineered containment systems)	No	No

Notes - * Higher TOCs might not always indicate high degradability. For example, coke breeze can contain up to 51% TOC but only 4% DOC. In this case, the assessor should estimate what proportion of the TOC is degradable.

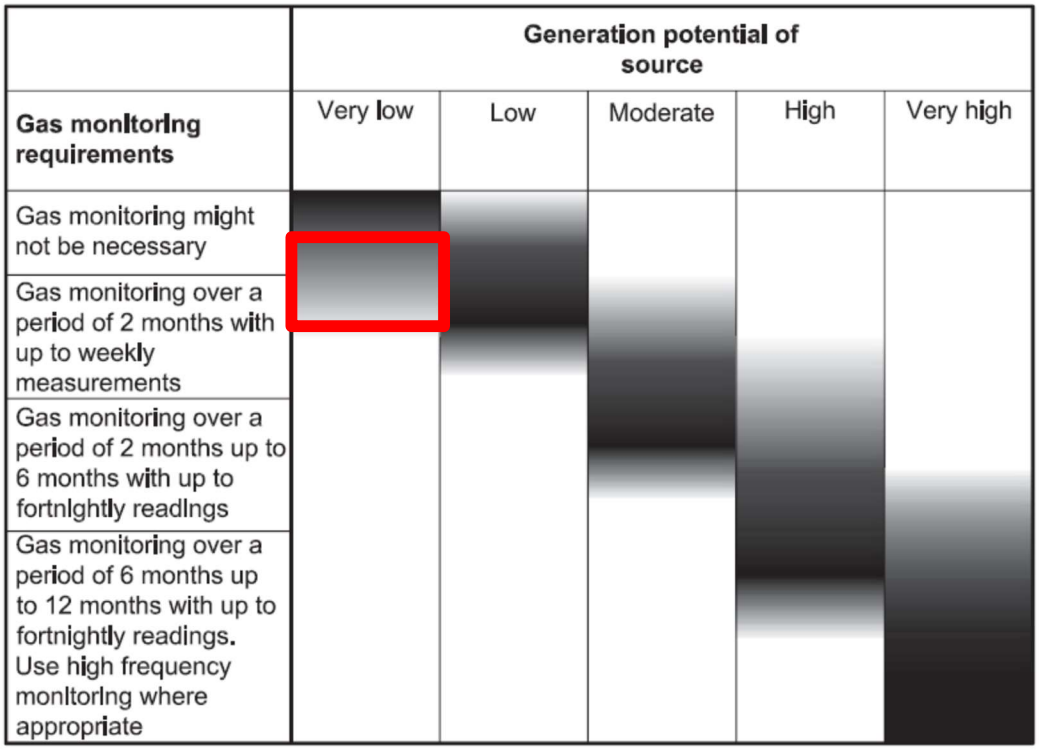
6.2. Appropriate Level of Ground Gas Monitoring

It can be seen from Table 6.1 that potential on-site ground gas sources have been identified that have between a negligible to very low gas generation potential.

BS 8576:2013

In accordance with Section 8.7 from BS 8576:2013, the decision matrix below derived from Figure 6 in the British Standard has been used to determine the appropriate level of gas monitoring for the site. The extent of gas monitoring that is required is based on the generation potential of the source(s) determined in Table 6.1, i.e. what is the risk that large volumes of gas can be generated and can credibly migrate to pose a credible hazard to the identified receptors? The British Standard also describes that it might be appropriate to take into account the sensitivity of the receptor, the existence of site-specific migration pathways and mechanisms that could affect migration, such as groundwater level movements when determining the gas monitoring requirements.

Figure 6.1 Decision Matrix For Initial Monitoring (Extracted from Figure 6 in BS 8576:2013)



NOTE The darker the section on the matrix, the more likely it is that monitoring is needed.

Note from BS 8576:2013: There could be occasions when "low potential" sites require more monitoring than those with a higher gas generation potential. On a site where there are high gas concentrations and/or flow rates this can become apparent following a single round of monitoring and further monitoring is unlikely to alter the assessment of potential risks. On the other hand, some sites with low gas concentrations and/or flow rates are more susceptible to changes in atmospheric pressure, etc. and therefore require a longer period of monitoring in order to assess the potential risks with confidence.

An assessment has been made as to whether a potential off-site source of gas warrants additional consideration based on its distance from site, local geology and whether the risk of lateral migration gas migration is high enough. In turn it has been assessed whether doing so merits increasing the

proposed periods of monitoring. Sources include historic infilled ponds, both on and off site, and historic industrial land uses which are considered to have generally very low gas generation potential. Furthermore, the superficial geology of low permeability cohesive glacial tills would further reduce any lateral migration between potential ground gas sources and the site.

On the basis of the above, it is not considered that the off-site sources, in the context of the conceptual site model are such that they warrant an increase to the proposed period of monitoring.

CIRIA C665

Additionally, due consideration has been made of Tables 5.5a and 5.5b in CIRIA C665 which offers guidance on "typical/idealized" monitoring periods and frequencies for gas monitoring based on proposed land use, sensitivity, and the gas generation potential of the source.

Table 6.2 and Table 6.3 demonstrate how, in accordance with CIRIA C665, the periods and frequency of monitoring have been selected for the site.

Table 6.2 From Table 5.5a CIRIA C665 - Typical/idealised periods of monitoring (after Wilson et al, 2005)

		Generation Potential of the Source				
	2	Very Low	Low	Moderate	High	Very High
Sensitivity of development	Low (commercial)	1 month	2 months	3 months	6 months	12 months
	Moderate (flats)	2 months	3 months	6 months	12 months	24 months
	High (residential with gardens)	3 months[1]	6 months	6 months	12 months[1]	24 months

Notes:

1 NHBC guidance also recommends this period of monitoring (Boyle and Witherington, 2007).

2 There is no industry consent over “high”, “medium” or “low” generation potential of source.

Table 6.3 From Table 5.5b CIRIA C665 - Typical/idealised frequency of monitoring (after Wilson et al, 2005)

		Generation Potential of the Source				
	2	Very Low	Low	Moderate	High	Very High
Sensitivity of development	Low (commercial)	4	6	6	12	12
	Moderate (flats)	6	6	9	12	24
	High (residential with gardens)	6[1]	9	12	24[1]	24

Notes:

1 NHBC guidance also recommends this period of monitoring (Boyle and Witherington, 2007).

2 There is no industry consent over “high”, “medium” or “low” generation potential of source.

Consideration of High Frequency (Continuous) Gas Monitoring

Table 6.4 below has been prepared in order to assess whether high frequency (continuous) gas monitoring should be considered for the site.

Table 6.4 Factors Considered for High Frequency (Continuous) Gas Monitoring

Factors	Tier Environmental Assessment
Are there any mineshafts on site?	No
Are there any recently closed mining workings on or near to the site?	No
Are there any landfills on or near to the site where large volumes of gases could be emitted (see Table 6.1 for definitions of generation potential of different landfill types)	No
Is there any previous gas monitoring that indicates a higher gas regime than expected from the conceptual model?	No
Is the site in an area where there may be tidal influence on the groundwater (and therefore the gas regime may fluctuate)?	No
Are there time constraints that may trigger the requirement for continuous gas monitoring?	No
Are there any sensitive receptors that may warrant additional continious gas monitoring?	No
Conclusions	High frequency gas montioriing not required

Overall Determination

Based on the potential sources identified and the gas generation potential of these sources, a monitoring regime of circa 4 No. visits across a 1 month period would be sufficient for the proposed commercial development.

6.3. Potential Pathways

Table 6.5 below summarises potential pathways identified as relevant to the site.

Table 6.5 Potential Ground Gas Pathways Identified

Potential Pathways	Present On / Beneath the Site?	Present Between Potential Off Site Source And The Site?
Permeable strata	No	No
Ingress into confined spaces (e.g. basements)	No	Yes (unknown if basements present in surrounding are)
Fractures or joints in rock	Yes	Yes
Utility services or ducts – existing	No	Yes
Utility services or ducts – future / proposed as part of development	Yes	Yes
Foundation structures (e.g. vibro stone columns) either pre-existing or proposed	Yes	Yes
Drainage systems (including culverts)	Yes	no
Mine workings / voids / coal seams	No	No
Mine shafts	No	No
Other future construction created pathways	Yes	Yes

6.4. Receptors

The primary receptors will comprise construction workers, site end users and maintenance staff for a proposed commercial development.

7. PRELIMINARY CONCEPTUAL SITE MODEL

Based on the information provided in the previous sections of this report a combined preliminary conceptual site model and conceptual exposure model has been developed for the proposed future land use. This summarises the understanding of surface and sub-surface features, the potential contaminant sources, transport pathways and receptors. In assessing the likely contaminants of concern present at the site, reference has also been made to Defra and Environment Agency supporting documentation. A preliminary qualitative risk assessment has also been made of the likelihood of the linkage operating and its potential significance in accordance with CIRIA C552.

The potential pollutant linkages identified and the qualitative risk assessment for these are presented in Table 7.1 below. The terms used in the preliminary qualitative risk assessment are defined in Appendix F.

7.1. Uncertainties

The following uncertainties exist in the preliminary conceptual model:

- The presence of any features unrecorded by the historic maps.
- Any unrecorded geological features.
- Any unrecorded pollution events during the site's history.

Table 7.1 Preliminary Assessment of Potential Pollutant Linkages (Continued on Next Page).

Justification / Comments
• The site is part of Ridley Farm from earliest records in 1873 with farm buildings located in the north and split across 4 No. fields to the south. A well is recorded just north of the site within the farm and a pond is located in the centre of the north of the site. A road (later Bryn Lane) forms the northern boundary of the site. The farm sees small scale expansion by 1912 and 1964 before being removed by 1982 mapping. A factory is shown on site, and extending east off site, from 1949 until between 1982-1989 when all on site buildings and hardstanding are removed; the pond is also infilled during this development cycle. A small square bunded feature in the north east of the site, present from 1964 mapping, remains on site and was identified as a concrete shelter. The site remains undeveloped to present day. • The wider site comprises agricultural fields until 1949 when factories and works begin to be developed. Multiple ponds are noted within 250m of the site including immediately north, 20m west, 85m south east and 90m north east, gradually infilled as development expands. By 1949 a mineral rail is present running west to southeast immediately south of the site associated with another works 90m south of the site. By 1974 a new works is constructed 130m west of the site and a tank is recorded 40m west with associated drain channel. Additional tanks or other circular features are recorded southwest of the site by 1982 associated with a water treatment facility. The land west of the site is developed sometime between 2003 and 2006 and the Net World Sports unit 450m east of the site is constructed from 2021. • The Devensian Till is classified as a Secondary Undifferentiated Aquifer, and the bedrock geology is classified as a Secondary A Aquifer (for the Salop Formation) with a Principal Aquifer (Kinnerton Sandstone Formation) located 60m north of the site. There is an inferred fault located beneath the site orientated from southwest to northeast associated with these two bedrock formations. The site is within a Source Protection Zone Total Catchment 3 associated with the Principal Aquifer, and the nearest surface water receptor comprises an on site drainage feature. There are no potable or non-potable water abstractions located within 1km of the Site. The low permeability cohesive Till deposits have been proven to depths of circa 15.00m bgl in previous Tier investigations for land north of the site, and are recorded to depths of circa 26.0 to 38.0m bgl in nearby BGS records which is considered sufficient to provide protection of the underlying bedrock aquifers from any vertical migration of potential contaminants of concern. On this basis the controlled waters sensitivity is considered to be low. • The Local Authority records suggest the site falls within the wider Royal Ordnance Wrexham facility, which was spread over a large area, with the main buildings circa 600m south of the site. Tier Environmental have reviewed ordinance maps and a UXO report for the area and conclude the site itself was not used directly as part of the wider ROF Wrexham, though a pillbox in the northeast of the site may be associated with this facility. Records also suggest a 'Tank' (1992) located to the southwest of the site and three 'water fill' (1881,1954 and 1954) on the northern section, however these do not correlate with historic mapping and Groundsure data which suggests the 1992 tank is off site associated with the water treatment facility. It is possible the water filled tank are associated with the feature in the north east of the site. • There are no landfills recorded within close proximity to the site. A number of historic pond features have been infilled during developed of the wider area, including an on-site pond infilled in the mid 1940s, however these are not considered to pose a ground gas risk to the site. Made Ground is anticipated given the historic land uses as a farm and factory which is the primary ground gas source. The farm may also have had associated cess pits. • The site falls within a Phosphorus Sensitive SAC Freshwater catchment area associated with the River Dee. As such, due consideration during drainage strategy / design should be given with respect to this designation and any mitigation / avoidance measures. • The site is not located within an ecologically sensitive area.

Source	Potential Contaminants of Concern	Pathway	Receptor	Consequence	Probability	Qualitative Risk Assessment
Anticipated Made Ground in the northern half of the site associated with historic land use as a farm and factory.	Metals PAHs pH Hexavalent chromium Acids Alkalis	Direct contact, dust inhalation and ingestion	Future site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
			Adjacent site users (commercial)	Mild	Unlikely	Very Low Risk
			Construction, site investigation, demolition and future maintenance workers	Medium	Low Likelihood	Moderate / Low Risk
		Migration of mobile contaminants from Made Ground soils to adjacent sites along services and conduits	Adjacent site users (commercial)	Mild	Unlikely	Low Risk
		Migration via water pipes	Future site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
		Lateral and/or vertical migration of mobile contaminants.	Aquifer 1 - Secondary (Undifferentiated) Aquifer associated with Till	Mild	Low Likelihood	Low Risk
			Aquifer 2 - Secondary A Aquifer associated with Salop Formation	Medium	Unlikely	Low Risk
			Aquifer 3 - Principal Aquifer associated with Kinnerton Sandstone Formation (60m N)	Medium	Unlikely	Low Risk
			Drainage feature located in the south east of the site.	Mild	Low Likelihood	Low Risk
	Naphthalene (a semi-volatile PAH) TPH / BTEX / MTBE VOCs / SVOCs Phenols Cyanides Coal tar Free phase product	Vapour inhalation, direct contact, dust inhalation and ingestion	Future site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
			Adjacent site users (commercial)	Mild	Unlikely	Very Low Risk
			Construction, site investigation, demolition and future maintenance workers	Medium	Low Likelihood	Moderate / Low Risk
		Migration of mobile contaminants from Made Ground soils to adjacent sites along services and conduits	Adjacent site users (commercial)	Mild	Unlikely	Very Low Risk
		Migration via water pipes	Future site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
		Lateral and/or vertical migration of mobile contaminants.	Aquifer 1 - Secondary (Undifferentiated) Aquifer associated with Till	Mild	Low Likelihood	Low Risk
			Aquifer 2 - Secondary A Aquifer associated with Salop Formation	Medium	Unlikely	Low Risk
			Aquifer 3 - Principal Aquifer associated with Kinnerton Sandstone Formation (60m N)	Medium	Unlikely	Low Risk
			Drainage feature located in the south east of the site.	Mild	Low Likelihood	Low Risk
	Asbestos	(Dust migration and) dust inhalation	Future site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
			Adjacent site users (commercial)	Mild	Unlikely	Very Low Risk
			Construction, site investigation, demolition and future maintenance workers	Medium	Likely	Moderate Risk
Off site historic land uses including wider Royal Ordnance Factory, and works.	Metals PAHs pH Hexavalent chromium Acids Alkalis	Direct contact, dust inhalation and ingestion	Future site users (commercial)	Medium	Unlikely	Low Risk
			Adjacent site users (commercial)	Mild	Unlikely	Very Low Risk
			Construction, site investigation, demolition and future maintenance workers	Medium	Unlikely	Low Risk
		Migration of mobile contaminants from Made Ground soils to adjacent sites along services and conduits	Adjacent site users (commercial)	Mild	Unlikely	Low Risk
		Migration via water pipes	Future site users (commercial)	Medium	Unlikely	Low Risk
		Lateral and/or vertical migration of mobile contaminants.	Aquifer 1 - Secondary (Undifferentiated) Aquifer associated with Till	Mild	Low Likelihood	Low Risk
			Aquifer 2 - Secondary A Aquifer associated with Salop Formation	Medium	Unlikely	Low Risk
			Aquifer 3 - Principal Aquifer associated with Kinnerton Sandstone Formation (60m N)	Medium	Unlikely	Low Risk
			Drainage feature located in the south east of the site.	Mild	Low Likelihood	Low Risk
	Naphthalene (a semi-volatile PAH) TPH / BTEX / MTBE VOCs / SVOCs Phenols PolyChlorinated Biphenyls (PCBs) Cyanides Coal tar Free phase product	Vapour inhalation, direct contact, dust inhalation and ingestion	Future site users (commercial)	Medium	Unlikely	Low Risk
			Adjacent site users (commercial)	Mild	Unlikely	Very Low Risk
			Construction, site investigation, demolition and future maintenance workers	Medium	Unlikely	Low Risk
		Migration of mobile contaminants from Made Ground soils to adjacent sites along services and conduits	Adjacent site users (commercial)	Mild	Unlikely	Very Low Risk
		Migration via water pipes	Future site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
		Lateral and/or vertical migration of mobile contaminants.	Aquifer 1 - Secondary (Undifferentiated) Aquifer associated with Till	Mild	Low Likelihood	Low Risk
			Aquifer 2 - Secondary A Aquifer associated with Salop Formation	Medium	Unlikely	Low Risk

Source	Potential Contaminants of Concern	Pathway	Receptor	Consequence	Probability	Qualitative Risk Assessment
			Aquifer 3 - Principal Aquifer associated with Kinnerton Sandstone Formation (60m N)	Medium	Unlikely	Low Risk
			Drainage feature located in the south east of the site.	Mild	Low Likelihood	Low Risk
	Asbestos	(Dust migration and) dust inhalation	Future site users (commercial)	Medium	Unlikely	Low Risk
			Adjacent site users (commercial)	Mild	Unlikely	Very Low Risk
			Construction, site investigation, demolition and future maintenance workers	Medium	Unlikely	Low Risk
Made Ground located beneath the site including possible infilled pond	Hazardous ground gasses (methane, carbon dioxide, hydrogen sulphide, carbon monoxide and depleted oxygen)	Inhalation (indoor and outdoor)	Future site users (commercial)	Medium	Low Likelihood	Moderate / Low Risk
			Adjacent site users (commercial)	Medium	Unlikely	Low Risk
			Construction, site investigation, demolition and future maintenance workers	Medium	Low Likelihood	Moderate / Low Risk
		Migration of hazardous ground gases from beneath the site to adjacent sites along services or other preferential conduits	Adjacent site users (commercial)	Medium	Unlikely	Low Risk
		Migration of ground gas / explosion	Buildings and services	Severe	Low Likelihood	Moderate Risk

For definition of the terms used in the qualitative risk assessment, please see Appendix F.

8. PROPOSED FURTHER WORKS

8.1. Further works

The Phase 1 Preliminary Risk Assessment has determined a very low to moderate/low risk to human health and a low risk to controlled waters at the site with respect to potential contamination, and a low to moderate risk for hazardous ground gases.

It is recommended that a ground investigation is undertaken in order to further assess the potential risks associated with the pollutant linkages identified in the Preliminary Conceptual Site Model (presented in Section 5).

The objectives of the Phase II Ground Investigation will be:

- to determine shallow soil and groundwater (if encountered) conditions, including whether significant contamination has resulted from past or current land uses;
- to determine the risks posed by any ground contamination and provide recommendations on remedial measures to manage such risks;
- to determine the risks posed to the site from hazardous ground gases;
- to determine the existence, and if applicable, the extent of contamination within local groundwater beneath the site;
- to provide advice relating to geotechnical issues associated with the site.

8.2. Proposed Scope of Works

The following scope of works are proposed

- 1 No. days trial pitting (approximately 10 No. trial pits) to determine the nature and extent of Made Ground and natural deposits across the site, facilitate soil sampling for environmental and geotechnical testing.
- 1 No. Day window sample drilling (approximately 5 No. locations) and installation of monitoring wells for gas and groundwater (if encountered) monitoring purposes and to facilitate soil sampling for environmental and geotechnical testing.
- 3 No. cable percussive boreholes to circa 10m bgl to facilitate in-situ testing and installation of ground gas/groundwater monitoring wells.
- In situ geotechnical testing to assist with foundation design and recommendations.
- Geoenvironmental chemical testing on selected soil samples for metals, pH, speciated PAH, speciated TPH, phenol, sulphate, TOC and asbestos screens in order to assess potential risks to human health based on historical land uses on and within close proximity to the site and to assist with basic waste characterisation.
- The Control of Asbestos Regulations 2012 should be adhered to. A summary of complying with CAR: risk assessments, licensing and training is provided in Appendix H.

9. REGULATORY APPROVALS

The conclusions and recommendations presented above are considered reasonable based on the findings of the site investigation. However, these cannot be guaranteed to gain regulatory approval and, therefore, the report should be passed to the appropriate regulatory authorities and/or other organisations for their comment and approval prior to undertaking any works on site.

It is recommended that conditions placed on any planning permission are discharged prior to commencement of site works.

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Britain From Above - https://britainfromabove.org.uk/en/image/WPW060399

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https://www.epa.gov/pfas/basic-information-pfas

UK Maps of Radon, http://www.ukradon.org/information/ukmaps

Health and Safety Executive (2015) Construction (Design and Management) Regulations.

Coal Authority Interactive Map Viewer, http://mapapps2.bgs.ac.uk/coalauthority/home.html

BGS Geology of Britain Viewer http://mapapps.bgs.ac.uk/geologyofbritain/home.html

11.GLOSSARY OF TERMS

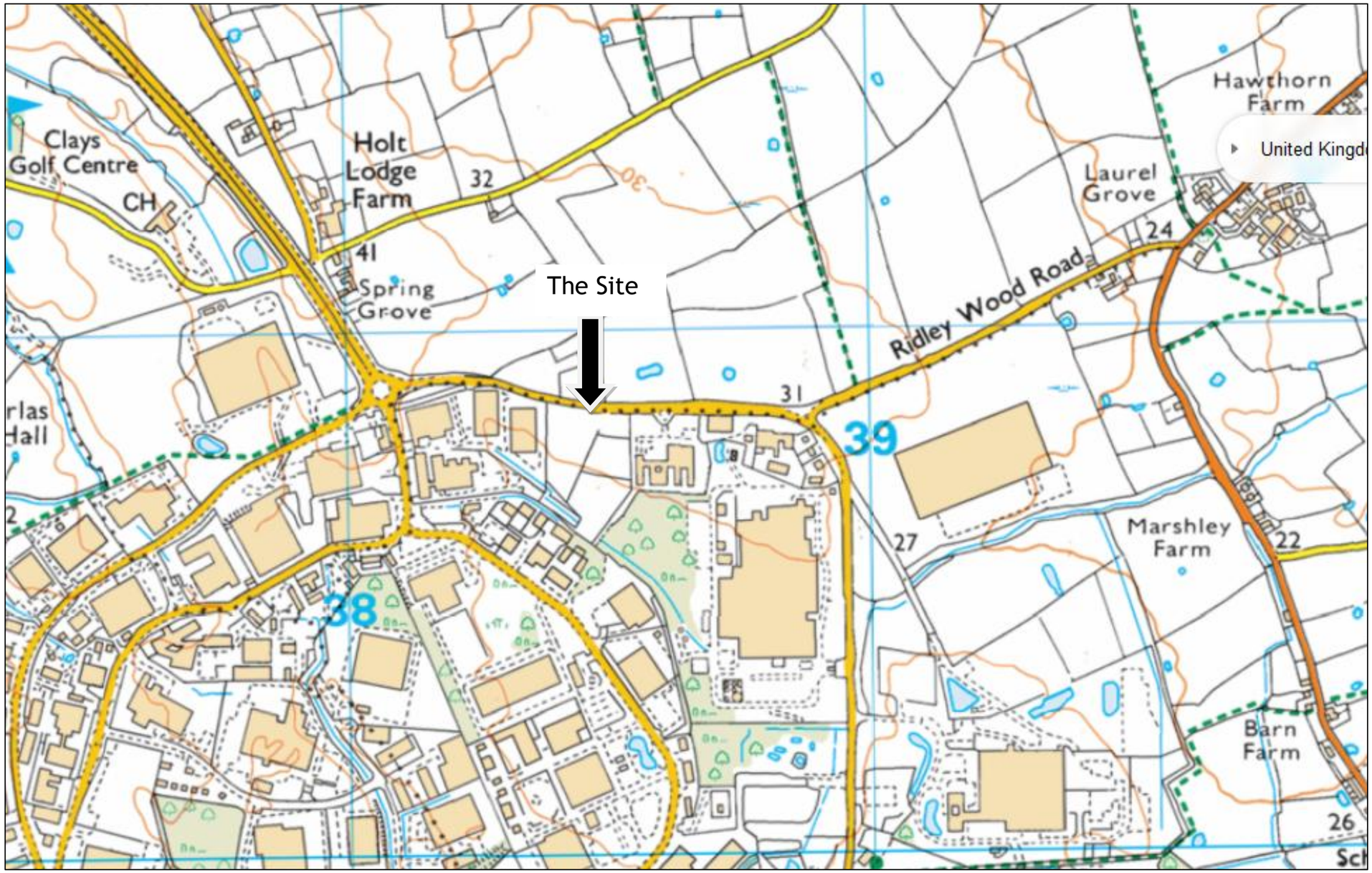
ACEC	Aggressive Chemical Environment for Concrete (classification)
aOD	Above Ordnance Datum
bgl	Below ground level
BGS	British Geological Survey
BRE	Building Research Establishment
CBR	California Bearing Ratio (test)
COMAH	Control of Major Accident Hazards (regulations)
Designated location	Site (and the ecosystem on that site) protected under national of international legislation. A potential ecological receptor to be considered as part of the assessment of land contamination. Example designated locations include SSSIs (q.v.), SACs (q.v.), national nature reserves, Ramsar sites and bird special protection areas.
DQA	Data Quality Assessment
DQO	Data Quality Objective
DQRA	Detailed Quantitative Risk Assessment
DWS	Drinking Water Standard
EQS	Environmental Quality Standard
GAC	Generic Assessment Criterion
GQA	General Quality Assessment (Environment Agency)
GSV	Gas Screening Value
HCV	Health Criteria Value
IPPC	Integrated Pollution Prevention and Control (regulations)
K_{ow}	Octanol-water partition coefficient
LEL	Lower Explosive Limit
LL	Liquid Limit
LoD	Limit of Detection (analytical)
LoQ	Limit of Quantification (analytical)
Mean Value Test	Statistical test (described in the CIEH Guidance) to estimate the mean value of a normally distributed population of data at a given level of confidence. Normally for contaminated land assessment, the 95th percentile (referred to as the 95%UCL or US95) is applied as a reasonable but conservative estimate of the mean concentration for comparison with the relevant assessment criteria.
Maximum Value Test	Statistical test (described in the CIEH Guidance) to identify whether an elevated concentration within a normally distributed data set forms part of the underlying population from which it has been sampled or whether it is an outlier (such as a localised area of contamination) that merits further consideration.
MC	Moisture Content
NGR	National Grid Reference
NIHHS	Notification of Installations Handling Hazardous Substances (regulations)
OS	Ordnance Survey
PI	Plasticity Index
PID	Photoionisation Detector
PL	Plastic Limit
ppm	Parts per million
ppmv	Parts per million by volume
QA	Quality Assurance
QC	Quality Control
SAC	Special Area of Conservation
SOM	Soil Organic Matter

SPT	Standard Penetration Test
SPZ	Source Protection Zone (see Appendix G)
SSAC	Site-Specific Assessment Criterion
SSSI	Site of Special Scientific Interest
SVOC	Semi-Volatile Organic Compound
TEF	Toxicity Equivalent Factor
TPH	Total Petroleum Hydrocarbons
TWA	Time Weighted Average
US95	95th percentile estimate of the true mean value of a data population (also known as 95%UCL).
VOC	Volatile Organic Compound

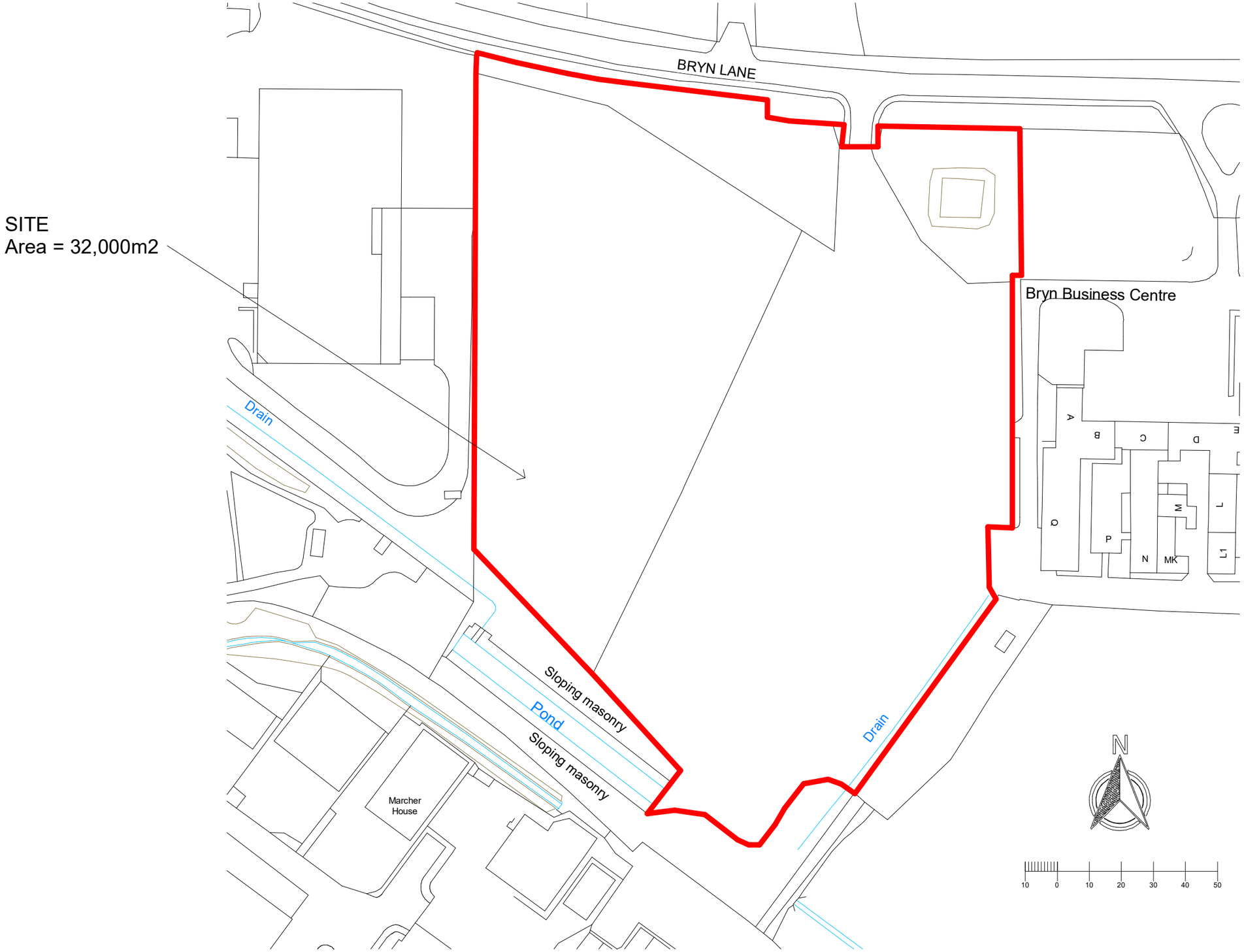
APPENDIX A - DRAWINGS

Contract Number	TE1891
Contract	Land South of Bryn Lane
Client	Mauna Kea

Site Location Plan



Scale	NTS		
Drawn by	JL	Approved by	SL
Drawing Number	TE1891-TE-00-XX-DR-GE-001-V01		



NET WORLD SPORTS

PACE | ARCHITECTURE

No.	Description	Date

PROJECT BRYN LANE SOUTH	ADDRESS Bryn Lane, Wrexham Industrial Estate
DESCRIPTION New commercial units on vacant land	SHEET Site Location Plan

CLIENT: Net World Sports

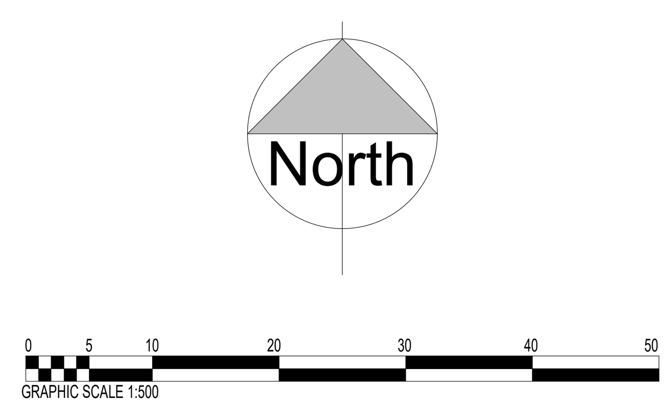
Date 18.08.23	Project number 2042	Scale (@ A3) 1 : 1250
Drawn by nc	DRAWING NUMBER 2042 . P . 001	REV
Checked by sg		

03/06/2024 10:02:57

Existing Site Plan - Topo

1 : 500





1. This drawing has been produced for the client for the project on the site shown. It was prepared for a purpose agreed with the client and will have a commensurate degree of accuracy.
2. This drawing is not intended for use by any other person or for any other purpose without express permissions.
3. Pace Architecture Limited accept no liability whatsoever if this drawing is used by any other person or for any other purpose.
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BS 9999 (2017) - Fire safety in the design, management and use of buildings – Code of practice
BS 6564 (2017) - Sanitary installations. Code of practice for the design of sanitary facilities
BS 5266 (2016) - Emergency Lighting - Code of practice for the emergency lighting of premises
BS 5499 (2014) - Guidance for the selection and use of safety signs and fire safety notices

NET WORLD SPORTS

PURPOSE OF ISSUE
Project Status

PACE | ARCHITECTURE

PROJECT
BRYN LANE SOUTH

ADDRESS
Bryn Lane, Wrexham Industrial Estate

TITLE
Existing Site - Topographical Survey

CLIENT
Net World Sports

DRAWN BY	CHECKED BY	DATE
Author	Checker	05/26/24

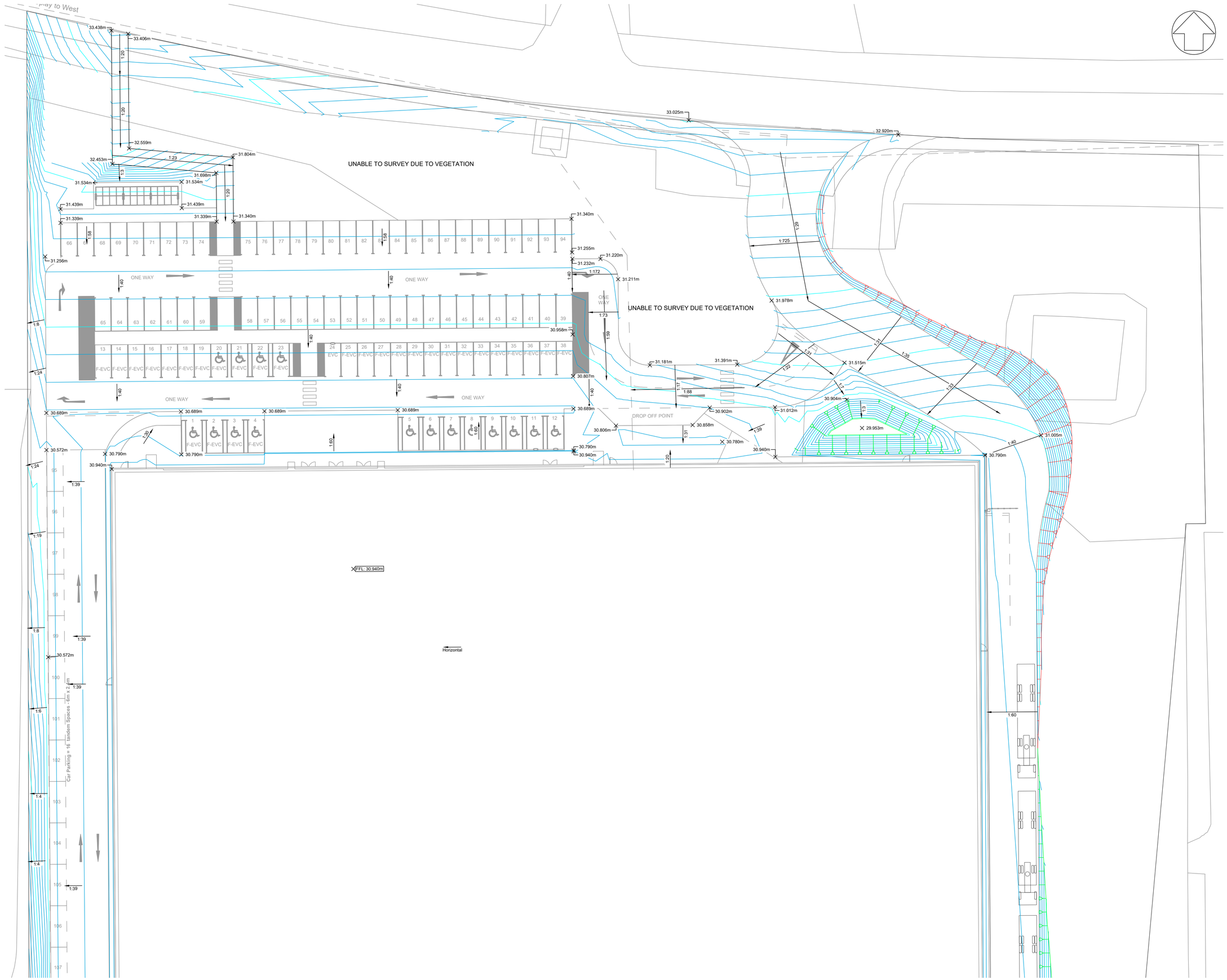
SCALE (@ A1)	PROJECT NUMBER
1 : 500	2042

DRAWING NUMBER	REV
2042 . P . 003	

03/06/2024 10:06:45

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- ALL LEVELS ARE IN METRES, UNLESS NOTED OTHERWISE

Earthworks Notes

Level and earthworks shown on this drawing are indicative and for information only. Proposed finished levels are based on achieving an approximate cut and fill balance and will change following receipt of further information and detailed design

Legend

REDLINE BOUNDARY

RETAINING WALL

Rev	Date	By	Description	Chk	App
P2	2024.11.15	ESG	Adjusted to comments.	WL	PJB
P1	2024.11.08	ESG	First issue.	WL	PJB

Status
PRELIMINARY

TIER CONSULT GROUP.
Unit 5, Office Village
Sandpiper Court,
Chester Business Park,
Chester,
CH4 9QZ
T: 01244 684 900

Client:
NET WORLD SPORTS

Project Title:
LAND SOUTH BRYN LANE, WREXHAM

Drawing Title:
Proposed Ground
Contours & Levels

Drawing Scale:	Drawn By:	Drawing Start Date:
1:250 @ A1	ESG	08.11.2024

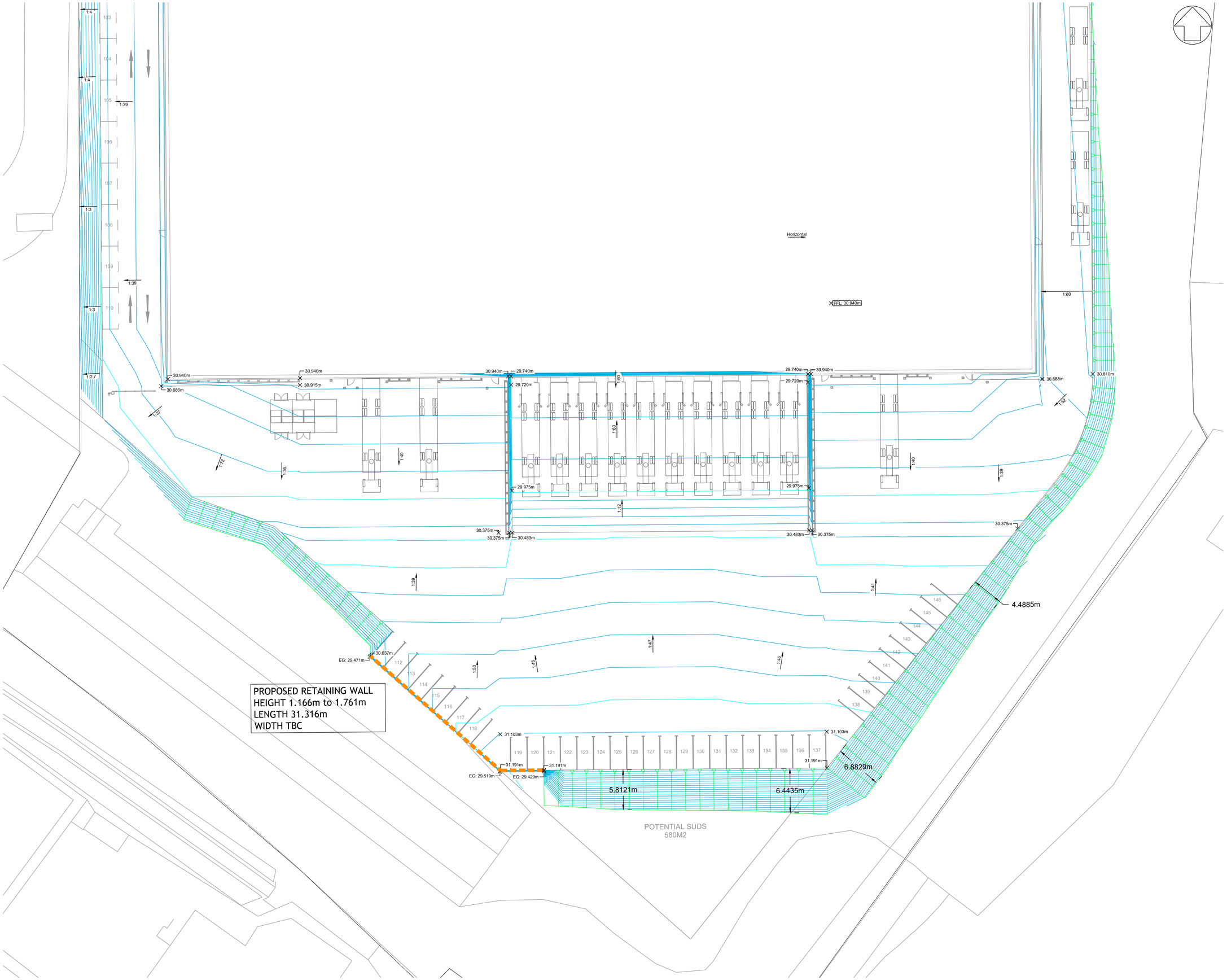
Drawing No:
2721-TCG-XX-XX-M3-C-6001

Revision:
P2

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- IT IS THE CONTRACTORS RESPONSIBILITY TO CHECK ALL DIMENSIONS ON SITE. DIMENSIONS MUST NOT BE SCALED FROM THIS DRAWING. ANY DISCREPANCIES TO BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT IN WRITING.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
- ALL LEVELS ARE IN METRES, UNLESS NOTED OTHERWISE

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Legend

REDLINE BOUNDARY

RETAINING WALL

Rev	Date	By	Description	Chk	App
P2	2024.11.15	ESG	Adjusted to comments.	WL	PJB
P1	2024.11.08	ESG	First issue.	WL	PJB

Status
PRELIMINARY

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T: 01244 684 900

Client:
NET WORLD SPORTS

Project Title:
LAND SOUTH BRYN LANE, WREXHAM

Drawing Title:
Proposed Ground
Contours & Levels

Drawing Scale:	Drawn By:	Drawing Start Date:
1:250 @ A1	ESG	08.11.2024

Drawing No: 2721-TCG-XX-XX-M3-C-6002

Revision: P2

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APPENDIX B - PHOTOGRAPHS

TE1891 – BRYN LANE SOUTH









APPENDIX C - GROUNDSURE REPORT

Groundsure LOCATION INTELLIGENCE

Enviro+Geo Insight

Bryn Lane South, Wrexham

Order Details

Date: 19/12/2024

Your ref: TE1891_3479

Our Ref: GS-3DQ-8H6-588-1BB

Site Details

Location: 338465 350752

Area: 3.21 ha

Authority: Wrecsam - Wrexham County Borough Council ↗



Summary of findings p. 2 >

OS MasterMap site plan p.14 >

Aerial image p. 9 >

Insight User Guide ↗

Contact us with any questions at:
info@groundsure.com ↗
01273 257 755

Certified B Corporation

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	2	2	3	14	-
16 >	1.2 >	Historical tanks >	0	8	11	20	-
18 >	1.3 >	Historical energy features >	0	0	2	9	-
19	1.4	Historical petrol stations	0	0	0	0	-
19	1.5	Historical garages	0	0	0	0	-
19 >	1.6 >	Historical military land >	1	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
21 >	2.1 >	Historical industrial land uses >	3	4	5	27	-
23 >	2.2 >	Historical tanks >	0	28	30	41	-
27 >	2.3 >	Historical energy features >	0	0	14	10	-
28	2.4	Historical petrol stations	0	0	0	0	-
28	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
29	3.1	Active or recent landfill	0	0	0	0	-
29	3.2	Historical landfill (BGS records)	0	0	0	0	-
30	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
30	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
30 >	3.5 >	Historical waste sites >	0	0	0	1	-
31 >	3.6 >	Licensed waste sites >	0	11	0	1	-
34 >	3.7 >	Waste exemptions >	0	0	4	7	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
36 >	4.1 >	Recent industrial land uses >	0	6	16	-	-
38 >	4.2 >	Current or recent petrol stations >	0	0	0	1	-
38	4.3	Electricity cables	0	0	0	0	-
38	4.4	Gas pipelines	0	0	0	0	-
39	4.5	Sites determined as Contaminated Land	0	0	0	0	-

39	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
39	4.7	Regulated explosive sites	0	0	0	0	-
39	4.8	Hazardous substance storage/usage	0	0	0	0	-
39 >	4.9 >	Historical licensed industrial activities (IPC) >	0	0	0	5	-
40 >	4.10 >	Licensed industrial activities (Part A(1)) >	0	0	0	29	-
45 >	4.11 >	Licensed pollutant release (Part A(2)/B) >	0	0	1	8	-
46	4.12	Radioactive Substance Authorisations	0	0	0	0	-
47 >	4.13 >	Licensed Discharges to controlled waters >	0	0	0	5	-
47	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
48	4.15	Pollutant release to public sewer	0	0	0	0	-
48	4.16	List 1 Dangerous Substances	0	0	0	0	-
48 >	4.17 >	List 2 Dangerous Substances >	0	0	1	0	-
48 >	4.18 >	Pollution Incidents (EA/NRW) >	0	0	1	4	-
49	4.19	Pollution inventory substances	0	0	0	0	-
49	4.20	Pollution inventory waste transfers	0	0	0	0	-
50	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology >	On site	0-50m	50-250m	250-500m	500-2000m
51 >	5.1 >	Superficial aquifer >	Identified (within 500m)				
52 >	5.2 >	Bedrock aquifer >	Identified (within 500m)				
54 >	5.3 >	Groundwater vulnerability >	Identified (within 50m)				
55	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
55	5.5	Groundwater vulnerability- local information	None (within 0m)				
56 >	5.6 >	Groundwater abstractions >	0	0	0	0	15
60 >	5.7 >	Surface water abstractions >	0	0	0	0	1
60	5.8	Potable abstractions	0	0	0	0	0
60 >	5.9 >	Source Protection Zones >	1	0	0	0	-
61	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology >	On site	0-50m	50-250m	250-500m	500-2000m
62 >	6.1 >	Water Network (OS MasterMap) >	1	4	5	-	-

63 >	6.2 >	Surface water features >	1	3	4	-	-
64 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
64 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
64 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-

Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
66	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
66	7.2	Historical Flood Events	0	0	0	-	-
66	7.3	Flood Defences	0	0	0	-	-
67	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
67	7.5	Flood Storage Areas	0	0	0	-	-
68	7.6	Flood Zone 2	None (within 50m)				
68	7.7	Flood Zone 3	None (within 50m)				

Page	Section	Surface water flooding >	
69 >	8.1 >	Surface water flooding >	1 in 30 year, Greater than 1.0m (within 50m)

Page	Section	Groundwater flooding >	
71 >	9.1 >	Groundwater flooding >	Low (within 50m)

Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
72	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
73	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
73	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
73	10.4	Special Protection Areas (SPA)	0	0	0	0	0
73	10.5	National Nature Reserves (NNR)	0	0	0	0	0
74	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
74 >	10.7 >	Designated Ancient Woodland >	0	0	0	0	8
74	10.8	Biosphere Reserves	0	0	0	0	0
75	10.9	Forest Parks	0	0	0	0	0
75	10.10	Marine Conservation Zones	0	0	0	0	0
75	10.11	Green Belt	0	0	0	0	0
75	10.12	Proposed Ramsar sites	0	0	0	0	0

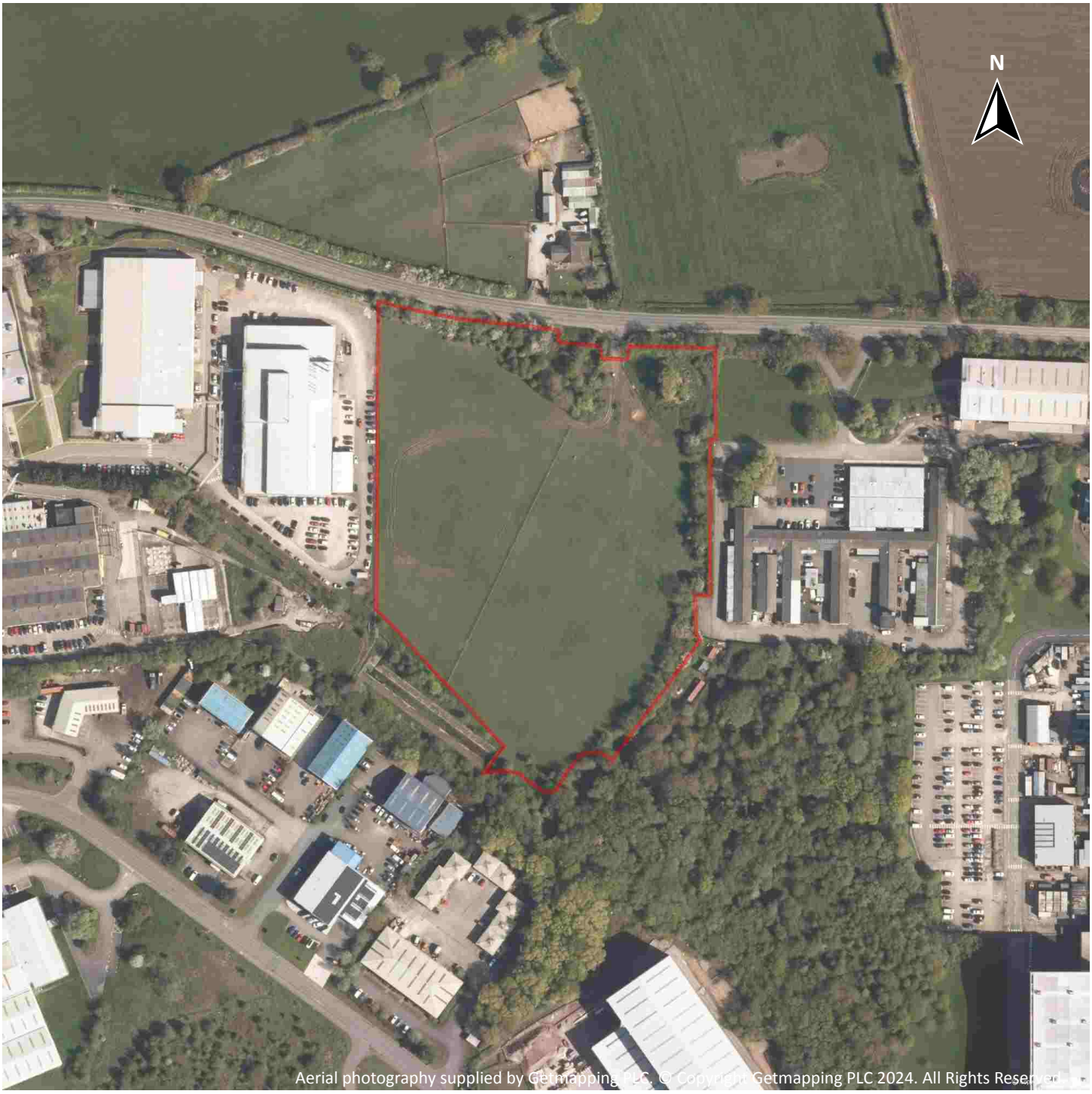
75	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
76	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
76	10.15	Nitrate Sensitive Areas	0	0	0	0	0
76	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
77 >	**10.17 >**	**SSSI Impact Risk Zones >**	1	-	-	-	-
78	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
79	11.1	World Heritage Sites	0	0	0	-	-
79	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
79	11.3	National Parks	0	0	0	-	-
79	11.4	Listed Buildings	0	0	0	-	-
80	11.5	Conservation Areas	0	0	0	-	-
80	11.6	Scheduled Ancient Monuments	0	0	0	-	-
80	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	**Agricultural designations >**	On site	0-50m	50-250m	250-500m	500-2000m
81 >	**12.1 >**	**Agricultural Land Classification >**	Grade 3b (within 250m)				
82	12.2	Open Access Land	0	0	0	-	-
82	12.3	Tree Felling Licences	0	0	0	-	-
82	12.4	Environmental Stewardship Schemes	0	0	0	-	-
82	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
83	13.1	Priority Habitat Inventory	0	0	0	-	-
83	13.2	Habitat Networks	0	0	0	-	-
83	13.3	Open Mosaic Habitat	0	0	0	-	-
83	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	**Geology 1:10,000 scale >**	On site	0-50m	50-250m	250-500m	500-2000m
84 >	**14.1 >**	**10k Availability >**	Identified (within 500m)				
85 >	**14.2 >**	**Artificial and made ground (10k) >**	1	0	1	1	-
86 >	**14.3 >**	**Superficial geology (10k) >**	1	0	0	0	-

87	14.4	Landslip (10k)	0	0	0	0	-
88 >	14.5 >	Bedrock geology (10k) >	1	0	1	0	-
89 >	14.6 >	Bedrock faults and other linear features (10k) >	0	0	1	0	-
Page	Section	**Geology 1:50,000 scale** >	On site	0-50m	50-250m	250-500m	500-2000m
90 >	15.1 >	50k Availability >	Identified (within 500m)				
91 >	15.2 >	Artificial and made ground (50k) >	1	0	0	1	-
92 >	15.3 >	Artificial ground permeability (50k) >	1	0	-	-	-
93 >	15.4 >	Superficial geology (50k) >	2	0	0	0	-
94 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
94	15.6	Landslip (50k)	0	0	0	0	-
94	15.7	Landslip permeability (50k)	None (within 50m)				
95 >	15.8 >	Bedrock geology (50k) >	2	0	2	0	-
96 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
96 >	15.10 >	Bedrock faults and other linear features (50k) >	0	0	2	0	-
Page	Section	**Boreholes** >	On site	0-50m	50-250m	250-500m	500-2000m
97 >	16.1 >	BGS Boreholes >	0	1	6	-	-
Page	Section	**Natural ground subsidence** >					
99 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
100 >	17.2 >	Running sands >	Very low (within 50m)				
102 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
103 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
104 >	17.5 >	Landslides >	Very low (within 50m)				
105 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	**Mining and ground workings** >	On site	0-50m	50-250m	250-500m	500-2000m
107	18.1	BritPits	0	0	0	0	-
108 >	18.2 >	Surface ground workings >	0	2	20	-	-
109	18.3	Underground workings	0	0	0	0	0
109	18.4	Underground mining extents	0	0	0	0	-
109	18.5	Historical Mineral Planning Areas	0	0	0	0	-

109	18.6	Non-coal mining	0	0	0	0	0
109	18.7	JPB mining areas	None (within 0m)				
110	18.8	The Coal Authority non-coal mining	0	0	0	0	-
110	18.9	Researched mining	0	0	0	0	-
110	18.10	Mining record office plans	0	0	0	0	-
110	18.11	BGS mine plans	0	0	0	0	-
111 >	**18.12 >**	**Coal mining >**	Identified (within 0m)				
111	18.13	Brine areas	None (within 0m)				
111	18.14	Gypsum areas	None (within 0m)				
111	18.15	Tin mining	None (within 0m)				
111	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
112	19.1	Natural cavities	0	0	0	0	-
112	19.2	Mining cavities	0	0	0	0	0
112	19.3	Reported recent incidents	0	0	0	0	-
112	19.4	Historical incidents	0	0	0	0	-
Page	Section	**Radon >**					
114 >	**20.1 >**	**Radon >**	Less than 1% (within 0m)				
Page	Section	**Soil chemistry >**	On site	0-50m	50-250m	250-500m	500-2000m
116 >	**21.1 >**	**BGS Estimated Background Soil Chemistry >**	3	0	-	-	-
116	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
116	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	**Railway infrastructure and projects >**	On site	0-50m	50-250m	250-500m	500-2000m
117	22.1	Underground railways (London)	0	0	0	-	-
117	22.2	Underground railways (Non-London)	0	0	0	-	-
118	22.3	Railway tunnels	0	0	0	-	-
118 >	**22.4 >**	**Historical railway and tunnel features >**	3	1	0	-	-
118	22.5	Royal Mail tunnels	0	0	0	-	-
119	22.6	Historical railways	0	0	0	-	-

119	22.7	Railways	0	0	0	-	-
119	22.8	Crossrail 2	0	0	0	0	-
119	22.9	HS2	0	0	0	0	-

Recent aerial photograph



Capture Date: 25/04/2023

Site Area: 3.21ha

Recent site history - 2020 aerial photograph



Capture Date: 10/04/2020

Site Area: 3.21ha

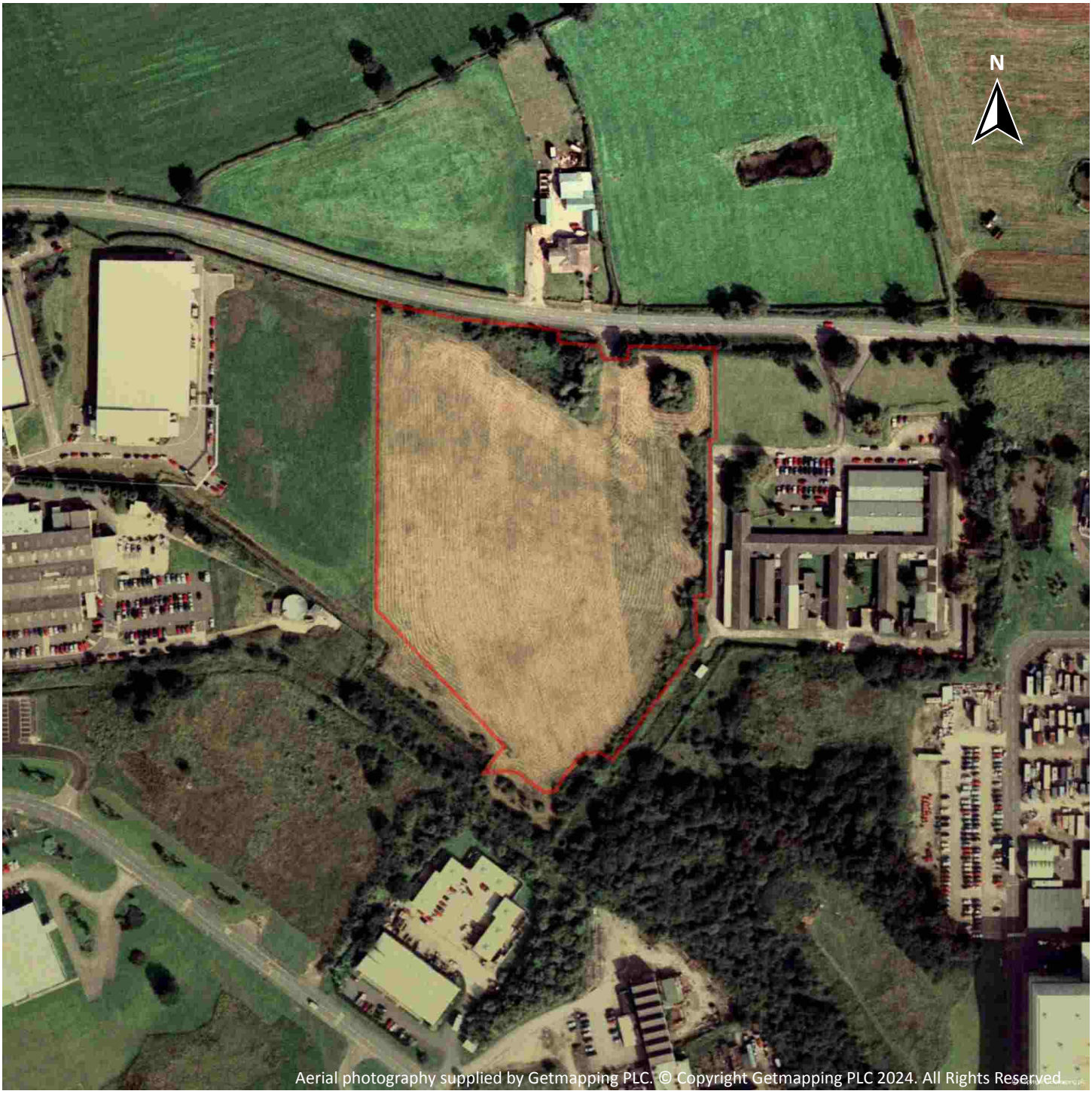
Recent site history - 2013 aerial photograph



Capture Date: 09/06/2013

Site Area: 3.21ha

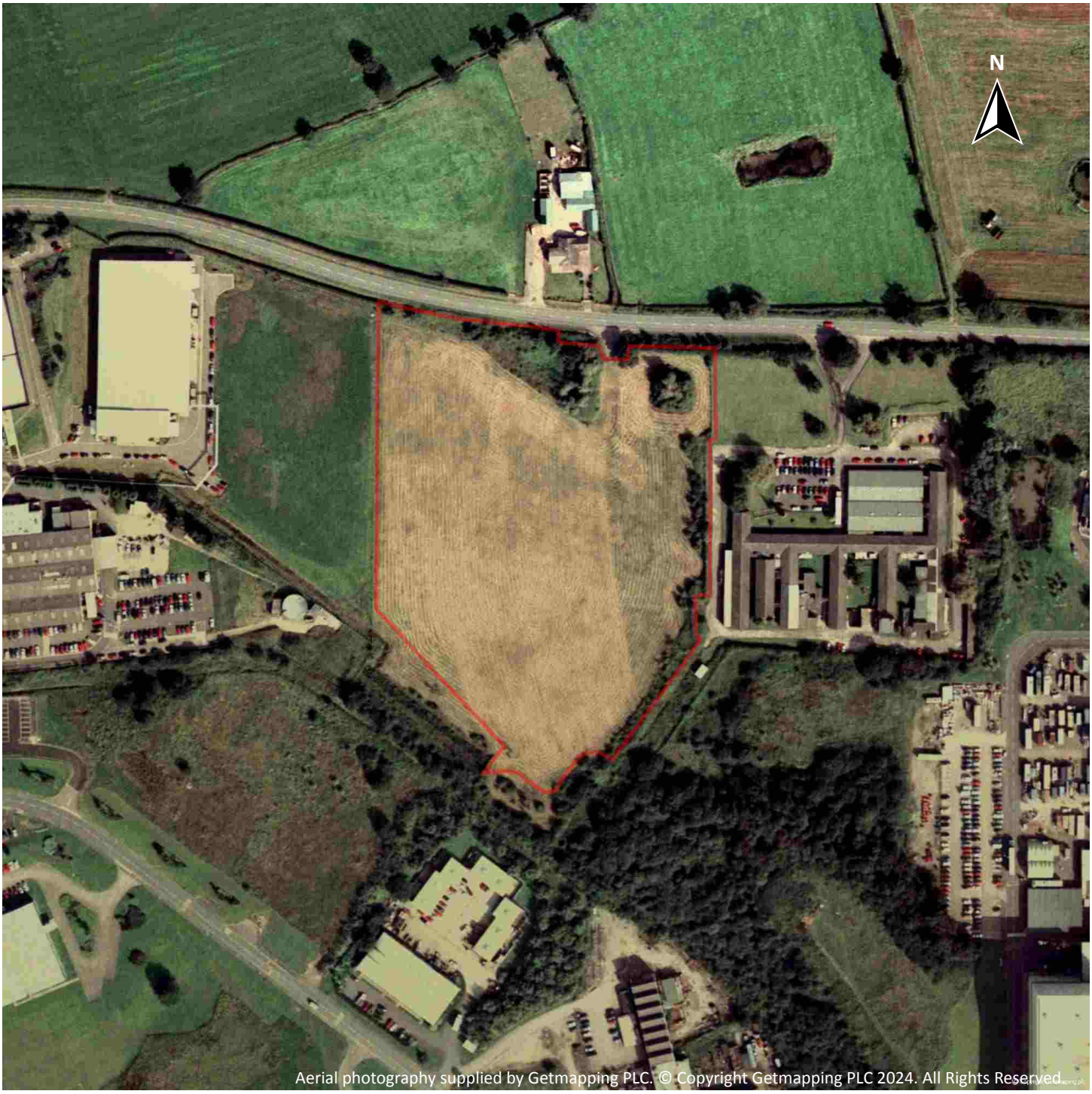
Recent site history - 2003 aerial photograph



Capture Date: 04/08/2003

Site Area: 3.21ha

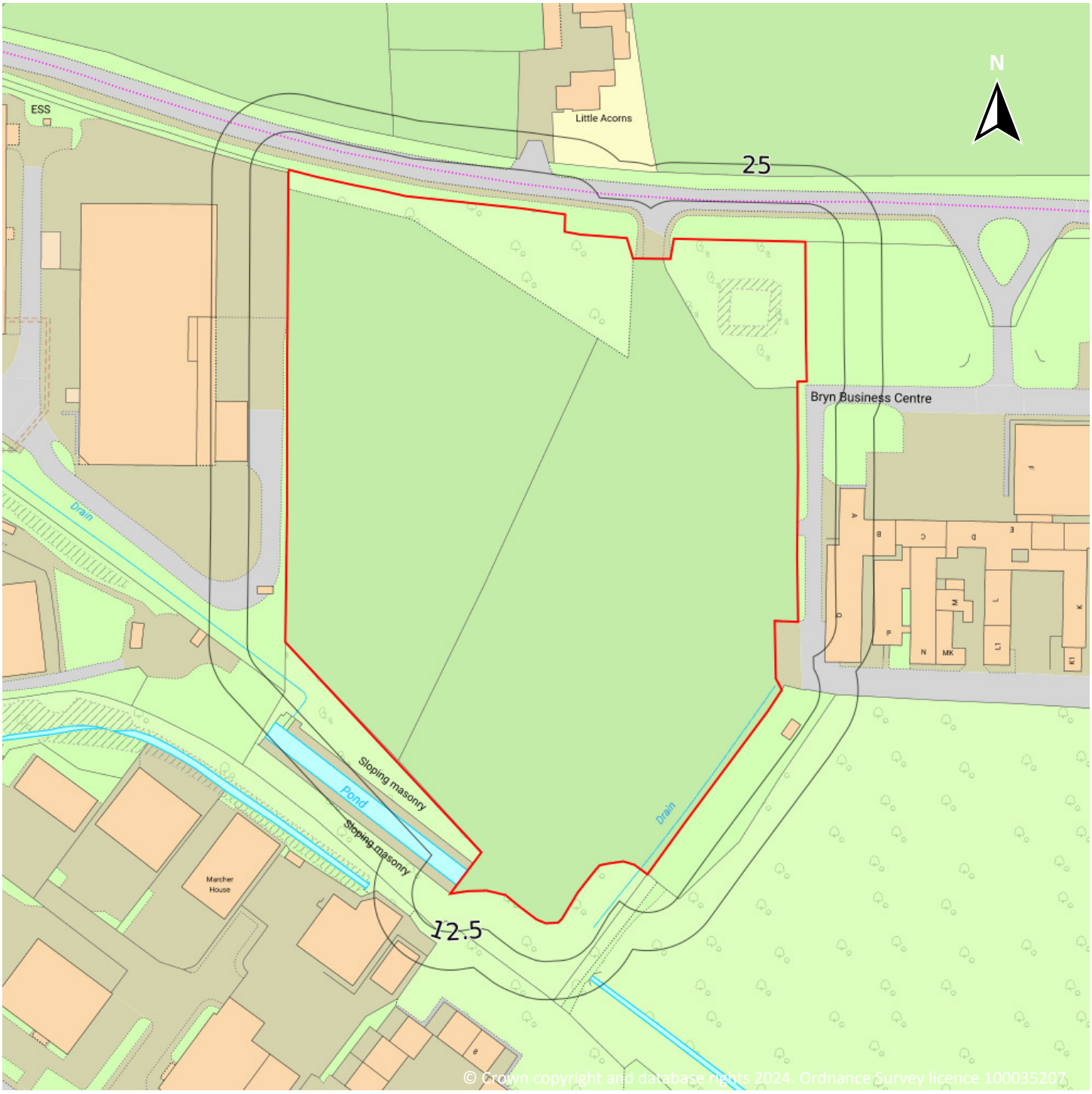
Recent site history - 2000 aerial photograph



Capture Date: 04/09/2000

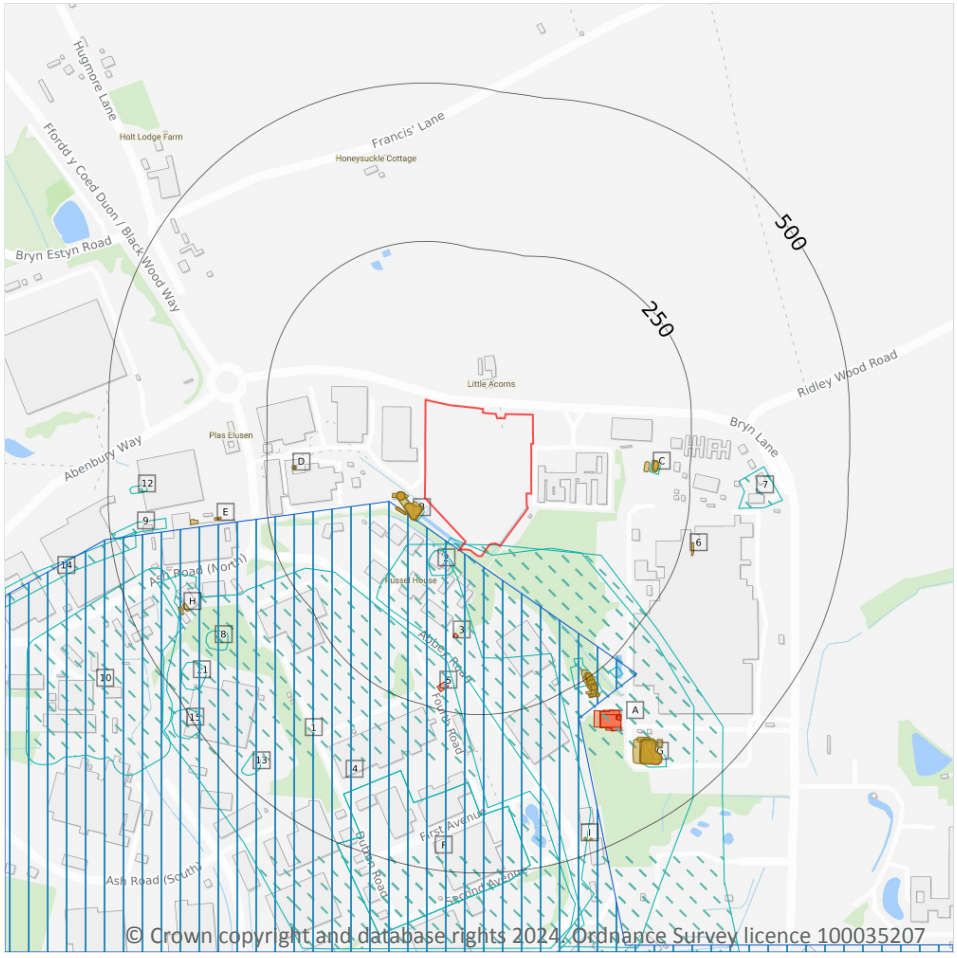
Site Area: 3.21ha

OS MasterMap site plan



Site Area: 3.21ha

1 Past land use



1.1 Historical industrial land uses

Records within 500m	21

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

Features are displayed on the Past land use map on **page 15 >**

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Railway Sidings**	**1960 - 1968**	**978580**

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Railway Sidings**	**1949**	**996260**
B	14m SW	Unspecified Tanks	1982 - 1992	985223
2	20m S	Unspecified Heap	1960 - 1968	1001509
4	150m SW	Industrial Estate	1982	859459
C	187m E	Unspecified Tanks	1982 - 1992	907723
A	213m SE	Railway Buildings	1960 - 1968	983215
A	251m SE	Unspecified Tanks	1992	819023
A	262m SE	Railway Building	1960 - 1968	882430
7	328m E	Telecomm Exchange	1982 - 1992	898435
F	357m S	Unspecified Commercial/Industrial	1982 - 1992	860279
F	357m S	Unspecified Works	1960 - 1968	897996
8	378m SW	Unspecified Pit	1960 - 1982	1004185
G	386m SE	Unspecified Tanks	1992	819022
9	410m W	Railway Sidings	1949	891856
10	419m W	Unspecified Commercial/Industrial	1949	822083
11	439m SW	Unspecified Heap	1960 - 1982	966993
12	439m W	Unspecified Tanks	1949	819767
13	456m SW	Unspecified Heap	1960 - 1982	913912
14	460m W	Railway Sidings	1960 - 1968	860347
15	485m SW	Unspecified Heap	1960 - 1982	976190

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**39**

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

Features are displayed on the Past land use map on **page 15 >**

ID	Location	Land use	Dates present	Group ID
B	13m SW	Tanks	1993 - 1995	138942
B	14m SW	Tanks	1991	154845
B	14m SW	Tanks	1982 - 1990	141559
B	26m W	Tanks	1982 - 1990	150453
B	31m W	Unspecified Tank	1991	155089
B	31m W	Unspecified Tank	1974	156038
B	38m SW	Tanks	1993 - 1995	143532
B	38m SW	Tanks	1982 - 1991	136638
C	178m E	Tanks	1989	110795
C	190m E	Tanks	1982 - 1991	151542
C	192m E	Tanks	1993 - 1995	127625
D	204m W	Unspecified Tank	1974	142113
D	204m W	Unspecified Tank	1991	146140
D	204m W	Unspecified Tank	1993 - 1995	133286
D	205m W	Unspecified Tank	1982 - 1990	141176
A	235m SE	Tanks	1987 - 1989	145704
A	242m SE	Tanks	1989 - 1990	147130
A	244m SE	Tanks	1991	132165
A	244m SE	Tanks	1993 - 1995	155631
A	254m SE	Tanks	1991	142502
A	264m SE	Tanks	1991	154673
6	264m E	Tanks	1987	110794
A	274m SE	Tanks	1993 - 1995	127250
A	276m SE	Unspecified Tank	1982	121300
A	277m SE	Tanks	1993 - 1995	154449
A	278m SE	Tanks	1991	150592
E	323m W	Unspecified Tank	1974 - 1991	132391
E	329m W	Unspecified Tank	1993 - 1995	138586

ID	Location	Land use	Dates present	Group ID
E	360m W	Tanks	1989	148437
G	372m SE	Tanks	1989	132468
G	372m SE	Tanks	1987	136103
G	378m SE	Tanks	1989 - 1990	154266
G	379m SE	Tanks	1993 - 1995	148705
G	381m SE	Tanks	1991	134705
G	394m SE	Tanks	1991	110792
H	411m SW	Tanks	1961	108472
H	421m SW	Tanks	1961	108473
I	473m S	Unspecified Tank	1989	121302
I	477m S	Unspecified Tank	1982 - 1990	151335

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	**11**

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

Features are displayed on the Past land use map on **page 15 >**

ID	Location	Land use	Dates present	Group ID
3	127m S	Electricity Substation	1991 - 1995	72029
5	204m S	Electricity Substation	1974 - 1995	79922
A	299m SE	Electricity Substation	1989	86336
A	305m SE	Electricity Substation	1989	82985
A	305m SE	Electricity Substation	1990	88450
A	305m SE	Electricity Substation	1990	89363
A	310m SE	Electricity Substation	1982 - 1987	82095

ID	Location	Land use	Dates present	Group ID
A	324m SE	Electricity Substation	1994	73158
A	324m SE	Electricity Substation	1993	77654
A	324m SE	Electricity Substation	1995	84116
A	326m SE	Electricity Substation	1991	90139

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m	1

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

Features are displayed on the Past land use map on **page 15 >**

ID	Location	Site Name	Date of Operation	Activities
1	**On site**	**ROF Wrexham**	**c.1938 - 1988**	**c. WW2: Produced cordite,; post WW2: Cordite production ceased in 1945 an the area was used as an industrial estate by the Welsh Development Agency to boost the local economy; Explosives Factory**

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

2 Past land use - un-grouped



2.1 Historical industrial land uses

Records within 500m	39

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

Features are displayed on the Past land use - un-grouped map on **page 21 >**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Railway Sidings**	**1949**	**996260**
A	**On site**	**Railway Sidings**	**1960**	**978580**
A	**On site**	**Railway Sidings**	**1968**	**978580**

ID	Location	Land Use	Date	Group ID
B	14m SW	Unspecified Tanks	1992	985223
B	14m SW	Unspecified Tanks	1982	985223
C	20m S	Unspecified Heap	1960	1001509
C	20m S	Unspecified Heap	1968	1001509
1	150m SW	Industrial Estate	1982	859459
E	187m E	Unspecified Tanks	1992	907723
E	187m E	Unspecified Tanks	1982	907723
A	213m SE	Railway Buildings	1960	983215
A	213m SE	Railway Buildings	1968	983215
A	251m SE	Unspecified Tanks	1992	819023
A	262m SE	Railway Building	1960	882430
A	262m SE	Railway Building	1968	882430
I	328m E	Telecomm Exchange	1992	898435
I	328m E	Telecomm Exchange	1982	898435
J	357m S	Unspecified Commercial/Industrial	1992	860279
J	357m S	Unspecified Commercial/Industrial	1982	860279
J	357m S	Unspecified Works	1960	897996
J	357m S	Unspecified Works	1968	897996
L	378m SW	Unspecified Pit	1982	1004185
L	378m SW	Unspecified Pit	1960	1004185
L	378m SW	Unspecified Pit	1968	1004185
K	386m SE	Unspecified Tanks	1992	819022
3	410m W	Railway Sidings	1949	891856
4	419m W	Unspecified Commercial/Industrial	1949	822083
5	439m W	Unspecified Tanks	1949	819767
N	439m SW	Unspecified Heap	1982	966993
N	439m SW	Unspecified Heap	1960	966993
N	439m SW	Unspecified Heap	1968	966993

ID	Location	Land Use	Date	Group ID
O	456m SW	Unspecified Heap	1982	913912
O	456m SW	Unspecified Heap	1960	913912
O	456m SW	Unspecified Heap	1968	913912
P	460m W	Railway Sidings	1960	860347
P	460m W	Railway Sidings	1968	860347
R	485m SW	Unspecified Heap	1982	976190
R	485m SW	Unspecified Heap	1960	976190
R	485m SW	Unspecified Heap	1968	976190

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**99**

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

Features are displayed on the Past land use - un-grouped map on **page 21 >**

ID	Location	Land Use	Date	Group ID
B	13m SW	Tanks	1993	138942
B	13m SW	Tanks	1995	138942
B	13m SW	Tanks	1994	138942
B	14m SW	Tanks	1991	154845
B	14m SW	Tanks	1982	141559
B	14m SW	Tanks	1987	141559
B	14m SW	Tanks	1989	141559
B	14m SW	Tanks	1989	141559
B	14m SW	Tanks	1990	141559
B	14m SW	Tanks	1990	141559
B	26m W	Tanks	1982	150453
B	26m W	Tanks	1987	150453

ID	Location	Land Use	Date	Group ID
B	26m W	Tanks	1989	150453
B	26m W	Tanks	1989	150453
B	26m W	Tanks	1990	150453
B	26m W	Tanks	1990	150453
B	31m W	Unspecified Tank	1991	155089
B	31m W	Unspecified Tank	1974	156038
B	38m SW	Tanks	1993	143532
B	38m SW	Tanks	1995	143532
B	38m SW	Tanks	1994	143532
B	38m SW	Tanks	1991	136638
B	39m SW	Tanks	1982	136638
B	39m SW	Tanks	1987	136638
B	39m SW	Tanks	1989	136638
B	39m SW	Tanks	1989	136638
B	39m SW	Tanks	1990	136638
B	39m SW	Tanks	1990	136638
E	178m E	Tanks	1989	110795
E	190m E	Tanks	1989	151542
E	190m E	Tanks	1990	151542
E	190m E	Tanks	1990	151542
E	191m E	Tanks	1982	151542
E	191m E	Tanks	1987	151542
E	192m E	Tanks	1993	127625
E	192m E	Tanks	1995	127625
E	192m E	Tanks	1994	127625
E	193m E	Tanks	1991	151542
F	204m W	Unspecified Tank	1991	146140
F	204m W	Unspecified Tank	1974	142113

ID	Location	Land Use	Date	Group ID
F	204m W	Unspecified Tank	1993	133286
F	204m W	Unspecified Tank	1995	133286
F	204m W	Unspecified Tank	1994	133286
F	205m W	Unspecified Tank	1982	141176
F	205m W	Unspecified Tank	1987	141176
F	205m W	Unspecified Tank	1989	141176
F	205m W	Unspecified Tank	1989	141176
F	205m W	Unspecified Tank	1990	141176
F	205m W	Unspecified Tank	1990	141176
A	235m SE	Tanks	1987	145704
A	235m SE	Tanks	1989	145704
A	242m SE	Tanks	1989	147130
A	242m SE	Tanks	1990	147130
A	242m SE	Tanks	1990	147130
A	244m SE	Tanks	1991	132165
A	244m SE	Tanks	1993	155631
A	244m SE	Tanks	1995	155631
A	244m SE	Tanks	1994	155631
A	254m SE	Tanks	1991	142502
A	264m SE	Tanks	1991	154673
2	264m E	Tanks	1987	110794
A	274m SE	Tanks	1993	127250
A	274m SE	Tanks	1995	127250
A	274m SE	Tanks	1994	127250
A	276m SE	Unspecified Tank	1982	121300
A	277m SE	Tanks	1993	154449
A	277m SE	Tanks	1995	154449
A	277m SE	Tanks	1994	154449

ID	Location	Land Use	Date	Group ID
A	278m SE	Tanks	1991	150592
H	323m W	Unspecified Tank	1991	132391
H	323m W	Unspecified Tank	1974	132391
H	323m W	Unspecified Tank	1982	132391
H	323m W	Unspecified Tank	1987	132391
H	323m W	Unspecified Tank	1989	132391
H	323m W	Unspecified Tank	1989	132391
H	323m W	Unspecified Tank	1990	132391
H	323m W	Unspecified Tank	1990	132391
H	329m W	Unspecified Tank	1993	138586
H	329m W	Unspecified Tank	1995	138586
H	329m W	Unspecified Tank	1994	138586
H	360m W	Tanks	1989	148437
H	360m W	Tanks	1989	148437
K	372m SE	Tanks	1989	132468
K	372m SE	Tanks	1987	136103
K	378m SE	Tanks	1989	154266
K	378m SE	Tanks	1990	154266
K	378m SE	Tanks	1990	154266
K	379m SE	Tanks	1993	148705
K	379m SE	Tanks	1995	148705
K	379m SE	Tanks	1994	148705
K	381m SE	Tanks	1991	134705
K	394m SE	Tanks	1991	110792
M	411m SW	Tanks	1961	108472
M	421m SW	Tanks	1961	108473
Q	473m S	Unspecified Tank	1989	121302
Q	477m S	Unspecified Tank	1982	151335

ID	Location	Land Use	Date	Group ID
Q	477m S	Unspecified Tank	1987	151335
Q	477m S	Unspecified Tank	1989	151335
Q	477m S	Unspecified Tank	1990	151335

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	**24**

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

Features are displayed on the Past land use - un-grouped map on **page 21 >**

ID	Location	Land Use	Date	Group ID
D	127m S	Electricity Substation	1991	72029
D	129m S	Electricity Substation	1993	72029
D	129m S	Electricity Substation	1995	72029
D	129m S	Electricity Substation	1994	72029
G	204m S	Electricity Substation	1993	79922
G	204m S	Electricity Substation	1995	79922
G	204m S	Electricity Substation	1994	79922
G	205m S	Electricity Substation	1991	79922
G	205m S	Electricity Substation	1974	79922
G	206m S	Electricity Substation	1982	79922
G	206m S	Electricity Substation	1987	79922
G	206m S	Electricity Substation	1989	79922
G	206m S	Electricity Substation	1989	79922
G	206m S	Electricity Substation	1990	79922
A	299m SE	Electricity Substation	1989	86336
A	305m SE	Electricity Substation	1989	82985
A	305m SE	Electricity Substation	1990	88450

ID	Location	Land Use	Date	Group ID
A	305m SE	Electricity Substation	1990	89363
A	310m SE	Electricity Substation	1982	82095
A	310m SE	Electricity Substation	1987	82095
A	324m SE	Electricity Substation	1993	77654
A	324m SE	Electricity Substation	1995	84116
A	324m SE	Electricity Substation	1994	73158
A	326m SE	Electricity Substation	1991	90139

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

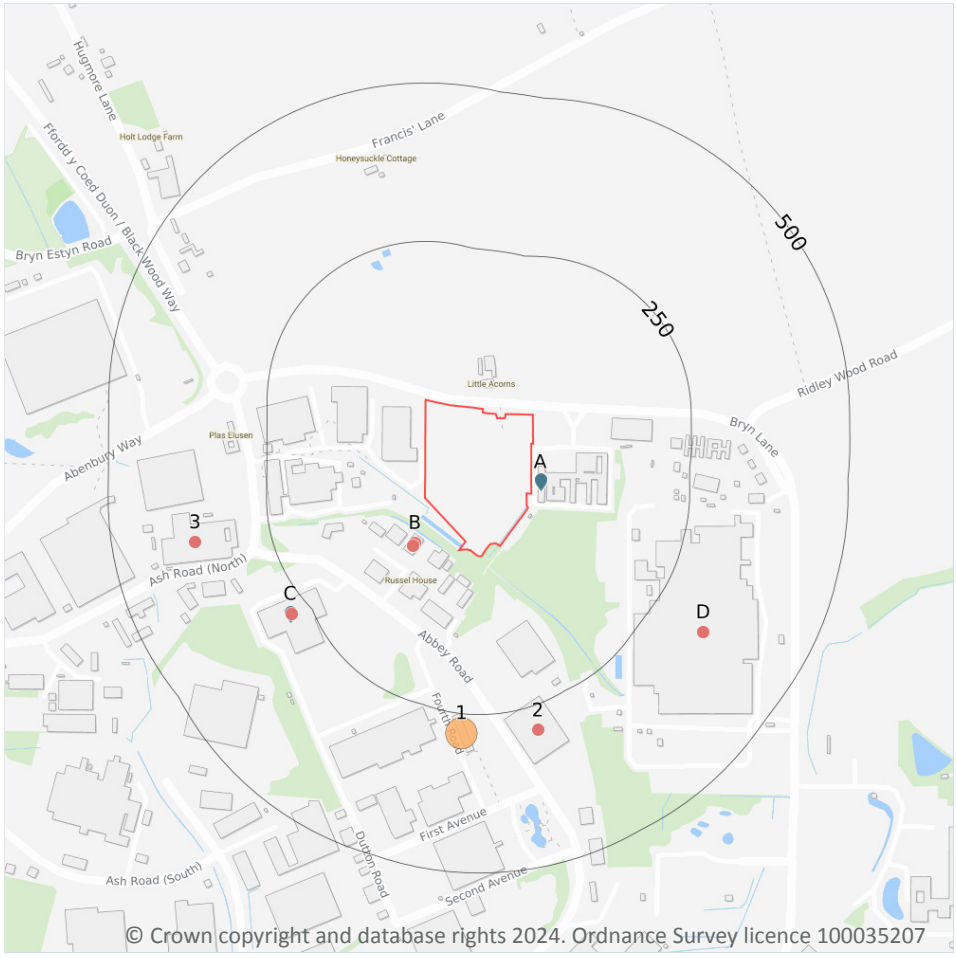
2.5 Historical garages

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



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3.1 Active or recent landfill

Records within 500m	0

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

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

3.2 Historical landfill (BGS records)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

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

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

3.5 Historical waste sites

Records within 500m	1

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

Features are displayed on the Waste and landfill map on **page 29 >**

ID	Location	Address	Further Details	Date
1	256m S	Site Address: Redwither Business Park, WREXHAM, Clwyd, LL13 9XR	Type of Site: Waste Recovery Centre Planning application reference: N/A Description: Scheme comprises construction of a waste recovery centre which will include a 50,000 tonne incinerator. Electricity will be produced and fed into the national grid. An application (ref: -) for Detailed Planning permission was submitted to Wrexham B.C. on 11th September 2001. Plans are currently under objection from local residents and Cheshire's planning offices are preparing an environmental impact report. This goes before the Development Regulatory Committee on December 11th 2001. Start on site is sub ject to planning approval. Data source: Historic Planning Application Data Type: Point	16/06/2003

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

3.6 Licensed waste sites

Records within 500m	12

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

Features are displayed on the Waste and landfill map on **page 29 >**

ID	Location	Details		
A	14m E	Site Name: - Site Address: Bryn Lane Composting Facility, Bryn Lane, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9UT Correspondence Address: -	Type of Site: Material Recycling Treatment Facility Size: - Environmental Permitting Regulations (Waste) Licence Number: ZP3795ER EPR reference: - Operator: FCC Recycling (UK) Limited Waste Management licence No: - Annual Tonnage: 81444	Issue Date: 24/04/2023 Effective Date: 24/04/2023 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
A	14m E	Site Name: - Site Address: Bryn Lane Composting Facility, Bryn Lane, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9UT Correspondence Address: -	Type of Site: Material Recycling Treatment Facility Size: - Environmental Permitting Regulations (Waste) Licence Number: ZP3795ER EPR reference: - Operator: F C C Recycling (U K) Limited Waste Management licence No: - Annual Tonnage: 81444	Issue Date: 27/11/2007 Effective Date: 27/11/2007 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
A	14m E	Site Name: - Site Address: Bryn Lane Composting Facility, Bryn Lane, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9UT Correspondence Address: -	Type of Site: Material Recycling Treatment Facility Size: - Environmental Permitting Regulations (Waste) Licence Number: ZP3795ER EPR reference: - Operator: F C C Recycling (U K) Limited Waste Management licence No: - Annual Tonnage: 81444	Issue Date: 27/11/2007 Effective Date: 27/11/2007 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective

ID	Location	Details		
A	14m E	Site Name: Bryn Lane Waste Recycling And Composting Facility Site Address: Land/ Premises At, Bryn Lane, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9UT Correspondence Address: -	Type of Site: Material Recycling Treatment Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WAS023 EPR reference: EA/EPR/ZP3795ER/V004 Operator: Waste Recycling Ltd Waste Management licence No: 100079 Annual Tonnage: 81444	Issue Date: 27/11/2007 Effective Date: - Modified: 05/05/2011 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified
A	14m E	Site Name: Bryn Lane Waste Recycling And Composting Facility Site Address: Land/ Premises At, Bryn Lane, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9UT Correspondence Address: -	Type of Site: Material Recycling Treatment Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WAS023 EPR reference: ZP3795ER/V002 Operator: Waste Recycling Group Ltd Waste Management licence No: 100079 Annual Tonnage: 0	Issue Date: 27/11/2007 Effective Date: - Modified: 16/04/2009 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified
A	14m E	Site Name: Bryn Lane Composting Facility Site Address: Bryn Lane Composting Facility, Bryn Lane, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9UT Correspondence Address: -	Type of Site: Material Recycling Treatment Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WAS023 EPR reference: ZP3795ER/V002 Operator: F C C Recycling (U K) Limited Waste Management licence No: 100079 Annual Tonnage: 81444	Issue Date: 27/11/2007 Effective Date: - Modified: 22/08/2012 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified
A	14m E	Site Name: Bryn Lane Composting Facility Site Address: Bryn Lane Composting Facility, Bryn Lane, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9UT Correspondence Address: -	Type of Site: Material Recycling Treatment Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WAS023 EPR reference: EA/EPR/ZP3795ER/V002 Operator: F C C Recycling (U K) Limited Waste Management licence No: 100079 Annual Tonnage: 81444	Issue Date: 27/11/2007 Effective Date: - Modified: 22/08/2012 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified

ID	Location	Details		
A	14m E	Site Name: - Site Address: Bryn Lane Composting Facility, Bryn Lane, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9UT Correspondence Address: -	Type of Site: Material Recycling Treatment Facility Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: ZP3795ER EPR reference: - Operator: - Waste Management licence No: 100079 Annual Tonnage: 81444	Issue Date: 27/11/2007 Effective Date: 27/11/2007 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
A	14m E	Site Name: - Site Address: Bryn Lane Composting Facility, Bryn Lane, Wrexham Industrial Estate, Wrexham, Wrexham, LL13 9UT Correspondence Address: -	Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: ZP3795ER EPR reference: - Operator: F C C Recycling (U K) Limited Waste Management licence No: 0 Annual Tonnage: 81444	Issue Date: 27/11/2007 Effective Date: 27/11/2007 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
A	14m E	Site Name: - Site Address: Bryn Lane Composting Facility, Bryn Lane, Wrexham Industrial Estate, Clwyd, Wrexham, Wrexham, LL13 9UT Correspondence Address: -	Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: ZP3795ER EPR reference: - Operator: F C C Recycling (U K) Limited Waste Management licence No: 100079 Annual Tonnage: 81444	Issue Date: 27/11/2007 Effective Date: 27/11/2007 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
A	15m E	Site Name: Bryn Lane Composting Facility Site Address: Bryn Lane Composting Facility, Bryn Lane, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9UT Correspondence Address: -	Type of Site: Composting Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WAS023 EPR reference: ZP3795ER/V002 Operator: F C C Recycling (U K) Limited Waste Management licence No: 100079 Annual Tonnage: 81444	Issue Date: 27/11/2007 Effective Date: - Modified: 22/08/2012 Surrendered Date: 0 Expiry Date: 0 Cancelled Date: 0 Status: Modified

ID	Location	Details		
C	281m SW	Site Name: - Site Address: AST Plastic Containers UK LLP, Unit 1, Abbey Road, Redwither Business Park, Wrexham, Wrexham, LL13 9RF Correspondence Address: -	Type of Site: - Size: - Environmental Permitting Regulations (Waste) Licence Number: CB3491FL EPR reference: - Operator: AST Plastic Containers UK LLP Waste Management licence No: - Annual Tonnage: 8650	Issue Date: 02/03/2022 Effective Date: 02/03/2022 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective

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

3.7 Waste exemptions

Records within 500m **11**

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

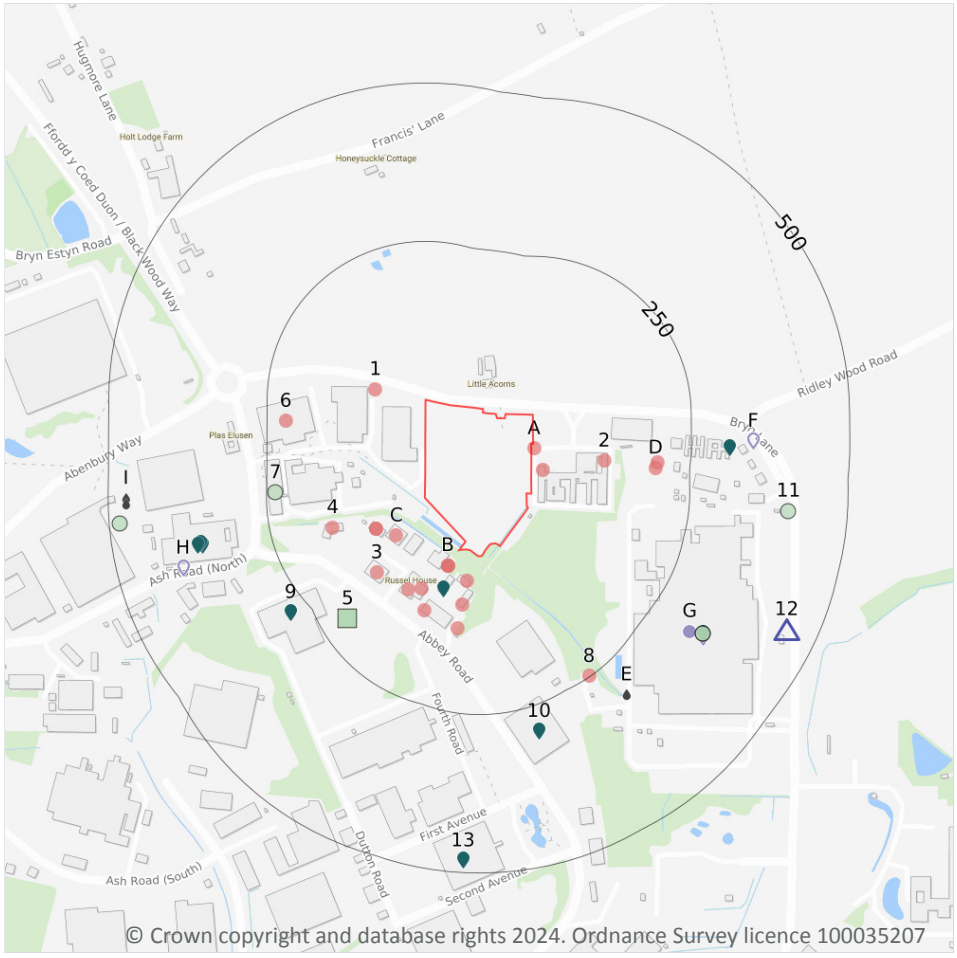
Features are displayed on the Waste and landfill map on **page 29 >**

ID	Location	Site	Reference	Category	Sub-Category	Description
B	60m SW	Dragon Hydraulics, Unit 3 Abbey Road North, Wrexham Industrial Estate, Wrexham, Ll13 9rx	WEX125151	Storing waste exemption	Not on a farm	Storage of waste in secure containers
B	66m SW	-	WEX264851	Storing waste exemption	Not on a farm	Storage of waste in secure containers
B	66m SW	Rodens Hall, Isycoed, Wrexham, Wrecsam, Ll13 9rx	NRW-WME001936	Using waste exemption	Waste exemption - agricultural	Use of waste derived biodiesel as fuel
B	66m SW	Rodens Hall, Isycoed, Wrexham, Wrecsam, Ll13 9rx	NRW-WME001936	Storing waste exemption	Waste exemption - non-agricultural	Storage of sludge
C	280m SW	Ast Plastic Containers Uk Llp, Unit 1, Abbey Road, Wrexham Industrial Estate, Wrexham, Wrecsam, Ll13 9rf	NRW-WME061390	Storing waste exemption	Waste exemption - agricultural and non-agricultural	Storage of waste in a secure place
C	280m SW	Ast Plastic Containers Uk Llp, Unit 1, Abbey Road, Wrexham Industrial Estate, Wrexham, Wrecsam, Ll13 9rf	NRW-WME061390	Treating waste exemption	Waste exemption - agricultural and non-agricultural	Cleaning, washing, spraying or coating relevant waste

ID	Location	Site	Reference	Category	Sub-Category	Description
C	280m SW	Ast Plastic Containers Uk Llp, Unit 1, Abbey Road, Wrexham Industrial Estate, Wrexham, Wrecsam, Ll13 9rf	NRW-WME061390	Treating waste exemption	Waste exemption - agricultural and non-agricultural	Preparatory treatments (baling, sorting, shredding etc)
2	289m S	108 Abbey Road, Wrexham Industrial Estate, Wrexham, Wrecsam, Ll13 9rf	NRW-WME002295	Storing waste exemption	Waste exemption - non-agricultural	Storage of waste in a secure place
D	339m SE	Allied Fire Alarms & Escapes Co Ltd, Allied House Bryn Lane, Wrexham Industrial Estate, Wrexham, Wrexham, Ll13 9ut	NRW-WME046506	Storing waste exemption	Not on a farm	Storage of waste in a secure place
D	339m SE	Allied Fire Alarms & Escapes Co Ltd, Allied House Bryn Lane, Wrexham Industrial Estate, Wrexham, Wrexham, Ll13 9ut	NRW-WME046506	Storing waste exemption	Not on a farm	Storage of waste in secure containers
3	370m W	Trans Continental A C Uk Ltd, Ash Road North, Wrexham Industrial Estate, Wrexham, Wrecsam, Ll13 9uf	NRW-WME046393	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)

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

4 Current industrial land use



4.1 Recent industrial land uses

Records within 250m	22

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 36 >**

ID	Location	Company	Address	Activity	Category
A	4m E	Bryn Business Centre	Clwyd, LL13	Business Parks and Industrial Estates	Industrial Features
A	18m E	Air Covers	Bryn Business Centre, Bryn Lane, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9UT	Aviation Engineers	Engineering Services

ID	Location	Company	Address	Activity	Category
B	30m S	Link Engineering & Welding Ltd	Sean House, Abbey Road North, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9RX	Industrial Engineers	Engineering Services
B	30m S	Dragon Engineering	Sean House, Abbey Road North, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9RX	Hydraulic Engineers	Engineering Services
B	30m S	Link Power Transmissio ns	Sean House, Abbey Road North, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9RX	Special Purpose Machinery and Equipment	Industrial Products
B	44m S	Petcor Ltd	Unit A8 Redwither Business Park, Abbey Close, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9XG	Animal Feeds, Pet Foods, Hay and Straw	Foodstuffs
C	74m SW	Maple & Stone Ltd	Unit 5, Abbey Road North, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9RX	General Construction Supplies	Industrial Products
B	81m S	A W R Engineering Services	Unit A11 Redwither Business Park, Abbey Close, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9XG	Precision Engineers	Engineering Services
1	81m NW	Electricity Sub Station	Clwyd, LL13	Electrical Features	Infrastructure and Facilities
B	85m SW	Auto Tec	Shannon House, Abbey Road North, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9RX	Vehicle Repair, Testing and Servicing	Repair and Servicing
C	91m SW	Jamiqs Ltd	Room 2, Abbey Road North, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9RX	Textiles, Fabrics, Silk and Machinery	Industrial Products
C	91m SW	Relabelled	Jami Qs, Abbey Road North, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9RF	Office and Shop Equipment	Industrial Products
B	101m SW	Limpet Labels	Russell House, Abbey Road North, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9RX	Office and Shop Equipment	Industrial Products
B	110m S	Big Hand Brewing Company	Unit A1 Redwither Business Park, Abbey Close, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9XG	Alcoholic Drinks	Foodstuffs
2	115m E	Aspull Engineering	Unit G, Bryn Business Centre, Bryn Lane, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9UT	Industrial Engineers	Engineering Services
B	119m S	Electricity Sub Station	Clwyd, LL13	Electrical Features	Infrastructure and Facilities
3	135m SW	Bryn Roberts Workshops Ltd	Bryn Roberts Ltd, Abbey Road North, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9RX	General Construction Supplies	Industrial Products

ID	Location	Company	Address	Activity	Category
4	153m W	Dragon Hydraulics	Unit 3, Abbey Road North, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9RX	Industrial Repairs and Servicing	Repair and Servicing
D	196m E	Tank	Clwyd, LL13	Tanks (Generic)	Industrial Features
D	198m E	Tank	Clwyd, LL13	Tanks (Generic)	Industrial Features
6	221m W	Wockhardt UK Ltd	Wockhardt UK Ltd, Ash Road North, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9UF	Medical Equipment, Supplies and Pharmaceuticals	Industrial Products
8	249m SE	Tank	Clwyd, LL13	Tanks (Generic)	Industrial Features

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	**1**

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on **page 36 >**

ID	Location	Company	Address	LPG	Status
12	451m SE	CERTAS ENERGY	Bryn Lane, Wrexham Industrial Estate, Wrexham, Wrexham, LL13 9UT	No	Non-Retail

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	**0**

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	**0**

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	0

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	5

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

Features are displayed on the Current industrial land use map on **page 36 >**

ID	Location	Details	
G	321m SE	Operator: Owens Corning Fiberglas (gb) Ltd Address: Bryn Lane, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9JU Process: Other Mineral Fibres Permit Number: AG1425	Original Permit Number: IPCAIRAPP Date Approved: 8-4-1993 Effective Date: 8-4-1993 Status: Superseded By Variation
G	321m SE	Operator: Owens Corning Fiberglas (gb) Ltd Address: Bryn Lane, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9JU Process: Manufacture And Use Of Organic Chemicals Permit Number: AK5407	Original Permit Number: IPCAPP Date Approved: 18-2-1994 Effective Date: 28-2-1994 Status: Superseded By Variation
G	321m SE	Operator: Owens Corning Fiberglas (gb) Ltd Address: Bryn Lane, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9JU Process: Other Mineral Fibres Permit Number: BC5539	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Superseded By Variation
G	321m SE	Operator: Owens Corning Fiberglas (gb) Ltd Address: Bryn Lane, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9JU Process: Manufacture And Use Of Organic Chemicals Permit Number: BC6713	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Revoked
G	321m SE	Operator: Owens Corning Fiberglas (gb) Ltd Address: Bryn Lane, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9JU Process: Other Mineral Fibres Permit Number: BG0342	Original Permit Number: IPCMINVAR Date Approved: 21-9-2001 Effective Date: 15-10-2001 Status: Revoked

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m **29**

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

Features are displayed on the Current industrial land use map on **page 36 >**

ID	Location	Details	
G	343m SE	Operator: Kellogg Company of Great Britain Ltd Installation Name: Kelloggs EPR/BV8016ID Process: BURNING ANY FUEL IN AN APPLIANCE WITH A RATED THERMAL INPUT OF 50 OR MORE MEGAWATTS Permit Number: BV8016ID Original Permit Number: -	EPR Reference: - Issue Date: 17/02/2022 Effective Date: 17/02/2022 Last date noted as effective: 29/10/2024 Status: Effective

ID	Location	Details	
G	343m SE	Operator: Kellogg Company of Great Britain Ltd Installation Name: Kelloggs EPR/BV8016ID Process: DISPOSAL OF NON-HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 50 TONNES PER DAY (OR 100 TONNES PER DAY IF THE ONLY WASTE TREATMENT ACTIVITY IS ANAEROBIC DIGESTION) INVOLVING ONE OR MORE OF THE FOLLOWING ACTIVITIES, AND EXCLUDING ACTIVITIES COVERED BY COUNCIL DIRECTIVE 91/271/EEC CONCERNING URBAN WASTE-WATER TREATMENT(4)—BIOLOGICAL TREATMENT Permit Number: BV8016ID Original Permit Number: -	EPR Reference: - Issue Date: 17/02/2022 Effective Date: 17/02/2022 Last date noted as effective: 29/10/2024 Status: Effective
G	343m SE	Operator: Kellogg Company of Great Britain Ltd Installation Name: Kelloggs EPR/BV8016ID Process: TREATMENT AND PROCESSING, OTHER THAN EXCLUSIVELY PACKAGING, OF THE FOLLOWING RAW MATERIALS, WHETHER PREVIOUSLY PROCESSED OR UNPROCESSED, INTENDED FOR THE PRODUCTION OF FOOD OR FEED (WHERE THE WEIGHT OF THE FINISHED PRODUCT EXCLUDES PACKAGING)—ONLY VEGETABLE RAW MATERIALS WITH A FINISHED PRODUCT PRODUCTION CAPACITY GREATER THAN 300 TONNES PER DAY OR 600 TONNES PER DAY WHERE THE INSTALLATION OPERATES FOR A PERIOD OF NO MORE THAN 90 CONSECUTIVE DAYS IN ANY YEAR Permit Number: BV8016ID Original Permit Number: -	EPR Reference: - Issue Date: 17/02/2022 Effective Date: 17/02/2022 Last date noted as effective: 29/10/2024 Status: Effective
G	343m SE	Operator: KELLOGG COMPANY OF GREAT BRITAIN LTD Installation Name: KELLOGGS EPR/BV8016ID Process: ANIMAL VEGETABLE AND FOOD; TREATING ETC VEGETABLE RAW MATERIALS FOR FOOD >300T/D Permit Number: GP3031ZW Original Permit Number: BV8016ID	EPR Reference: - Issue Date: 21/03/2013 Effective Date: 21/03/2013 Last date noted as effective: 17/11/2015 Status: EFFECTIVE
G	343m SE	Operator: KELLOGG COMPANY OF GREAT BRITAIN LTD Installation Name: KELLOGGS EPR/BV8016ID Process: COMBUSTION; ANY FUEL =>50MW Permit Number: GP3031ZW Original Permit Number: BV8016ID	EPR Reference: - Issue Date: 21/03/2013 Effective Date: 21/03/2013 Last date noted as effective: 17/11/2015 Status: EFFECTIVE
G	343m SE	Operator: KELLOGG COMPANY OF GREAT BRITAIN LTD Installation Name: KELLOGGS EPR/BV8016ID Process: DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT Permit Number: GP3031ZW Original Permit Number: BV8016ID	EPR Reference: - Issue Date: 21/03/2013 Effective Date: 21/03/2013 Last date noted as effective: 17/11/2015 Status: EFFECTIVE

ID	Location	Details	
G	343m SE	Operator: KELLOGG COMPANY OF GREAT BRITAIN LTD Installation Name: WREXHAM, BREAKFAST CEREALS Process: ANIMAL VEGETABLE AND FOOD; TREATING ETC VEGETABLE RAW MATERIALS FOR FOOD >300T/D Permit Number: KP3135LW Original Permit Number: BV8016ID	EPR Reference: - Issue Date: 05/05/2006 Effective Date: 05/05/2006 Last date noted as effective: 17/11/2015 Status: SUPERCEDED
G	343m SE	Operator: KELLOGG COMPANY OF GREAT BRITAIN LTD Installation Name: WREXHAM, BREAKFAST CEREALS Process: COMBUSTION; ANY FUEL =>50MW Permit Number: KP3135LW Original Permit Number: BV8016ID	EPR Reference: - Issue Date: 05/05/2006 Effective Date: 05/05/2006 Last date noted as effective: 17/11/2015 Status: SUPERCEDED
G	343m SE	Operator: KELLOGG COMPANY OF GREAT BRITAIN LTD Installation Name: WREXHAM, BREAKFAST CEREALS Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY BIOLOGICAL TREATMENT Permit Number: KP3135LW Original Permit Number: BV8016ID	EPR Reference: - Issue Date: 05/05/2006 Effective Date: 05/05/2006 Last date noted as effective: 17/11/2015 Status: SUPERCEDED
G	343m SE	Operator: KELLOGG COMPANY OF GREAT BRITAIN LTD Installation Name: WREXHAM, BREAKFAST CEREALS Process: ANIMAL VEGETABLE AND FOOD; TREATING ETC VEGETABLE RAW MATERIALS FOR FOOD >300T/D Permit Number: VP3832KF Original Permit Number: BV8016ID	EPR Reference: - Issue Date: 23/03/2010 Effective Date: 23/03/2010 Last date noted as effective: 17/11/2015 Status: SUPERCEDED
G	343m SE	Operator: KELLOGG COMPANY OF GREAT BRITAIN LTD Installation Name: WREXHAM, BREAKFAST CEREALS Process: COMBUSTION; ANY FUEL =>50MW Permit Number: VP3832KF Original Permit Number: BV8016ID	EPR Reference: - Issue Date: 23/03/2010 Effective Date: 23/03/2010 Last date noted as effective: 17/11/2015 Status: SUPERCEDED
G	343m SE	Operator: KELLOGG COMPANY OF GREAT BRITAIN LTD Installation Name: WREXHAM, BREAKFAST CEREALS Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY BIOLOGICAL TREATMENT Permit Number: VP3832KF Original Permit Number: BV8016ID	EPR Reference: - Issue Date: 23/03/2010 Effective Date: 23/03/2010 Last date noted as effective: 17/11/2015 Status: SUPERCEDED
G	343m SE	Operator: KELLOGG COMPANY OF GREAT BRITAIN LTD Installation Name: WREXHAM, BREAKFAST CEREALS Process: ANIMAL VEGETABLE AND FOOD; TREATING ETC VEGETABLE RAW MATERIALS FOR FOOD >300T/D Permit Number: VP3935CF Original Permit Number: BV8016ID	EPR Reference: - Issue Date: 19/04/2012 Effective Date: 19/04/2012 Last date noted as effective: 17/11/2015 Status: SUPERCEDED
G	343m SE	Operator: KELLOGG COMPANY OF GREAT BRITAIN LTD Installation Name: WREXHAM, BREAKFAST CEREALS Process: COMBUSTION; ANY FUEL =>50MW Permit Number: VP3935CF Original Permit Number: BV8016ID	EPR Reference: - Issue Date: 19/04/2012 Effective Date: 19/04/2012 Last date noted as effective: 17/11/2015 Status: SUPERCEDED

ID	Location	Details	
G	343m SE	Operator: KELLOGG COMPANY OF GREAT BRITAIN LTD Installation Name: WREXHAM, BREAKFAST CEREALS Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY BIOLOGICAL TREATMENT Permit Number: VP3935CF Original Permit Number: BV8016ID	EPR Reference: - Issue Date: 19/04/2012 Effective Date: 19/04/2012 Last date noted as effective: 17/11/2015 Status: SUPERCEDED
G	343m SE	Operator: KELLOGG COMPANY OF GREAT BRITAIN LTD Installation Name: WREXHAM, BREAKFAST CEREALS Process: CREATED BY IED - DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT Permit Number: GP3031ZW Original Permit Number: BV8016ID	EPR Reference: - Issue Date: 21/03/2013 Effective Date: 21/03/2013 Last date noted as effective: 01/07/2013 Status: EFFECTIVE
G	343m SE	Operator: KELLOGG COMPANY OF GREAT BRITAIN LTD Installation Name: KELLOGGS EPR/BV8016ID Process: TREATMENT AND PROCESSING, OTHER THAN EXCLUSIVELY PACKAGING, OF THE FOLLOWING RAW... Permit Number: BV8016ID Original Permit Number: GP3031ZW	EPR Reference: - Issue Date: 19/10/2017 Effective Date: 19/10/2017 Last date noted as effective: 01/04/2018 Status: EFFECTIVE
G	343m SE	Operator: KELLOGG COMPANY OF GREAT BRITAIN LTD Installation Name: KELLOGGS EPR/BV8016ID Process: TREATMENT AND PROCESSING, OTHER THAN EXCLUSIVELY PACKAGING, OF THE FOLLOWING RAW... Permit Number: BV8016ID Original Permit Number: GP3031ZW	EPR Reference: - Issue Date: 19/10/2017 Effective Date: 19/10/2017 Last date noted as effective: 01/04/2018 Status: EFFECTIVE
G	343m SE	Operator: KELLOGG COMPANY OF GREAT BRITAIN LTD Installation Name: KELLOGGS EPR/BV8016ID Process: TREATMENT AND PROCESSING, OTHER THAN EXCLUSIVELY PACKAGING, OF THE FOLLOWING RAW... Permit Number: BV8016ID Original Permit Number: GP3031ZW	EPR Reference: - Issue Date: 19/10/2017 Effective Date: 19/10/2017 Last date noted as effective: 01/04/2018 Status: EFFECTIVE
G	343m SE	Operator: KELLOGG COMPANY OF GREAT BRITAIN LTD Installation Name: KELLOGGS EPR/BV8016ID Process: - Permit Number: BV8016ID Original Permit Number: -	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/04/2017 Status: DULY MADE
F	347m E	Operator: KELLOGG COMPANY OF GREAT BRITAIN LTD Installation Name: WREXHAM, BREAKFAST CEREALS Process: ANIMAL VEGETABLE AND FOOD; TREATING ETC VEGETABLE RAW MATERIALS FOR FOOD >300T/D Permit Number: BV8016ID Original Permit Number: BV8016ID	EPR Reference: - Issue Date: 09/11/2005 Effective Date: 09/11/2005 Last date noted as effective: 17/11/2015 Status: SUPERCEDED

ID	Location	Details	
F	347m E	Operator: KELLOGG COMPANY OF GREAT BRITAIN LTD Installation Name: WREXHAM, BREAKFAST CEREALS Process: COMBUSTION; ANY FUEL =>50MW Permit Number: BV8016ID Original Permit Number: BV8016ID	EPR Reference: - Issue Date: 09/11/2005 Effective Date: 09/11/2005 Last date noted as effective: 17/11/2015 Status: SUPERCEDED
F	347m E	Operator: KELLOGG COMPANY OF GREAT BRITAIN LTD Installation Name: WREXHAM, BREAKFAST CEREALS Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY BIOLOGICAL TREATMENT Permit Number: BV8016ID Original Permit Number: BV8016ID	EPR Reference: - Issue Date: 09/11/2005 Effective Date: 09/11/2005 Last date noted as effective: 17/11/2015 Status: SUPERCEDED
F	347m E	Operator: KELLOGG CO (GB) LTD Installation Name: WREXHAM, BREAKFAST CEREALS Process: OTHER WASTE DISPOSAL; ON SITE EFFLUENT TREATMENT PLANT DISCHARGING =>300 M CUBED PER DAY Permit Number: BV8016ID Original Permit Number: BV8016ID	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/04/2005 Status: DETERMINATION
H	398m W	Operator: Ipsen Biopharm Ltd Installation Name: Wrexham Pharmaceutical Works Process: PRODUCING PHARMACEUTICAL PRODUCTS Permit Number: SP3030LZ Original Permit Number: -	EPR Reference: - Issue Date: 13/02/2019 Effective Date: 13/02/2019 Last date noted as effective: 29/10/2024 Status: Effective
H	398m W	Operator: IPSEN BIOPHARM LTD Installation Name: WREXHAM PHARMACEUTICAL EPR/SP3030LZ Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: JP3038HV Original Permit Number: SP3030LZ	EPR Reference: - Issue Date: 19/12/2012 Effective Date: 19/12/2012 Last date noted as effective: 17/11/2015 Status: EFFECTIVE
H	398m W	Operator: IPSEN BIOPHARM LTD Installation Name: WREXHAM PHARMACEUTICAL WORKS Process: PLANT HEALTH AND BIOCIDES; PRODUCING PLANT HEALTH PRODUCTS/BIOCIDES Permit Number: SP3030LZ Original Permit Number: SP3030LZ	EPR Reference: - Issue Date: 04/12/2006 Effective Date: 04/12/2006 Last date noted as effective: 17/11/2015 Status: SUPERCEDED
H	398m W	Operator: IPSEN BIOPHARM LTD Installation Name: WREXHAM PHARMACEUTICAL WORKS Process: - Permit Number: SP3030LZ Original Permit Number: JP3038HV	EPR Reference: - Issue Date: 19/12/2012 Effective Date: 19/12/2012 Last date noted as effective: 01/12/2016 Status: EFFECTIVE

ID	Location	Details	
H	398m W	Operator: IPSEN BIOPHARM LTD Installation Name: WREXHAM PHARMACEUTICAL WORKS Process: PRODUCING PLANT HEALTH PRODUCTS OR BIOCIDES Permit Number: SP3030LZ Original Permit Number: JP3038HV	EPR Reference: - Issue Date: 19/12/2012 Effective Date: 19/12/2012 Last date noted as effective: 26/10/2020 Status: EFFECTIVE

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

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

Records within 500m	**9**

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

Features are displayed on the Current industrial land use map on **page 36 >**

ID	Location	Address	Details	
B	67m S	Petcor Limited, Unit A4 and A6 Abbey Road, Redwither Buisness Park, Wrexham, LL13 9XG	Process: Animal Feed Compound Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified. Date of enforcement: No Enforcement Notified. Comment: No Enforcement Notified.
9	278m SW	Hoya Lens UK Ltd, Fourth Road, Wrexham Industrial Estate, Wrexham, LL13 9UA	Process: Surface Cleaning Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified. Date of enforcement: No Enforcement Notified. Comment: No Enforcement Notified.
10	291m S	Clwyd Compounders Ltd, Abbey Road, Wrexham Industrial Estate, Wrexham, LL13 9UE	Process: Rubber Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified. Date of enforcement: No Enforcement Notified. Comment: No Enforcement Notified.
F	310m E	Orchid Laundry & Dry Cleaning Ltd, Unit 6, Ridley Wood Industrial Complex, Bryn Lane, Wrexham Industrial Estate, Wrexham, LL13 9UT	Process: Dry Cleaning Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified. Date of enforcement: No Enforcement Notified. Comment: No Enforcement Notified.

ID	Location	Address	Details	
G	340m SE	Kellogg Company of Great Britain Ltd, Bryn Lane, Wrexham Industrial Estate, Wrexham, LL13 9UT	Process: Combustion & Incineration Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified. Date of enforcement: No Enforcement Notified. Comment: No Enforcement Notified.
H	359m W	Intelicoat Technologies, Wrexham Industrial Estate, Wrexham, Ll13 9UF	Process: Coating Processes Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified. Date of enforcement: No Enforcement Notified. Comment: No Enforcement Notified.
H	361m W	Coveris (Transcontinental AC UK), Ash Road North, Wrexham Industrial Estate, Wrexham, LL13 9UF	Process: Coating Processes; Manufacture of Coating Powder Status: Current Permit Permit Type: Part B/A2	Enforcement: No Enforcement Notified. Date of enforcement: No Enforcement Notified. Comment: No Enforcement Notified.
H	367m W	Exopack Advanced Coatings, Ash Road North, Wrexham Industrial Estate, Wrexham, LL13 9UF	Process: Coating Processes Status: Historical Permit Permit Type: Part A2	Enforcement: No Enforcement Notified. Date of enforcement: No Enforcement Notified. Comment: No Enforcement Notified.
13	481m S	K D Products Ltd, Redwither Tower, Redwither Industrial Estate, Wrexham, LL13 9UE	Process: Timber Manufacture Status: Historical Permit Permit Type: Part B	Enforcement: Enforcement Notified Date of enforcement: 18/06/2007 Comment: Manufacture of timber and wood based products.

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	**0**

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m	5

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

Features are displayed on the Current industrial land use map on **page 36 >**

ID	Location	Address	Details	
E	308m SE	BRYNROADWREXHAMINDEST,WREXHAMINDEST,WREXHAMIN	Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: CM0097401 Permit Version: 3 Receiving Water: UN-NAMED TRIB. OF DEE	Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV Issue date: 06/07/1994 Effective Date: 06/07/1994 Revocation Date: 09/11/2005
E	308m SE	BRYNROADWREXHAMINDEST,WREXHAMINDEST,WREXHAMIN	Effluent Type: UNSPECIFIED Permit Number: CM0097401 Permit Version: 1 Receiving Water: UN-NAMED TRIB. OF DEE	Status: REVOKED - UNSPECIFIED Issue date: 16/05/1984 Effective Date: 16/05/1984 Revocation Date: 29/09/1985
E	308m SE	BRYNROADWREXHAMINDEST,WREXHAMINDEST,WREXHAMIN	Effluent Type: UNSPECIFIED Permit Number: CM0097401 Permit Version: 2 Receiving Water: UN-NAMED TRIB. OF DEE	Status: REVOKED - UNSPECIFIED Issue date: 16/05/1984 Effective Date: 30/09/1985 Revocation Date: 05/07/1994
I	472m W	JCBTRANSMISSIONSLTDWREXHAMINDE,JCBTRANSMISSIONSLTDWREXHAMIN,WREXHAMINDESTATEWREXHAM,WREXHAM	Effluent Type: UNSPECIFIED Permit Number: CM0097602 Permit Version: 1 Receiving Water: UN-NAMED TRIB. OF DEE	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 25/07/1984 Effective Date: 25/07/1984 Revocation Date: 14/07/1994
I	472m W	JCBTRANSMISSIONSLTDWREXHAMINDE,JCBTRANSMISSIONSLTDWREXHAMIN,WREXHAMINDESTATEWREXHAM,WREXHAM	Effluent Type: UNSPECIFIED Permit Number: CM0097601 Permit Version: 1 Receiving Water: UN-NAMED TRIB. OF DEE	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 25/07/1984 Effective Date: 25/07/1984 Revocation Date: 09/03/1993

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m	0

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

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

4.15 Pollutant release to public sewer

Records within 500m	0

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m	0

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

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

4.17 List 2 Dangerous Substances

Records within 500m	1

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

Features are displayed on the Current industrial land use map on **page 36 >**

ID	Location	Name	Status	Receiving Water	Authorised Substances
5	207m SW	Hoya Lens Uk Ltd (new Factory) Abbey Road, Wrexham Ind Est	Not Active	-	Chromium, Copper, Lead, Nickel, Zinc

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	5

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

Features are displayed on the Current industrial land use map on **page 36 >**

ID	Location	Details	
7	236m W	Incident Date: 19/12/2013 Incident Identification: 1184930 Pollutant: Inorganic Chemicals/Products Pollutant Description: Other Inorganic Chemical or Product	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

ID	Location	Details	
G	339m SE	Incident Date: 07/02/2014 Incident Identification: 1202822 Pollutant: Contaminated Water Pollutant Description: Firefighting Run-Off	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	339m SE	Incident Date: 08/01/2014 Incident Identification: 1191799 Pollutant: Contaminated Water Pollutant Description: Firefighting Run-Off	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
11	407m E	Incident Date: 30/04/2015 Incident Identification: 1333634 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
I	483m W	Incident Date: 25/07/2003 Incident Identification: 176604 Pollutant: Oils and Fuel Pollutant Description: Cutting Oils	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m	**0**

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

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

4.20 Pollution inventory waste transfers

Records within 500m	**0**

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

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

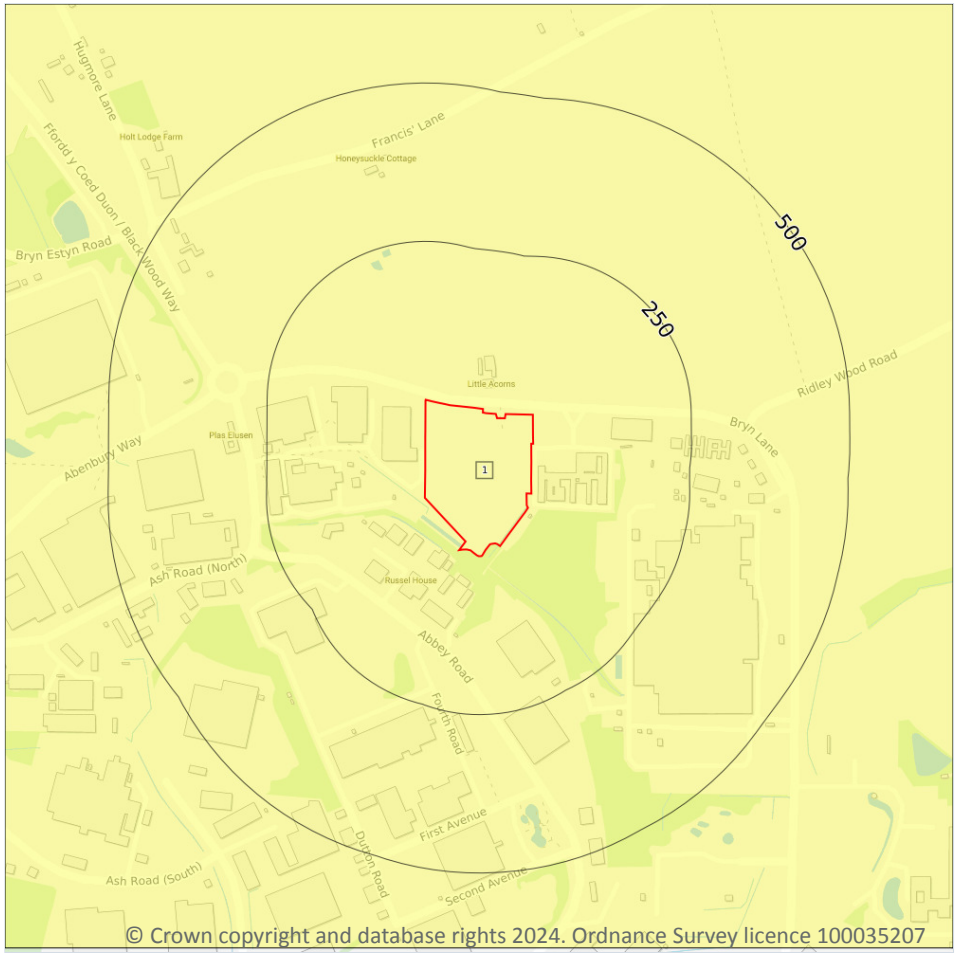
4.21 Pollution inventory radioactive waste

Records within 500m	0

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

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

5 Hydrogeology - Superficial aquifer



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive
- Unknown

5.1 Superficial aquifer

Records within 500m	1

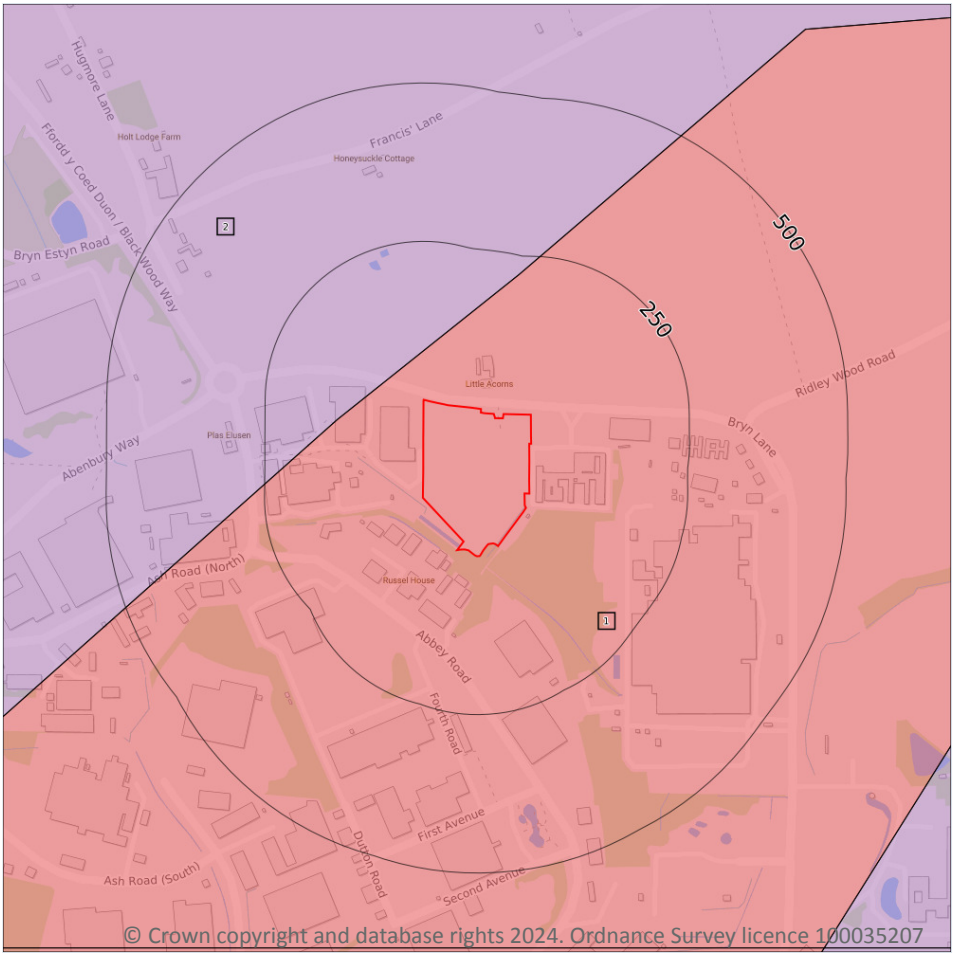
Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 51 >**

ID	Location	Designation	Description
1	**On site**	**Secondary Undifferentiated**	**Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type**

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

Bedrock aquifer



5.2 Bedrock aquifer

Records within 500m	2

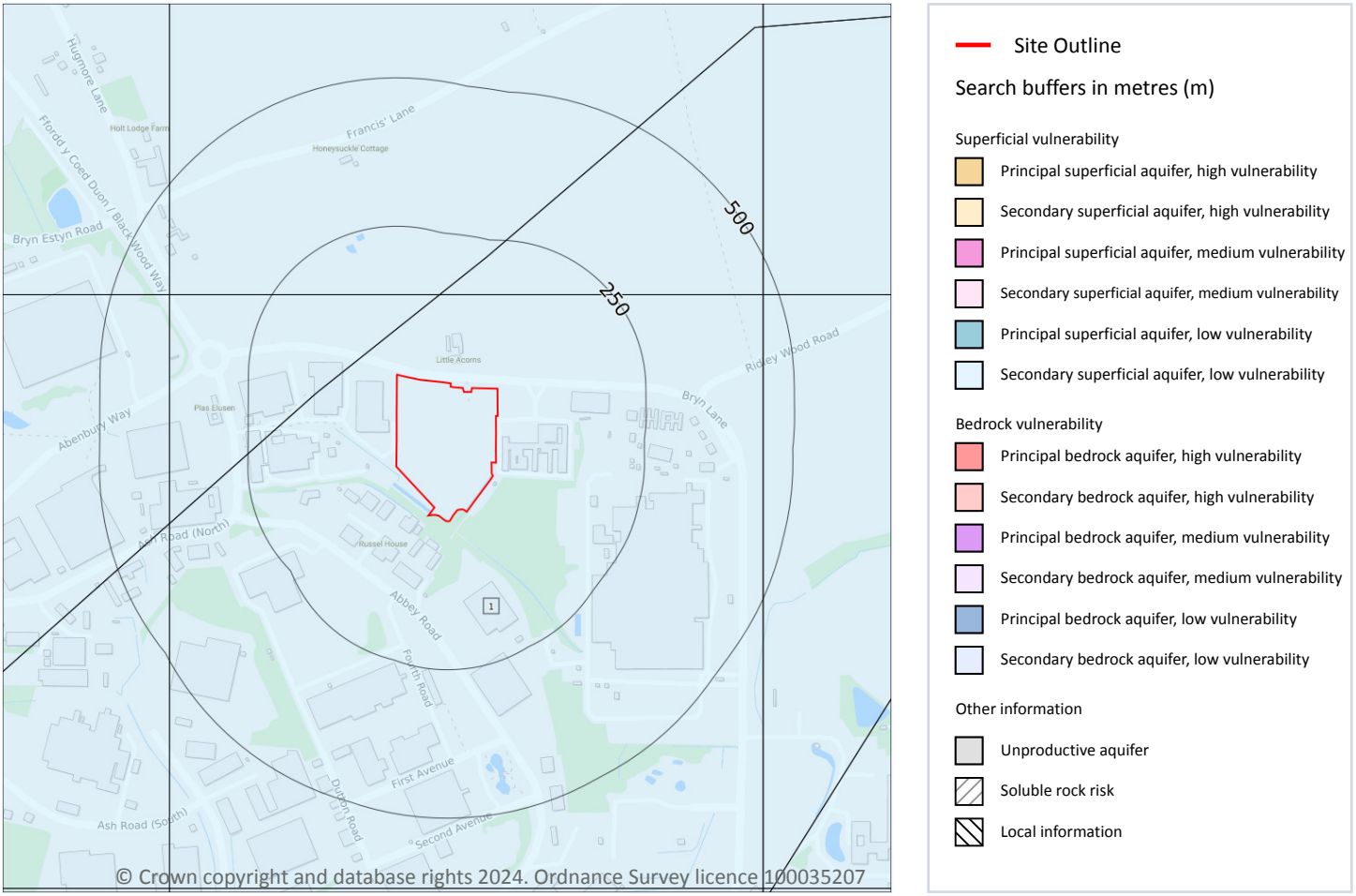
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 52 >**

ID	Location	Designation	Description
1	**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**
2	61m NW	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

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

Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m	1

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

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

Features are displayed on the Groundwater vulnerability map on **page 54 >**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	**Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year**	**Vulnerability: Low Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low**	**Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures**

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0

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

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

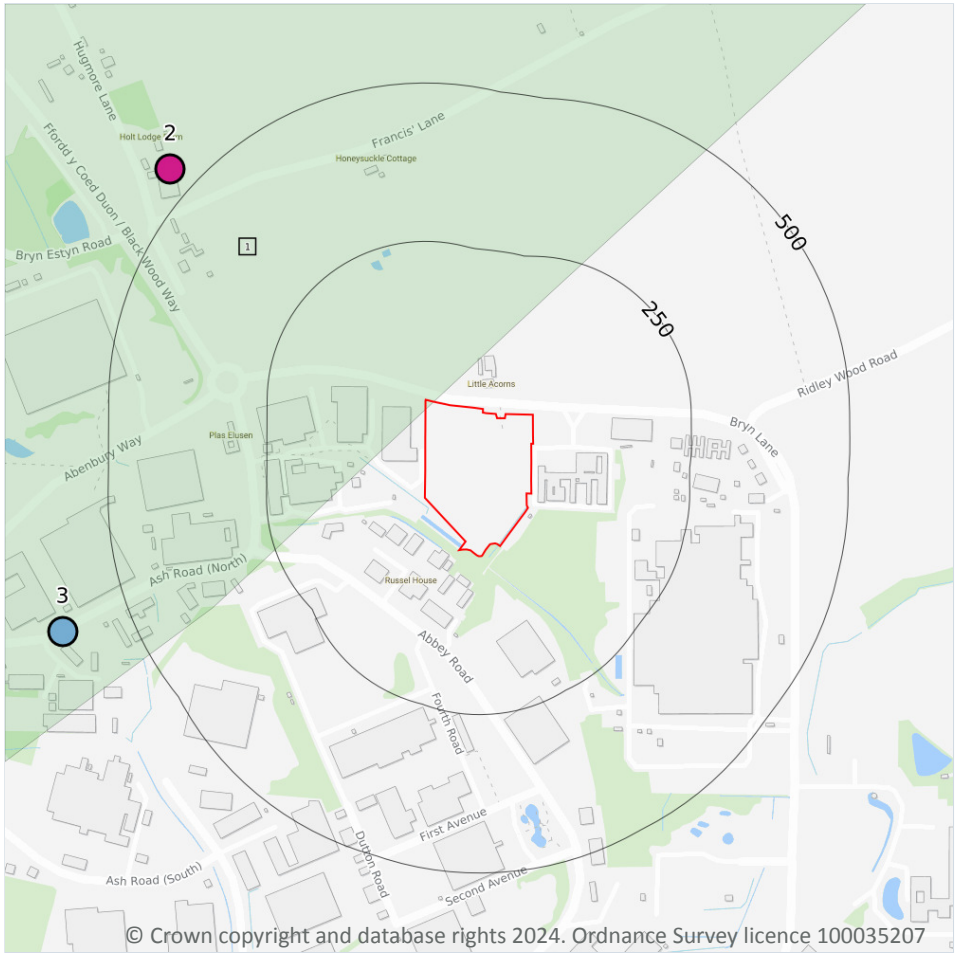
5.5 Groundwater vulnerability- local information

Records on site	0

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

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

Abstractions and Source Protection Zones





5.6 Groundwater abstractions

Records within 2000m	15

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 56 >**

ID	Location	Details	
2	544m NW	Status: Historical Licence No: 24/67/9/0130 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: WELL Data Type: Point Name: Taylor Easting: 337980 Northing: 351230	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 14/06/1968 Expiry Date: - Issue No: 100 Version Start Date: 14/06/1968 Version End Date: -
-	1432m S	Status: Historical Licence No: 24/67/7/0213 Details: Process water Direct Source: EAW Groundwater Point: 144 M DEEP, 200MM DIA BH AW2 Data Type: Point Name: Calypso Soft Drinks Ltd Easting: 338360 Northing: 349190	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 10/09/1998 Expiry Date: 10/09/2001 Issue No: 100 Version Start Date: 10/09/1998 Version End Date: -
-	1432m S	Status: Historical Licence No: 24/67/7/0222 Details: Process Water Direct Source: EAW Groundwater Point: 144 M DEEP, 200MM DIA BH AW2 Data Type: Point Name: Calypso Soft Drinks Ltd Easting: 338360 Northing: 349190	Annual Volume (m^3): 131400 Max Daily Volume (m^3): 600 Original Application No: - Original Start Date: 10/09/2001 Expiry Date: 31/03/2012 Issue No: 1 Version Start Date: 10/09/2001 Version End Date: -
-	1443m S	Status: Historical Licence No: WA/067/0007/006 Details: Process Water Direct Source: EAW Groundwater Point: SPECTRUM BUSINESS PARK BOREHOLE AW2 Data Type: Point Name: Calypso Soft Drinks Ltd Easting: 338350 Northing: 349180	Annual Volume (m^3): 131400 Max Daily Volume (m^3): 600 Original Application No: - Original Start Date: 01/04/2012 Expiry Date: 31/03/2022 Issue No: 1 Version Start Date: 01/04/2012 Version End Date: -
-	1545m S	Status: Historical Licence No: 24/67/7/0213 Details: Process water Direct Source: EAW Groundwater Point: 144M DEEP, 150MM DIA., OB1 Data Type: Point Name: Calypso Soft Drinks Ltd Easting: 338240 Northing: 349090	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 10/09/1998 Expiry Date: 10/09/2001 Issue No: 100 Version Start Date: 10/09/1998 Version End Date: -

ID	Location	Details	
-	1545m S	Status: Historical Licence No: 24/67/7/0222 Details: Process Water Direct Source: EAW Groundwater Point: 144M DEEP, 150MM DIA., OB1 Data Type: Point Name: Calypso Soft Drinks Ltd Easting: 338240 Northing: 349090	Annual Volume (m^3): 131400 Max Daily Volume (m^3): 600 Original Application No: - Original Start Date: 10/09/2001 Expiry Date: 31/03/2012 Issue No: 1 Version Start Date: 10/09/2001 Version End Date: -
-	1545m S	Status: Historical Licence No: WA/067/0007/006 Details: Process Water Direct Source: EAW Groundwater Point: 144M DEEP, 150MM DIA., OB1 Data Type: Point Name: Calypso Soft Drinks Ltd Easting: 338240 Northing: 349090	Annual Volume (m^3): 131400 Max Daily Volume (m^3): 600 Original Application No: - Original Start Date: 01/04/2012 Expiry Date: 31/03/2022 Issue No: 1 Version Start Date: 01/04/2012 Version End Date: -
-	1701m S	Status: Historical Licence No: 24/67/7/0213 Details: Process water Direct Source: EAW Groundwater Point: 144M DEEP, 150MM DIA. BOREHOLE AW1 Data Type: Point Name: Calypso Soft Drinks Ltd Easting: 338190 Northing: 348940	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 10/09/1998 Expiry Date: 10/09/2001 Issue No: 100 Version Start Date: 10/09/1998 Version End Date: -
-	1701m S	Status: Historical Licence No: 24/67/7/0222 Details: Process Water Direct Source: EAW Groundwater Point: 144M DEEP, 150MM DIA. BOREHOLE AW1 Data Type: Point Name: Calypso Soft Drinks Ltd Easting: 338190 Northing: 348940	Annual Volume (m^3): 131400 Max Daily Volume (m^3): 600 Original Application No: - Original Start Date: 10/09/2001 Expiry Date: 31/03/2012 Issue No: 1 Version Start Date: 10/09/2001 Version End Date: -
-	1701m S	Status: Historical Licence No: WA/067/0007/006 Details: Process Water - Medium Direct Source: Underground strata Point: - Data Type: Point Name: - Easting: 338190 Northing: 348940	Annual Volume (m^3): 131400 Max Daily Volume (m^3): 600 Original Application No: - Original Start Date: 02/10/2016 Expiry Date: 30/03/2027 Issue No: - Version Start Date: - Version End Date: -

ID	Location	Details	
-	1701m S	Status: Historical Licence No: WA/067/0007/006 Details: Process Water Direct Source: EAW Groundwater Point: 144M DEEP, 150MM DIA. BOREHOLE AW1 Data Type: Point Name: Calypso Soft Drinks Ltd Easting: 338190 Northing: 348940	Annual Volume (m^3): 131400 Max Daily Volume (m^3): 600 Original Application No: - Original Start Date: 01/04/2012 Expiry Date: 31/03/2022 Issue No: 1 Version Start Date: 01/04/2012 Version End Date: -
-	1861m E	Status: Historical Licence No: 24/67/7/0171 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: BOREHOLE Data Type: Point Name: Davies Easting: 340410 Northing: 350660	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 10/01/1969 Expiry Date: - Issue No: 100 Version Start Date: 31/01/1994 Version End Date: -
-	1871m E	Status: Historical Licence No: 24/67/7/0107 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: WELL Data Type: Point Name: Evans Easting: 340420 Northing: 350670	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 25/10/1966 Expiry Date: - Issue No: 100 Version Start Date: 25/10/1966 Version End Date: -
-	1934m NW	Status: Active Licence No: 24/67/7/0197 Details: Mineral Washing - Low Direct Source: Carboniferous strata at Llan y Pwll, Wrexham Point: - Data Type: Point Name: - Easting: 336870 Northing: 352070	Annual Volume (m^3): 195180 Max Daily Volume (m^3): 533.28 Original Application No: - Original Start Date: 03/12/2021 Expiry Date: - Issue No: - Version Start Date: - Version End Date: -
-	1934m NW	Status: Historical Licence No: 24/67/7/0197 Details: Mineral Washing Direct Source: EAW Groundwater Point: BOREHOLE Data Type: Point Name: Lafarge Tarmac Trading Limited Easting: 336870 Northing: 352070	Annual Volume (m^3): 195180 Max Daily Volume (m^3): 533.28 Original Application No: - Original Start Date: 25/08/1982 Expiry Date: - Issue No: 103 Version Start Date: 27/03/2014 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	1

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 56 >**

ID	Location	Details	
3	610m W	Status: Historical Licence No: 24/67/7/0178 Details: Non-Evaporative Cooling Direct Source: EAW Surface Water Point: TRIBUTARY OF REDWITHER BROOK Data Type: Point Name: Caparo Wire Ltd Easting: 337810 Northing: 350500	Annual Volume (m^3): 9955.74 Max Daily Volume (m^3): 27.276 Original Application No: - Original Start Date: 12/05/1972 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2007 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	0

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

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

5.9 Source Protection Zones

Records within 500m	1

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 56 >**

ID	Location	Type	Description
1	**On site**	**3**	**Total catchment**

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

5.10 Source Protection Zones (confined aquifer)

Records within 500m	0

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

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

6 Hydrology



6.1 Water Network (OS MasterMap)

Records within 250m	10

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

Features are displayed on the Hydrology map on **page 62 >**

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

ID	Location	Type of water feature	Ground level	Permanence	Name
B	7m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	8m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	21m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	27m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	64m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	65m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
3	100m SW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
E	173m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
G	244m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	**8**

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

Features are displayed on the Hydrology map on **page 62 >**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	1

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

Features are displayed on the Hydrology map on **page 62 >**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	**On site**	**River WB catchment**	**Dee - Chester Weir to Ceiriog**	**GB111067057080**	**Dee Lower Chester Weir to Ceiriog**	**Dee**

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

6.4 WFD Surface water bodies

Records identified	1

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

Features are displayed on the Hydrology map on **page 62 >**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	3343m NE	River	Dee - Chester Weir to Ceiriog	GB111067057080	Moderate	Fail	Moderate	2016

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

6.5 WFD Groundwater bodies

Records on site	1

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place.

Features are displayed on the Hydrology map on **page 62 >**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
2	**On site**	**Dee Permo-Triassic Sandstone**	**GB41101G202400**	**Poor**	**Poor**	**Good**	**2019**

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

7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m	0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

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

7.2 Historical Flood Events

Records within 250m	0

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

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

7.3 Flood Defences

Records within 250m	0

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	0

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

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

7.5 Flood Storage Areas

Records within 250m	0

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

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

River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0

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

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

7.7 Flood Zone 3

Records within 50m	0

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

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

8 Surface water flooding



Site Outline
Search buffers in metres (m)

1 in 1000 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site	**1 in 30 year, 0.3m - 1.0m**
Highest risk within 50m	**1 in 30 year, Greater than 1.0m**

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

Features are displayed on the Surface water flooding map on **page 69 >**

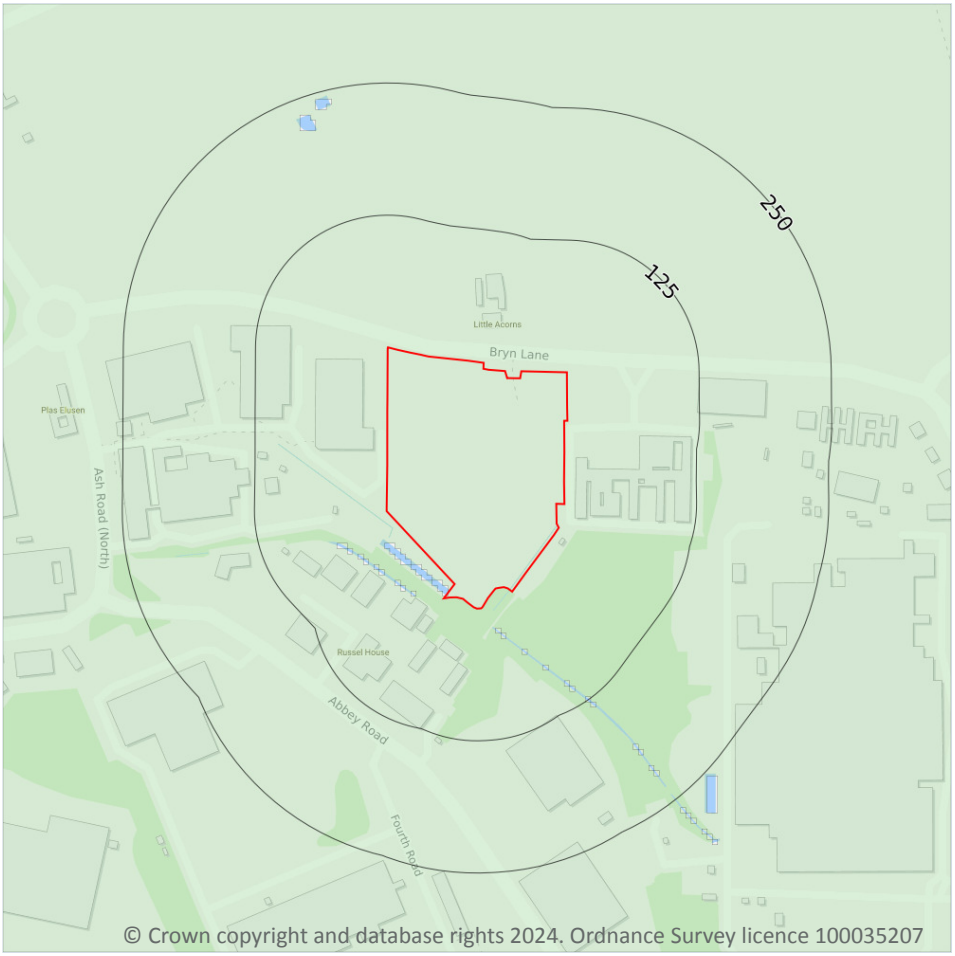
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Greater than 1.0m
1 in 250 year	Greater than 1.0m
1 in 100 year	Greater than 1.0m
1 in 30 year	Between 0.3m and 1.0m

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



Site Outline

Search buffers in metres (m)

High

Moderate - High

Moderate

Low

Negligible

9.1 Groundwater flooding

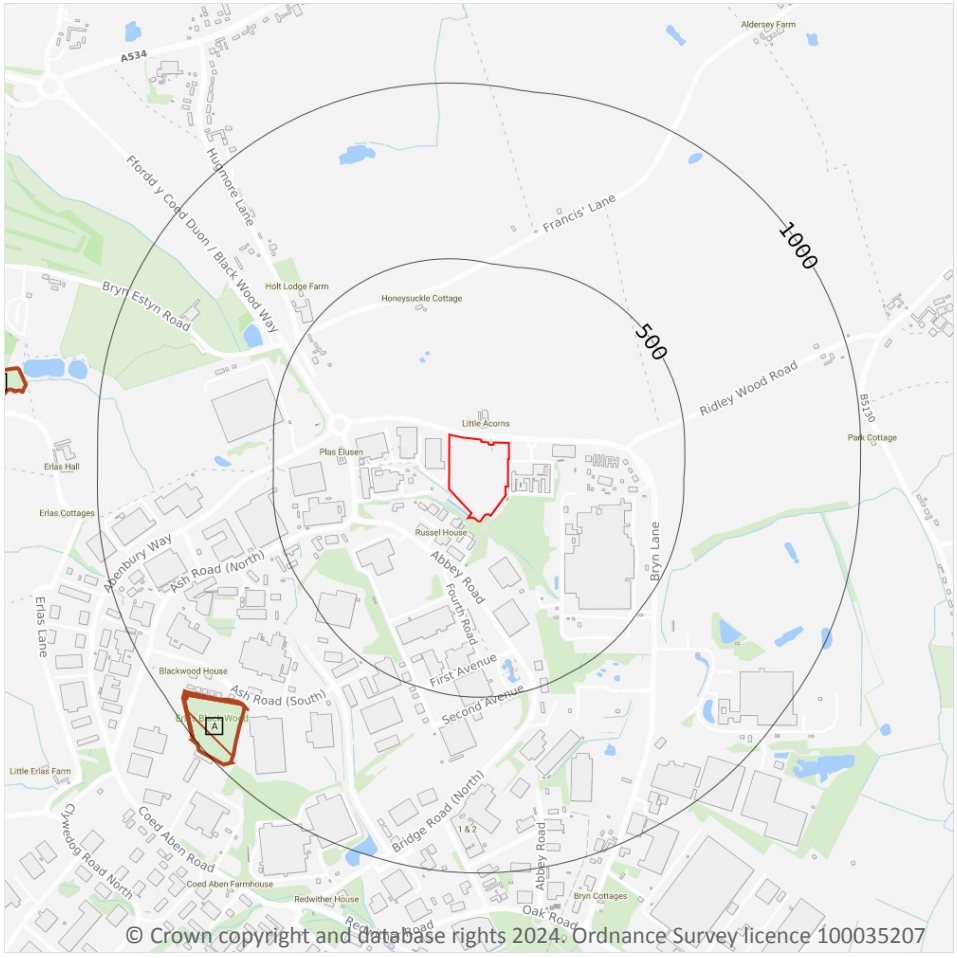
Highest risk on site	**Low**
Highest risk within 50m	**Low**

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

Features are displayed on the Groundwater flooding map on **page 71 >**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



Site Outline

Search buffers in metres (m)

Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m	0

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m	0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m	0

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

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

10.7 Designated Ancient Woodland

Records within 2000m	8

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

Features are displayed on the Environmental designations map on **page 72 >**

ID	Location	Name	Woodland Type
A	832m SW	Unknown	Restored Ancient Woodland Site
A	832m SW	Unknown	Restored Ancient Woodland Site
1	1213m W	Unknown	Restored Ancient Woodland Site
-	1338m W	Unknown	Ancient Semi Natural Woodland
-	1533m SW	Unknown	Ancient Semi Natural Woodland
-	1541m SW	Unknown	Ancient Semi Natural Woodland
-	1749m N	Unknown	Ancient Semi Natural Woodland
-	1823m N	Unknown	Ancient Semi Natural Woodland

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

10.8 Biosphere Reserves

Records within 2000m	0

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

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

10.9 Forest Parks

Records within 2000m	0

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

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

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

10.11 Green Belt

Records within 2000m	0

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

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

10.12 Proposed Ramsar sites

Records within 2000m	0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

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

This data is sourced from Natural England.

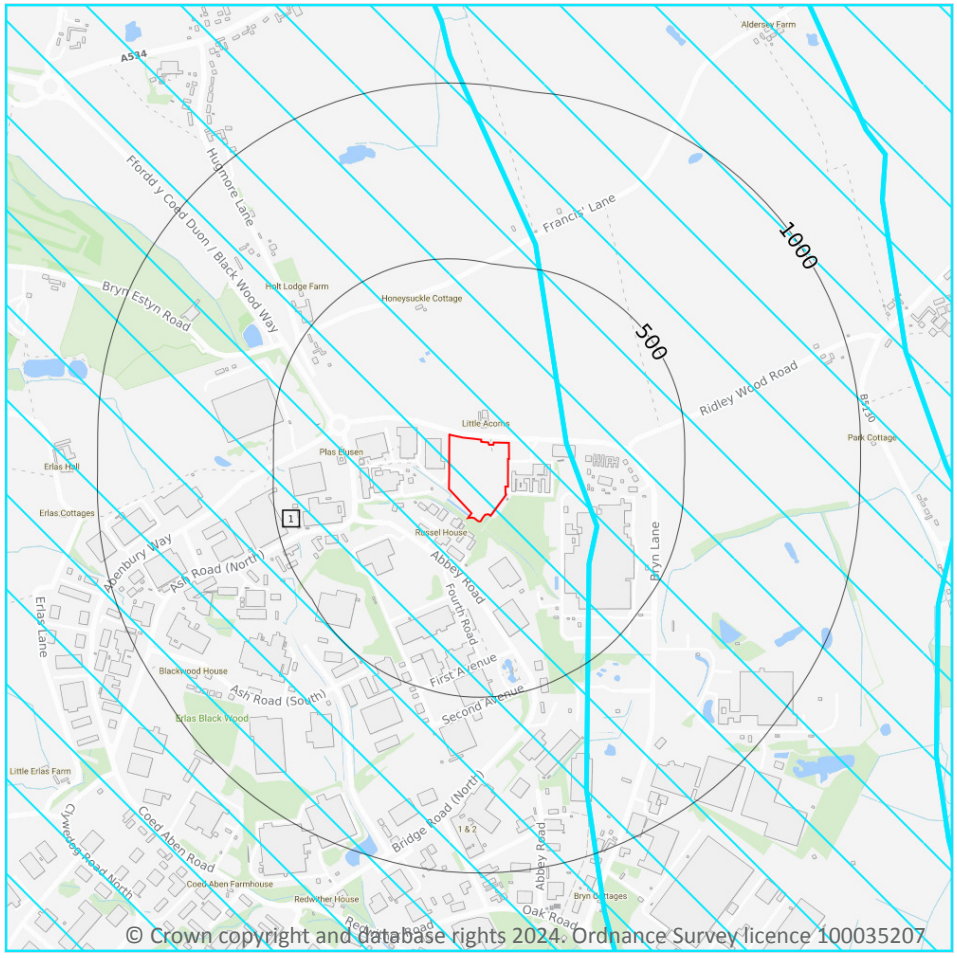
10.16 Nitrate Vulnerable Zones

Records within 2000m	0

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

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

SSSI Impact Zones and Units



10.17 SSSI Impact Risk Zones

Records on site	1

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

Features are displayed on the SSSI Impact Zones and Units map on **page 77 >**

ID	Location	Type of developments requiring consultation
1	On site	**Infrastructure - Airports, helipads and other aviation proposals.** **Air pollution - Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 750m², manure stores > 3500t).** **Combustion - General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	0

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

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

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m	0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

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

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

11.3 National Parks

Records within 250m	0

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

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

11.4 Listed Buildings

Records within 250m	0

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

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

11.5 Conservation Areas

Records within 250m	0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m	0

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

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

11.7 Registered Parks and Gardens

Records within 250m	0

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

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

12 Agricultural designations



Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Timber felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m	2

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

Features are displayed on the Agricultural designations map on **page 81 >**

ID	Location	Classification	Description
1	**On site**	**Grade 3b**	**Moderate quality agricultural land**
4	130m SE	Grade 3b	Moderate quality agricultural land

This data is sourced from Natural Resources Wales.

12.2 Open Access Land

Records within 250m	0

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

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

12.3 Tree Felling Licences

Records within 250m	0

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m	0

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

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

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

This data is sourced from Natural England.

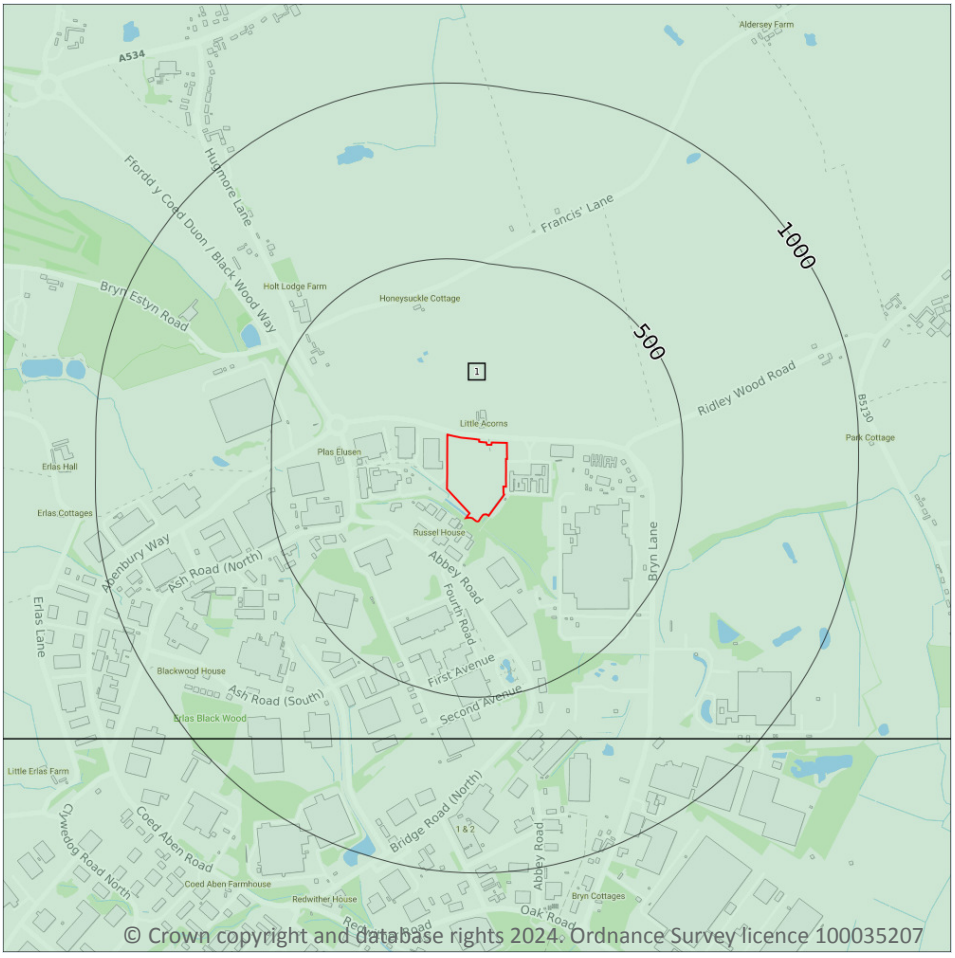
13.4 Limestone Pavement Orders

Records within 250m	0

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



14.1 10k Availability

Records within 500m	1

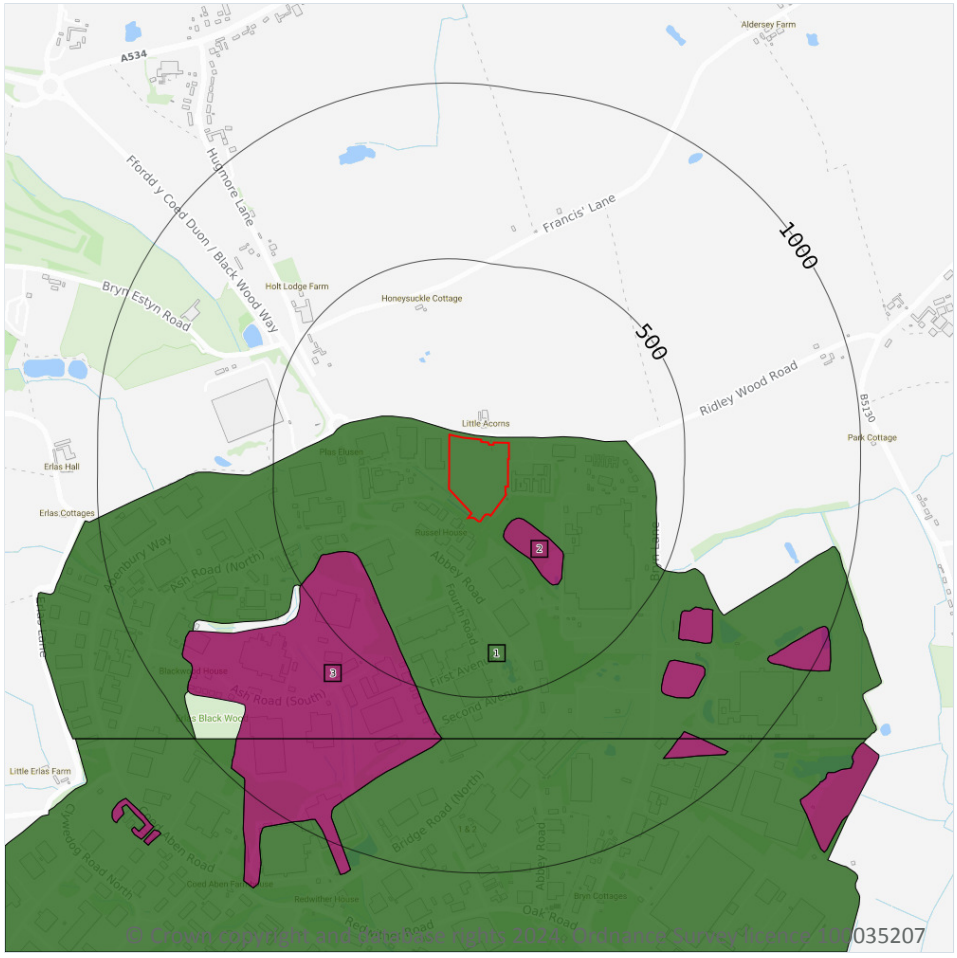
An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 84 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**No coverage**	**SJ35SE**

This data is sourced from the British Geological Survey.

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



Site Outline

Search buffers in metres (m)

- Reclaimed ground
- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

14.2 Artificial and made ground (10k)

Records within 500m	3

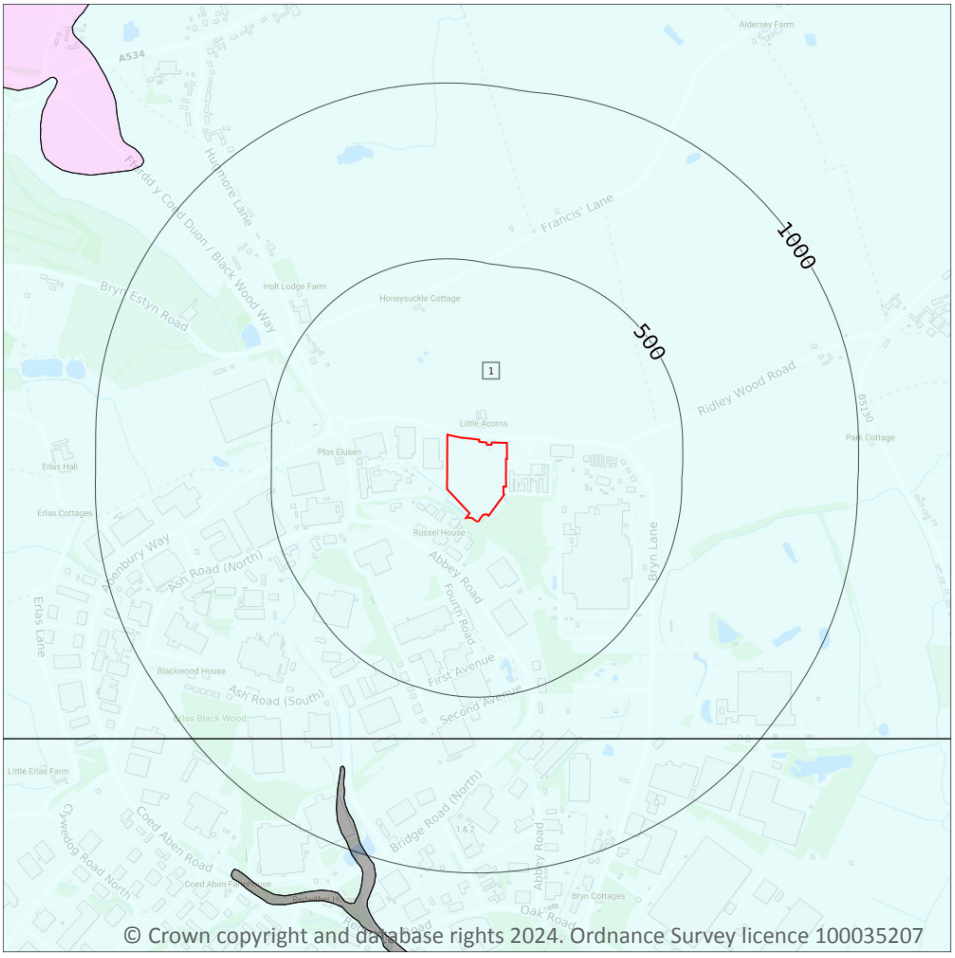
Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 85 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**LSGR-UKNOWN**	**Landscaped Ground (Undivided)**	**Unknown/unclassified Entry**
2	55m SE	MGR-UKNOWN	Made Ground (Undivided)	Unknown/unclassified Entry
3	323m SW	MGR-UKNOWN	Made Ground (Undivided)	Unknown/unclassified Entry

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m	1

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

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 86 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TILL-DMTN**	**Till - Diamicton**	**Diamicton**

This data is sourced from the British Geological Survey.

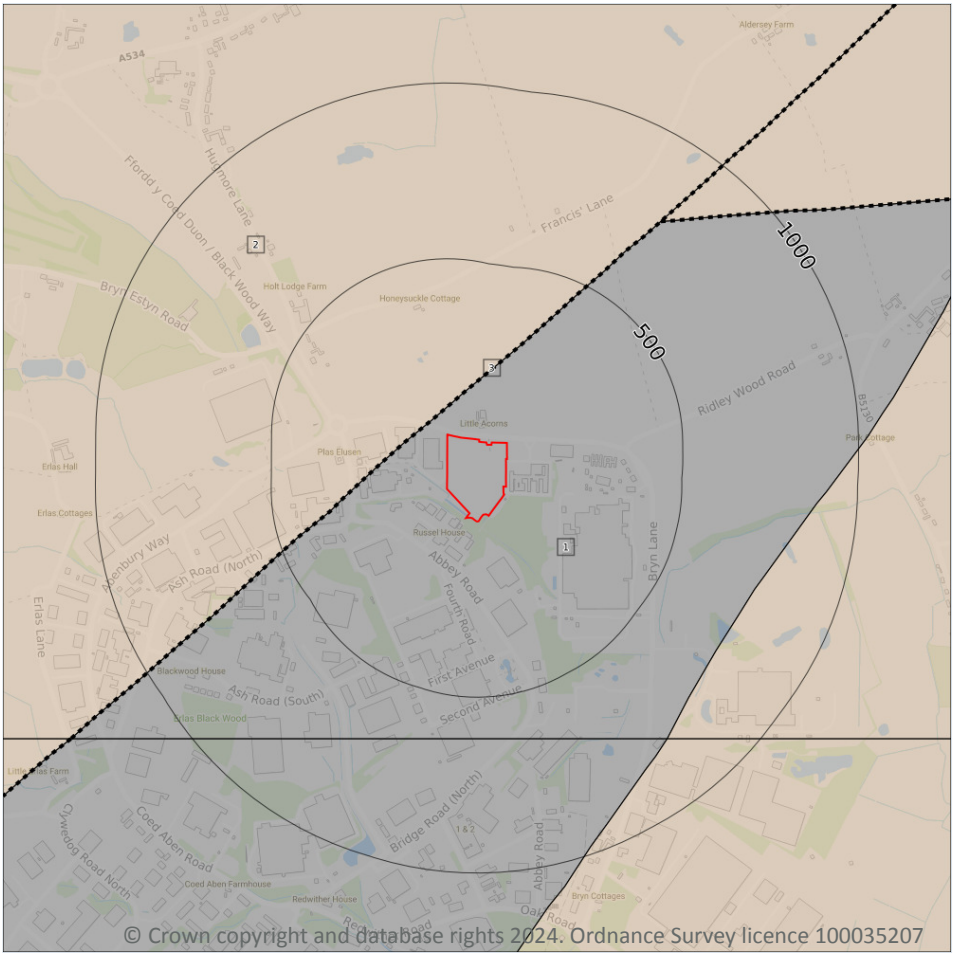
14.4 Landslip (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m	2

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

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 88 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**SAL-MDST**	**Salop Formation - Mudstone**	**Cisuralian Epoch - Westphalian D Sub-age**
2	60m NW	KNSF-SDST	Kinnerton Sandstone Formation - Sandstone	Early Triassic Epoch

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m	1

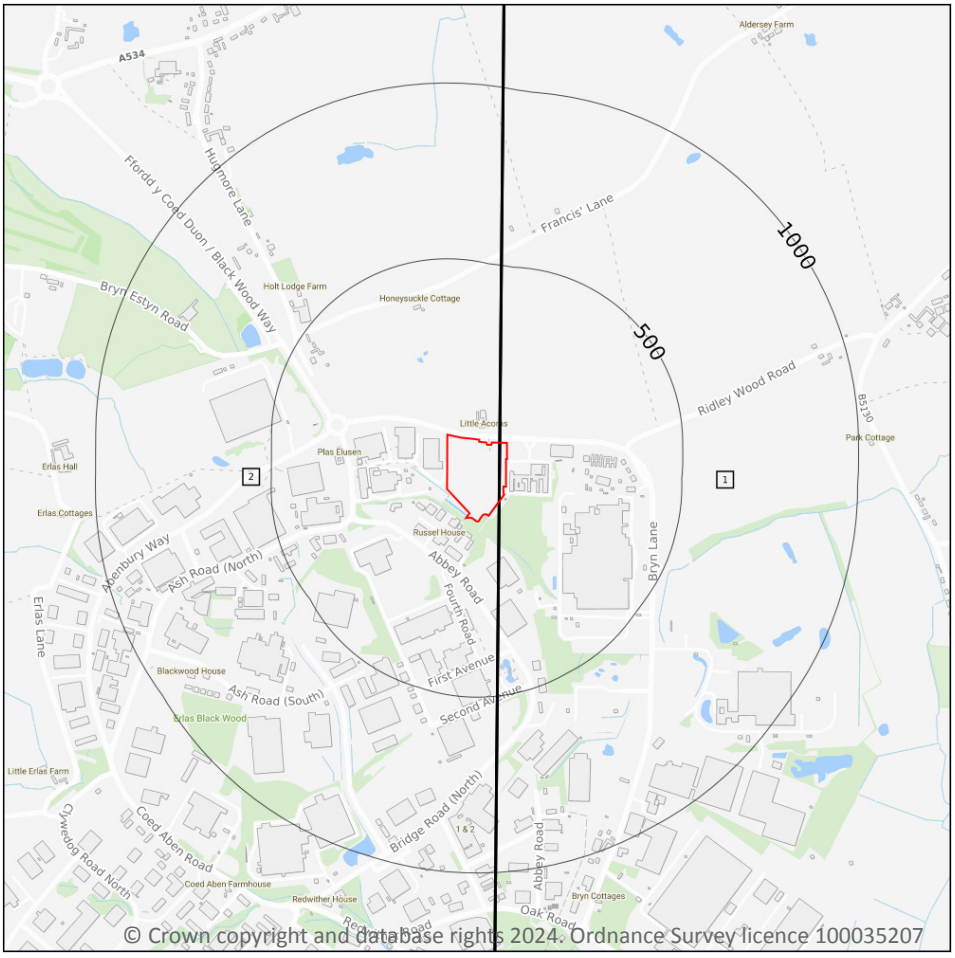
Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 88 >**

ID	Location	Category	Description
3	60m NW	FAULT	Normal fault, inferred

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	2

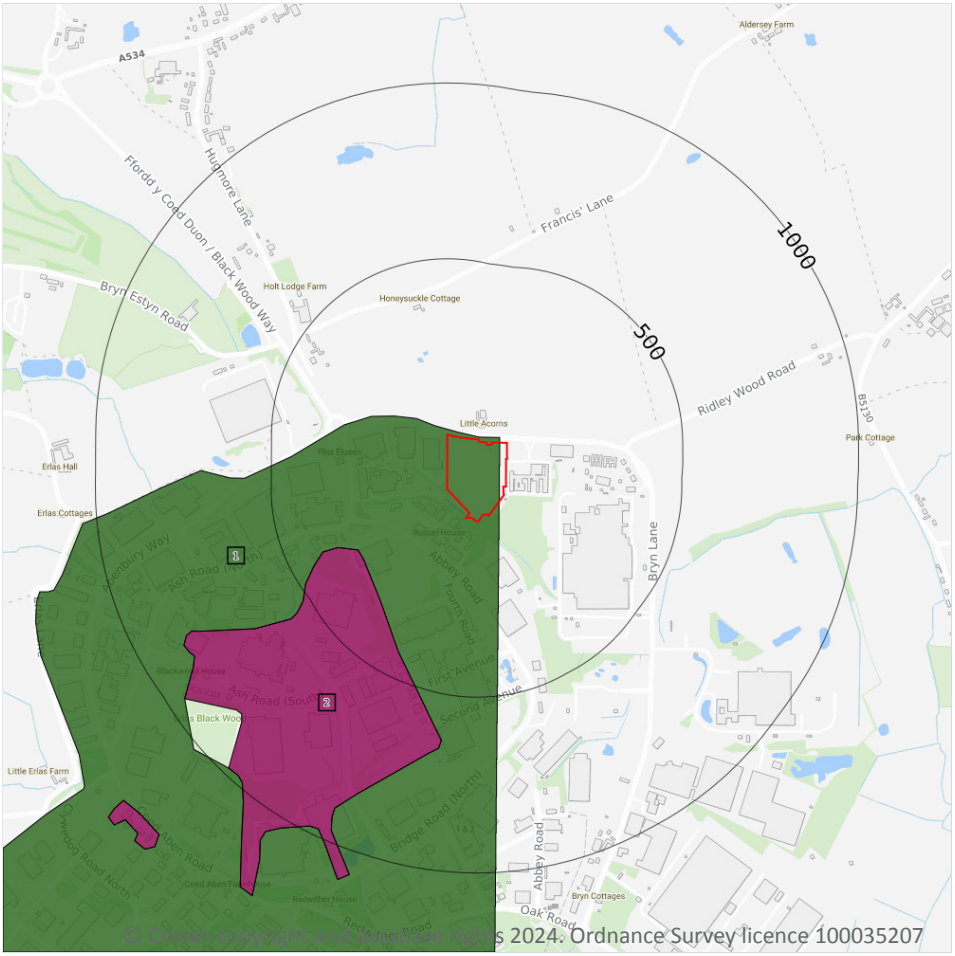
An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme. Where 50k data is not available, this area has been filled in with 625k scale data.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 90 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	Full	EW122_nantwich_v4
2	On site	Full	Full	Full	Full	EW121_wrexham_v4

This data is sourced from the British Geological Survey.

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



15.2 Artificial and made ground (50k)

Records within 500m	2

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

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 91 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**LSGR-ARTGR**	**LANDSCAPED GROUND (UNDIVIDED)**	**ARTIFICIALLY MODIFIED GROUND**
2	307m SW	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

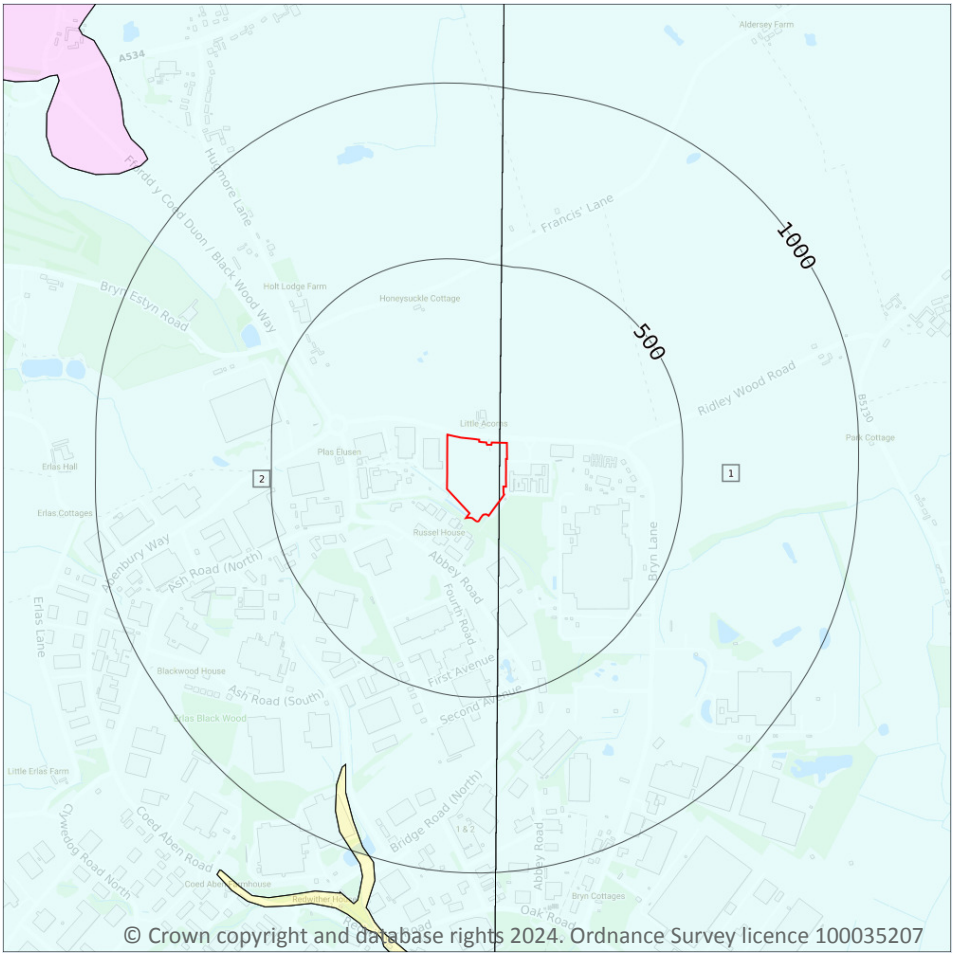
Records within 50m	1

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Mixed**	**Very High**	**Low**

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m **2**

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 93 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TILLD-DMTN**	**TILL, DEVENSIAN**	**DIAMICTON**
2	**On site**	**TILLD-DMTN**	**TILL, DEVENSIAN**	**DIAMICTON**

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Mixed**	**High**	**Low**

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

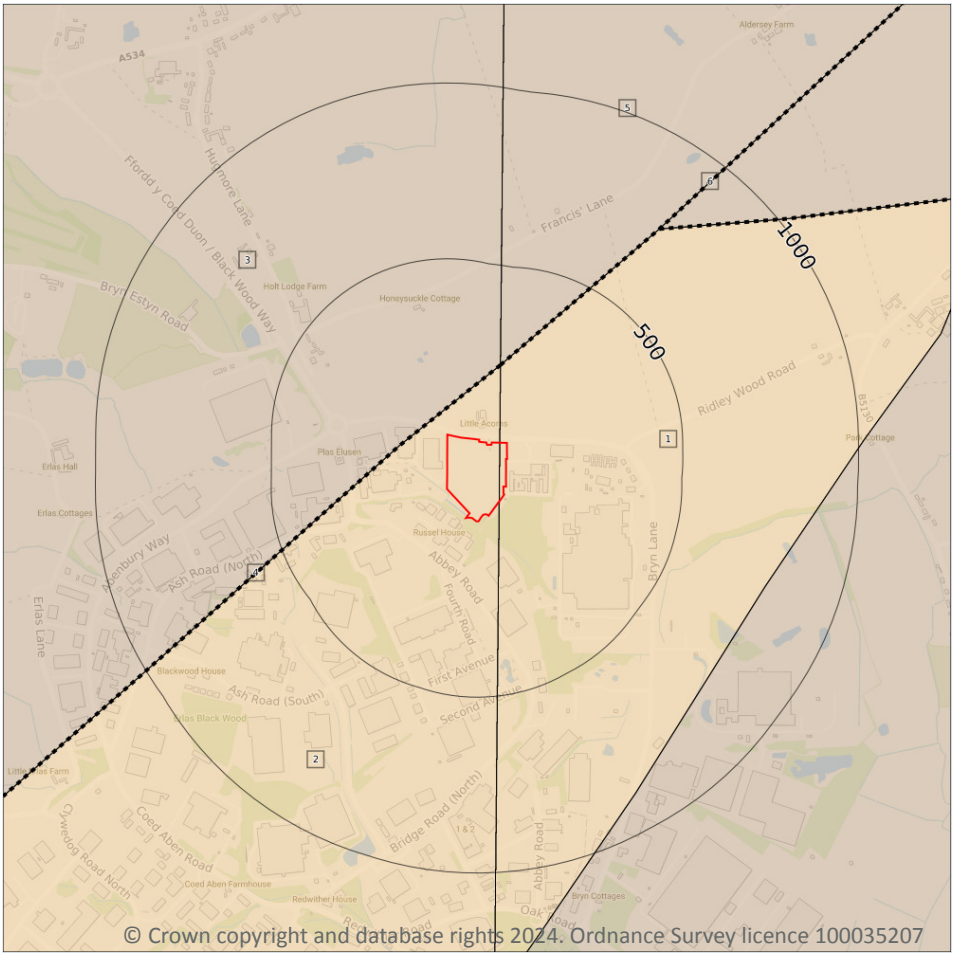
15.7 Landslip permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



15.8 Bedrock geology (50k)

Records within 500m	4

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 95 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**SAL-MDSC**	**SALOP FORMATION - MUDSTONE, SANDSTONE AND CONGLOMERATE**	**WESTPHALIAN**
2	**On site**	**SAL-MDSC**	**SALOP FORMATION - MUDSTONE, SANDSTONE AND CONGLOMERATE**	**WESTPHALIAN**
3	61m NW	KNSF-SDST	KINNERTON SANDSTONE FORMATION - SANDSTONE	-

ID	Location	LEX Code	Description	Rock age
5	221m N	KNSF-SDST	KINNERTON SANDSTONE FORMATION - SANDSTONE	-

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	**1**

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

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

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	**2**

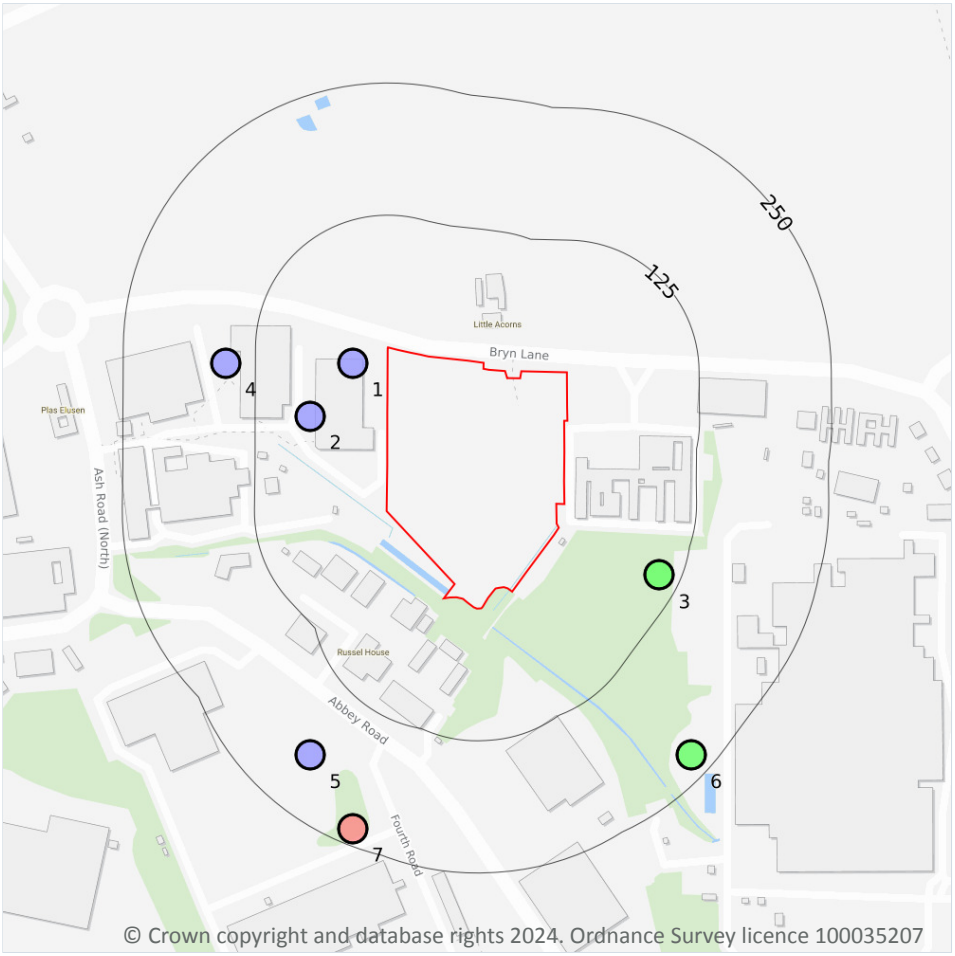
Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 95 >**

ID	Location	Category	Description
4	61m NW	FAULT	Fault, inferred, displacement unknown
6	221m N	FAULT	Fault, inferred, displacement unknown

This data is sourced from the British Geological Survey.

16 Boreholes



Site Outline

Search buffers in metres (m)

- Confidential
- 0 - 10m
- 10 - 30m
- 30m+
- Unknown

16.1 BGS Boreholes

Records within 250m **7**

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

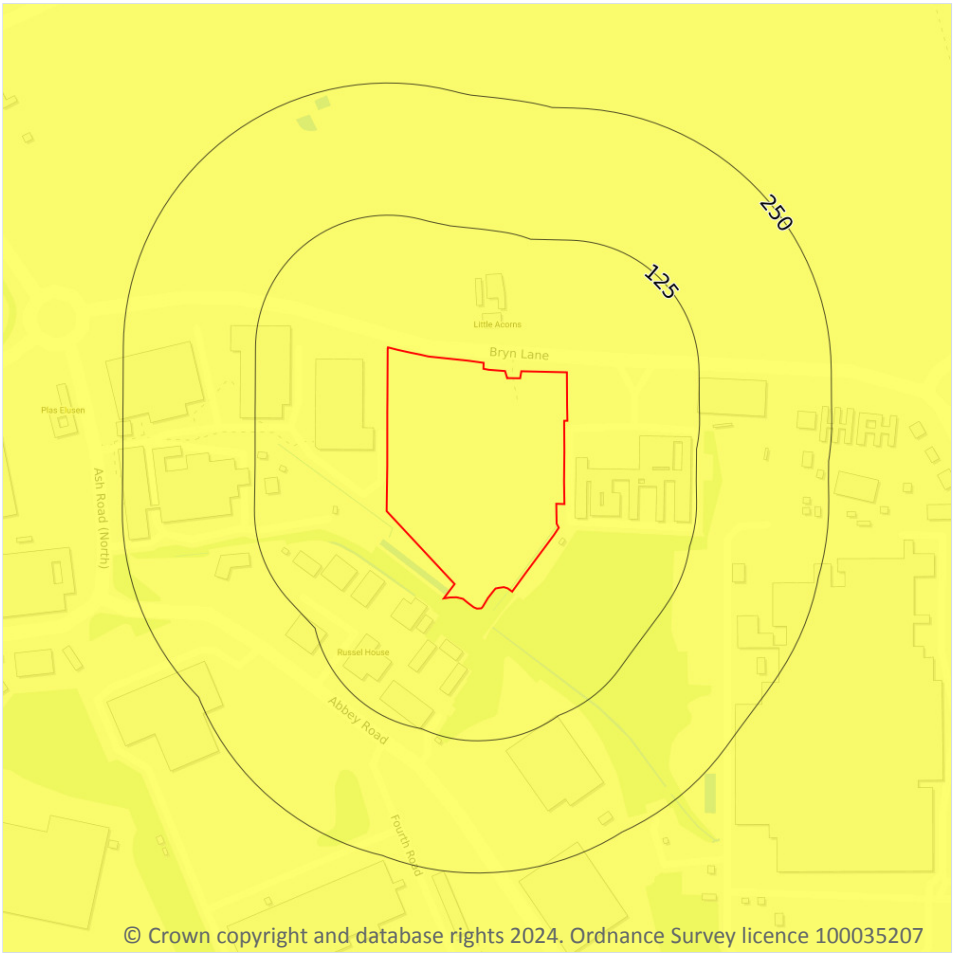
Features are displayed on the Boreholes map on **page 97 >**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	33m NW	338350 350850	RIDLEY FARM 2	5.03	N	154675 ↗
2	73m W	338310 350800	RIDLEY FARM 3	5.03	N	154676 ↗
3	105m SE	338640 350650	WREXHAM INDUSTRIAL ESTATE 7	20.0	N	154807 ↗

ID	Location	Grid reference	Name	Length	Confidential	Web link
4	153m W	338230 350850	RIDLEY FARM 1	4.88	N	154674 ↗
5	194m SW	338310 350480	IND. EST. COURTAULDS SITE 5	5.0	N	154688 ↗
6	229m SE	338670 350480	WREXHAM INDUSTRIAL ESTATE 6	20.0	N	154806 ↗
7	234m S	338350 350410	BRITISH CELANESE W32A	30.48	N	154627 ↗

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.1 Shrink swell clays

Records within 50m	1

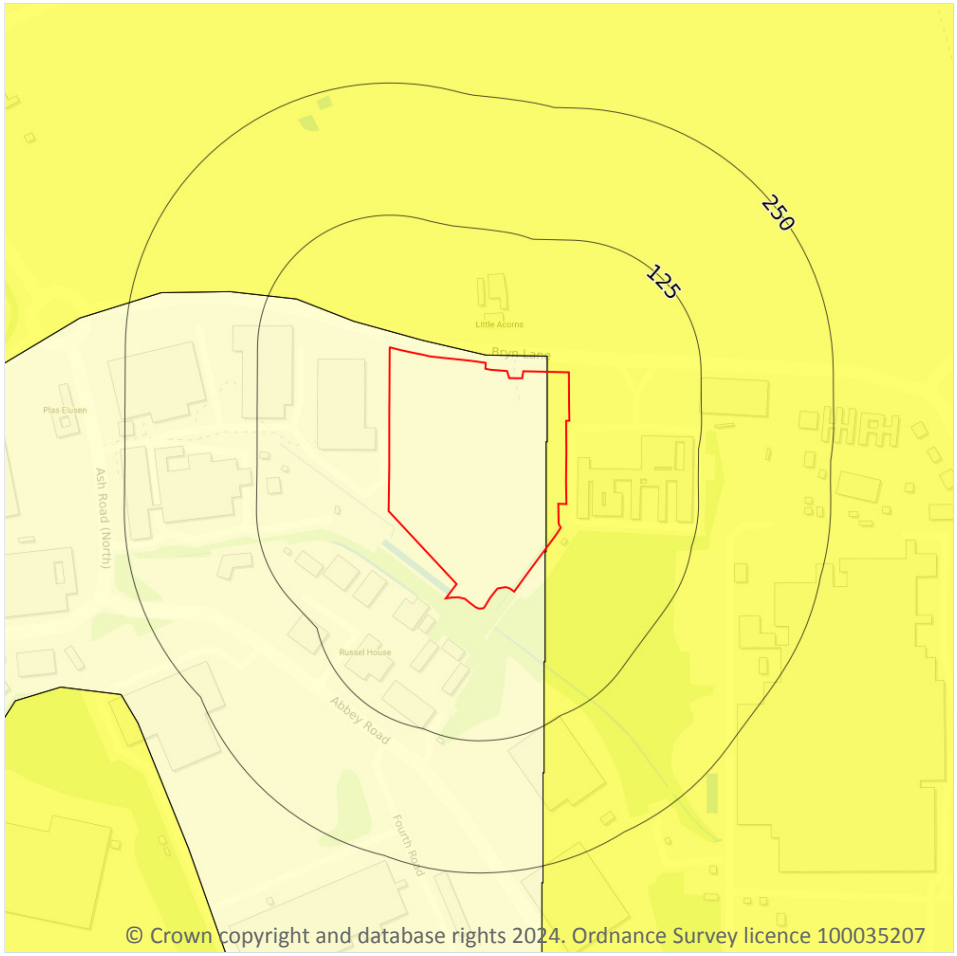
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 99 >**

Location	Hazard rating	Details
On site	**Very low**	**Ground conditions predominantly low plasticity.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.2 Running sands

Records within 50m	2

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

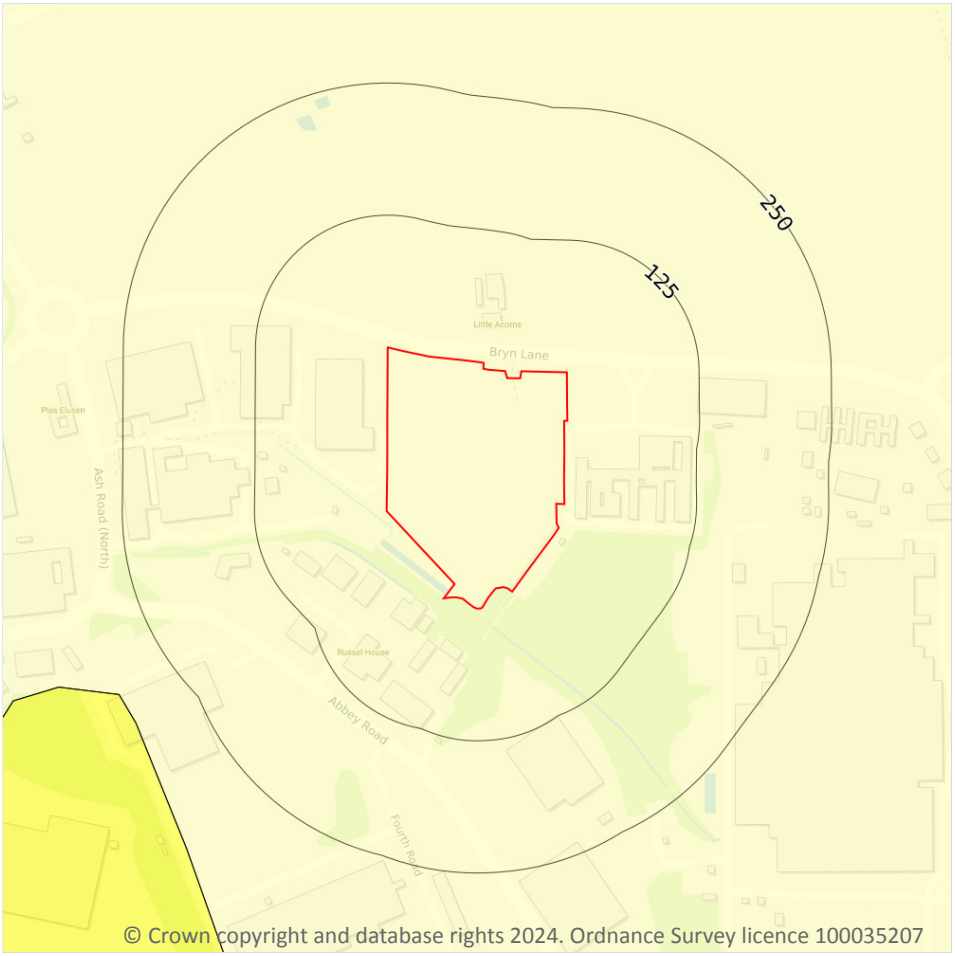
Features are displayed on the Natural ground subsidence - Running sands map on **page 100 >**

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

Location	Hazard rating	Details
On site	**Very low**	**Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.3 Compressible deposits

Records within 50m	1

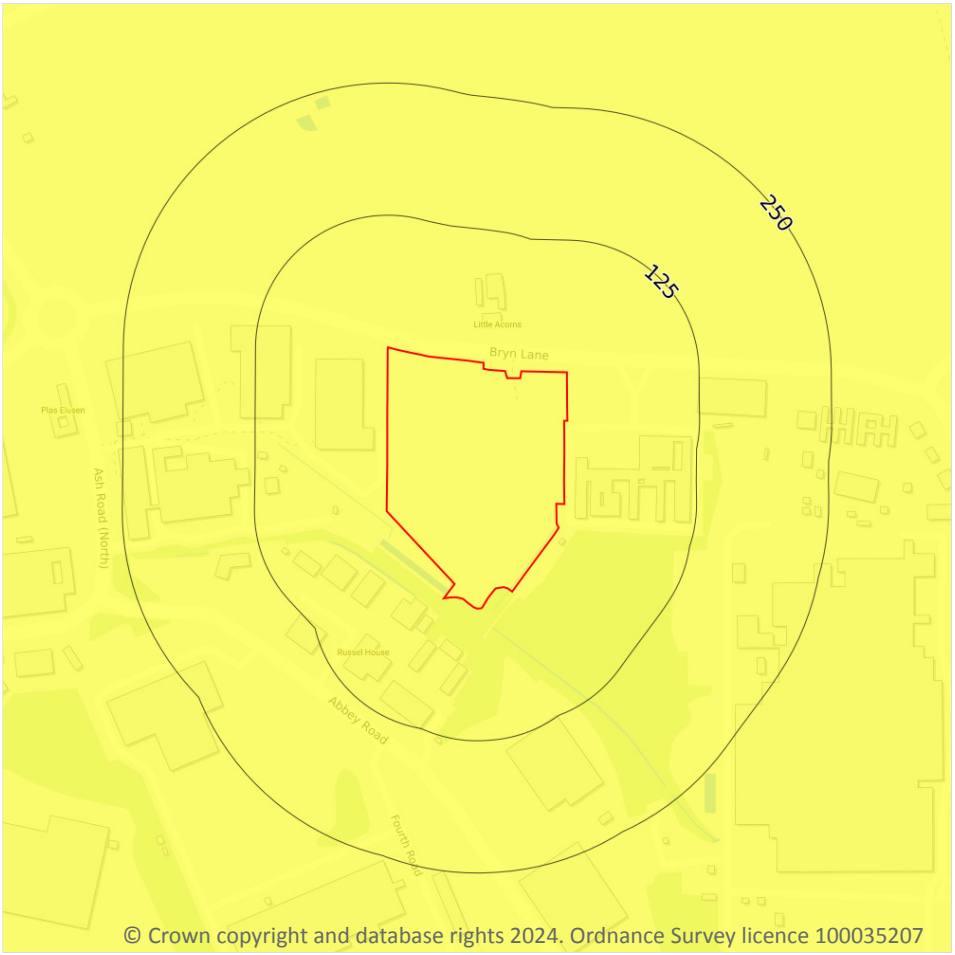
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 102 >**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.4 Collapsible deposits

Records within 50m	1

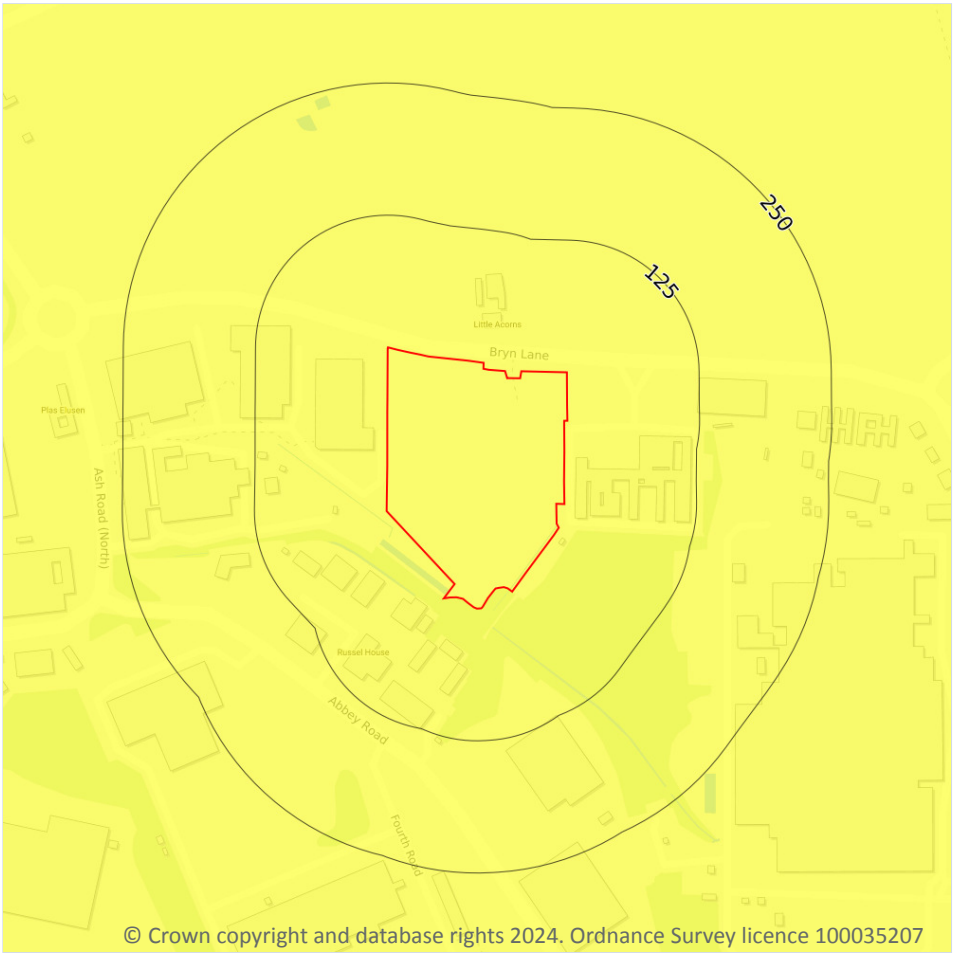
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 103 >**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.5 Landslides

Records within 50m	1

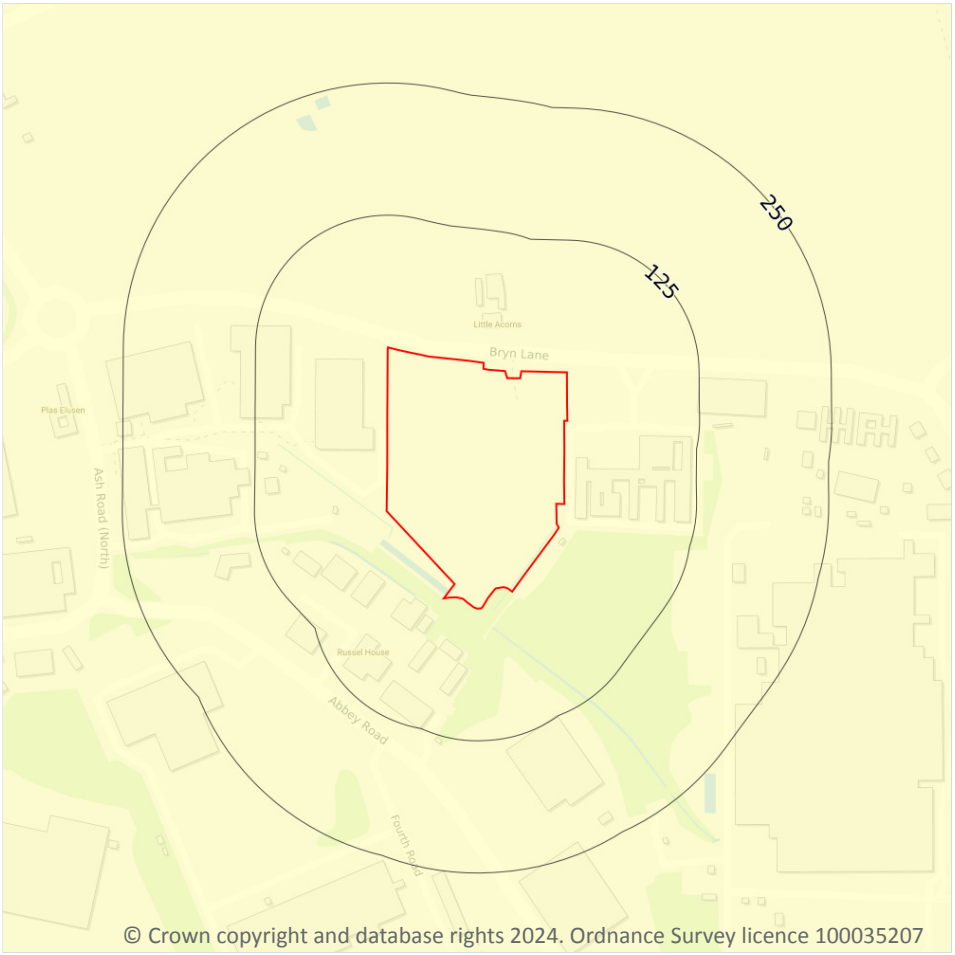
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 104 >**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.6 Ground dissolution of soluble rocks

Records within 50m	1

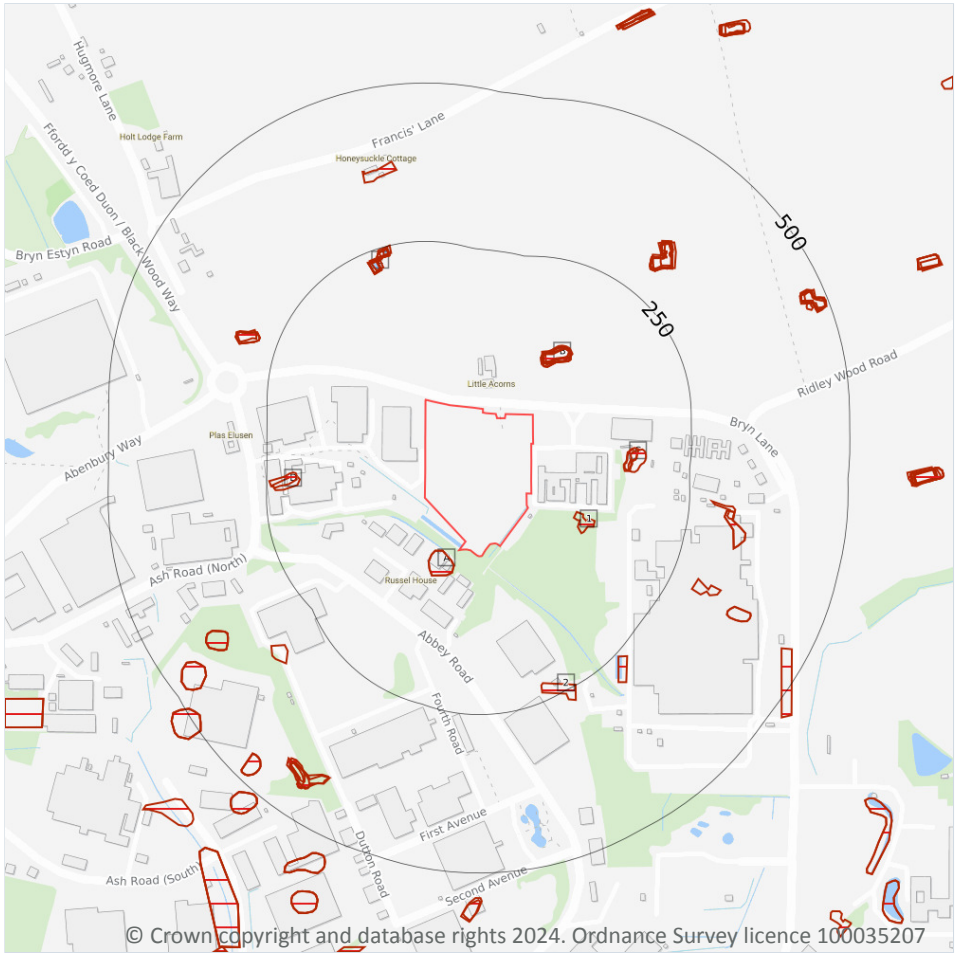
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 105 >**

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

This data is sourced from the British Geological Survey.

18 Mining and ground workings



Site Outline

Search buffers in metres (m)

- BritPits
- Surface ground workings
- Underground workings
- Underground mining extents
- Historical mineral planning areas
- TCA non-coal mining

Non Coal Mining

- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 BritPits

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m	22

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

Features are displayed on the Mining and ground workings map on **page 107 >**

ID	Location	Land Use	Year of mapping	Mapping scale
A	20m S	Unspecified Heap	1960	1:10560
A	20m S	Unspecified Heap	1968	1:10560
1	74m SE	Ponds	1872	1:10560
B	79m NE	Pond	1982	1:10000
B	79m NE	Pond	1960	1:10560
B	79m NE	Pond	1968	1:10560
B	82m NE	Pond	1949	1:10560
B	82m NE	Pond	1872	1:10560
B	84m NE	Pond	1900	1:10560
B	85m NE	Pond	1914	1:10560
C	146m E	Pond	1949	1:10560
C	147m E	Pond	1914	1:10560
C	153m E	Pond	1992	1:10000
D	198m W	Ponds	1872	1:10560
D	203m W	Ponds	1900	1:10560
E	214m NW	Ponds	1992	1:10000
E	214m NW	Ponds	1982	1:10000
E	214m NW	Ponds	1960	1:10560
E	214m NW	Ponds	1968	1:10560
E	216m NW	Ponds	1900	1:10560
E	219m NW	Ponds	1914	1:10560
2	223m S	Ponds	1872	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m	0

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

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m	0

This data identifies underground mine workings that could present a potential risk, including adits and seam workings. These features have been identified from BGS Geological mapping and mine plans sourced from the BGS and various collections and sources.

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	0

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

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site	0

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

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m	0

This data provides an indication of the potential zone of influence of recorded underground non-coal mining workings. Any and all analysis and interpretation of Coal Authority Data in this report is made by Groundsure, and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be the copyright of the Coal Authority and permission should be sought from Groundsure prior to any re-use.

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m	0

This data indicates areas of potential mining identified from alternative or archival sources, including; BGS Geological paper maps, Lidar data, aerial photographs (from World War II onwards), archaeological data services, websites, Tithe maps, and various text/plans from collected books and reports. Some of this data is approximate and Groundsure have interpreted the resultant risk area and, where possible, specific areas of risk have been captured.

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m	0

This dataset is representative of Mining Record Office and/or plan extents held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m	0

This dataset is representative of BGS mine plans held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.12 Coal mining

Records on site	1

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

Location	Details
On site	**The site is located within a coal mining area as defined by the Coal Authority. A Consultants Coal Mining Report is recommended to further assess coal mining issues at the site. This can be ordered directly through Groundsure or your preferred search provider.**

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site	0

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

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

18.14 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

Records on site	0

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

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

19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m	0

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

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m	0

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

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m	0

This data identifies sinkhole information gathered from media reports and Groundsure's own records. This data goes back to 2014 and includes relative accuracy ratings for each event and links to the original data sources. The data is updated on a regular basis and should not be considered a comprehensive catalogue of all sinkhole events. The absence of data in this database does not mean a sinkhole definitely has not occurred during this time.

This data is sourced from Groundsure.

19.4 Historical incidents

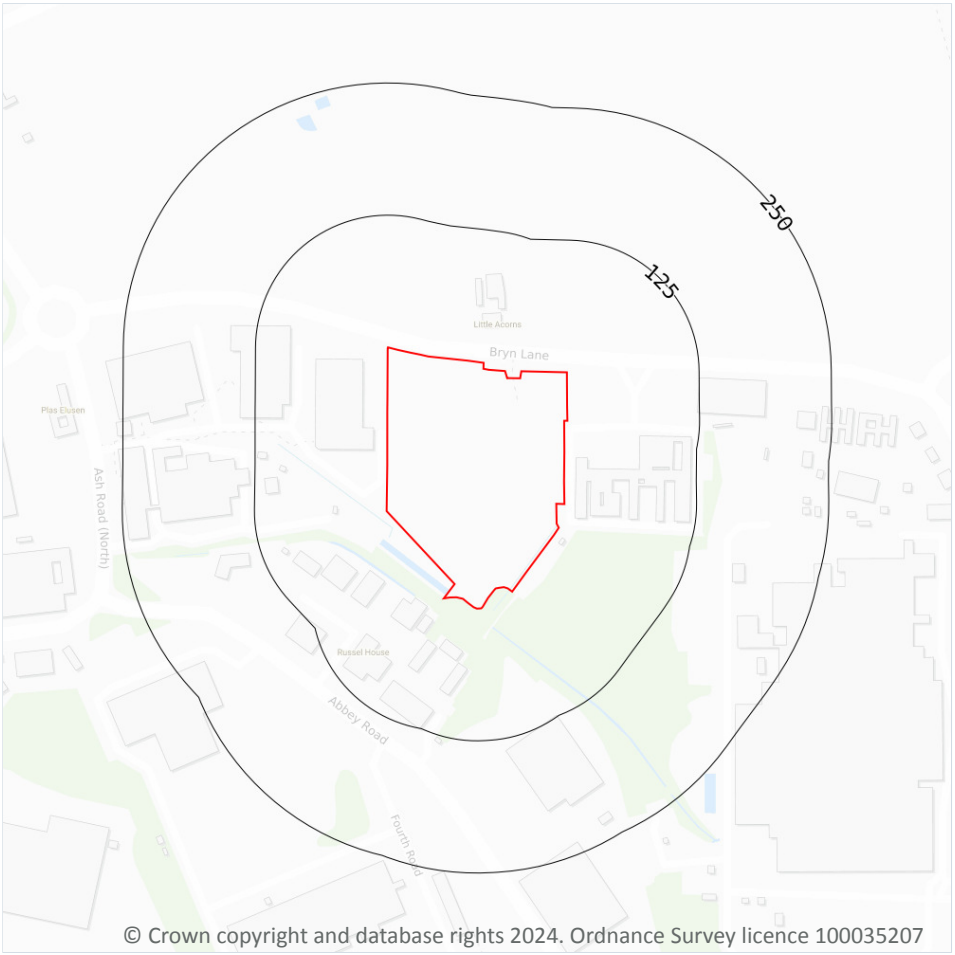
Records within 500m	0

This dataset comprises an extract of 1:10,560, 1:10,000, 1:2,500 and 1:1,250 scale historical Ordnance Survey maps held by Groundsure, dating back to the 1840s. It shows shakeholes, deneholes and other 'holes' as noted on these maps. Dene holes are medieval chalk extraction pits, usually comprising a narrow shaft with a number of chambers at the base of the shaft. Shakeholes are an alternative name for suffusion sinkholes, most commonly found in the limestone landscapes of North Yorkshire but also extensively noted around the Brecon Beacons National Park.

Not all 'holes' noted on Ordnance Survey mapping will necessarily be present within this dataset.

This data is sourced from Groundsure.

20 Radon



Site Outline

Search buffers in metres (m)

- Greater than 30%
- Between 10% and 30%
- Between 5% and 10%
- Between 3% and 5%
- Between 1% and 3%
- Less than 1%

20.1 Radon

Records on site	1

The Radon Potential data classifies areas based on their likelihood of a property having a radon level at or above the Action Level in Great Britain. The dataset is intended for use at 1:50,000 scale and was derived from both geological assessments and indoor radon measurements (more than 560,000 records). A minimum 50m buffer should be considered when searching the maps, as the smallest detectable feature at this scale is 50m. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain (1:100,000 scale).

Features are displayed on the Radon map on **page 114 >**

Location	Estimated properties affected	Radon Protection Measures required
On site	**Less than 1%**	**None**

This data is sourced from the British Geological Survey and UK Health Security Agency.

21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m	3

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

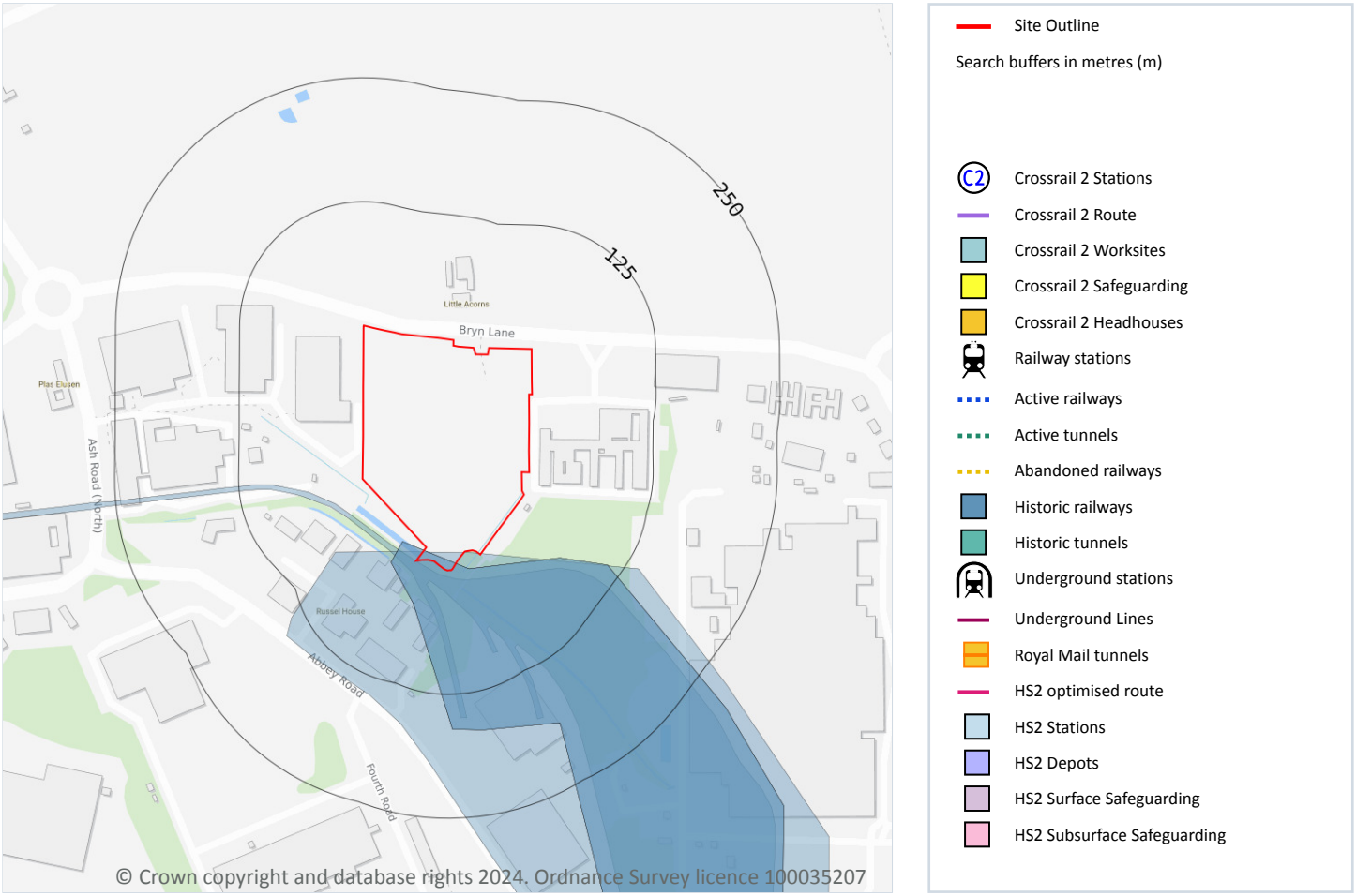
21.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

22 Railway infrastructure and projects



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22.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m	4

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

Features are displayed on the Railway infrastructure and projects map on **page 117 >**

Location	Land Use	Year of mapping	Mapping scale
On site	**Railway Sidings**	**1949**	**10560**
On site	**Railway Sidings**	**1960**	**10560**
On site	**Railway Sidings**	**1968**	**10560**
On site	**Mineral Railway Sidings**	**1961**	**2500**

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m	0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 2

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

22.9 HS2

Records within 500m	0

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

This data is sourced from HS2 ltd.

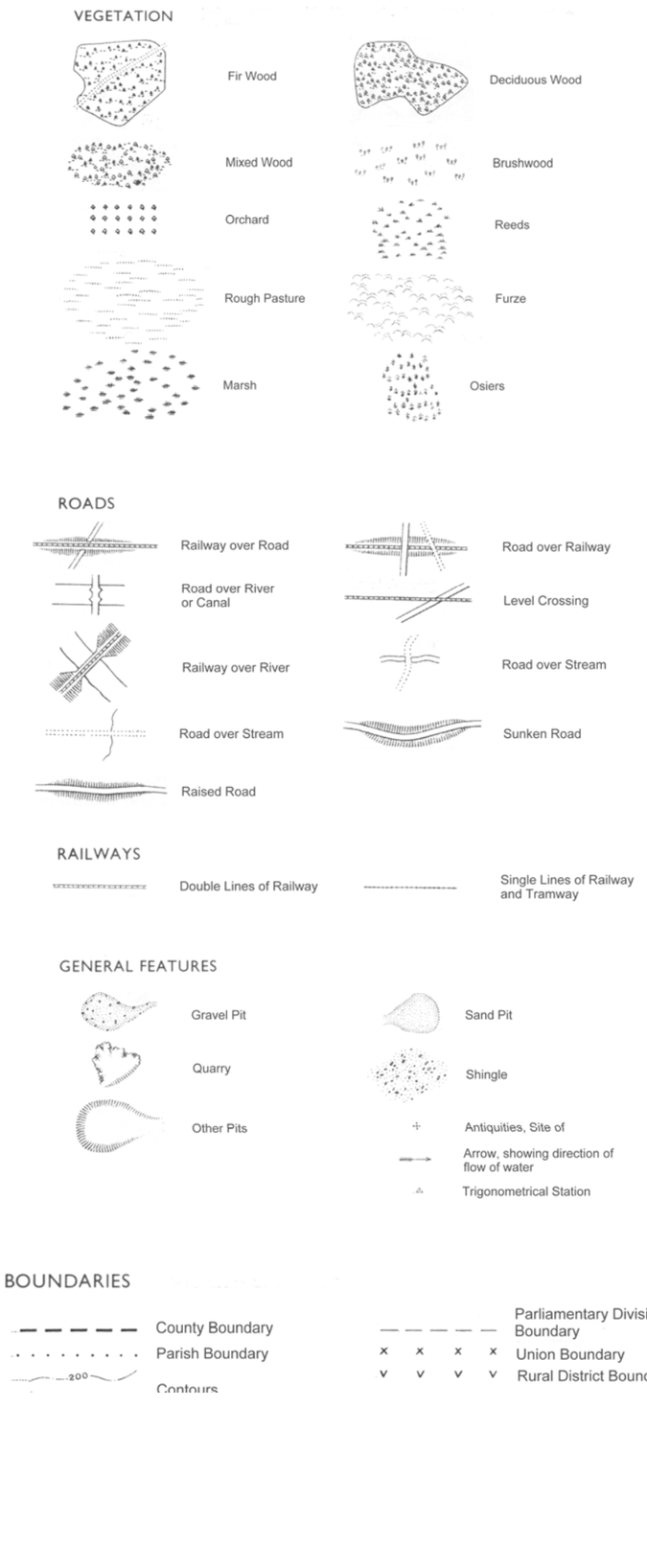
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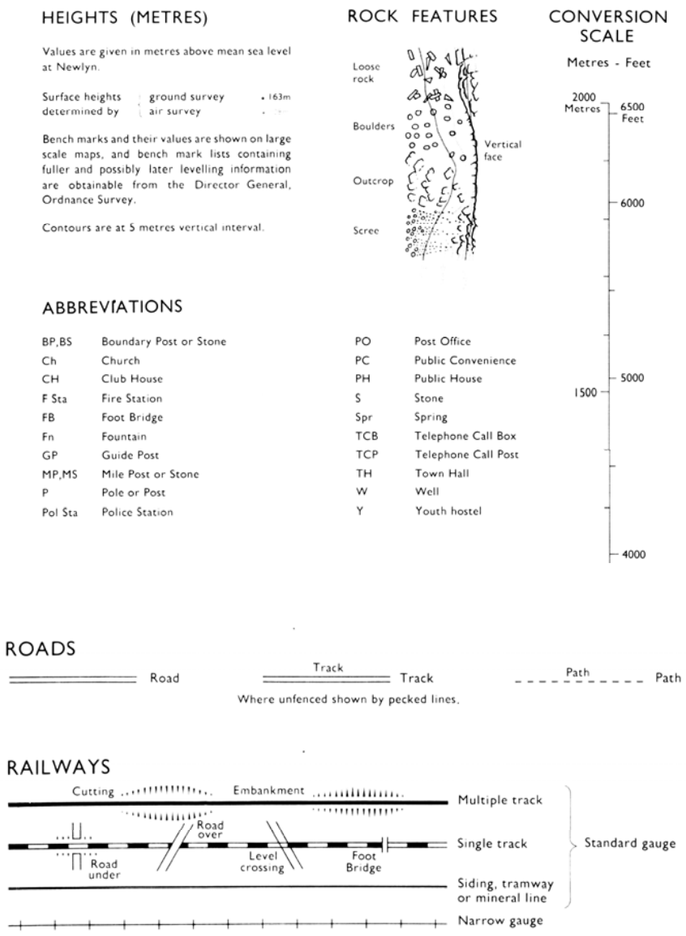
Terms and conditions

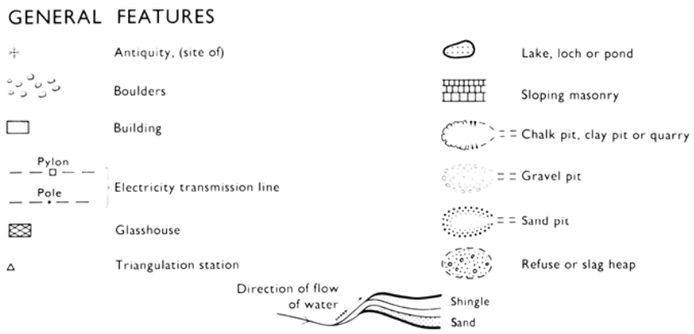
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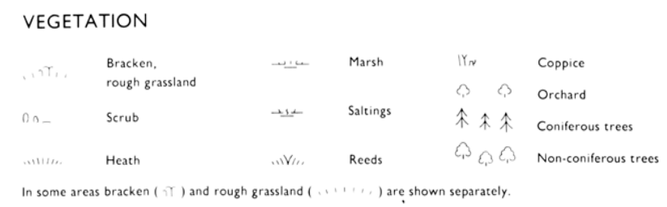
County Series 1:10,560 scale



National Grid 1:10,000 scale







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Historical Map Pack Legend

County Series & National Grid

1:10,560 scale & 1:10,000 scale

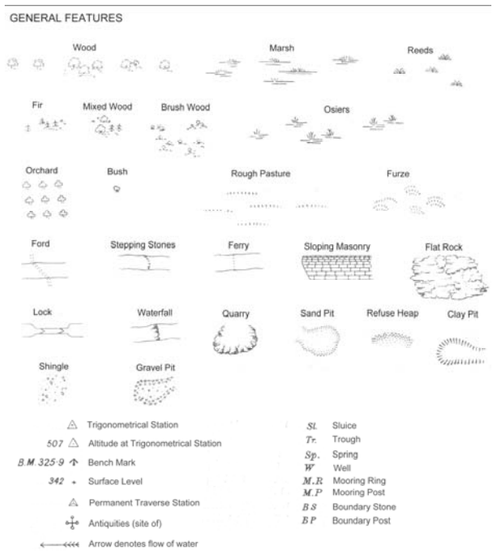
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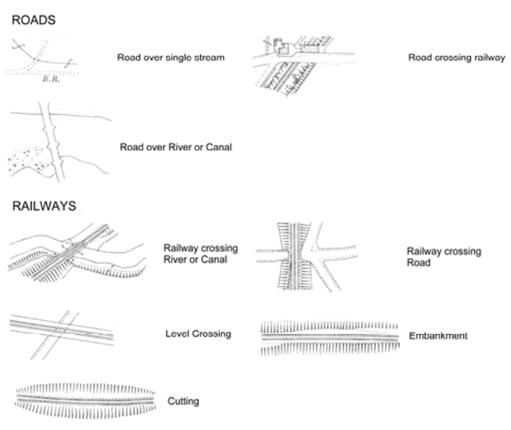
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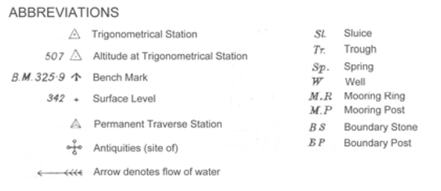
Technical Helpline

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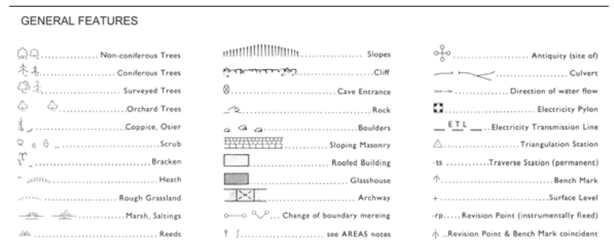
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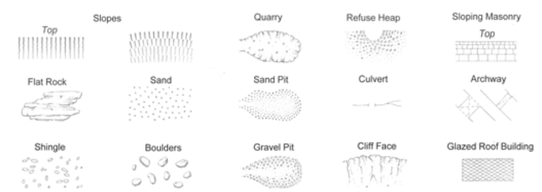


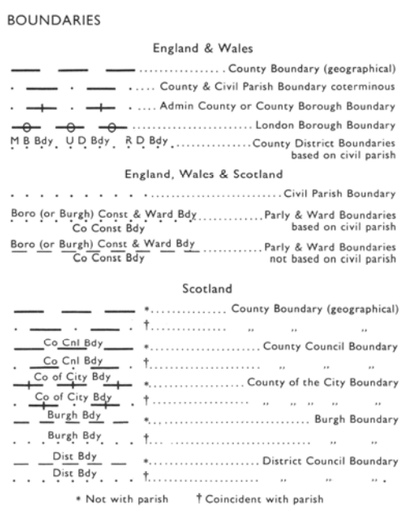


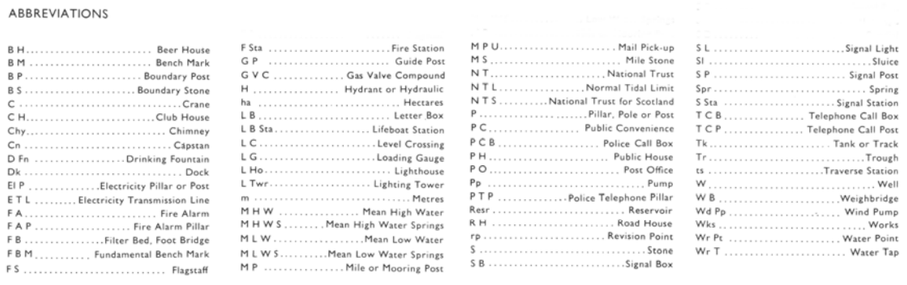


National Grid 1:2,500 / 1:1,250 scale









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Historical Map Pack Legend

County Series

1:1,250 scale

~

County Series & National Grid

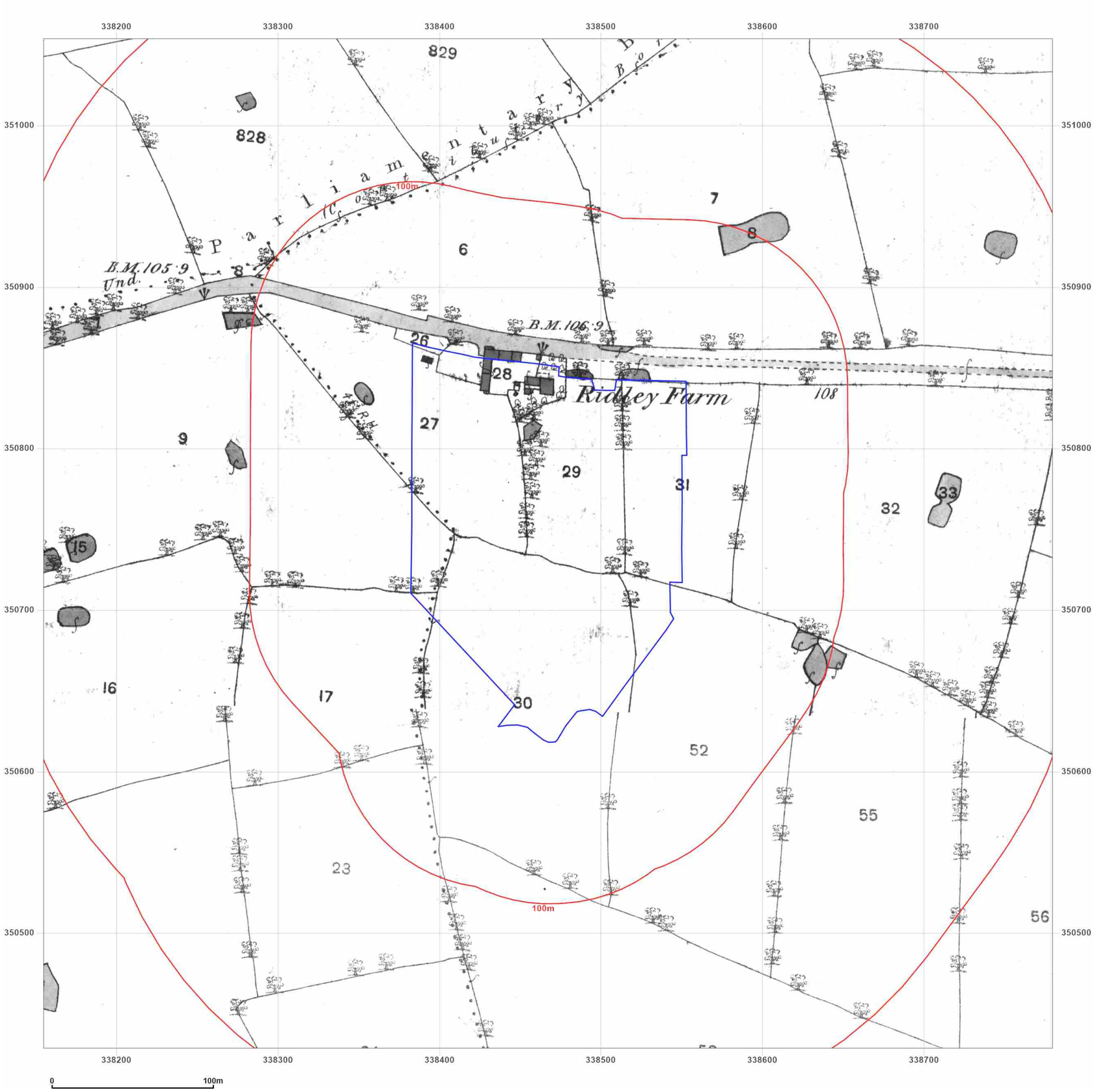
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Bryn Lane South, Wrexham

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Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

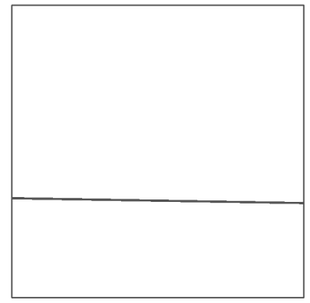
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Map date: **1873**

Scale: 1:2,500

Printed at: 1:2,500

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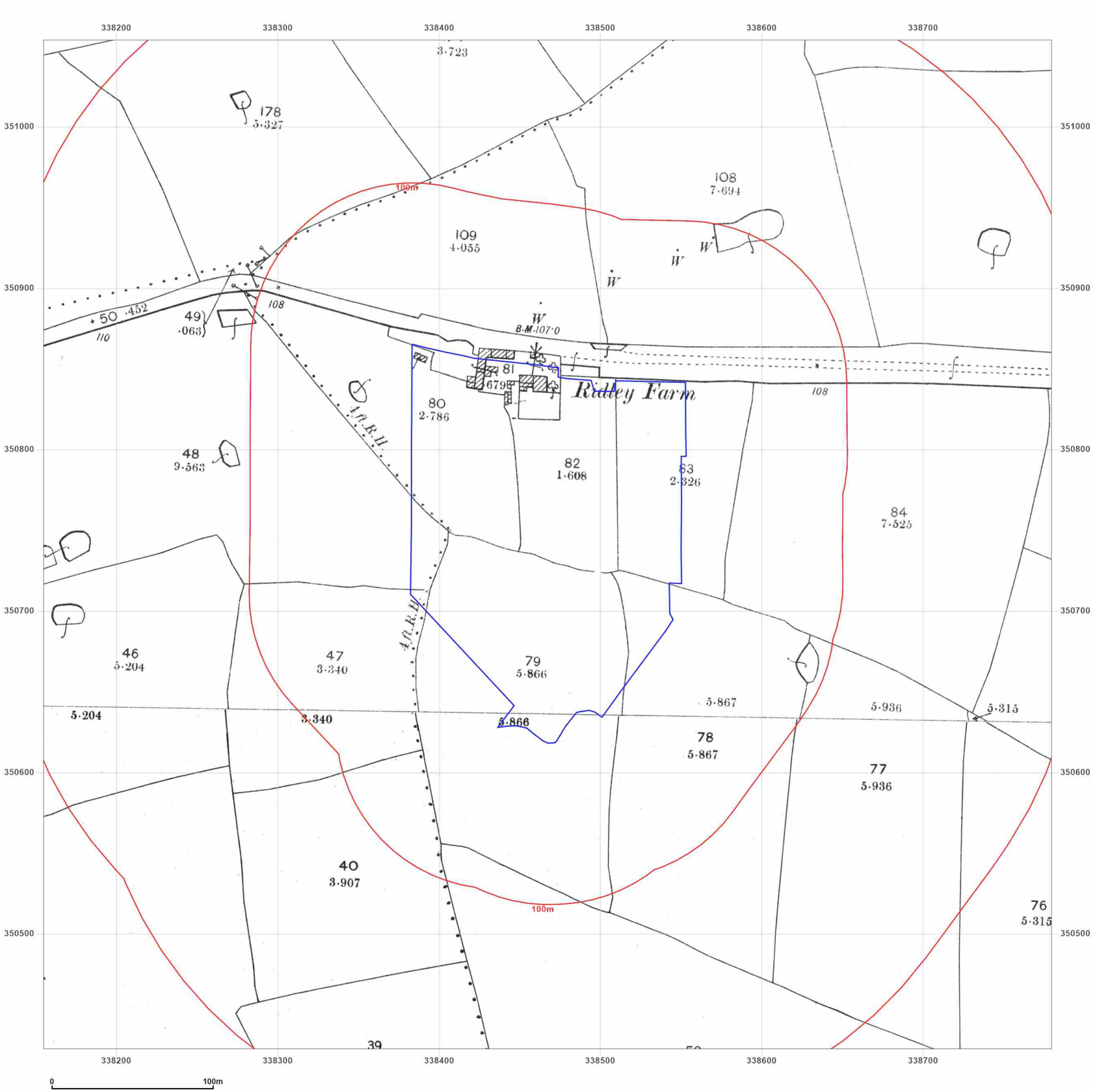
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Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

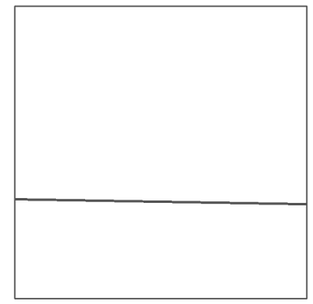
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Map date: **1899**

Scale: 1:2,500

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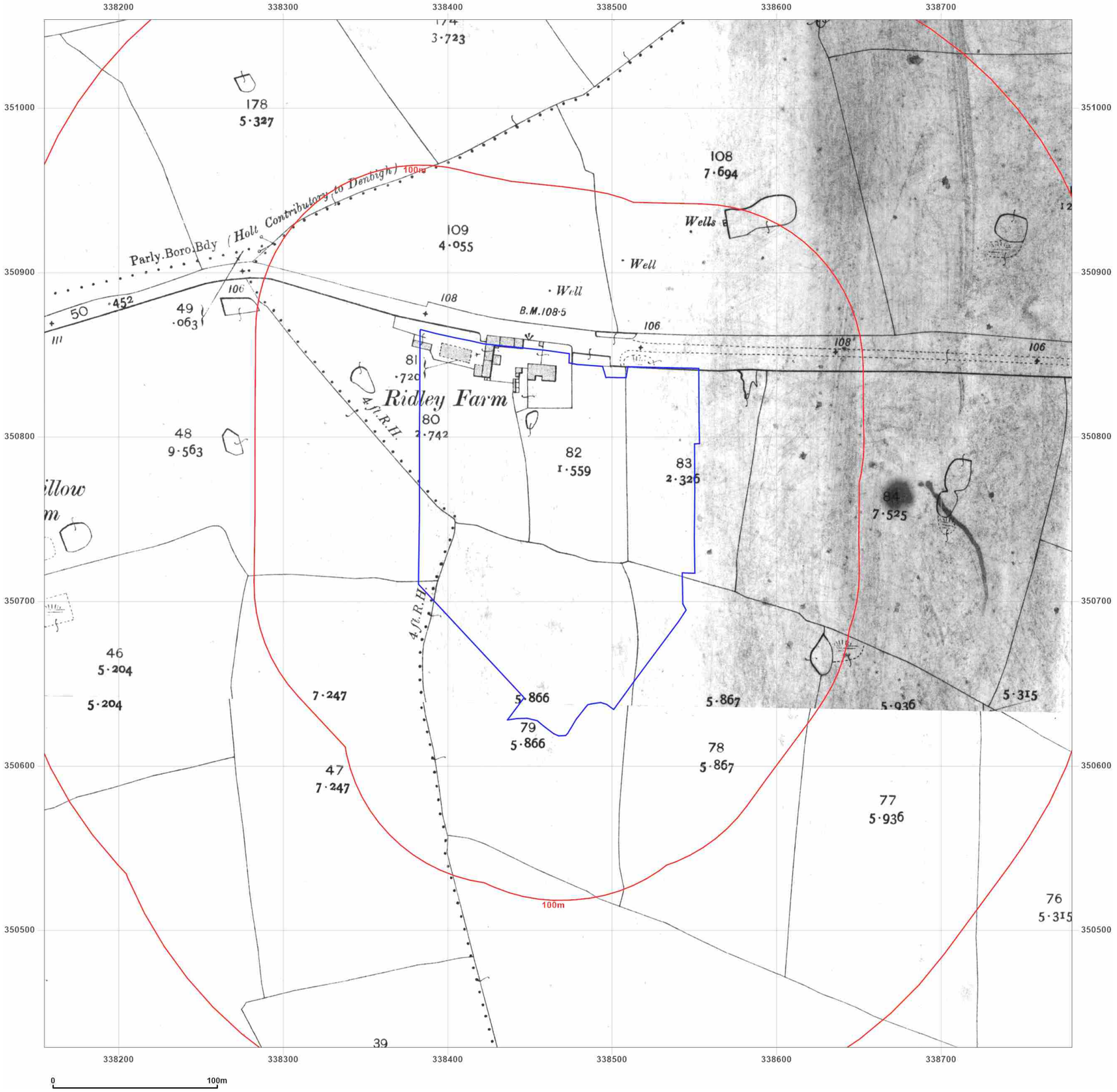
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Grid Ref: 338467, 350741

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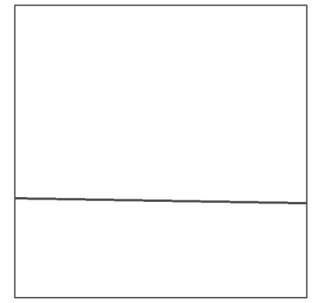
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Scale: 1:2,500

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Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **1961-1964**

Scale: 1:2,500

Printed at: 1:2,500

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Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **1961-1964**

Scale: 1:2,500

Printed at: 1:2,500

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Revised N/A
Edition N/A
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Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **1974**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1974
Revised 1974
Edition N/A
Copyright 1974
Levelled 1959

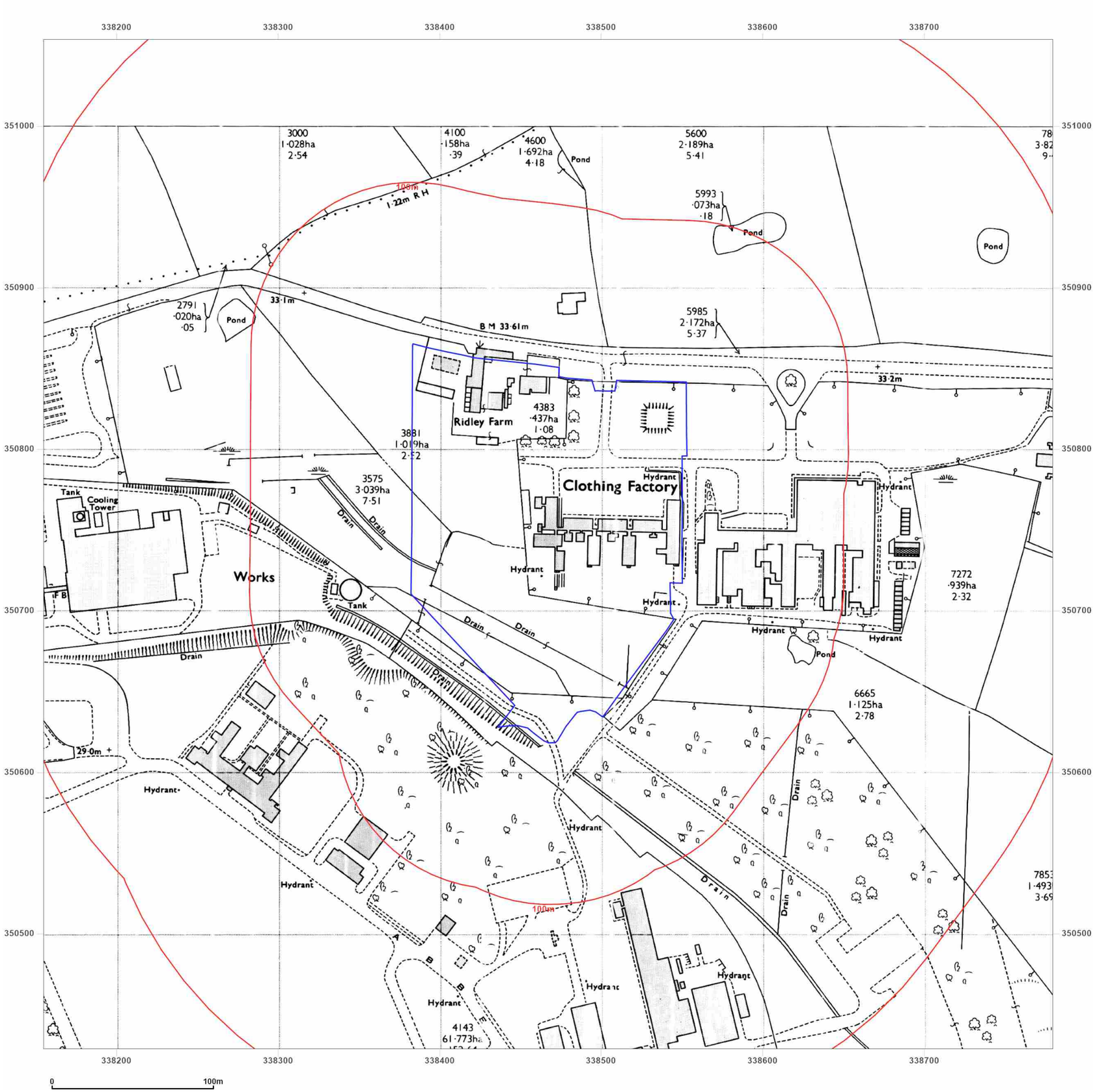
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Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **1974**

Scale: 1:2,500

Printed at: 1:2,500

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Edition N/A
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Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **1982**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1959
Revised 1982
Edition N/A
Copyright 1982
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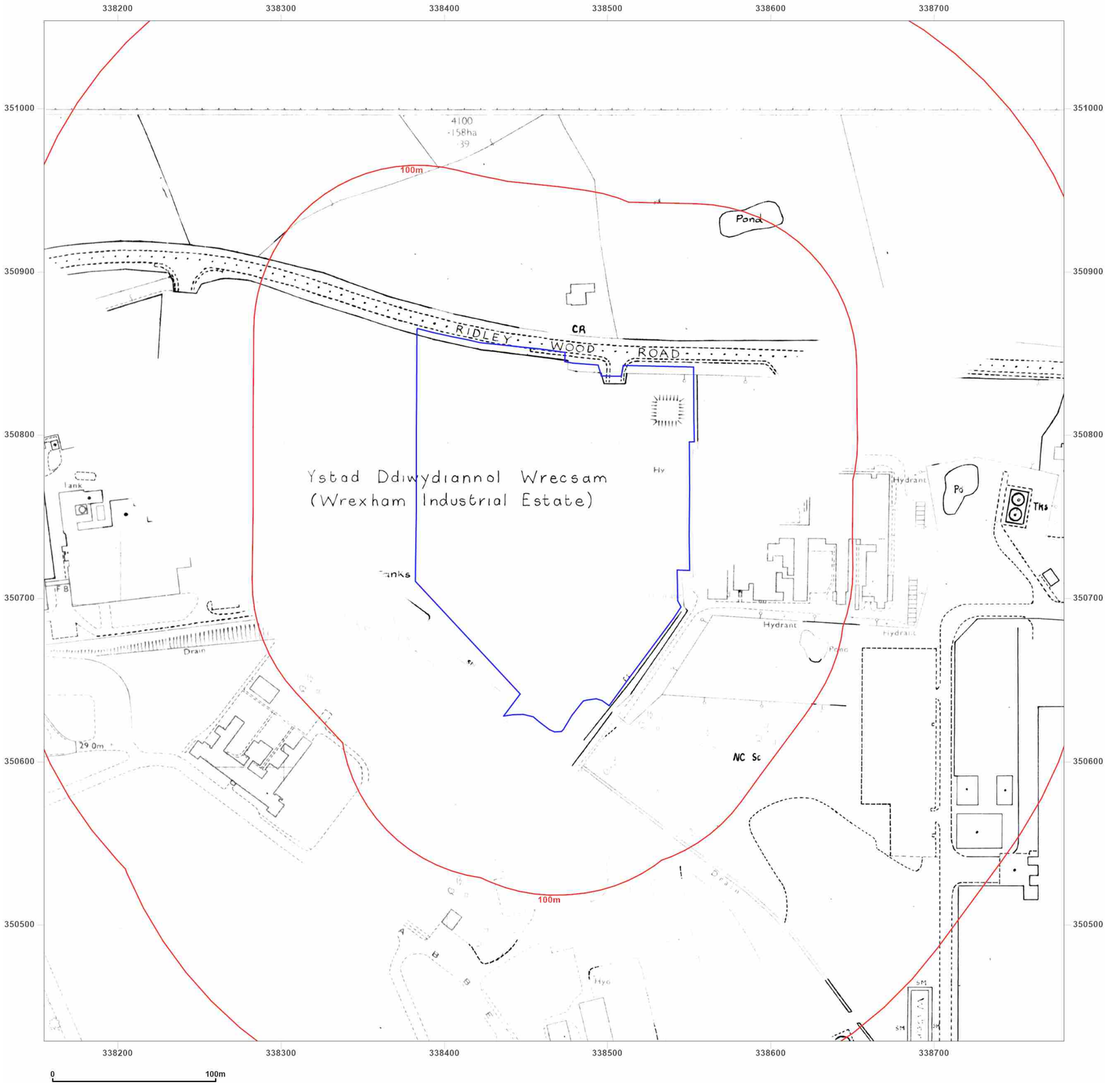
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Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **1989**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed N/A
Revised N/A
Edition N/A
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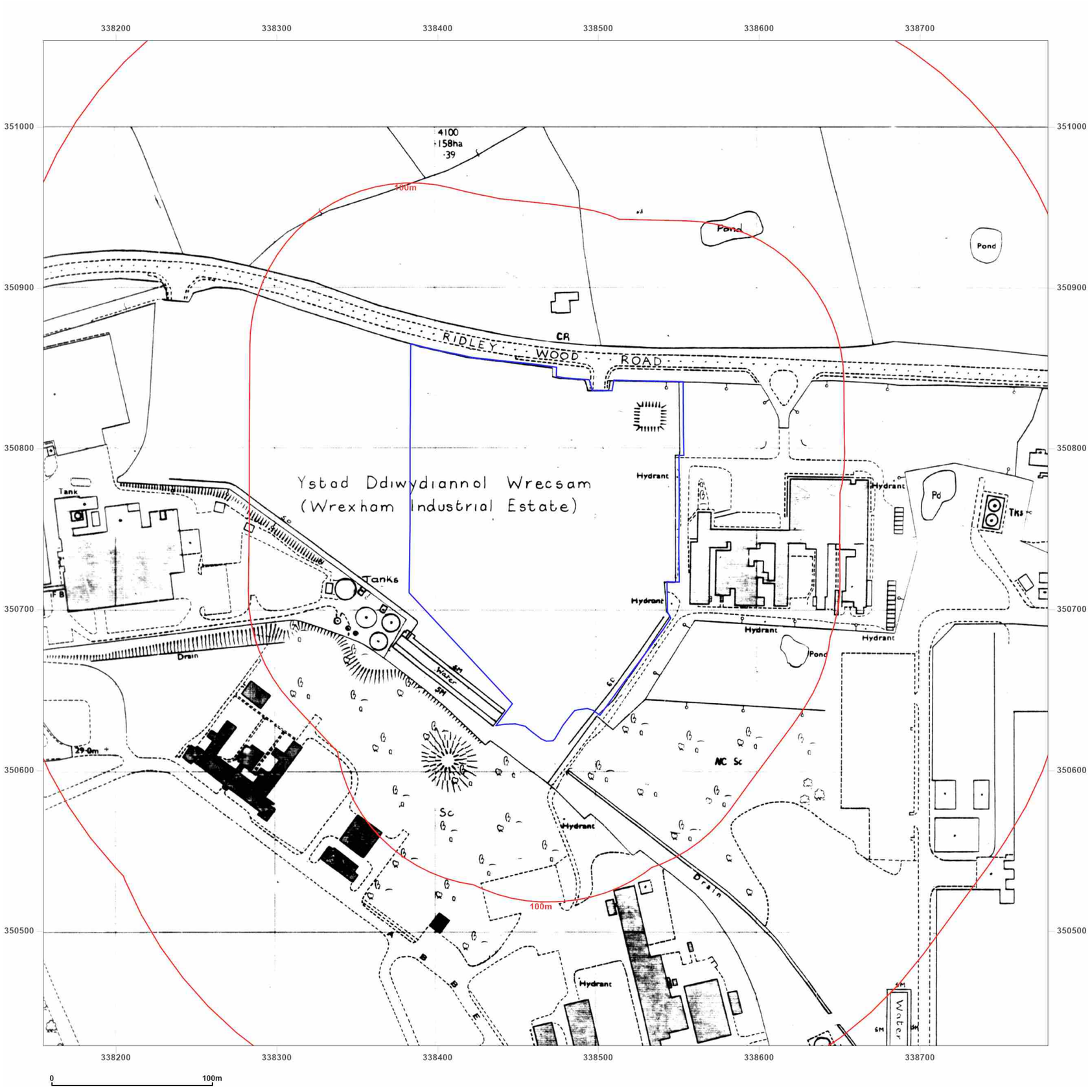
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Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **1989**

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Printed at: 1:2,500

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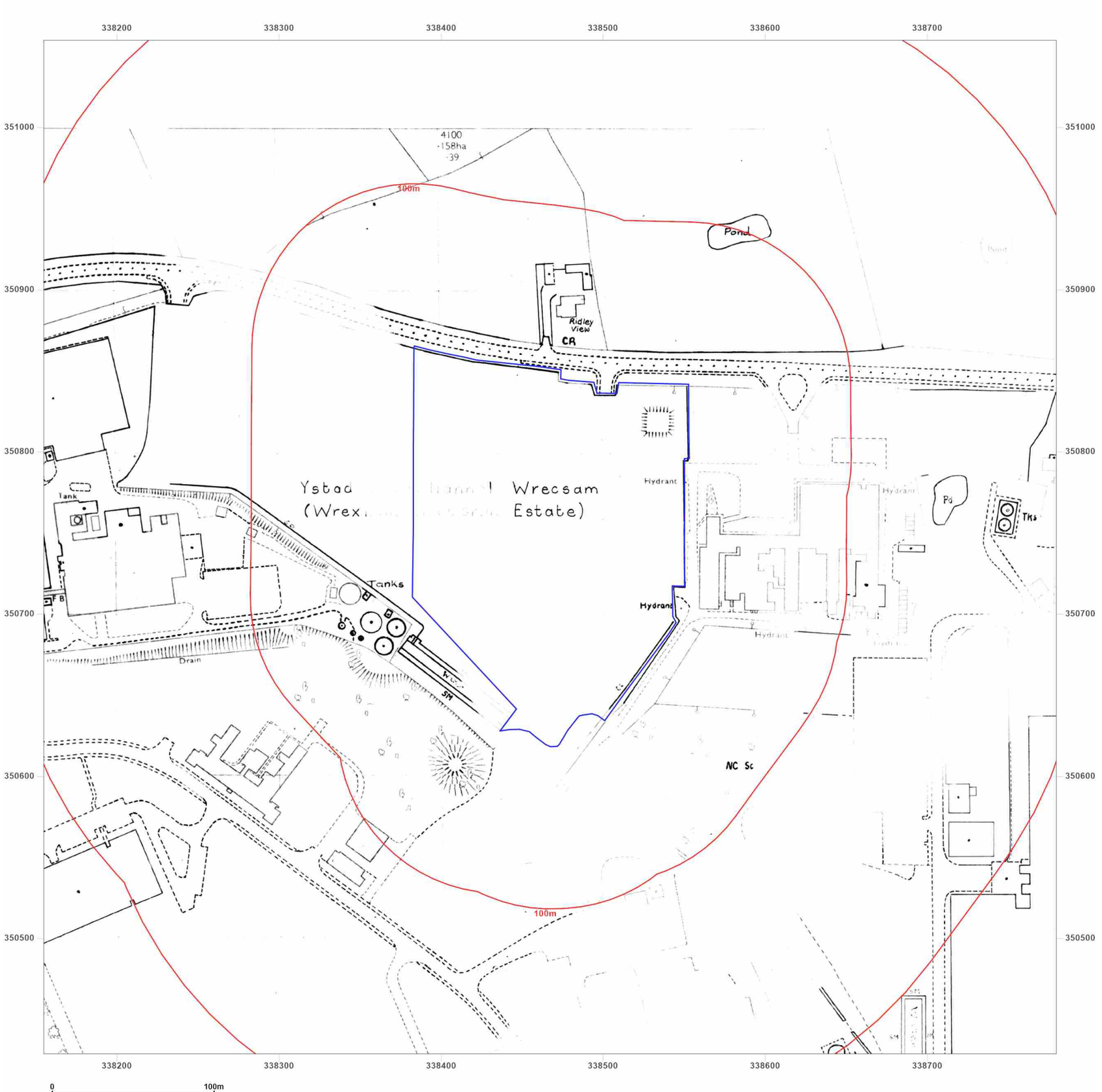
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Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **1990**

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Revised N/A
Edition N/A
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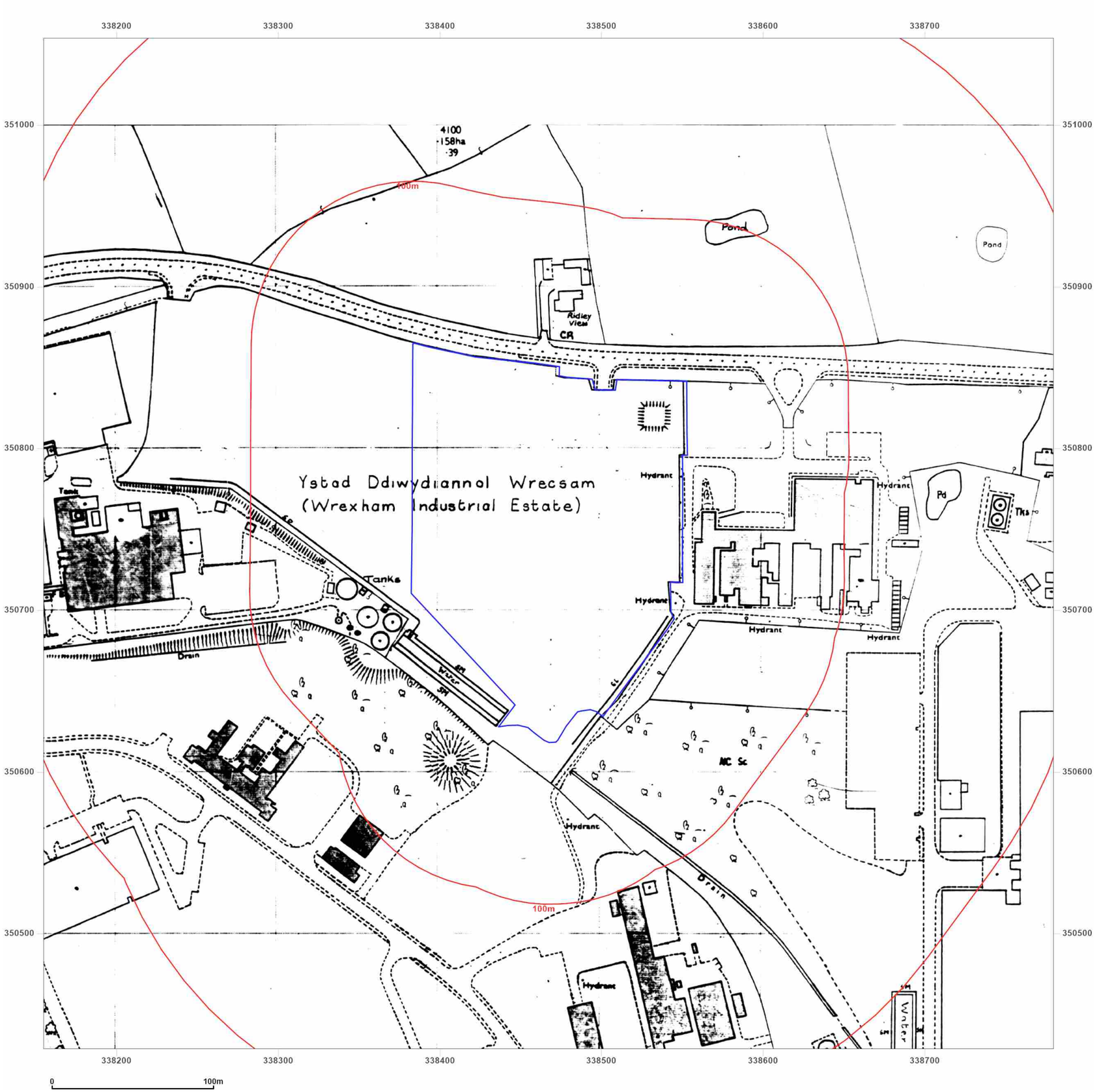
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Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **1990**

Scale: 1:2,500

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Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **1991**

Scale: 1:2,500

Printed at: 1:2,500

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Revised 1991
Edition N/A
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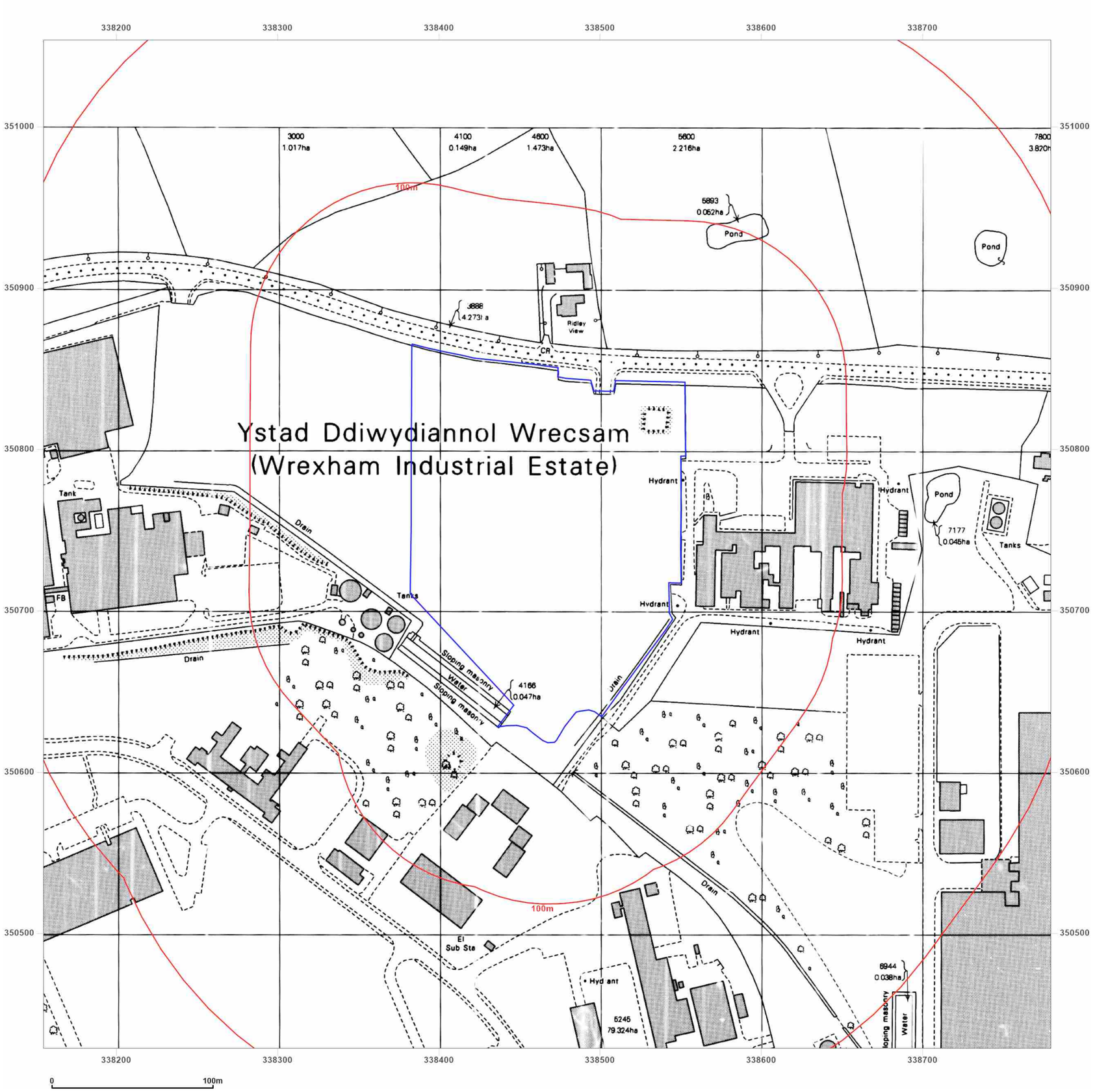
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Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **1992**

Scale: 1:2,500

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Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

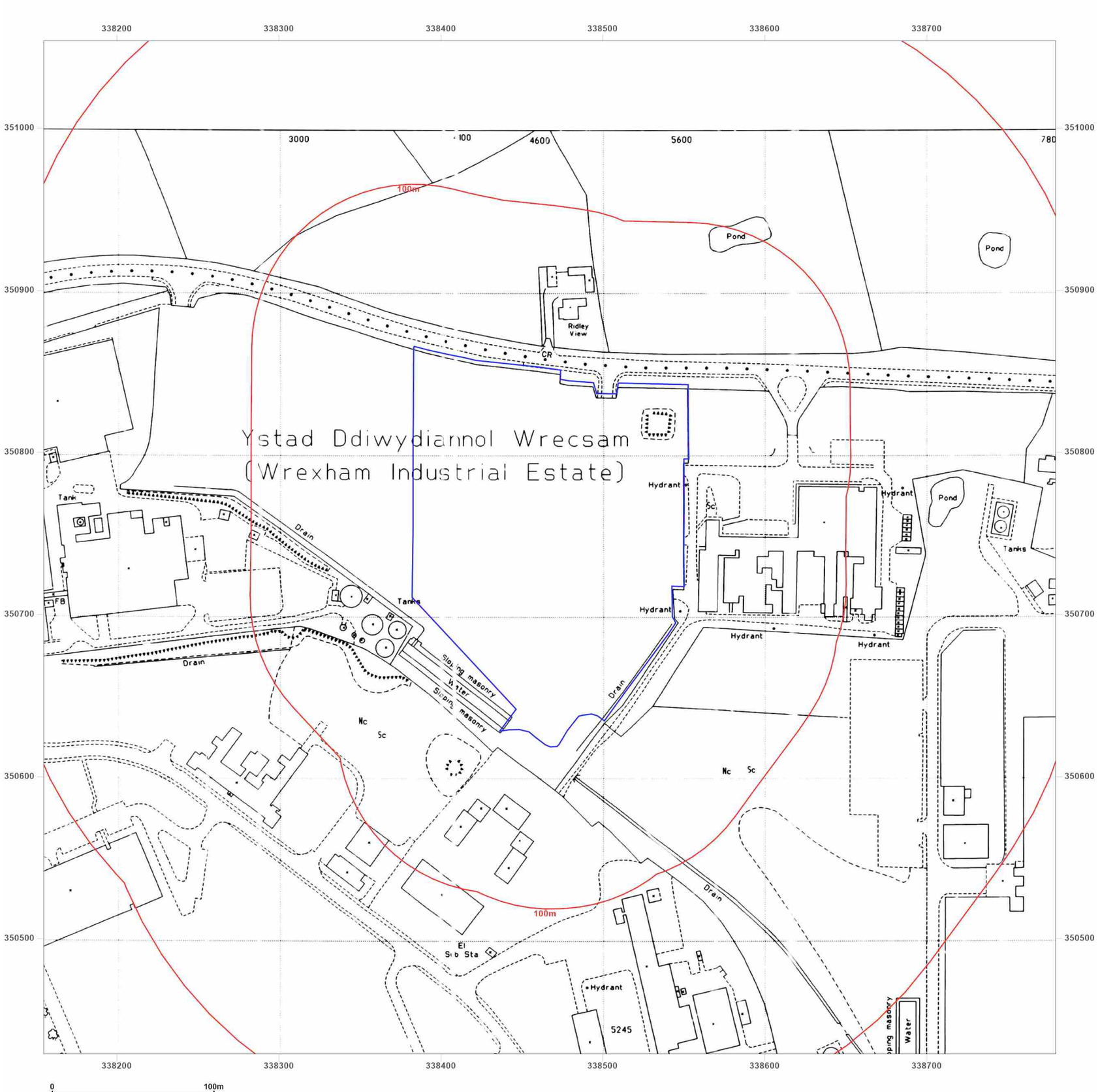
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Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **1992**

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Edition N/A
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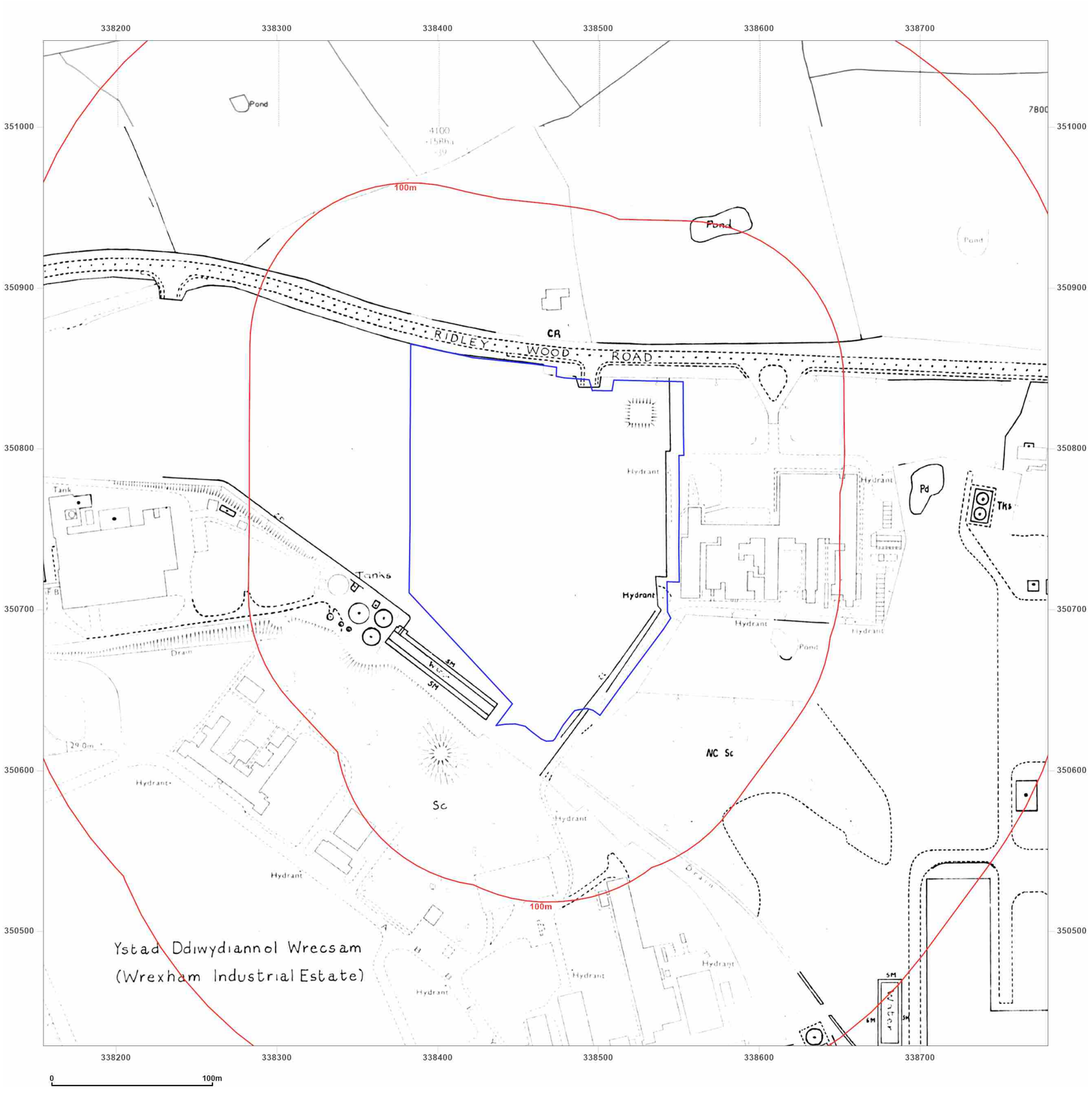
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Map Name: National Grid

Map date: **1987-1992**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1992
Revised N/A
Edition N/A
Copyright 1992
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1987
Levelled 1959

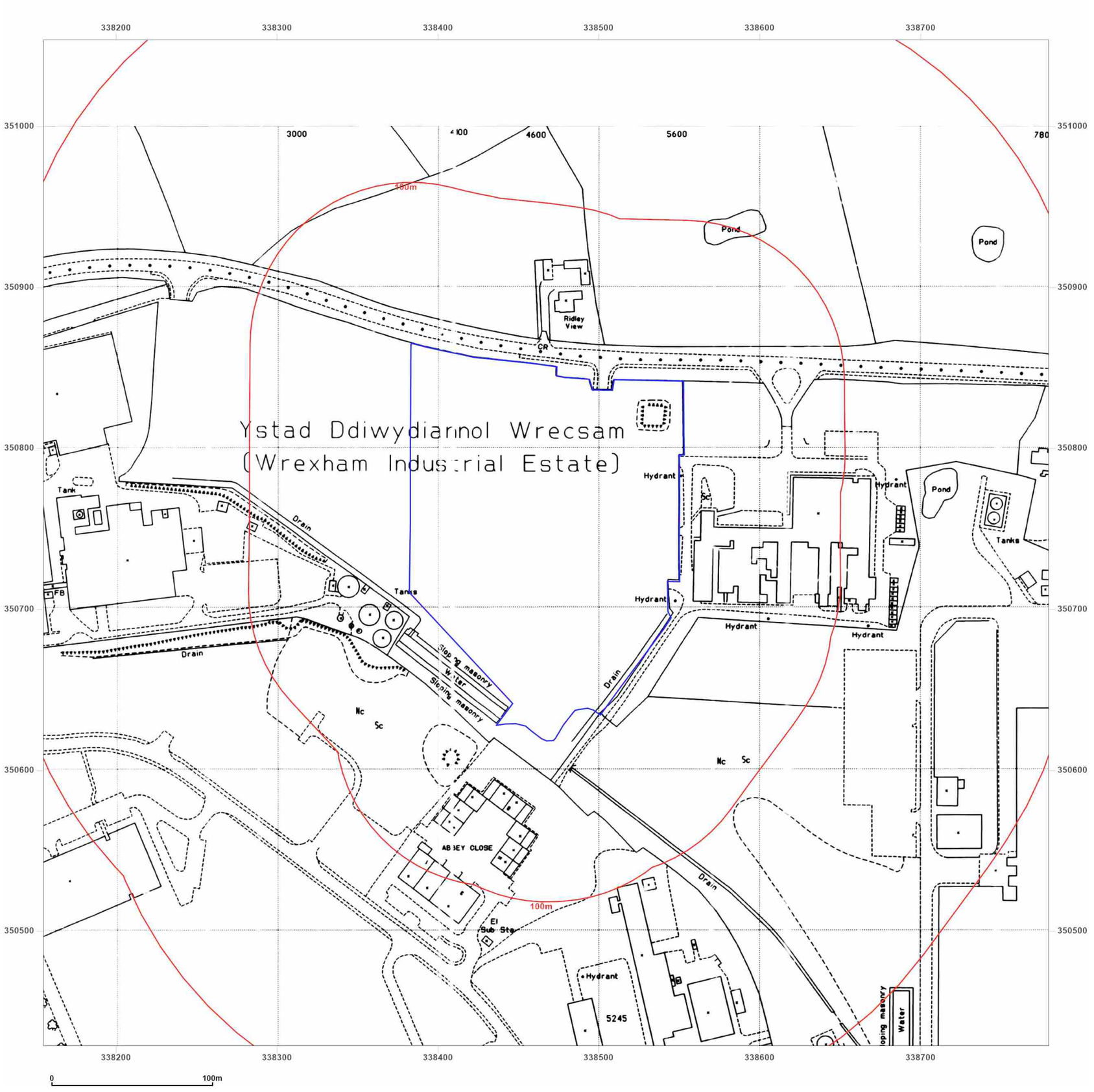
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Groundsure INSIGHTS

Site Details:

Bryn Lane South, Wrexham

Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **1993**

Scale: 1:2,500

Printed at: 1:2,500

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

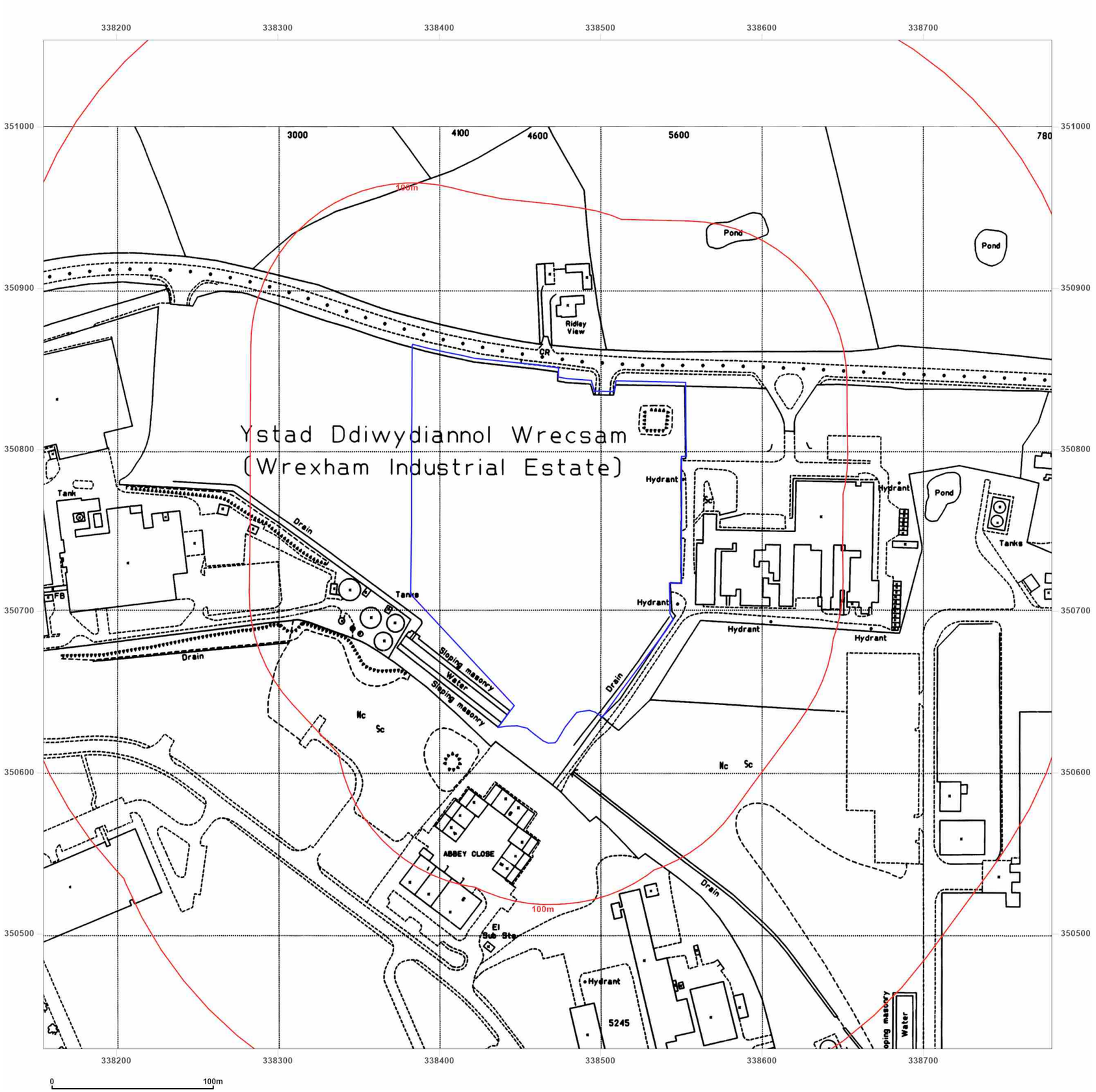
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Groundsure INSIGHTS

Site Details:

Bryn Lane South, Wrexham

Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **1993**

Scale: 1:2,500

Printed at: 1:2,500

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

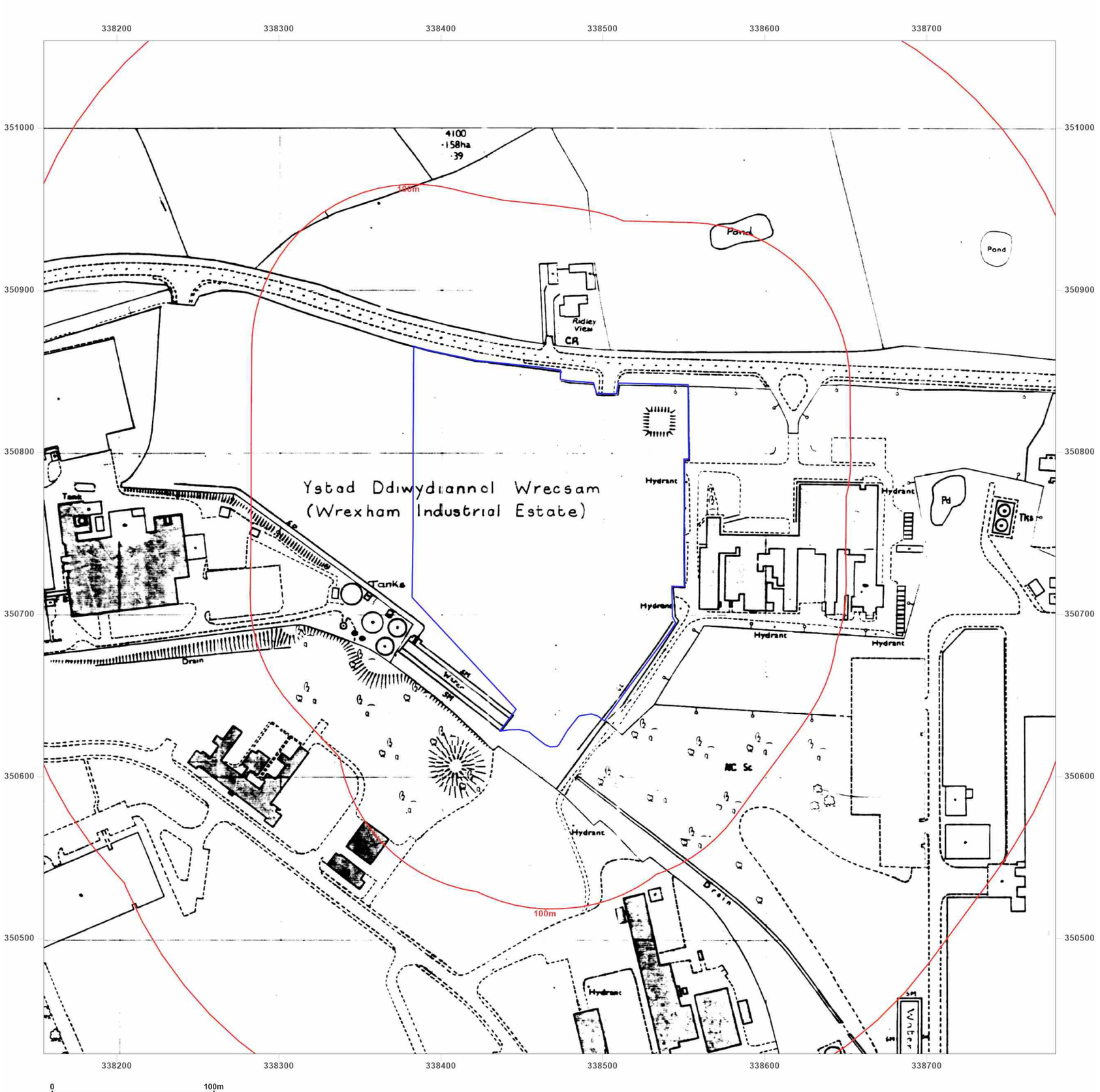
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Groundsure INSIGHTS

Site Details:

Bryn Lane South, Wrexham

Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **1993**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed N/A
Revised 1993
Edition N/A
Copyright 1990
Levelled 1959

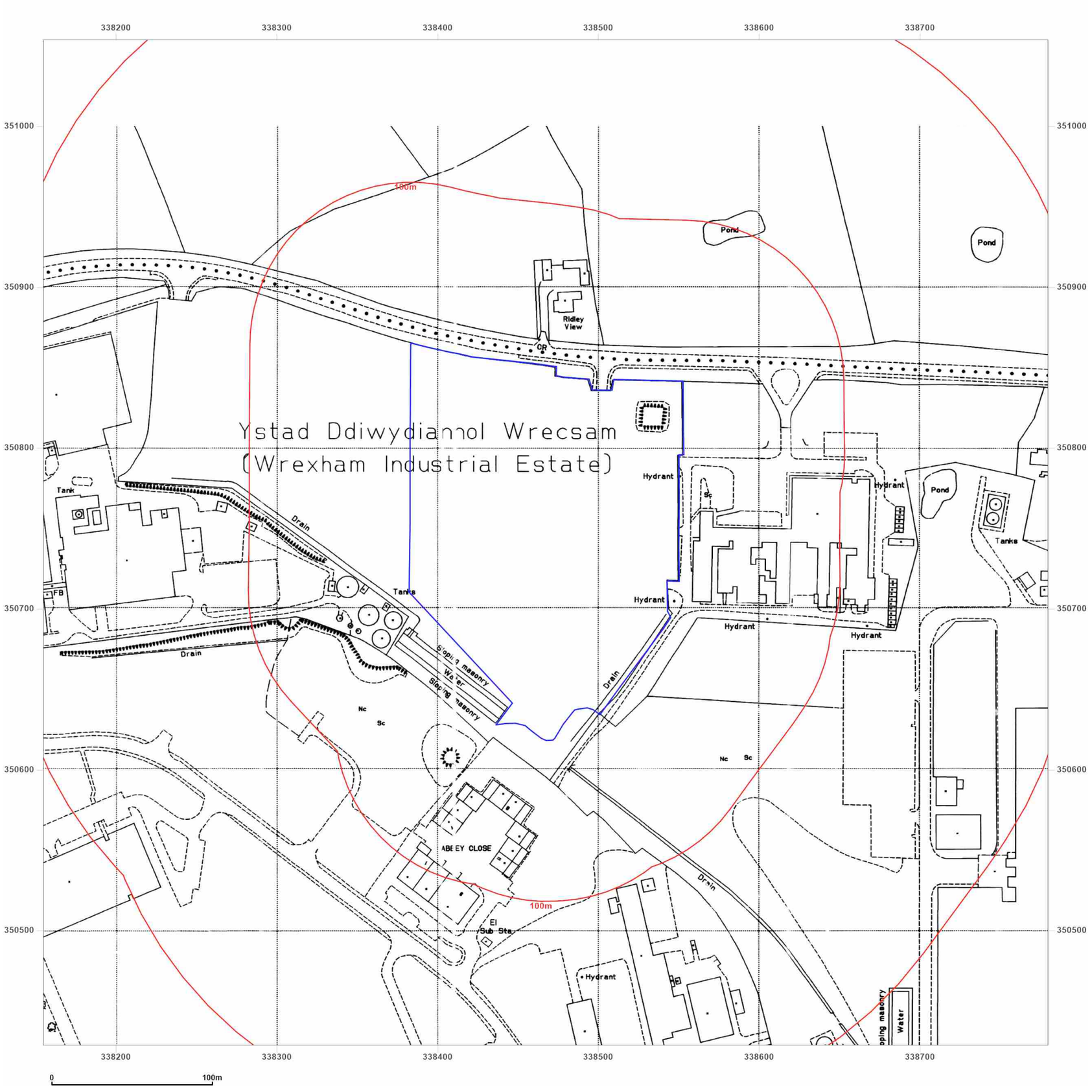
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Groundsure INSIGHTS

Site Details:

Bryn Lane South, Wrexham

Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **1994**

Scale: 1:2,500

Printed at: 1:2,500

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

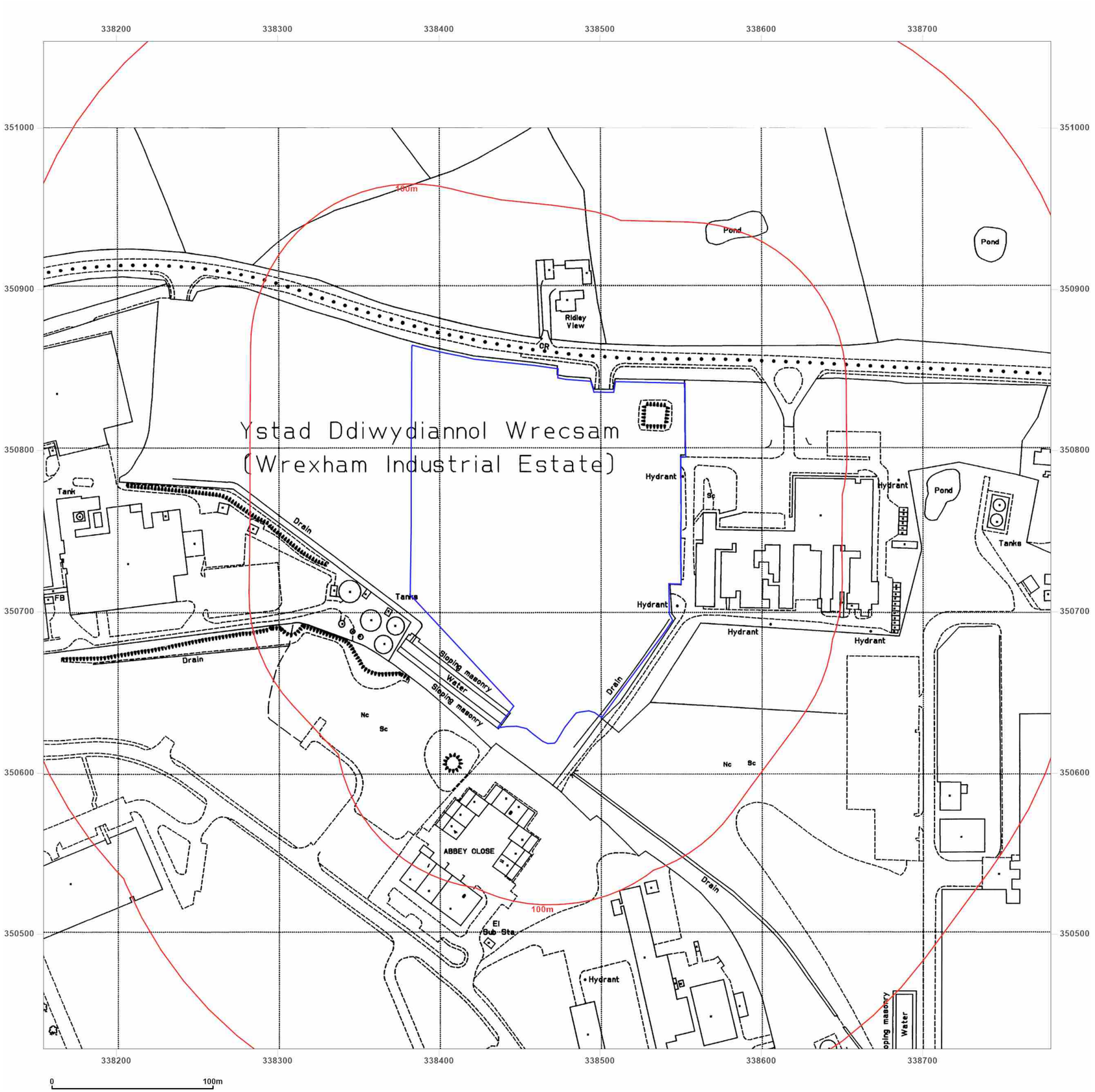
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Site Details:

Bryn Lane South, Wrexham

Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **1994**

Scale: 1:2,500

Printed at: 1:2,500

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

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Site Details:

Bryn Lane South, Wrexham

Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **1995**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1995
Levelled N/A

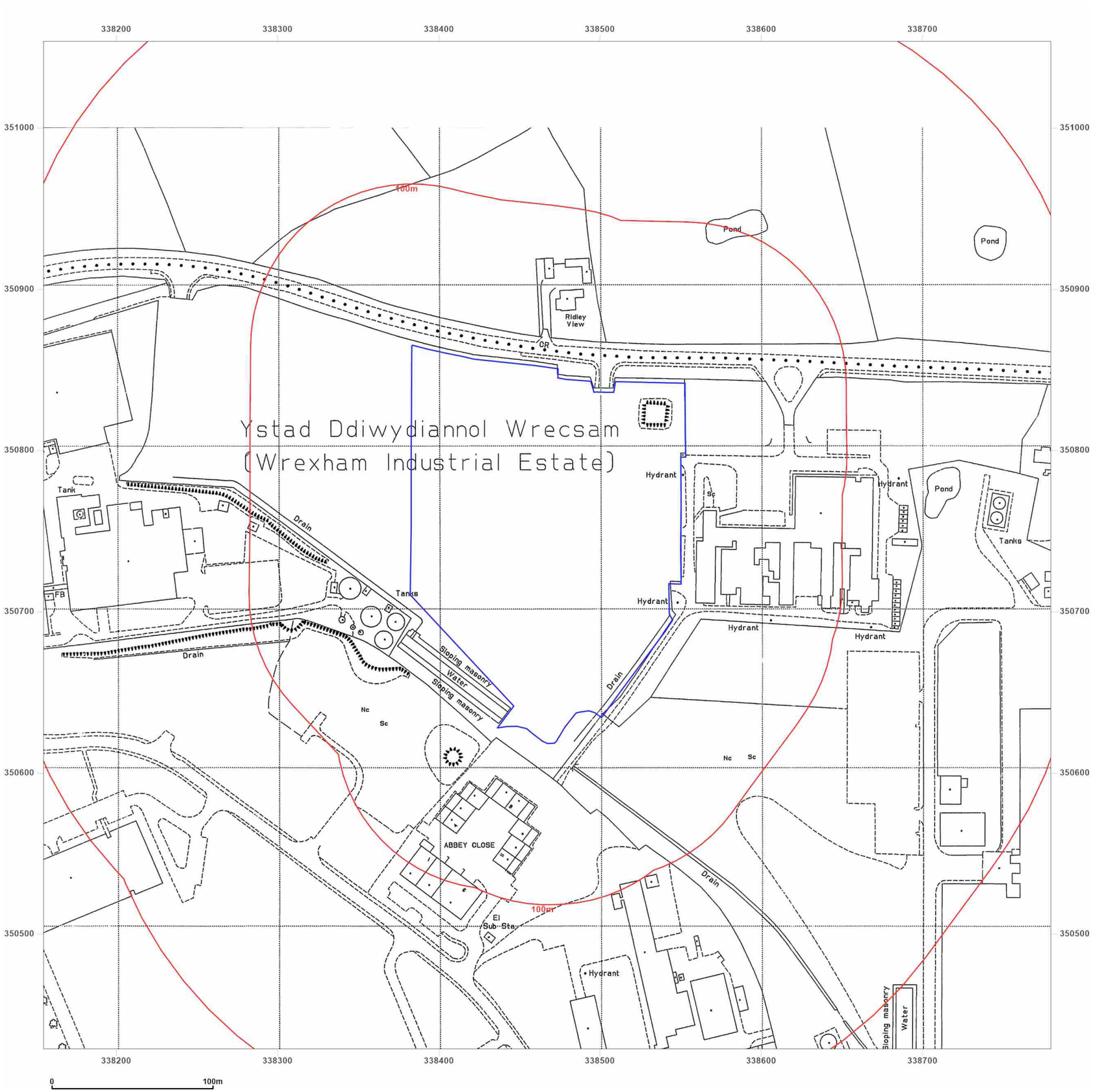
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Site Details:

Bryn Lane South, Wrexham

Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **1995**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1995
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

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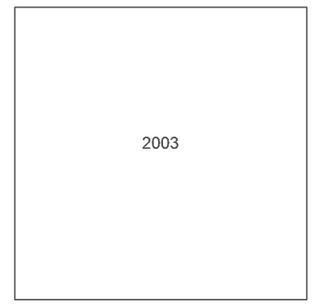
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Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: LandLine
Map date: **2003**
Scale: 1:1,250
Printed at: 1:1,250

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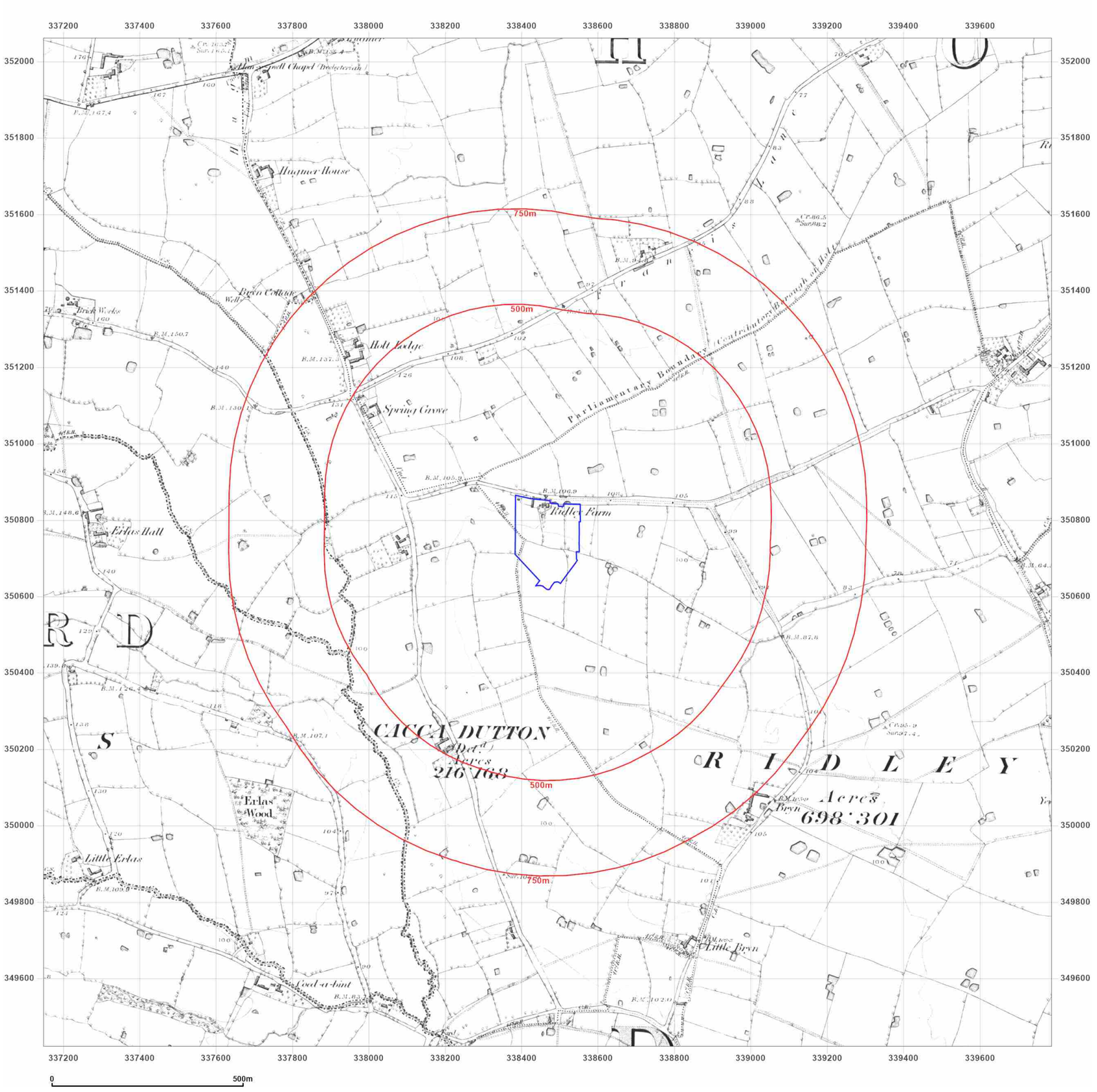
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Site Details:

Bryn Lane South, Wrexham

Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: County Series

Map date: **1872**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1872
Revised 1872
Edition N/A
Copyright N/A
Levelled N/A

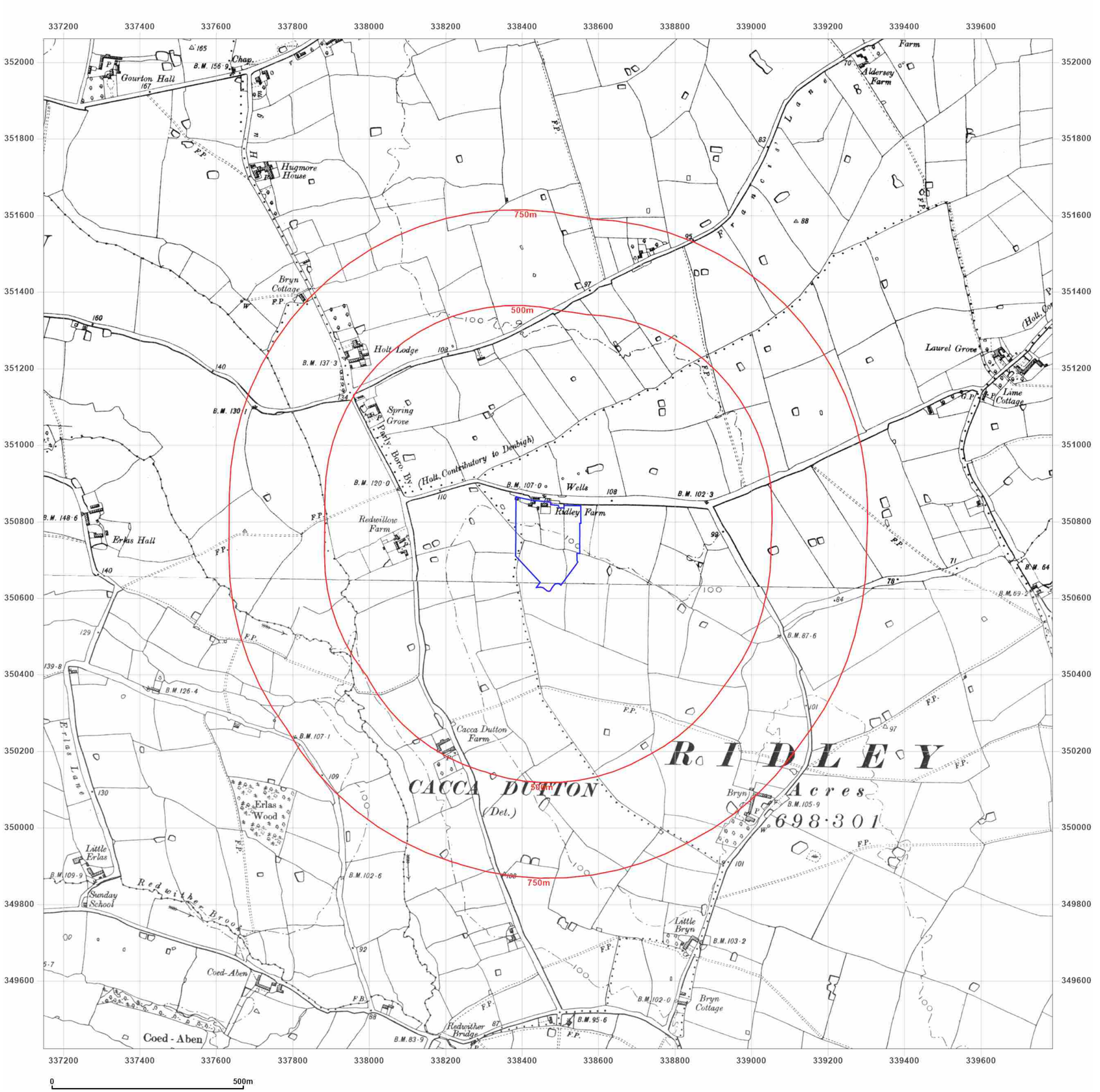
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Groundsure INSIGHTS

Site Details:

Bryn Lane South, Wrexham

Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: County Series

Map date: **1898-1900**

Scale: 1:10,560

Printed at: 1:10,560

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

Surveyed 1872
Revised 1898
Edition N/A
Copyright N/A
Levelled N/A

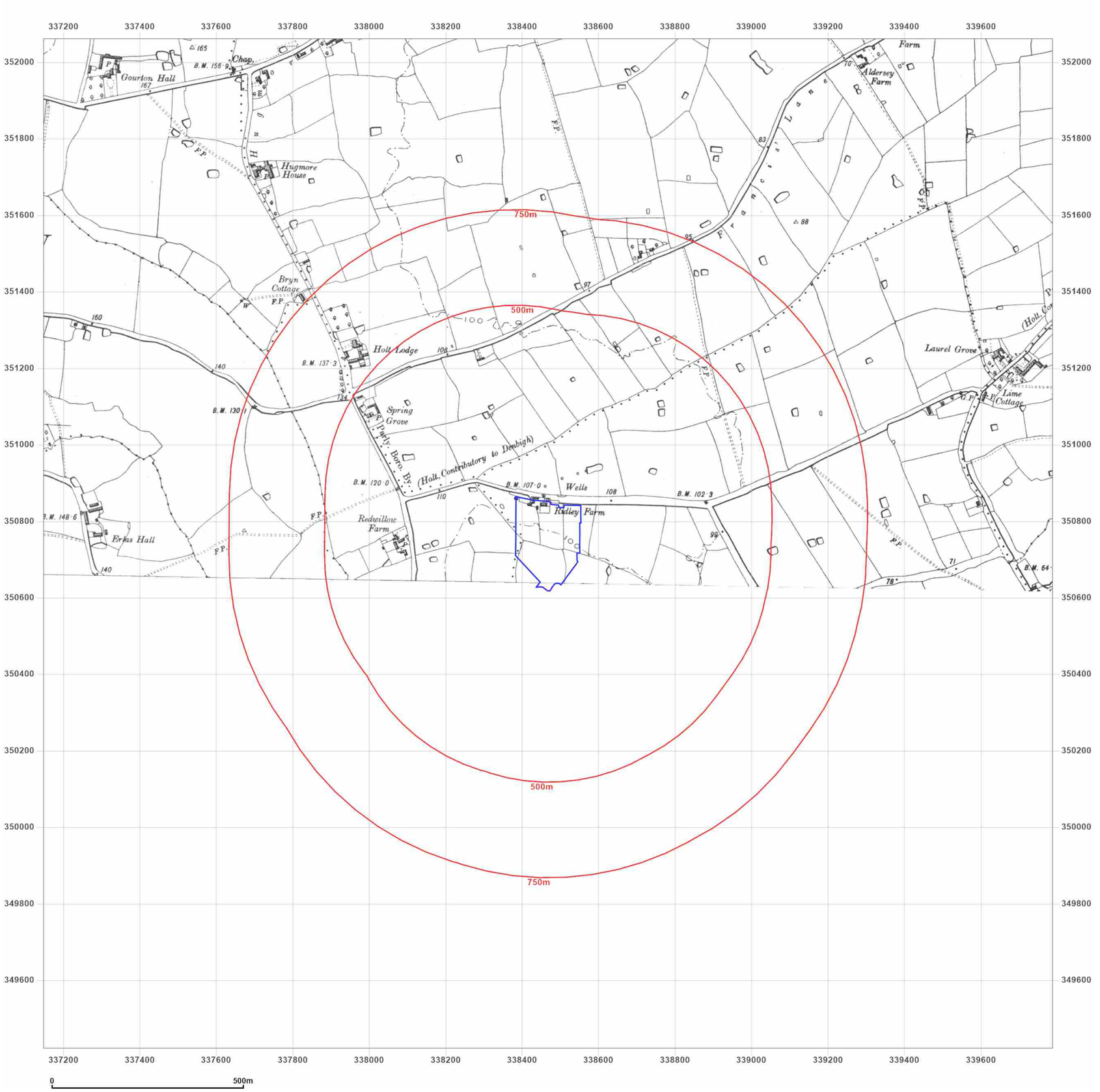
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Site Details:

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Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: County Series

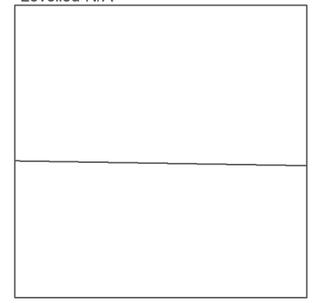
Map date: **1900**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1872
Revised 1900
Edition N/A
Copyright N/A
Levelled N/A



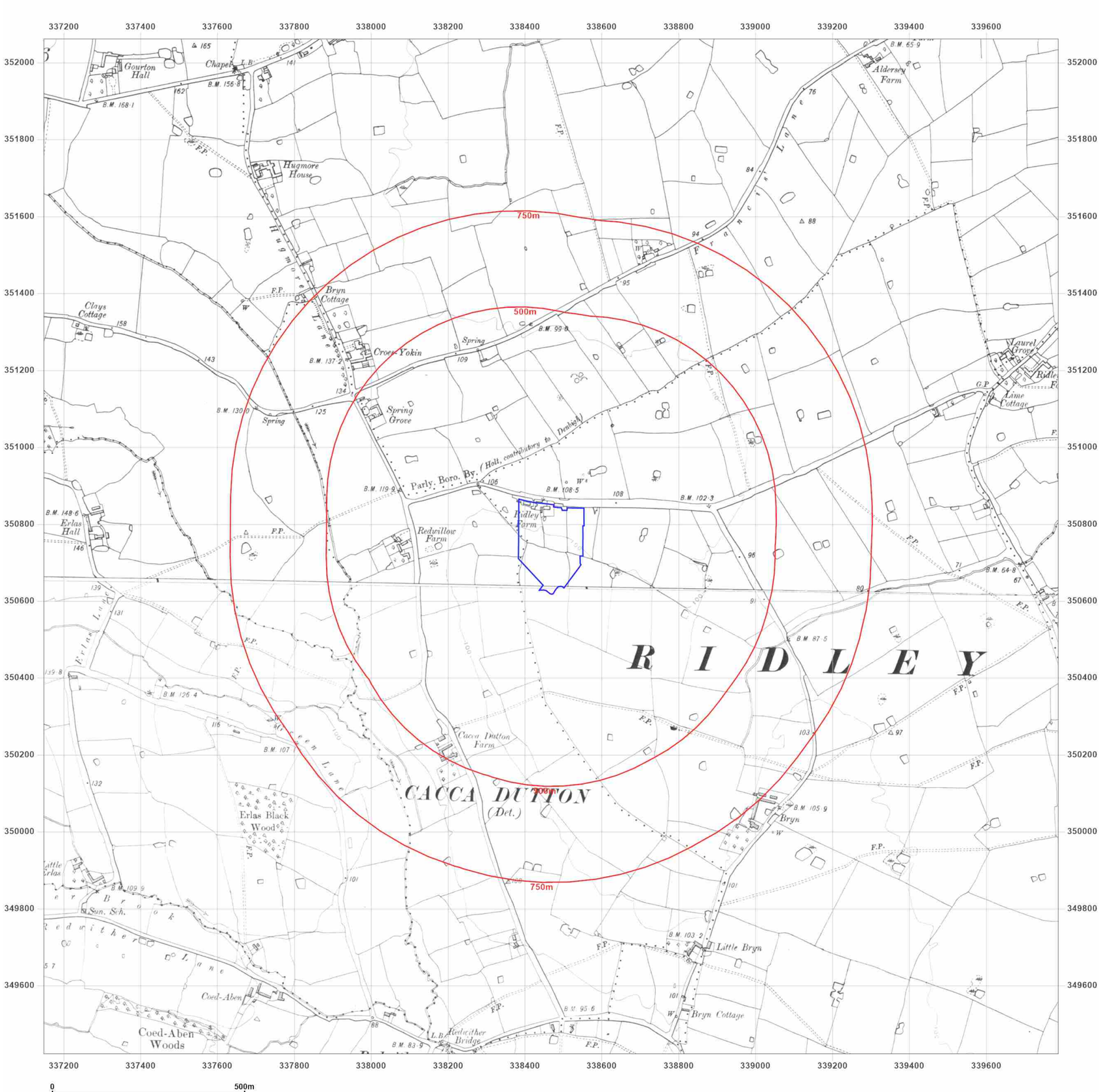
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Site Details:

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Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: County Series

Map date: **1909-1914**

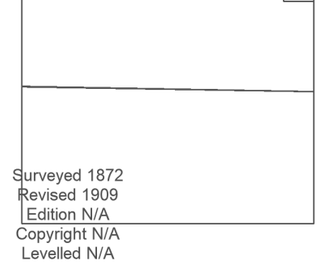
Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1871
Revised 1914
Edition 1914
Copyright N/A
Levelled N/A

Surveyed 1874
Revised 1913
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1872
Revised 1909
Edition N/A
Copyright N/A
Levelled N/A

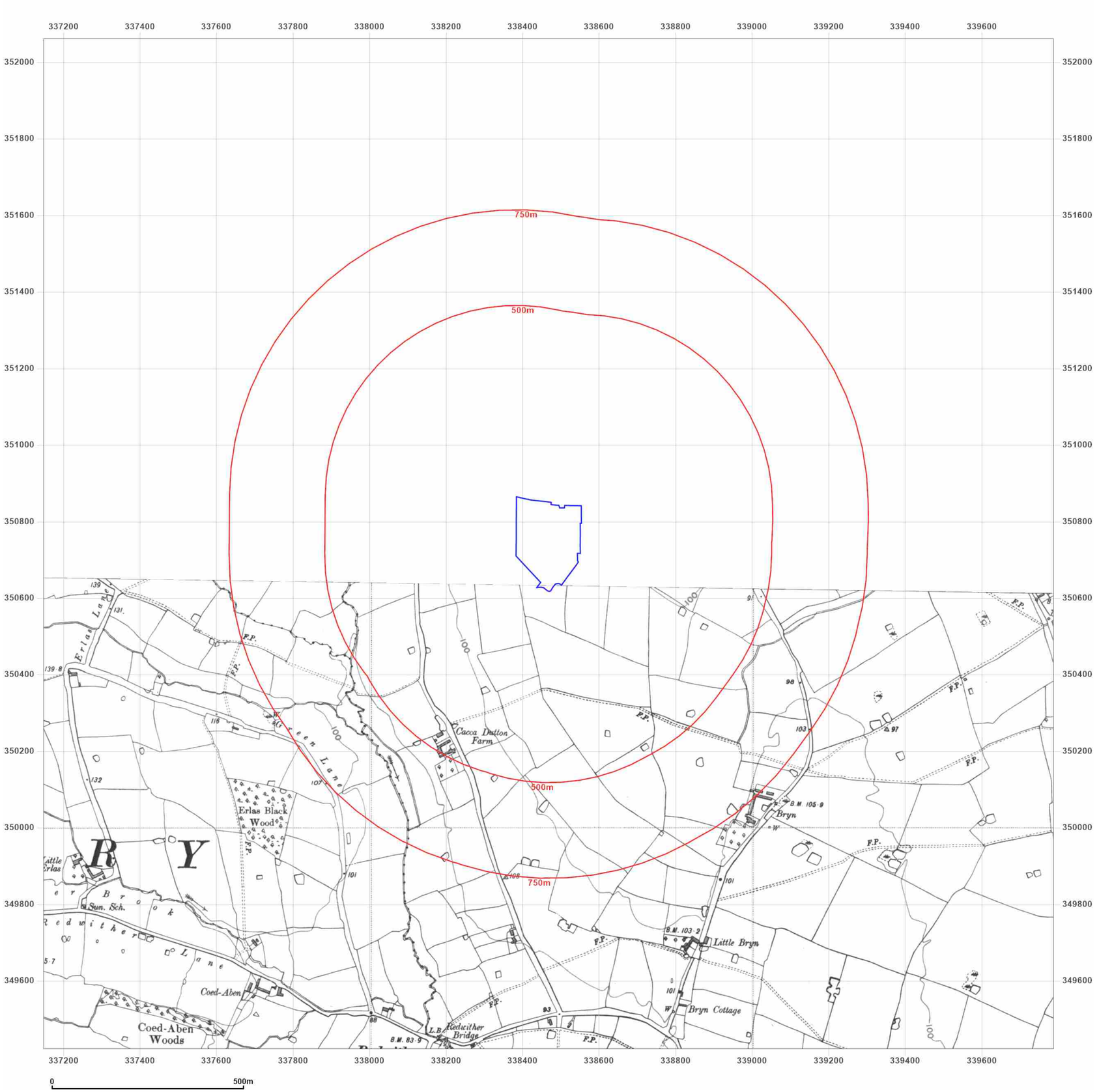
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Site Details:

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Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

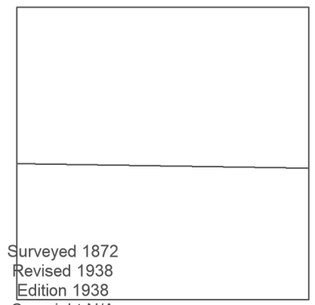
Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1872
Revised 1938
Edition 1938
Copyright N/A
Levelled N/A

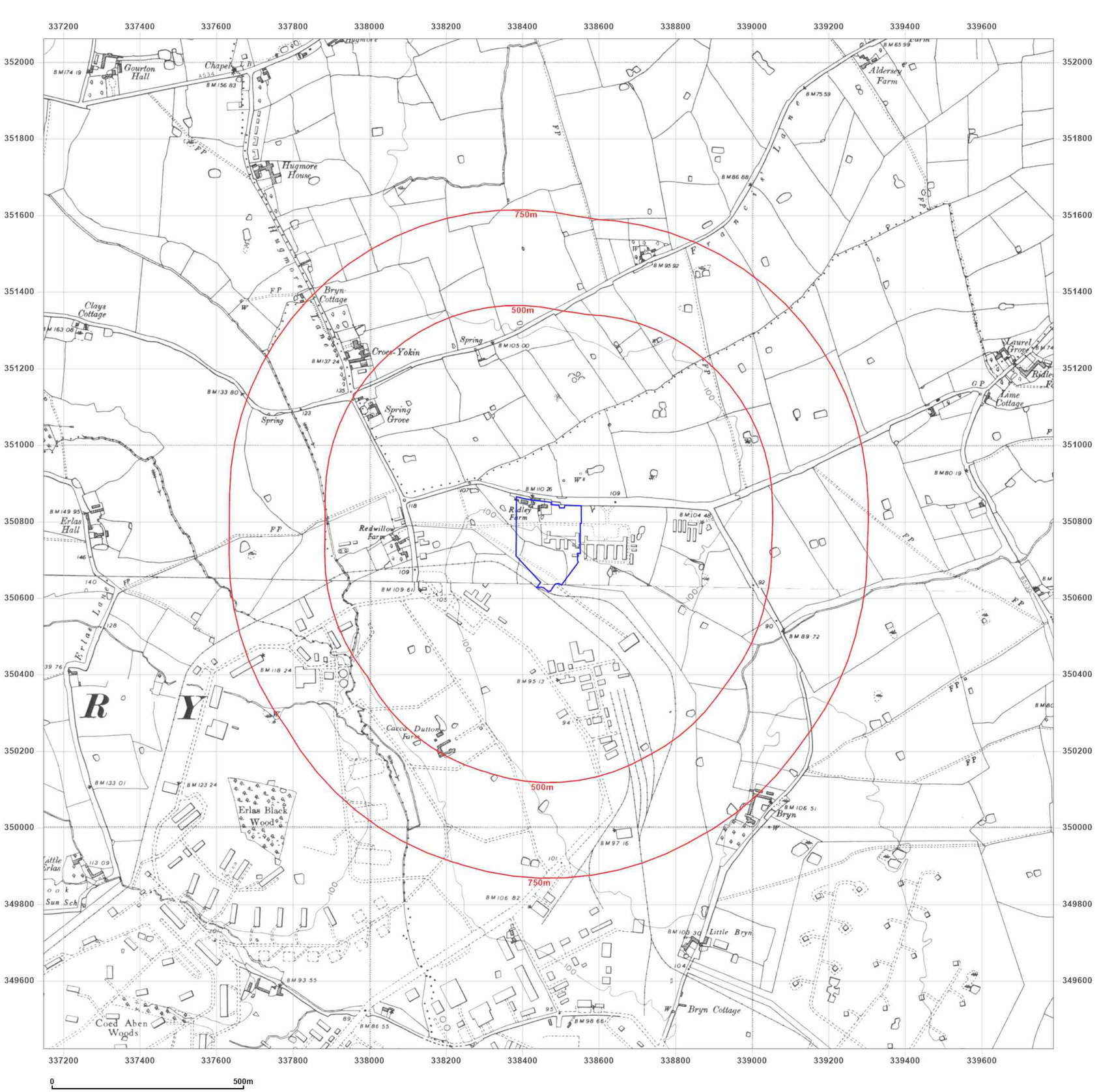
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Groundsure INSIGHTS

Site Details:

Bryn Lane South, Wrexham

Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: County Series

Map date: **1949**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1871
Revised 1949
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1872
Revised 1949
Edition N/A
Copyright N/A
Levelled N/A

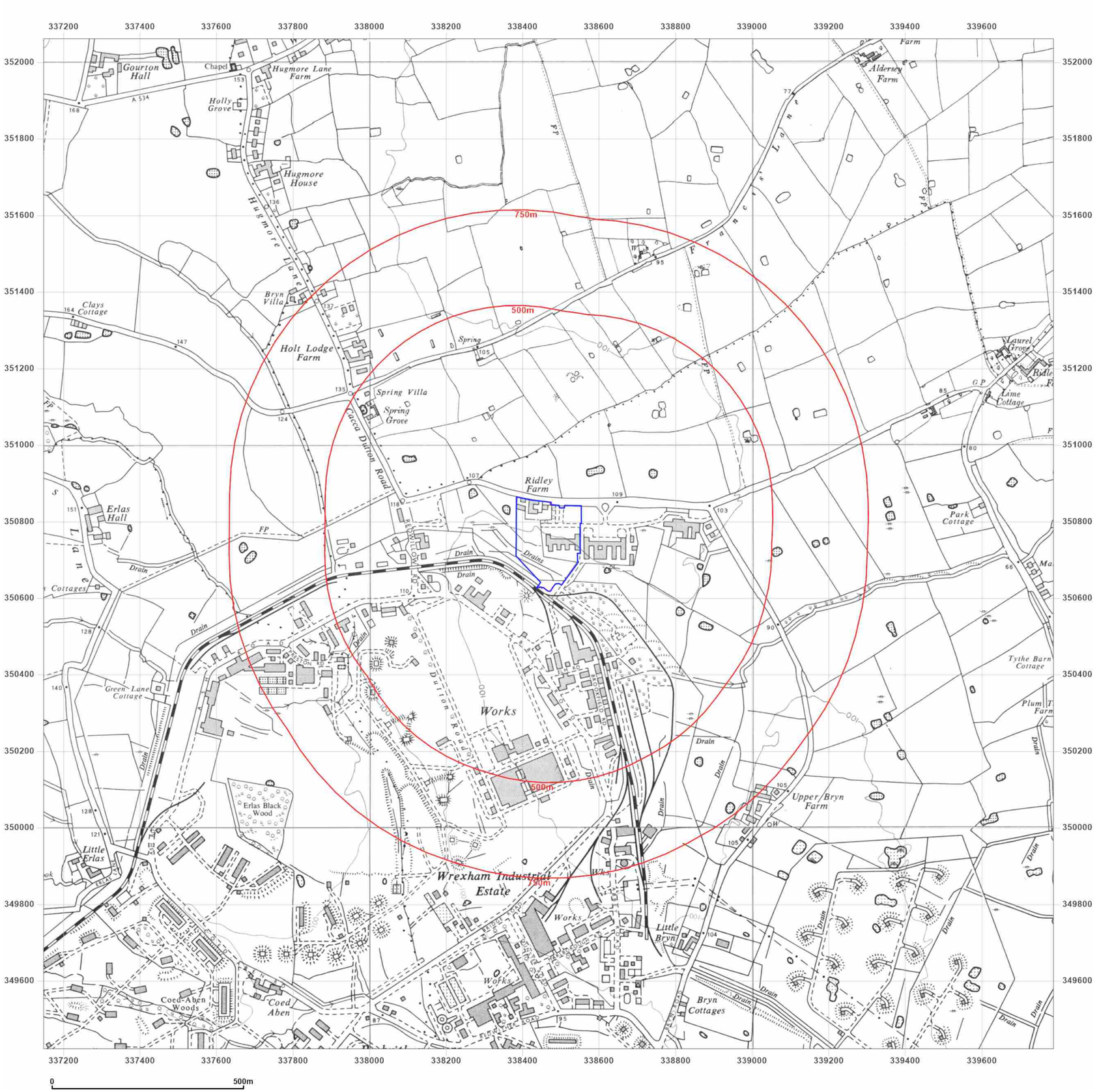
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Site Details:

Bryn Lane South, Wrexham

Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: Provisional

Map date: **1960-1964**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1874
Revised 1960
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1964
Revised 1964
Edition N/A
Copyright N/A
Levelled N/A

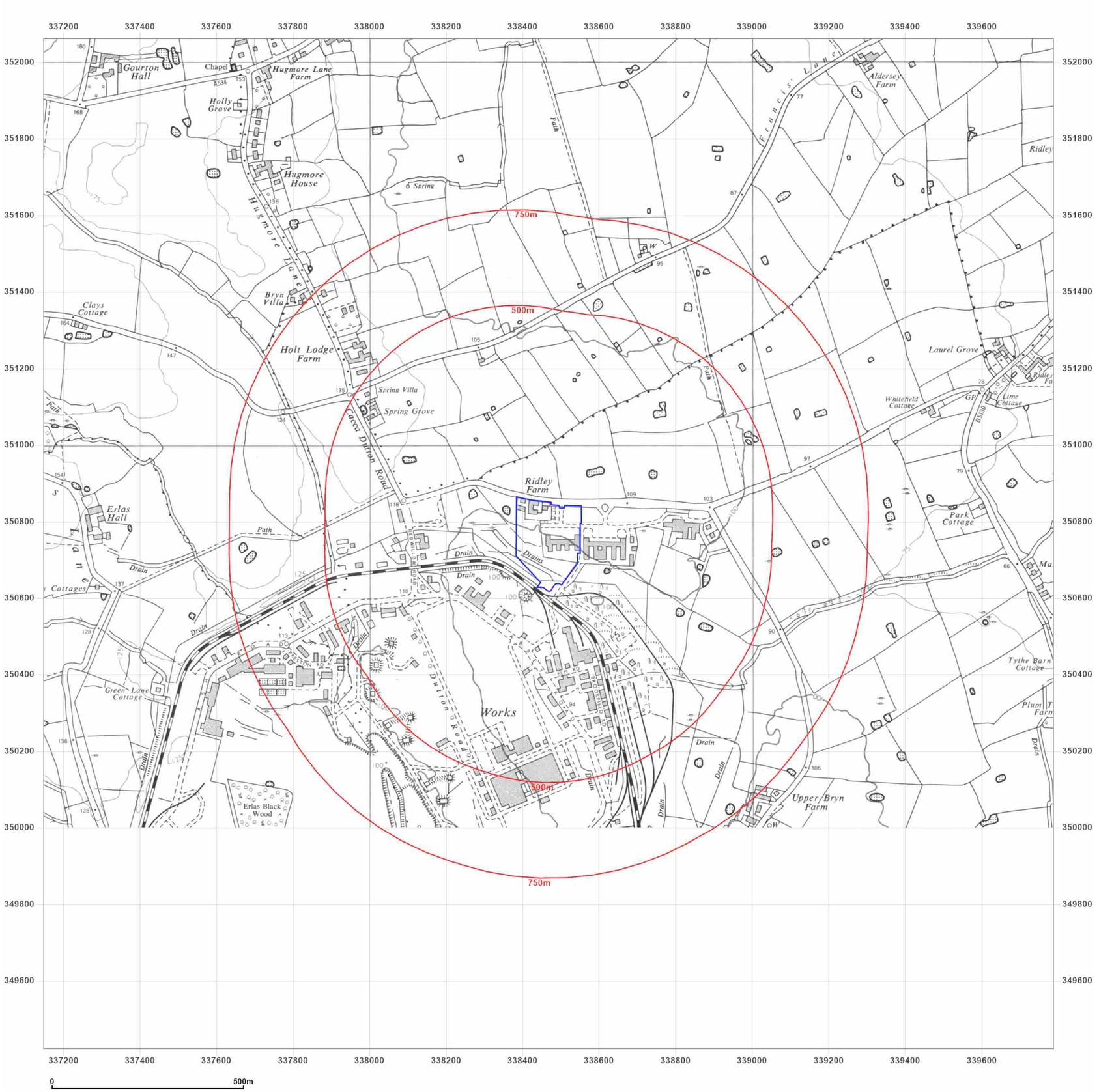
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Groundsure INSIGHTS

Site Details:

Bryn Lane South, Wrexham

Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: Provisional

Map date: **1968**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1968
Revised 1968
Edition N/A
Copyright N/A
Levelled N/A

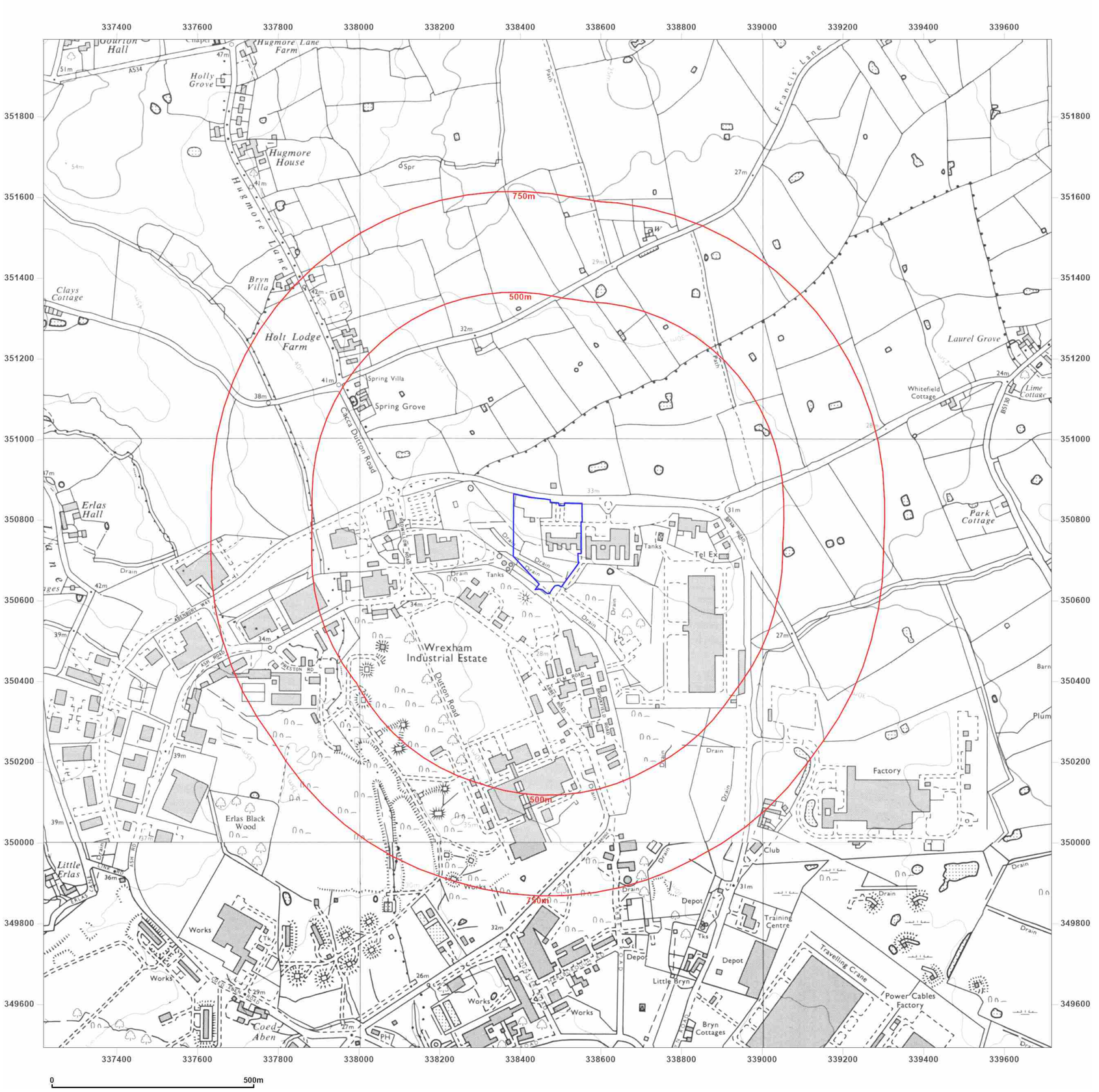
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Site Details:

Bryn Lane South, Wrexham

Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **1979-1982**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1970
Revised 1982
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1975
Revised 1978
Edition N/A
Copyright 1979
Levelled 1969

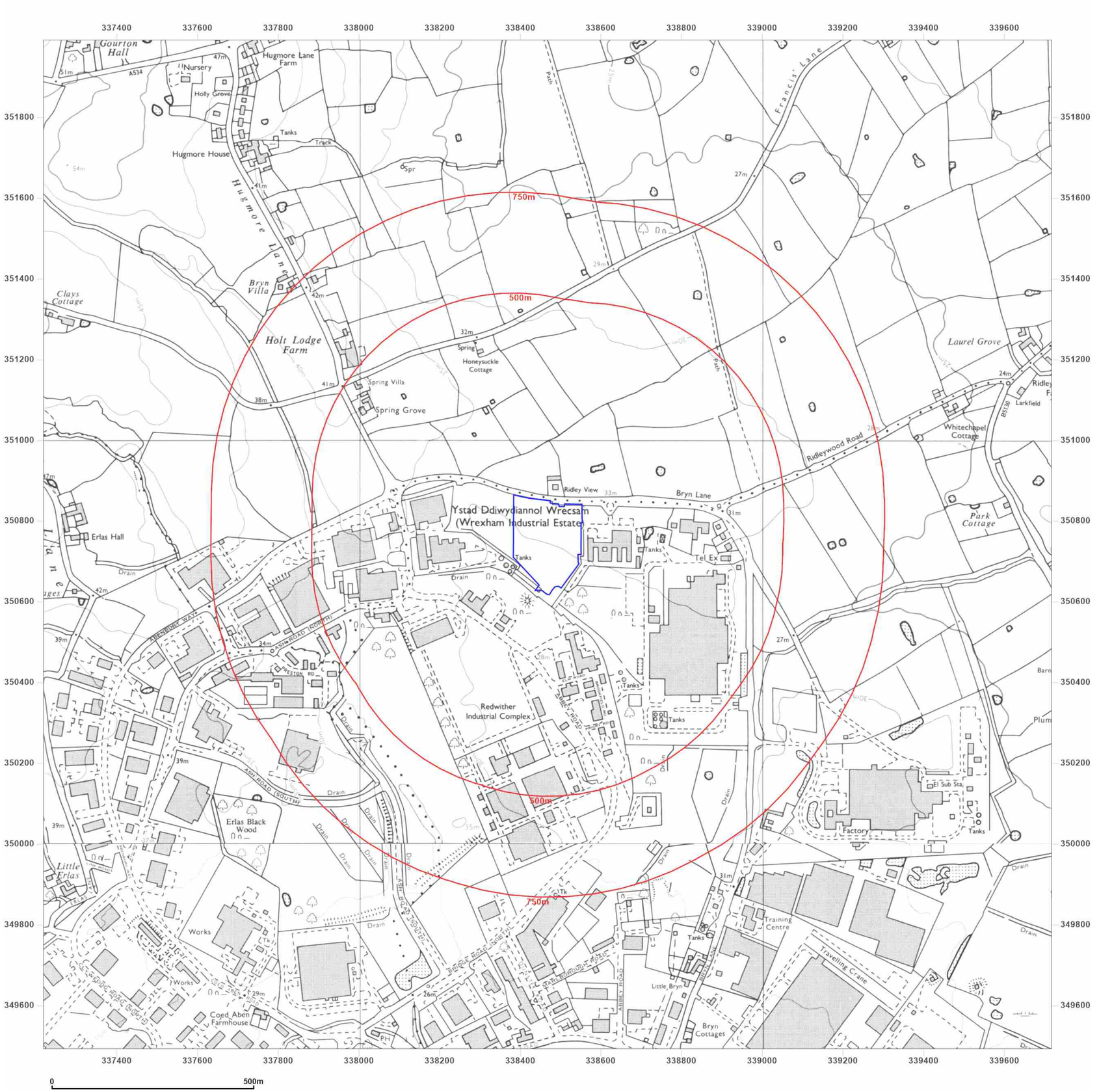
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Site Details:

Bryn Lane South, Wrexham

Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **1992**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1990
Revised 1992
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1983
Revised 1992
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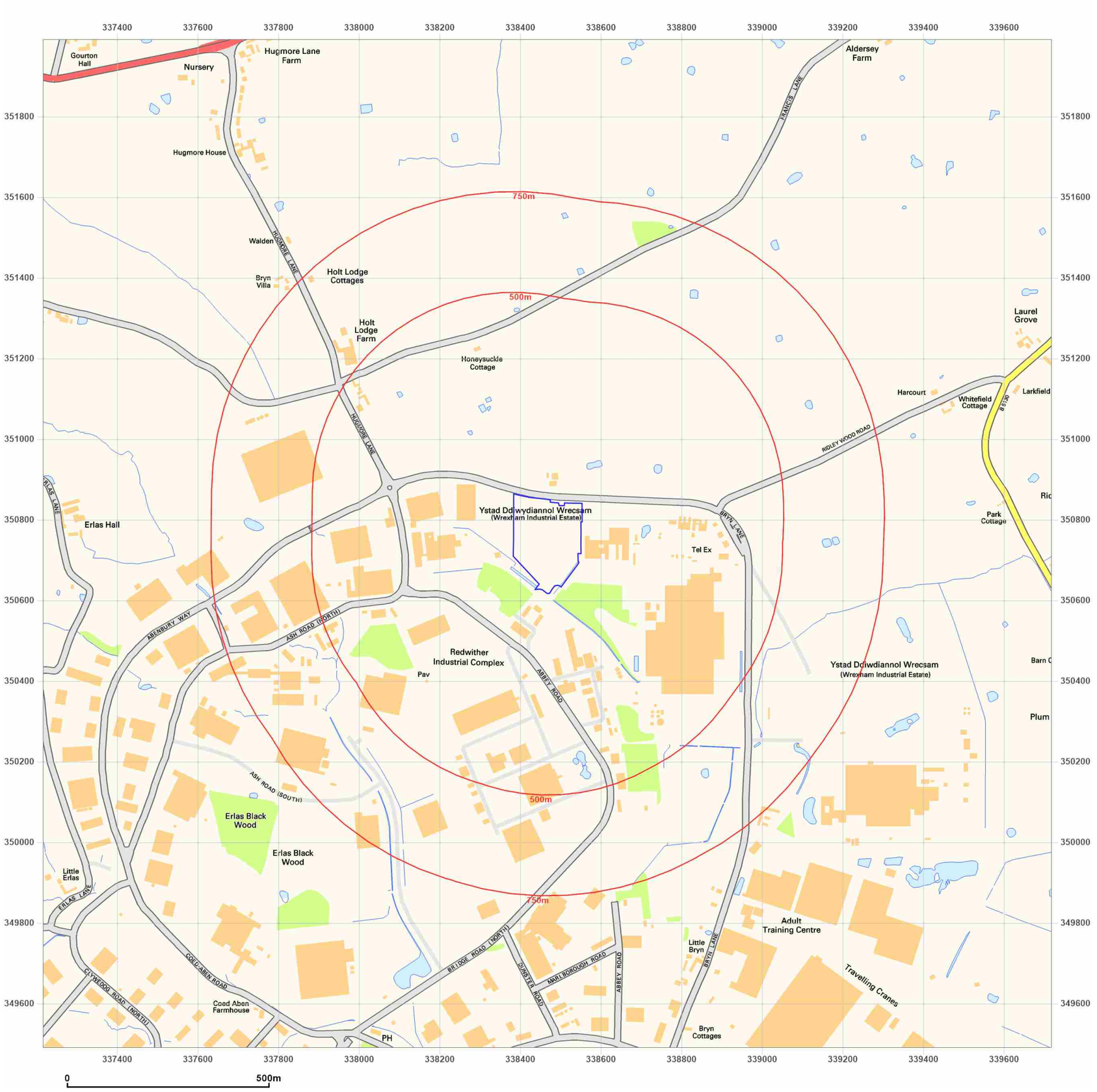
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Groundsure INSIGHTS

Site Details:

Bryn Lane South, Wrexham

Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

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2001

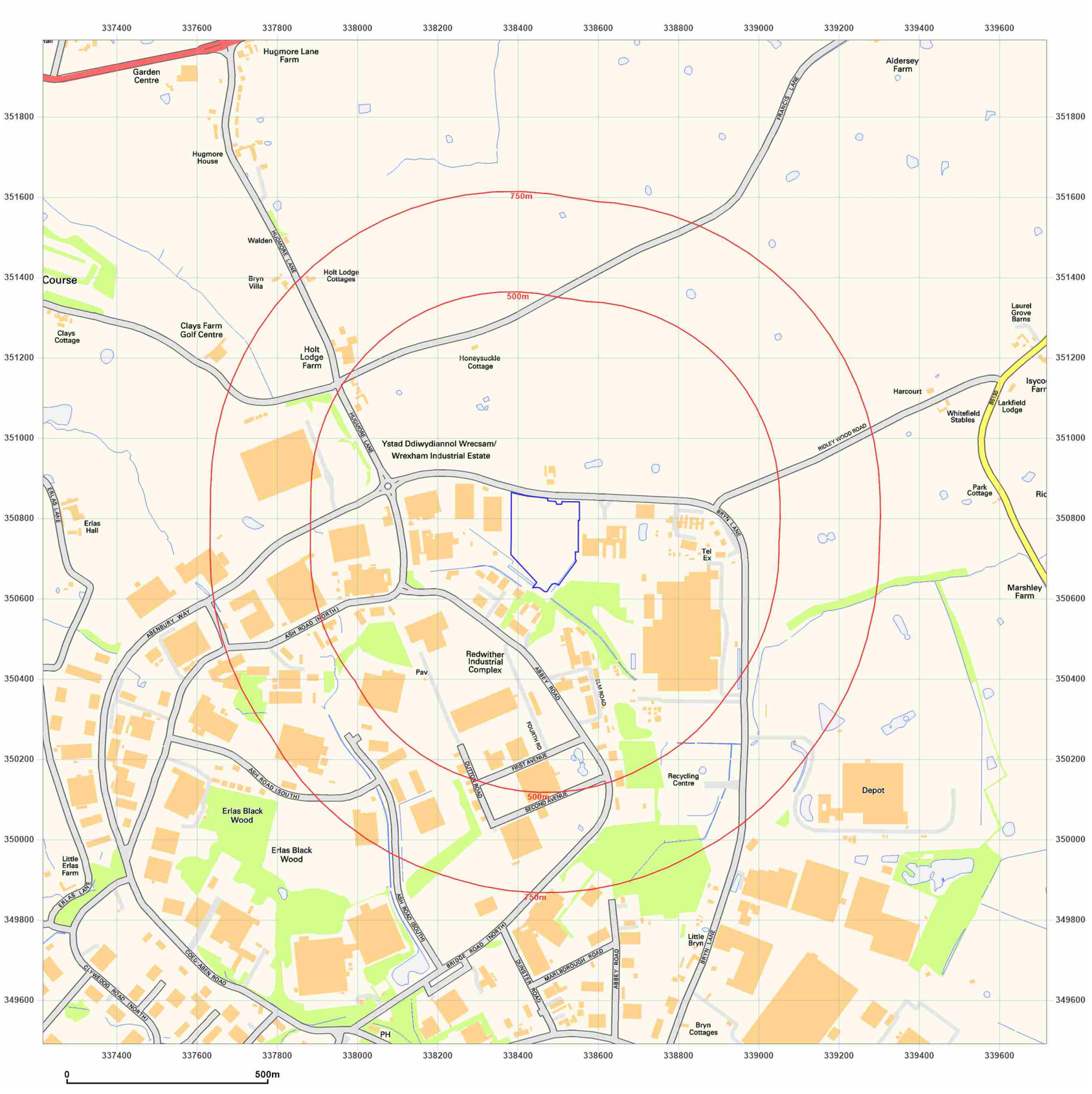
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Groundsure INSIGHTS

Site Details:

Bryn Lane South, Wrexham

Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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2010

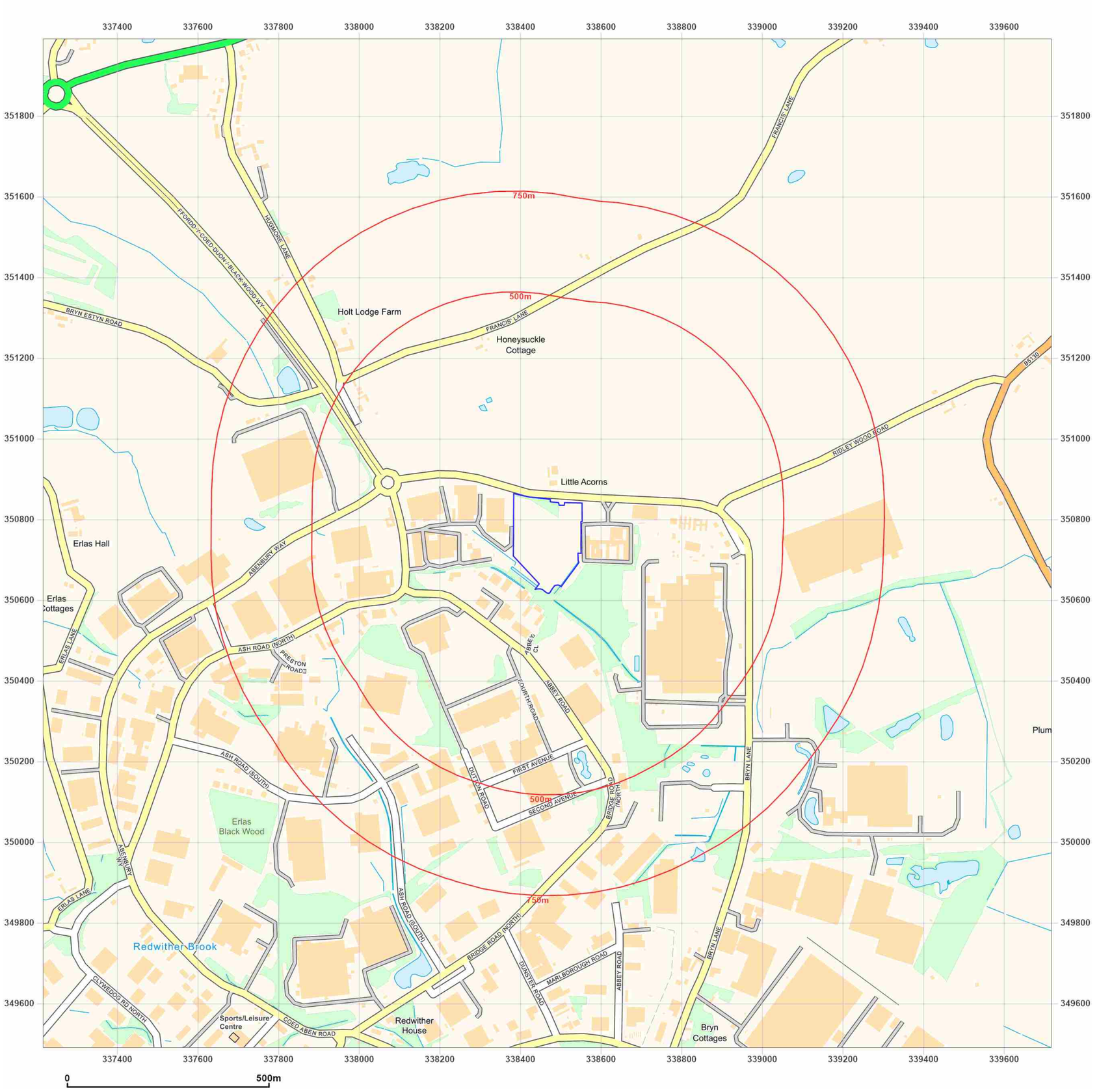
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Client Ref: TE1891_3479
Report Ref: GS-PZO-K9E-3ZG-7CF
Grid Ref: 338467, 350741

Map Name: National Grid

Map date: **2024**

Scale: 1:10,000

Printed at: 1:10,000

N
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2024

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

APPENDIX D - REGULATOR PROVIDED INFORMATION

From:	Enquiries
To:	Christina Shannon
Cc:	Library
Subject:	RE: FW: EA_ Environmental Search request Letter_TE1891 NRW:00693940
Date:	24 December 2024 11:20:25
Attachments:	image.png image.png image002.png image003.png image001.jpg

---

Hello,

Thank you for contacting Natural Resources Wales (NRW). Please see the links provided below in response to your query. These should help you further.

Natural Resources Wales / Access our data, maps and reports
Home | DataMapWales
NRW Data Discovery | home

If you still require further information or can not find what you are looking for, please contact us back and we will look in to this further.

Kind regards,

Cymorth Cyswllt Cyfoeth / Customer Hub Support
Cwsmeriaid, Cyfathrebu a Masnachol / Customer, Communications and Commercial Directorate
Rhif ffôn: 03000 653 000 / Phone number: 03000 653 000
E-bost / E-mail: enquiries@naturalresourceswales.gov.uk
Cyfoeth Naturiol Cymru / Natural Resources Wales

Croesewir gohebiaeth yn Gymraeg a byddwn yn ymateb yn Gymraeg, heb i hynny arwain at oedi.
Correspondence in Welsh is welcomed, and we will respond in Welsh without it leading to a delay.

From: Christina Shannon <christina.shannon@tieruk.com>
Sent: Friday, December 20, 2024 9:16 AM
To: Library <library@cyfoethnaturiolcymru.gov.uk>
Subject: EA_ Environmental Search request Letter_TE1891

You don't often get email from christina.shannon@tieruk.com. Learn why this is important

Rhybudd: Deilliodd yr e-bost hwn o'r tu allan i'r sefydliad. Peidiwch â chlicio dolenni, atodiadau agored nac sganio codau QR oni bai eich bod yn cydnabod yr anfonwr ac yn gwybod bod y cynnwys yn ddiogel.

Caution: This email originated from outside of the organisation. Do not click links, open attachments or

scan QR Codes unless you recognise the sender and know the content is safe.

Good afternoon,

Please find the attached environmental search request.

Please use ref TE1891 in all returning correspondence.

Kind regards,
Christina

Christina Shannon

Office Manager | Tier Environmental

Unit 5 Office Village, Sandpiper Court, Chester Business Park, Chester, CH4 9QZ

t: 01925 818388 | e: christina.shannon@tieruk.com | w: tieruk.com

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Cyngor Bwrdeistref Sirol Wrecsam/ Wrexham County Borough Council
Neuadd y Dref, Wrecsam. LL11 1AY
Guildhall, Wrexham. LL11 1AY
DX: 721924 - Wrexham 4
www.wrecsam.gov.uk www.wrexham.gov.uk
Cyfnewid Testun/Text Relay: 18001

wrexham
COUNTY BOROUGH COUNCIL
CYNGOR BWRDEISTREF SIROL
wrecsam

Christina Shannon
Tier Environmental
Unit 5 Office Village
Sandpiper Court
Chester Business Park
Chester
CH4 9QZ

Eich Cyf/Your Ref	TE1891
Ein Cyf/Our ref	Search 1118
Dyddiad/Date	03 January 2025
Gofynner am/Ask for	Stacey Inglis
Rhif Cyswllt/Contact No	01978 298773
E-bost/E-mail	contaminatedland@wrexham.gov.uk

BY EMAIL ONLY

ENVIRONMENTAL SEARCH – BRYN LANE, HOLT, WREXHAM, WALES LL13 9RX – GRID REFERENCE 338465 350752

Dear Christina Shannon,

Further to your email dated 19 December 2024 and subsequent receipt of payment for the search received on 23 December 2024 I can provide the following comments:

1. *Records of any landfills on or within the vicinity of the site*

There are no records of any landfills within 250m of the site.

2. *Any information pertaining to historic contaminated land uses of contamination concerns*

The Contaminated Land Team does not yet have a comprehensive database regarding historic land use or contamination, however the limited information available to the Contaminated Land Team indicates that the above property is on land that was formerly used by the Ministry of Defence (MoD) for the manufacture of explosives. The limited records held by this Department, associated with this former use, are summarised as follows:

i. The Royal Ordnance Factory (ROF) Wrexham was the largest explosives factory in the area;
ii. The site covered an area of over 1400 acres and was served by its own railway;
iii. It became operation in 1941, about a year after the facility was constructed. It consisted of a number if production buildings, widely spaced to minimise and damage should an accidental explosion occur;
iv. Two units were built for the manufacture of solventless cordite also known as Cordite W;

Rydym yn croesawu gohebiaeth yn Gymraeg. Byddwn yn ymateb i unrhyw ohebiaeth yn Gymraeg ac ni fydd hyn yn arwain at unrhyw oedi.
We welcome correspondence in Welsh. We will respond to any correspondence in Welsh and this will not lead to any delay.

v. Operation of the ROF ceased on 11 August 1945. Shortly after the war the site was sold for development as an Industrial Estate;
vi. Cordite is produced by the incorporation of Nitrocellulose (guncotton) with Nitroglycerine in the presence of a solvent to assist gelatinisation, although at Wrexham Carbamite was introduced as a suitable stabiliser instead of solvents. The cordite produced at Wrexham was 'flashless', produced by the inclusion of a large proportion of finely divided Nitroguanidine (Pircrite);
vii. Further information of contamination issues associated with the manufacture of explosives is contained in the Environment Agency document 'Land Contamination: Technical Guidance on Special Sites: Explosive Manufacturing & Processing Sites' Research & Development Technical Report P5-042/TR/03, dated June 2001.

The former Department of Industry Profiles and Contaminated Land Research (CLR) Report 8: Potential Contaminants for the Assessment of Land identify historical munitions sites as sites that may have ground contamination, therefore the Council will be required to consider the former MoD land under its duties of implementing Part 2A of the Environmental Protection Act 1990.

Due to the historic use of the land it is likely that the above property will need to be considered further by this Department under Part 2A. It should be noted that the fact that the area is likely to be considered under Part 2A does not necessarily mean that it will be determined as 'Contaminated Land' as any future assessment undertaken may find that there is no significant risk. Unfortunately it is not possible to advise you of a likely time when such an assessment may take place since it will be subject to financial resources and prioritisation against other potential contaminated sites in the Borough that also require assessment.

In the context of other potential contaminated land sites that have been identified to date, the site in question is currently considered to be of a lower priority. However this could change at any point if for instance new information were to come to light, or if there is a change in guidance or any of the other factors that we consider when prioritising and planning Part 2A works.

You may be interested to know that some sites on the Industrial Estate have had ground contamination issues assessed. These have mainly been the result of a planning condition requiring a contamination assessment for the development of the site. Some assessments have shown no contamination to have been present, whilst others have shown some contamination that has required remediation measures for its safe development. In many of these cases the contamination was not necessarily due to the sites former use by Royal Ordnance but by subsequent operations on the site or made ground.

In addition the site being on former MoD land the Landmark Information Group historical maps have marked the north eastern section of the site as a 'factory or works – use not specified' (1992), there is a 'Tank' (1992) located to the south west of the site and three 'water fill' (1881,1954 and 1954) on the northern section.

3. Any records of odour complaints or similar evidence of historic contamination

There are no records of any odour complaints on the site, however there are records of odour complaints (2016 and 2018) from industrial units on the industrial estate. Should you require any additional information regarding this, please contact our Environmental Protection Team at HealthandHousing@wrexham.gov.uk.

4. *Information of any asbestos*

We do not hold any records regarding asbestos at the above site.

5. *Information associated with any historic site investigations*

We do not hold any records of historic site investigations at the above site.

6. *Information associated with any previous remediation*

We do not hold any records of previous remediation at the above site.

7. *Any pertinent information pertaining to know geotechnical issues such as sinkholes, subsidence, mining related issues etc*

We hold no records of geotechnical issues at the above site.

Should you have any queries then please do not hesitate to contact me on the above number.

Yours sincerely



Ms Stacey Inglis
Contaminated Land Officer

From: FoI
To: Christina Shannon
Subject: North Wales Fire and Rescue Service Freedom of Information Act Request #1600
Date: 09 January 2025 08:54:58
Attachments: image001.jpg

Dear Christina,

Further to your recent request to North Wales Fire and Rescue Service made under the terms of the Freedom of Information Act regarding Fire incidents at Bryn Lane, Holt, Wrexham, Wales LL13 9RX Grid Reference: 338465 350752. Please see the below for the response from North Wales Fire and Rescue Service.

North Wales Fire and Rescue Service have found no fire incidents at this specific location.

If you are dissatisfied with the handling of your request, you have the right to ask for an internal review. Internal review requests should be submitted within two months of the date of receipt of the response to your original correspondence and should be addressed to:

The Freedom of Information Officer

North Wales Fire and Rescue Service Headquarters

Ffordd Salesbury

St Asaph Business Park

St Asaph

Denbighshire

LL17 0JJ

If you remain dissatisfied with the handling of your request, you have a right to appeal to the Information Commissioner at:

The Information Commissioner's Office

Wycliffe House

Water Lane

Wilmslow

Cheshire

SK9 5AF

Telephone: 08456 30 60 60 or 01625 54 57 45

Website: www.ico.gov.uk

There is no charge for making an appeal.

Kind Regards,

Information Governance Department | Adran Llywodraethu Gwybodaeth
Gwasanaeth Tân & Achub Gogledd Cymru | North Wales Fire and Rescue Service
Ffôn / Tel: 01745 535250

Sent: 19 December 2024 13:44
To: FoI <FoI@northwalesfire.gov.wales>
Subject: Contact Us form submission

Contact Us Request:
Name: Christina Shannon
Email: christina.shannon@tieruk.com
Subject: Freedom of Information
Country: Wrexham
Address: Site Address: Bryn Lane, Holt, Wrexham, Wales LL13 9RX Grid Reference: 338465 350752
Telephone: 01925818388
Enquiry details: To whom it may concern, We are looking to undertake a search of relevant information pertaining to any historical fires at the below site as part of a Geoenvironmental desk study we are conducting. Site Address: Bryn Lane, Holt, Wrexham, Wales LL13 9RX Grid Reference: 338465 350752 Please find below the site location plan for the above enquiry. We would be obliged if you could supply the following information: • Details of any fires reported at the address, including the following: o Dates of the fire(s) o Reference numbers associated with the incidents; o Nature and scale of the fire(s); and, o Cause of the fire(s) • Details of the fire fighting fluids or materials used, including: o Whether PFAS containing fire fighting foams were used (please note that this is an important consideration for our desk study); o Whether just water was used; o The volumes used to put out the fires o Details of any reported run-off into drains or the ground etc.

****
Cyfrinachedd: Mae'r neges e-bost hon ac unrhyw ffeiliau a drosglwyddir gyda hi, yn breifat ac fe allent fod yn cynnwys gwybodaeth sy'n gyfrinachol neu'n gyfreithiol-freintiedig. Os byddwch yn derbyn y neges hon trwy gamgymeriad, a fyddech mor garedig â rhoi gwybod inni a chael gwared arni o'ch system ar unwaith.

Ymwadiad: Fe allai e-bostio trwy'r We fod yn agored i oedi, rhyng-gipio, peidio â chyrraedd, neu newidiadau heb eu hawdurdodi. Felly, nid yw'r wybodaeth a fynegir yn y neges hon yn cael cefnogaeth GTAGC oni bai fod cynrychiolydd awdurdodedig, yn annibynnol ar yr e-bost hwn, yn hysbysu ynghylch hynny. Ni ddylid gweithredu o ddibynnu ar gynnwys yr e-bost hwn yn unig.

Monitro: Bydd GTAGC yn monitro cynnwys e-byst at ddiben atal neu ddarganfod troseddau, a hynny er mwyn sicrhau diogelwch ein systemau cyfrifiadurol a gwirio cydymffurfiad â'n polisïau.

Gwasanaeth Tân ac Achub Gogledd Cymru
Parc Busnes Llanelwy, Sir Ddinbych. LL17 0JJ
****
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North Wales Fire and Rescue Service
St Asaph Business Park, Denbighshire. LL17 0JJ
****

APPENDIX E - PREVIOUS REPORTS (AVAILABLE AS A SEPARATE DOCUMENT)

APPENDIX F - DEFINITIONS OF TERMS USED IN QUALITATIVE AND QUANTITATIVE RISK ASSESSMENTS

CIRIA C552 Terminology

For the qualitative and quantitative assessment of risks posed by potential pollutant linkages have been undertaken using the risk matrix adapted from CIRIA C552 and outlined in the table below.

	Category	Definition
Potential severity	Severe	Acute (short term) risk to human health, Major pollution of sensitive controlled waters, ecosystems or habitat. Catastrophic damage to buildings or property or crops.
	Medium	Chronic (Medium / long term) risk to human health Pollution of sensitive controlled waters, ecosystems or species, Significant damage to crops, buildings or structures
	Mild	Easily preventable permanent health effects on humans. Pollution of non-sensitive controlled waters. Minor damage to buildings or structures.
	Minor	Easily preventable non-permanent health effects on humans, or no effects. Minor, low level and localised contamination of on-site soil. Easily repairable damage to buildings or structures.
Probability of risk	High Likelihood	Pollutant linkage may be present, and the risk is almost certain to occur , or there is evidence of harm already occurring.
	Likely	Pollutant linkage may be present, and it is probable that the risk will occur over the long term.
	Low Likelihood	Pollutant linkages may be present and there is a possibility of the risk occurring, although there is no certainty that it will do so.
	Unlikely	Pollutant linkage may be present but the circumstances under which harm would occur are improbable.

		Potential Severity			
		Severe	**Medium**	**Mild**	**Minor**
Probability of risk	**High Likelihood**	Very high risk	High risk	Moderate risk	Moderate / low risk
	Likely	High risk	Moderate risk	Moderate / low risk	Low risk
	Low Likelihood	Moderate risk	Moderate / low risk	Low risk	Very low risk
	Unlikely	Moderate / low risk	Low risk	very low risk	Very low risk

APPENDIX G - CONTROLLED WATERS RISK ASSESSMENT

CURRENT GUIDANCE FOR CONTROLLED WATERS RISK ASSESSMENT

Regulatory Context

Government policy is based upon a "suitable for use approach," which is relevant to both the current use of land and also to any proposed future use. When considering the current use of land, Part IIA of the Environment Protection Act 1990 (EPA 1990) provides the regulatory regime, which was introduced by Section 57 of the Environment Act 1995, which came into force in England on 1 April 2000. The main objective of introducing the Part IIA regime is to provide an improved system for the identification and remediation of land where contamination is causing unacceptable risks to human health, controlled waters or the wider environment given the current use and circumstances of the land. Part IIA provides a statutory definition of contaminated land under Section 78A(2) as:

> *"any land which appears to the Local Authority in whose area it is situated to be in such a condition, by reason of substances in, on, or under the land, that:*
>
> *(a) Significant harm is being caused or there is a significant possibility of such harm being caused; or*
>
> *(b) Pollution of controlled waters is being, or is likely to be, caused."*

Part IIA provides a statutory definition of the pollution of controlled waters under Section 78A(9) as:

> *"the entry into controlled waters of any poisonous, noxious or polluting matter or any solid waste matter"*

Controlled Waters are defined Section 104 of the Water Resources Act 1991. In summary, the comprise relevant territorial waters which extend seaward for three miles from the low-tide limit from which the territorial sea adjacent to England and Wales is measured.

The Environment Agency has powers under Part 7 of The Water Resources Act (1991) to take action to prevent or remedy the pollution of controlled waters, including circumstances where the pollution arises from contamination in the land. This is reinforced in The Contaminated Land (England) (Amendment) Regulations 2012 and Contaminated Land Statutory Guidance (DEFRA, 2012) which came into force in early April 2012.

Part IIA introduces the concept of a contaminant linkage; where for potential harm to exist there must be a connection between the source of the hazard and the receptor via a pathway. Risk assessment in contaminated land is therefore directed towards identifying the contaminants, pathways and receptors that can provide contaminant linkages. This is known as the contaminant-pathway-receptor link (CPR or contaminant linkage).

Part IIA places contaminated land responsibility as a part of the planning and redevelopment process, rather than Local Authority or Environment Agency directly, except in cases of very high pollution risk or where harm is occurring. In the planning process, guidance is provided by National Planning Policy Framework (NPPF) of March 2012. The NPPF requires that a site which has been developed shall not be capable of being determined "contaminated land" under Part IIA. Therefore, appropriate risk-based investigation is required to identify the contaminant linkages that can then be assessed, and then mitigated using methods that can be agreed with the planners.

Source Protection Zones

Source Protection Zones (SPZs) are defined by the Environment Agency (for England and Wales), SEPA (Scotland) and the Environment and Heritage Service (Northern Ireland) for groundwater sources such as wells, boreholes and springs that are used for public drinking water supply. The zones show the risk of contamination from activities that might cause groundwater pollution in the area. The size and shape of a zone depends upon subsurface conditions, how the groundwater is removed, and other environmental factors.

SPZs are classified into four categories:

- **Zone 1 (Inner protection zone).** Any pollution that can travel to the abstraction point within 50 days from any point within the zone is classified as being inside Zone 1. This applies at and below the groundwater table. This zone also has a minimum 50 m protection radius around the abstraction point. These criteria are designed to protect against the transmission of toxic chemicals and water-borne disease.
- **Zone 2 (Outer protection zone).** The outer zone covers pollution that takes up to 400 days to travel to the abstraction point, or 25% of the total catchment area, whichever area is the largest. This travel time is the minimum period over which the Environment Agency considers that pollutants need to be diluted, reduced in strength or delayed by the time they reach the abstraction point.
- **Zone 3 (Total catchment).** This is the total area needed to support removal of water from the abstraction point, and to support any discharge from this.
- **Zone of special interest.** This may occasionally be defined as a special case. This is usually where local conditions mean that industrial sites and other potential sources of contamination could affect the groundwater source, even though they are outside the normal catchment area.

Groundwater Vulnerability Assessments

From 1 April 2010 The Environment Agency Groundwater Protection Policy began to use aquifer designations which are consistent with the Water Framework Directive. These designations reflect the importance of aquifers in terms of groundwater as a resource (drinking water supply) but also their role in supporting surface water flows and wetland ecosystems.

The aquifer designation data is based on geological mapping provided by the British Geological Survey. It is updated regularly to reflect their ongoing programme of improvements to these maps. The maps are split into two different type of aquifer designation:

- Superficial (Drift) - permeable unconsolidated (loose) deposits. For example, sands and gravels.
- Bedrock -solid permeable formations e.g. sandstone, chalk and limestone.

The maps display the following aquifer designations:

Table 1. Aquifer Classification ("Geological Classification").

Classification	Definition
Principal Aquifers (Highly Permeable)	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.
Secondary A Aquifers	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.
Secondary B Aquifers	Predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers.
Secondary Undifferentiated Aquifers	This has been assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.
Unproductive Strata	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

Environment Agency Guidance

The Environment Agency's stance on groundwater resources is:

> *"to protect and manage groundwater resources for present and future generations in ways that are appropriate for the risks we identify"* (Groundwater Protection: Policy and Practice GP3, 2012).

At present, the legislation and guidance pertaining to the protection of controlled waters in the UK is complex; however, the core objectives seek to enforce the position given above.

In 1992, the National Rivers Authority published their Policy and Practice for the Protection of Groundwater (PPPG), this document introduced areas of focus for developments such as Source Protection Zones (SPZs) and Groundwater Vulnerability Maps. The Policy was revised in 1998, since which there have been substantial changes in legislation, driven by key European Directives relating to groundwater include the Groundwater Directive (80/68/EEC) and the Water Framework Directive (2000/60/EC). Aspects of these directives are controlled by primary UK legislation such as the Water Resources Act 1991 as amended by the Water Act 2003. Gaps in the 1998 PPPG that emerged as the result of further legislative changes were addressed in the Environment Agency Policy document Groundwater Protection: Policy and Practice (GP3), Version 1 of November 2012. The three main parts of GP3 were:

- Groundwater principals;
- Position statements and legislation; and
- Technical information.

The Environment Agency has a tiered risk based approach to drinking water protection as summarised below:



Increasing levels of protection

Water Protection Zones

Safeguard Zones

Source Protection Zones

Principal Aquifers

Secondary Aquifers

APPENDIX H - COMPLYING WITH CONTROL OF ASBESTOS REGULATIONS 2012

Complying with Control of Asbestos Regulations (CAR): Risk Assessments, Licensing and Training

This appendix outlines CAR risk assessments and where they should be applied in relation to assessing and remediating brownfield sites. The information below details the different classifications of work with asbestos under CAR, summarises the legal requirements for asbestos awareness training for all involved in the investigation and management of asbestos containing soil (ACS), and details the potential requirements for suitable proficiency training relating specifically to ACS.

CAR RISK ASSESSMENTS

A CAR Risk Assessment is required for any work which may expose employees to asbestos. It is recommended that a precautionary approach is adopted if there is any doubt about risks associated with asbestos.

There are three main activities for potential asbestos exposure during work on brownfield sites:

- Site reconnaissance visits;
- Site investigation works; and
- Site remediation.

CAR risk assessments are needed at each stage but may be incorporated during the site investigation stage into the overarching health and safety risk assessments.

The CAR risk assessment must:

- Identify the type of asbestos to which employees are liable to be exposed, where possible, or assume it is present in different forms;
- Determine the type and extent of exposures to asbestos that may occur during the work
- Identify the steps to be taken to prevent exposure or reduce it to the lowest level reasonably practicable; and,
- Consider the effects of control measures that have been or will be taken.

The CAR risk assessment should include any information used to inform the risk assessment such as asbestos reports or desk study information. In the event that this information is not available, the assessor should be assumed that all forms of asbestos may be present on site.

For all investigation and remediation of ACSs, a detailed written work plan should he produced and followed as detailed on the HSE website and in the CAR.

The CAR risk assessments for specific investigations or remediation projects, will determine whether or not work is 'licensable work' (LW)**,** notifiable non-licensable work' (NNLW) or 'non-licensed work' (NLW). In addition, training requirements are also defined by the CAR risk assessment.

Some examples of control measures that apply during site reconnaissance, site investigation works, and site remediation are given below and should be applied depending on the asbestos risks identified for the site at each stage of investigation:

- Avoiding stirring up dust;
- Cleaning footwear after site works;
- Removing and bagging any overalls for disposal/laundering;
- Respirators and hygiene facilities for high risk sites;
- Segregated welfare units;
- Wetting ground
- Minimising soil disturbances;
- Implementation or retention of capping/break layers;
- Implementation of awareness training;
- Air monitoring;
- Managing stockpiles;
- Area segregation;
- Wheel washing
- Road washing/cleaning

It is important to note that during site reconnaissance visits, site investigation works and site remediation that asbestos should not be considered in isolation and control measures are likely to form part of a wider health and safety precautions.

Respiratory protective equipment (RPE)

RPE is the last line of defence and its requirement would be defined by the CAR risk assessment. HSE (2013b) advises that RPE should have an assigned protection factor of 20 or more for all work with asbestos. In certain instances, full face-piece, positive pressure respirators with a protection factor of 40 are necessary (to EN 12942:1998, TM3).

Suitable types of RPE for most ***short*** duration non-licensed asbestos work:

- Disposable respirator to standards EN149 (type FFP3) or EN1827 (type FMP3)
- Half mask respirator (to standard EN140) with P3 filter
- Semi-disposable respirator (to EN405) with P3 filter

These filters are not suitable for people with beards/stubble or for long or continuous use.

LICENSING

CAR defined certain types of activities involving asbestos as 'licensable work' (LW) or as 'notifiable non-licensable work' (NNLW). All other work would be 'non-licensable work' (NLW).

LW is defined as:

- work where exposure is not 'sporadic and low intensity'
- work where the risk assessment cannot demonstrate that the control limits (four hour and 10 minute limits) will not be exceeded
- work on asbestos coating
- work on AIB or insulation where risk assessment is either of first two points above or not of short duration (where short duration is defined for any work liable to disturb asbestos as taking less than two hours per week (including ancillary work) and no one person carries out that work for more than one hour').

NNLW includes work with:

- AIB or asbestos insulation of short duration that is not licensable
- fire-damaged asbestos cement or asbestos cement damaged so as to create significant dust and debris
- asbestos ropes, yarns, woven cloths in poor condition or handling cutting or breaking up the materials
- asbestos papers, felts and cardboard in poor condition, unencapsulated or not bound into another material.

Work with weathered asbestos cement, air monitoring and collecting samples of ACM in buildings would not normally be notifiable.

It is impossible to specify definitively what activities will and will not be licensable. This decision should be made as part of the CAR risk assessment. CAR is not primarily aimed at work with ACSs and there is little published information on airborne asbestos concentrations during work with ACSs. Nevertheless, CAR will require some remediation projects, and occasionally site investigations, to be LW. Investigations on other sites may involve NNLW. The decision as to whether work is LW or NNLW should be made during the CAR risk assessment by those in charge of the brownfield site investigations and remediation projects.

TRAINING REQUIREMENTS

Asbestos health and safety courses are offered by a number of providers in the UK. Training courses that include the problem of identifying ACMs in soil should be undertaken at regular intervals by those involved in the investigation, assessment and management of sites where ACs are known or suspected. It is the role of the employer to identify the level of training required for an employee based on their role, experience and duties. Reference to Regulation 10 of CAR should be referred to for more information on training requirements.

Recognising asbestos within soils is challenging due to the heterogeneity of such soils and the discolouration of asbestos by smeared soil. Specific training for ground workers should include understanding fibre release potential, potential control measures in the field, how to take representative ACSs safely, sample labelling and what analytical tests are available and when the y should be implemented.

Health and safety training required under CAR includes asbestos awareness, non-licensable work (including notifiable non-licensable work) and licensable work with asbestos.

In addition to health and safety training, some staff involved in the technical identification on site of ACMs, sampling and analysis may require technical proficiency training (competency training).

Training vs. Competence

HSE (2005) identifies that ‘training alone does not make people competent. Training must be consolidated by practical experience so that the person becomes confident, skilful and knowledgeable in practice on the job’. It is critical that ACS surveyors demonstrate competency with details of relevant field experience alongside training and examples of previous works/references.