4th November 2026

Mr. Norman Kelly
Castle Green
Unit 20
St Asaph Business Park
St Asaph
Denbighshire
LL17 0LJ

[emailed to: norman.kelly@castlegreenhomes.uk]

BRYN DERW, ABERGELE (PHASE 6)
FOCUSED FLOOD CONSEQUENCES ASSESSMENT

Dear Norman,

We have undertaken a brief review of the potential flood risks at and around the proposed site located at Bryn Derw (Abergele). The purpose of this exercise was to identify and review the primary sources of potential flood risk to the site and any potential mitigation measures that may need to be incorporated where appropriate.

Site Context & Initial Consultations

The site is located at Bryn Derw (Abergele), the nearest Ordnance Survey National Grid Reference is E: 295430, N: 376998, and the nearest postcode is LL22 9AS. The site is surrounded to the north, northeast, southwest and west by undeveloped land, with the Kinmel & Kinspa Hotel and Bryn Derw located to the east and southeast. Adjacent to the southern boundary is St Georges Road with a land drainage ditch located along the western boundary, as illustrated in **Figure 1**.

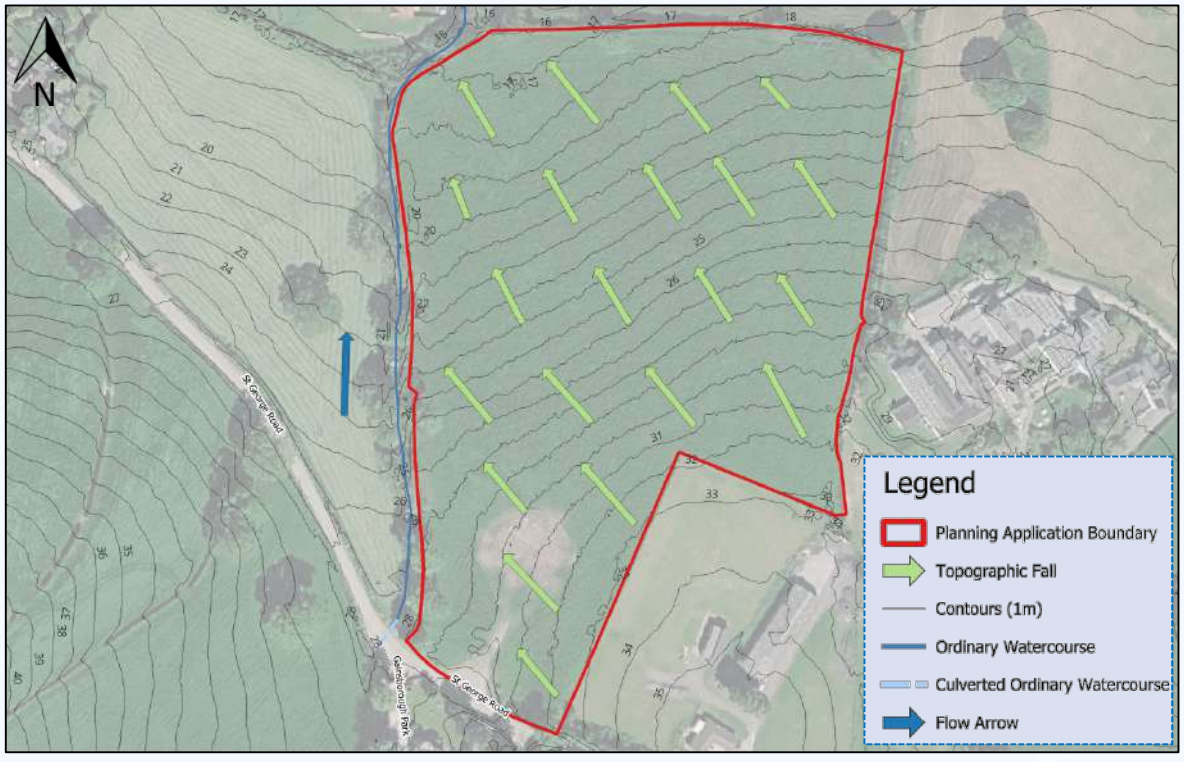


Figure 1: Site Location and Features (Betts Hydro, 2026)

Old Marsh Farm Barns
Welsh Road, Sealand
Flintshire CH5 2LY
Telephone: 01244 289 041

www.betts-associates.co.uk

Betts Hydro Ltd trading as Betts Hydro. Registered in England and Wales No. 09663830
Head Office Betts Associates Ltd

A site-specific topographic survey has not been carried out to support this assessment however LiDAR data has been obtained and identified the ground levels onsite to vary from 33.3mAOD along the southern site boundary, down to 15.3mAOD to the north of the site. An Elevation Plan has been created and included in **Appendix A**.

Consultations were undertaken in November 2026 with Natural Resources Wales (NRW), Welsh Water (WW) and Conwy County Borough Council (CCBC) (**Appendix B**, **C** & **D**) to obtain their historical records of flooding at the site and the most up-to-date flood data. The responses from these consultees are currently outstanding.

Development Proposals

This focused FCA has been prepared to support a planning application for the development of 123no. residential dwellings at Bryn Derw (Abergele). The proposals will be complete with access, car parking, boundary fencing and drainage (refer to **Appendix E** for full planning layout).

Flood Zone Classification

The site is located within Flood Zone 1 based on the Flood Map for Planning (Rivers & Sea) (**Figure 2**). Flood Zone 1 is defined as areas with "less than 1 in 1000 (0.1%) (plus climate change) chance of flooding in a given year". The site is not located within a TAN15 Defended Zone owing to the low risk from fluvial/tidal sources. The proposed development is residential in nature, considered as highly vulnerable within TAN15, which confirms that this type of land-use is appropriate for Flood Zone 1, providing there is no increase in flood risk elsewhere due to the proposals.

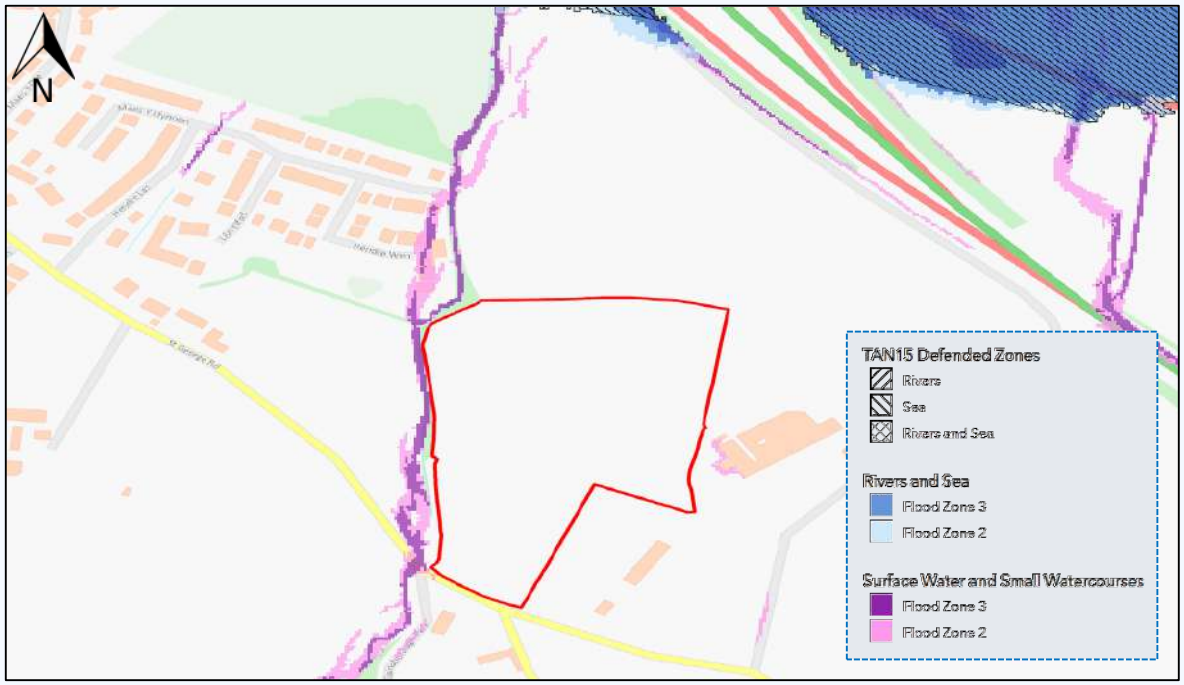


Figure 2: Flood Map for Planning Extract (NRW, 2026)

Old Marsh Farm Barns
Welsh Road, Sealand
Flintshire CH5 2LY
Telephone: 01244 289 041

Betts Hydro Ltd trading as Betts Hydro. Registered in England and Wales No. 09663830
Head Office Betts Associates Ltd

www.betts-associates.co.uk

Flood Risk Summary

The focus of this exercise was to identify how the potential fluvial/surface water flood risks impact the development proposals. As part of this Focused Flood Consequence Assessment, we have obtained and reviewed the most up to date flood data available. This flood mapping has identified the key development considerations relating to flood risk. **Table 1** summarises these key flood risks and the subsequent sections will consider how these risks might impact the development proposed.

Table 1: Key Flood Sources and Level of Risk (Betts Hydro, 2026)

SOURCE OF POTENTIAL FLOOD RISK		RISK RATING		COMMENT
Surface Water / Pluvial			Low/ Medium	The NRW Surface Water and Small Watercourses Map (Flood Map for Planning) indicates that the site is located within predominantly within Flood Zone 1, with minor encroachment along the western boundary. With an appropriate offset, as appears to have been considered within the initial planning layout provided, the risk to the proposed development from Surface Water and Small Watercourses is considered low.
Groundwater			Low/ Medium	The Groundsure groundwater flooding dataset in the Betts Geo desk study identifies the highest risk on the site and within 50m as Low. Conwy County Borough Council's Preliminary Flood Risk Assessment (2011) records no historic flood events attributed to groundwater, and no historic flooding as a result of groundwater has been identified at this stage. Betts Geo's initial ground investigation comprised four trial pits excavated to a maximum depth of 2.90m below ground level. No groundwater was encountered in any of the trial pits, and the ground comprised stiff sandy and gravelly clay (glacial till) with sand layers. No groundwater monitoring wells were installed. The investigation recommends groundwater monitoring as part of further ground investigation. On the evidence available, the risk from groundwater flooding is therefore considered to be 'low', to be confirmed through the further ground investigation and groundwater monitoring prior to development.
Artificial Sources	**Reservoirs**		Low	The Flood Map for Planning identifies the site is not at risk of flooding in the event of a dam failure, and therefore the risk from reservoir flooding is also low.
	Canals		Low	There are no canals located within proximity to the site. The potential flood risk is therefore considered low.
	Sewers		Low	The site is currently undeveloped agricultural land. The Betts Geo desk study walkover recorded a manhole in the north of the site, although the direction of any drains or sewers is uncertain. A review of Conwy County Borough Council's Stage 1 Strategic Flood Consequences Assessment (SFCA) (2022), which draws on Welsh Water's DG5 sewer flooding register, has identified no record of historic sewer flooding on or within proximity of the site. Given the undeveloped nature of the site and its elevated position, the risk from sewer flooding is therefore considered low.

Old Marsh Farm Barns
Welsh Road, Sealand
Flintshire CH5 2LY
Telephone: 01244 289 041

Betts Hydro Ltd trading as Betts Hydro. Registered in England and Wales No. 09663830
Head Office Betts Associates Ltd
www.betts-associates.co.uk

SOURCE OF POTENTIAL FLOOD RISK	RISK RATING		COMMENT
Fluvial • ***Main Rivers*** • ***Ordinary Watercourse*** • ***and Drainage Features***	🟢	Low	A review of the Flood Map for Planning has identified that the site is classified as Fluvial Flood Zone 1 (not at risk from fluvial flooding) and is not located within a TAN 15 Defended Zone (Rivers). The nearest Main River is the Afon Gele located 570m to the west of the site. It is therefore understood the risk to site from fluvial flooding is low given the proximity of the Main Rivers to site and the surrounding topography. Online and historical Mapping has confirmed the presence of an unnamed Ordinary Watercourse located adjacent to the western boundary of the site. It is understood that the Ordinary Watercourse runs in culvert beneath St Georges Road, and then returns to open channel and heading north, along the western boundary of the site. This watercourse feature has not been considered within the national flood mapping due to their relatively small catchment size (less than 2km^2). Due to scale and nature of this feature and the natural topography of the site, the likelihood of these assets affecting the development site is therefore understood to be low. An easement of 8m will be maintained from the top of bank of the Ordinary Watercourse, free of buildings, fences and other permanent obstructions, to allow access for maintenance, in line with the Land Drainage Byelaws applied by Lead Local Flood Authorities in Wales; the width of easement will be confirmed with Conwy County Borough Council as LLFA. The initial planning layout locates all proposed dwellings and gardens outside this easement.
Tidal	🟢	Low	The coastline at Pensarn is located approximately 1.9km north of the site. As the tidal flood extents do not reach the site, the risk from tidal sources is considered low.

Legend: 🟢 Very Low / Low 🟡 Medium 🔴 High

Surface Water Management

Surface water flooding occurs when rainwater is unable to drain away through the normal drainage systems or soak into the ground but lies on or flows over the ground instead. The risk associated with surface water flooding is indicated by the long-term flood mapping included in **Figure 3**.

The NRW Surface Water and Small Watercourse Map indicates that the site is located predominantly within Flood Zone 1, with minor encroachment into Flood Zone 2, along the western boundary, Based on Section 6.1 of TAN15, a Flood Consequences Assessment is required for any proposal located fully or partly in Surface Water and Small Watercourses Flood Zones 2 & 3. This Focused FCA has thus been prepared in accordance with the requirements of TAN15.

Old Marsh Farm Barns
Welsh Road, Sealand
Flintshire CH5 2LY
Telephone: 01244 289 041

Betts Hydro Ltd trading as Betts Hydro. Registered in England and Wales No. 09663830
Head Office Betts Associates Ltd
www.betts-associates.co.uk

LiDAR analysis demonstrates that the site rises consistently and significantly away from the unnamed Ordinary Watercourse. Along the western boundary, the unnamed Ordinary Watercourse corridor falls from approximately 26.4mAOD in the south to 19.4mAOD in the north. The nearest proposed dwellings are set back approximately 25-30m east of the watercourse, on ground approximately 1.7–2.3m higher than the adjacent unnamed Ordinary Watercourse corridor (approximately 28.6m AOD falling to 21.2m AOD).

The wider site continues to rise to approximately 33.3mAOD at its southern boundary. The proposed dwellings and the main estate roads are therefore elevated above the watercourse corridor and outside the mapped surface water extents. Finished floor levels will be set a minimum of 150mm above surrounding ground levels, with external levels graded away from dwellings. The surface water flood risk to the proposed dwellings is therefore considered low.

The risk to the proposals from surface water flooding will also be managed and reduced post-development through the design and implementation of a sustainable surface water management regime. To further mitigate for any residual risks, it is advised that (following any re-grade of the site) finished floor levels of the residential dwellings are elevated above the external levels to provide safe overland flood routes for any excess surface water run-off.

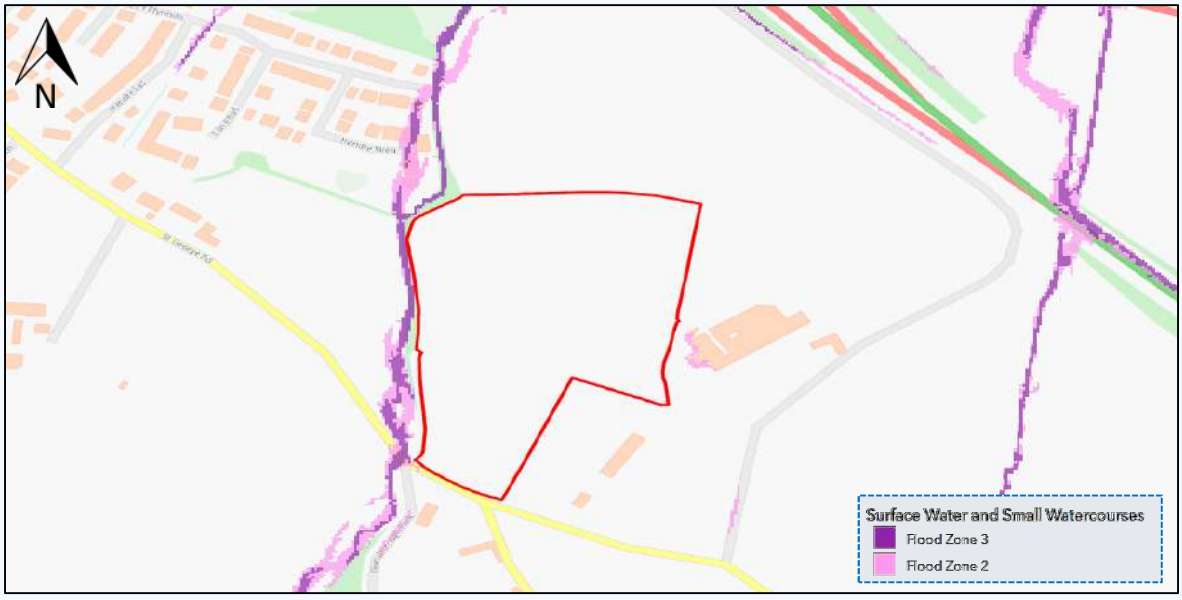


Figure 3: Flood Map for Planning (Surface Water & Small Watercourses) Extract (NRW, 2026)

Mitigation Measures

The development parcels are located wholly within Flood Zone 1 and are at little risk of fluvial/tidal flooding. To observe a conservative approach however, mitigation measures have been proposed below to safeguard against other potential residual sources of flood risk. The mitigation measures also consider the uncertainties of climate change in accordance with the revised TAN15.

Old Marsh Farm Barns
Welsh Road, Sealand
Flintshire CH5 2LY
Telephone: 01244 289 041

Betts Hydro Ltd trading as Betts Hydro. Registered in England and Wales No. 09663830
Head Office Betts Associates Ltd

www.betts-associates.co.uk

For 'highly vulnerable' development located within Flood Zone 1, it is typical to set the Finished Floor Levels (FFL) of proposed buildings a minimum of 150mm above the existing ground levels. By ensuring the FFLs are raised sufficiently above the external levels (following any re-grade) should mitigate any risk of flooding from a variety of sources, including groundwater and surface water risks.

Any overland flows generated by the development must be carefully controlled. Safe avenues directing overland flow way from any existing and proposed buildings are advised.

It is recommended that interception measures are incorporated along the site's southern boundary, and the northern part of the eastern boundary, where pluvial run-off naturally directs towards the site from the higher land to the south and east. The site falls in a north-north-westerly direction from circa 33.3m AOD along the southern boundary to circa 15.3m AOD in the north-western corner. Any overland flows from the adjacent land are therefore likely to enter the site along these boundaries. The interception measures can capture run-off before it reaches the proposed dwellings and direct it appropriately through the site, and back into the point(s) of outfall, replicating the existing natural flow route towards the Ordinary Watercourse along the western boundary.

The land beyond the northern boundary continues to fall to the north, towards existing residential properties to the north-west of the site. Interception measures are therefore also recommended along the northern boundary, to ensure that pluvial run-off generated within the site, including exceedance flows from the development, is not directed onto neighbouring land and is instead conveyed to the point(s) of outfall.

These measures will serve a land drainage function only and will remain separate from the development's surface water drainage system, so that intercepted flows from off-site land do not take up attenuation capacity. Any new or modified outfall to the Ordinary Watercourse will require Land Drainage Consent from Conwy County Borough Council as Lead Local Flood Authority. The exact location, form and alignment of the interception measures will be confirmed at the detailed design stage.

The NRW surface water mapping does not identify any overland flow routes entering the site from the adjacent land, and the interception measures are therefore recommended as a precaution. The contributing off-site catchment will be confirmed, and the interception measures sized accordingly, as part of the drainage strategy supporting the full planning application.

Online and historical Mapping has confirmed the presence of an unnamed Ordinary Watercourse located adjacent to the western boundary of the site. It is understood that the Ordinary Watercourse runs in culvert beneath St Georges Road, and then returns to open channel and heading north, along the western boundary of the site It is recommended that further investigation is undertaken to understand the exact condition, capacity and routing of the watercourses and waterbodies located onsite.

Old Marsh Farm Barns
Welsh Road, Sealand
Flintshire CH5 2LY
Telephone: 01244 289 041

Betts Hydro Ltd trading as Betts Hydro. Registered in England and Wales No. 09663830
Head Office Betts Associates Ltd

www.betts-associates.co.uk

Any works within or affecting the Ordinary Watercourse along the western boundary, or within the 8m maintenance easement, will require Land Drainage Consent from Conwy County Borough Council as Lead Local Flood Authority (Section 23 of the Land Drainage Act 1991 and the Council's land drainage byelaws). The initial planning layout shows a potential footpath link at the north-western corner and a future potential link road at the western boundary, both of which would cross or come close to the watercourse, and an attenuation basin adjacent to the western boundary whose outfall would discharge to it. Land Drainage Consent will therefore be required for these elements and will be sought prior to construction. The basin should be positioned so that it, and any associated earthworks, remain outside the 8m easement other than the outfall structure.

To minimise the flood risk to the neighbouring properties the surface water run-off generated by the proposals will be managed effectively with the peak rates of run-off being restricted to the equivalent of the pre-development situation (with betterment where required).

If an extreme rainfall event exceeds the design criteria for the drainage system it is likely that there will be some overland flows that are unable to enter the system, it is important that these potential overland flows are catered for within the development site if the capacity of the drainage system is exceeded. A full Drainage Management Strategy will be undertaken in due course, to support any future planning application. The DMS will provide details of how the proposals will be sustainably drained in accordance with local and national policy.

Conclusion

This Focused Flood Consequence Assessment has identified the key considerations in terms of flood risk to the site. The findings of this exercise are that the potential flood risks are either very low or can be sufficiently catered for through further detailed assessment and the implementation of mitigation measures.

I trust that the above information illustrates that the development proposals can be sustainably developed providing appropriate design and mitigation is implemented to safeguard future proposals against the potential flood risks identified. If you have any further queries or require further information, please do not hesitate to contact us.

Yours sincerely,



Liam Davies *BA MSc*
Graduate Flood Risk Analyst

Attached:

Appendix A – Elevation Plan
Appendix B – NRW Correspondence
Appendix C – Conwy County Borough Council Correspondence
Appendix D – Dwr Cymru Welsh Water Correspondence
Appendix E – Proposed Site Plan
Appendix F – Ground Investigation (GI) Works – Betts Geo

Old Marsh Farm Barns
Welsh Road, Sealand
Flintshire CH5 2LY
Telephone: 01244 289 041

Betts Hydro Ltd trading as Betts Hydro. Registered in England and Wales No. 09663830
Head Office Betts Associates Ltd

www.betts-associates.co.uk

BETTS HYDRO
CONSULTING ENGINEERS

This Page Has Been Left Intentionally Blank

Old Marsh Farm Barns
Welsh Road, Sealand
Flintshire CH5 2LY
Telephone: 01244 289 041

Betts Hydro Ltd trading as Betts Hydro. Registered in England and Wales No. 09663830
Head Office Betts Associates Ltd

www.betts-associates.co.uk

APPENDIX A – ELEVATION PLAN

This Page Has Been Left Intentionally Blank

Old Marsh Farm Barns
Welsh Road, Sealand
Flintshire CH5 2LY
Telephone: 01244 289 041

www.betts-associates.co.uk

Betts Hydro Ltd trading as Betts Hydro. Registered in England and Wales No. 09663830
Head Office Betts Associates Ltd



DO NOT SCALE

Legend

- Planning Application Boundary
- Topographic Fall
- Contours (1m)
- Ordinary Watercourse
- Culverted Ordinary Watercourse
- Flow Arrow

REV	DATE	BY	DESCRIPTION	CHK
A	03/11/26	LD	PRELIMINARY FOR ISSUE	HB

DRAWING STATUS:

BETTS HYDRO
CONSULTING ENGINEERS
Unit 6, Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire CH5 2LY
Tel: 01244 288178 enquiries@betts-associates.co.uk

Castle Green

PROJECT:

BRYN DERW
ABERGELE (PHASE 6)

TITLE:

ELEVATION PLAN

DATE:	SCALE @ SIZE:	DRAWN:	CHECKED:
NOV 26	1:1250@A3	LD	HB

PROJECT No:	DRAWING No:	REV:
HYD1240	001	A

APPENDIX B – NRW CORRESPONDENCE

This Page Has Been Left Intentionally Blank

Liam Davies

From: Data Distribution <datadistribution@cyfoethnaturiolcymru.gov.uk>
Sent: 03 November 2026 12:26
To: Liam Davies
Subject: RE: HYD1240 - Bryn Derw, Abergele (Request for Flood Risk Information)

Dear Liam,

Thank you for your email.

For drainage requirements, please see this guidance on our website – Natural Resources Wales / Sustainable Drainage Systems (SuDS)

Historic flooding - Recorded Flood Extents | DataMapWales

For planning advice about developments - Natural Resources Wales / Building in flood risk areas & Natural Resources Wales / Our service to developers & Natural Resources Wales / Contact us about a planning enquiry & Natural Resources Wales / Modelling for Flood Consequence Assessments

For the availability of flood data, we will be in touch in due course.

Yn gywir/ Yours sincerely
Enw / **Name Michelle Lewis**
Teitl swydd / Job title Data Licensing Officer
Cyswllt Cyfoeth / Customer Hub
Adran / Department Customer, Communications and Commercial
Rhif ffôn / Phone number 07917243096
Dyddiau gweithio (os yn berthnasol) / Working days Mon-Fri
Yn Ardystiedig o ran Llythrennedd Carbon/Certified Carbon Literate

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: Liam Davies <liamdavies@betts-associates.co.uk>
Sent: 03 November 2026 11:18
To: Data Distribution <datadistribution@cyfoethnaturiolcymru.gov.uk>
Subject: HYD1240 - Bryn Derw, Abergele (Request for Flood Risk Information)

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.

To whom it may concern,

Bryn Derw, Abergele

Please could you confirm whether you have any information that you feel would be valuable to a Flood Consequences Assessment for the above site (location plan attached), including details of historical flooding and specific drainage requirements; this would be greatly appreciated. If there are any other specific requirements that you require in a scope of works for this site, please can you advise at this stage so that it can be fully incorporated into the proposals at an early stage.

Please do not hesitate to contact me on the details below to discuss further should you require additional information or clarification.

Kind regards

Liam Davies BA MSc
Graduate Flood Risk Analyst

BETTS HYDRO
Consulting Engineers

Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire, CH5 2LY
Chester +44 (0)1244 289041

liamdavies@betts-associates.co.uk
www.betts-associates.co.uk

CIVIL | STRUCTURAL | GEO-ENVIRONMENTAL | HYDROLOGY | FLOOD RISK MANAGEMENT
SUDS | STRUCTURAL SURVEYS | PARTY WALL DUTIES | INFILTRATION | GEOTECHNICAL



P Please consider the environment before printing this email.

ELECTRONICALLY TRANSMITTED INFORMATION
This electronic transmission is strictly confidential and intended solely for the addressee. It may contain information which is covered by legal, professional or other privilege. If you are not the intended addressee, you must not disclose, copy or take any action in reliance of this transmission. If you have received this transmission in error, please notify us as soon as possible. All emails transmitted by Betts Associates, Betts Geo or Betts Hydro are virus checked. This does not guarantee that transmissions are virus free. Reference should always be made to the hard copy of any electronically transmitted files. Electronic data does not constitute contract documentation. Use of the content of our files is at your own risk. You remain responsible for anything produced using all or part of the data supplied.

DO NOT SCALE

Legend

- Planning Application Boundary
- Contours (1m)
- Ordinary Watercourse
- Culverted Ordinary Watercourse
- Flow Arrow

Flood Map for Planning -
Surface Water & Small Watercourses

- Flood Zone 2
- Flood Zone 3

REV	DATE	BY	DESCRIPTION	CHK
A	04/11/26	LD	PRELIMINARY FOR ISSUE	HB

DRAWING STATUS:

BETTS HYDRO
CONSULTING ENGINEERS
Unit 6, Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire CH5 2LY
Tel: 01244 288178 enquiries@betts-associates.co.uk

Castle Green

PROJECT:

BRYN DERW
ABERGELE (PHASE 6)

TITLE:

SURFACE WATER OVERLAY PLAN

DATE:	SCALE @ SIZE:	DRAWN:	CHECKED:
NOV 26	1:1250@A3	LD	HB

PROJECT No:	DRAWING No:	REV:
HYD1240	002	A

0 25 50 m

DO NOT SCALE

Legend

- Planning Application Boundary
- Contours (1m)
- Ordinary Watercourse
- Culverted Ordinary Watercourse
- Flow Arrow

Flood Map for Planning - Rivers & Sea

- Flood Zone 3
- Flood Zone 2

REV	DATE	BY	DESCRIPTION	CHK
A	04/11/26	LD	PRELIMINARY FOR ISSUE	HB

DRAWING STATUS:

BETTS HYDRO
CONSULTING ENGINEERS
Unit 6, Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire CH5 2LY
Tel: 01244 288178 enquiries@betts-associates.co.uk

Castle Green

PROJECT:

BRYN DERW
ABERGELE (PHASE 6)

TITLE:

RIVERS & SEA OVERLAY PLAN

DATE:	SCALE @ SIZE:	DRAWN:	CHECKED:
NOV 26	1:2500@A3	LD	HB

PROJECT No:	DRAWING No:	REV:
HYD1240	003	A

0 75 150 m

APPENDIX C – CONWY COUNTY BOROUGH COUNCIL CORRESPONDENCE

This Page Has Been Left Intentionally Blank

Old Marsh Farm Barns
Welsh Road, Sealand
Flintshire CH5 2LY
Telephone: 01244 289 041

www.betts-associates.co.uk

Betts Hydro Ltd trading as Betts Hydro. Registered in England and Wales No. 09663830
Head Office Betts Associates Ltd

Liam Davies

To: sab@conwy.gov.uk
Cc: erf@conwy.gov.uk
Subject: HYD1240 - Bryn Derw, Abergele (Historic Flood Risk and Drainage Information Request)
Attachments: Location Plan.pdf

To whom it may concern,

Bryn Derw, Abergele

Please could you confirm whether you have any information that you feel would be valuable to a Flood Risk Assessment for the above site (location plan attached), including details of the following:

1. Flood risk records
- Historic flooding records for the site and surrounding area (surface water, groundwater, sewer and ordinary watercourse), including any Section 19 flood investigation reports
- The Strategic Flood Consequence Assessment, Surface Water Management Plan and Local Flood Risk Management Strategy, and details of any Critical Drainage Areas or flood hotspots nearby
- Any planned, ongoing or proposed flood alleviation schemes that may affect the site
- Any known groundwater flooding issues

2. Watercourses and culverts
- Confirmation of the status of any watercourses on or adjacent to the site (ordinary watercourse, main river or sewer) and who holds maintenance responsibility
- Records of any culverts, headwalls or trash screens, including condition and ownership
- Required offsets or easements from the top of bank or culvert for buildings, fences, hardstanding and landscaping
- Local policy on culverting, diverting or building over watercourses, and Land Drainage Act consent requirements

3. Surface water drainage requirements
- Local SuDS guidance or design standards, and any preferred discharge hierarchy
- Permitted discharge rates (greenfield runoff method, any minimum rate, and Q1/QBAR/Q100 requirements)
- Required climate change and urban creep allowances
- Design storm criteria, including return periods, exceedance routing and half-drain time
- Water quality treatment and interception requirements
- Adoption and maintenance arrangements for SuDS features

4. Offsets and layout constraints
- Minimum distances from buildings and foundations to attenuation basins, ponds and swales
- Minimum offsets from SuDS features to highways and property boundaries, and for infiltration features from buildings and highways
- Required freeboard and minimum finished floor levels
- Easement widths and building stand-off distances for surface water and foul sewers
- Any slope, depth, safety or fencing requirements for basins

5. Highways and existing infrastructure
- Highway drainage records (gullies, carrier drains and outfalls) and any assets that could accept or be affected by site flows
- Any private or land drainage assets recorded by the council
- Requirements for discharging to or across highway land

6. Planning and site context
- Planning history and LLFA consultation responses for the site and nearby sites, particularly any drainage or flood risk conditions

- Any known contamination, landfill or ground stability issues that may constrain infiltration

If possible, please provide any data in PDF or GIS format. If any of the above is held by another department, we would be grateful if you could forward this request or let us know who to contact.

Please do not hesitate to contact me on the details below to discuss further should you require additional information or clarification.

Kind regards

Liam Davies BA MSc
Graduate Flood Risk Analyst

BETTS HYDRO
Consulting Engineers

Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire, CH5 2LY
Chester +44 (0)1244 289041

liamdavies@betts-associates.co.uk
www.betts-associates.co.uk

CIVIL | STRUCTURAL | GEO-ENVIRONMENTAL | HYDROLOGY | FLOOD RISK MANAGEMENT
SUDS | STRUCTURAL SURVEYS | PARTY WALL DUTIES | INFILTRATION | GEOTECHNICAL



P Please consider the environment before printing this email.

ELECTRONICALLY TRANSMITTED INFORMATION
This electronic transmission is strictly confidential and intended solely for the addressee. It may contain information which is covered by legal, professional or other privilege. If you are not the intended addressee, you must not disclose, copy or take any action in reliance of this transmission. If you have received this transmission in error, please notify us as soon as possible. All emails transmitted by Betts Associates, Betts Geo or Betts Hydro are virus checked. This does not guarantee that transmissions are virus free. Reference should always be made to the hard copy of any electronically transmitted files. Electronic data does not constitute contract documentation. Use of the content of our files is at your own risk. You remain responsible for anything produced using all or part of the data supplied.

APPENDIX D – DCWW CORRESPONDENCE

This Page Has Been Left Intentionally Blank

Old Marsh Farm Barns
Welsh Road, Sealand
Flintshire CH5 2LY
Telephone: 01244 289 041

www.betts-associates.co.uk

Betts Hydro Ltd trading as Betts Hydro. Registered in England and Wales No. 09663830
Head Office Betts Associates Ltd

Liam Davies

To: Sewerage.Services@dwrcymru.com
Subject: HYD1240 - Bryn Derw, Abergele (Sewer Flood Risk Information)
Attachments: Location Plan.pdf

To whom it may concern,

Bryn Derw, Abergele

We are preparing a Flood Consequence Assessment at the above site (location plan attached). Please could you confirm whether you hold any information that would be valuable to this assessment, including details of historical flooding at or near the site, any predicted flood water levels, whether the site lies within, or drains to, a Special Area of Conservation (SAC) or other designated site, and whether there are any known phosphate issues or phosphorus-related constraints in the area that would need to be considered in the drainage strategy.

If there are any specific requirements you would like included in the scope of works for this site, please advise at this stage so they can be fully incorporated into the proposals early on.

Please do not hesitate to contact me on the details below to discuss further or if you require any additional information or clarification.

Kind regards

Liam Davies BA MSc
Graduate Flood Risk Analyst

BETTS HYDRO
Consulting Engineers

Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire, CH5 2LY
Chester +44 (0)1244 289041

liamdavies@betts-associates.co.uk
www.betts-associates.co.uk

CIVIL | STRUCTURAL | GEO-ENVIRONMENTAL | HYDROLOGY | FLOOD RISK MANAGEMENT
SUDS | STRUCTURAL SURVEYS | PARTY WALL DUTIES | INFILTRATION | GEOTECHNICAL



P Please consider the environment before printing this email.

ELECTRONICALLY TRANSMITTED INFORMATION
This electronic transmission is strictly confidential and intended solely for the addressee. It may contain information which is covered by legal, professional or other privilege. If you are not the intended addressee, you must not disclose, copy or take any action in reliance of this transmission. If you have received this transmission in error, please notify us as soon as possible. All emails transmitted by Betts Associates, Betts Geo or Betts Hydro are virus checked. This does not guarantee that transmissions are virus free. Reference should always be made to the hard copy of any electronically transmitted files. Electronic data does not constitute contract documentation. Use of the content of our files is at your own risk. You remain responsible for anything produced using all or part of the data supplied.

APPENDIX E – PROPOSED SITE PLAN

This Page Has Been Left Intentionally Blank

Old Marsh Farm Barns
Welsh Road, Sealand
Flintshire CH5 2LY
Telephone: 01244 289 041

www.betts-associates.co.uk

Betts Hydro Ltd trading as Betts Hydro. Registered in England and Wales No. 09663830
Head Office Betts Associates Ltd

SCHEDULE OF ACCOMMODATION

HOUSETYPE	DESCRIPTION	SQFT	NUMBER	PERCENTAGE
2B1B (Affordable)	1 Bed, Walk up flat - Ground Floor	567 SQFT	4	3.25
2B1B (Affordable)	1 Bed, Walk up flat - First Floor	652 SQFT	4	3.25
2B2B (Affordable)	2 Bed, 2 Storey, Mid-Terrace	884 SQFT	5	4.07
2B2B (Affordable)	2 Bed, 2 Storey, End-Terrace/ Semi Det	884 SQFT	56	45.53
3B3B (Affordable)	3 Bed, 2 Storey, End-Terrace/ Semi Det	1004 SQFT	34	27.64
3B3B Corner (Affordable)	3 Bed, 2 Storey, End-Terrace/ Semi Det	1004 SQFT	10	8.13
4B4B (Affordable)	4 Bed, 2 Storey, Semi Detached	1186 SQFT	8	6.50
4B4B Corner (Affordable)	4 Bed, 2 Storey	1197 SQFT	2	1.63
TOTAL		**114838 SQFT**	**123**	**100.00**

Gross Site Area	10.3 Acres	4.17	Hectares
Parking , landscape & ditch	0.28 Acres	0.11	Hectares
POS	2.26 Acres	0.91	Hectares
Undevelopable Site Access, SSR & Pump station	0.86 Acres	0.27	Hectares
NETT SITE AREA:	**7.1 ACRES**	**2.87**	**HECTARES**
Gross Density:	11.94 Units/Acre	29.51	Units/Hectare
NETT DENSITY:	**17.32 UNITS/ACRE**	**42.81**	**UNITS/HECTARE**
Gross Footage	11149.32 SQFT/Acre	2559.51	SQM/Hectare
NETT FOOTAGE:	**16174.37 SQFT/ACRE**	**3713.06**	**SQM/HECTARE**

Key:

- Site Boundary
- 1.8m high boundary fence
- 1.8m high screen wall
- Private Drive
- Visibility Splays - 2.4x45m
- Indicative Landscaping
- Number of parking spaces proposed to Semi-Detached and Detached Dwellings in accordance with Local Authority's Parking Standards
- Parking space allocation to Frontage Parking Dwellings
- Affordable Housing - 10% to CCBC Policy
- Affordable Housing - Additional Provision over & above Policy
- Existing PROW route

Future Potential Link Road
Potential Footpath Link
Attenuation Basin
Future Potential Link Road
Issues
Track
L.E.A.P
P.O.S
Vis.
Kinmel Mar Hotel
Bryn Derw
35.0m
Tan-y-bryn Lodge
BOROUGH PARK

REV	DATE	DESCRIPTION
D	10/09/26	Mix amended to 100% affordable
C	14/08/26	Mix amended & 4 blocks split into semis following technical review
B	22/07/26	Phases split, Phase 6 reduced to 110 Plots
A	27/03/26	Football Pitch moved & internal design review

Project Title:
Land at Bryn Derw, Abergele

Castle Green

Title:
Site Layout
Phase 6

Job No: R1-000
Ref: BD_ABRGL_SL02
Scale (A1): 1:50
Date: 05/11/2025
Rev: D

This drawing is to be read in conjunction with the relevant Site Specification, Drawings and Standard Details
DO NOT SCALE OFF THIS DRAWING: © Castle Green Homes

BETTS HYDRO
CONSULTING ENGINEERS

APPENDIX F –GROUND INVESTIGATION (GI) WORKS – BETTS GEO

This Page Has Been Left Intentionally Blank

26CGH049/SI/2026/JS/L1/Rev1

3rd September 2026

FAO Norman Kelly
Unit 20
St Asaph Business Park
St Asaph
Denbighshire
LL17 0LJ

Dear Norman

INITIAL GROUND INVESTIGATION (GI) WORKS – ABEREGELE PHASE 6

1. Introduction

Betts Geo were commissioned by Castle Green Homes to undertaken an initial GI at the site. At the request of the client, the fieldwork comprised of four (4 No) trial pits.

The site red edge is shown below;



2. Site Location

The site is located north of St George Road, Abergele, LL22 9AU. The coordinates on the National Grid Reference are 295399, 377016. The site is approximately 4.16ha in total.

Old Marsh Farm Barns
Welsh Road, Sealand
Flintshire CH5 2LY
Telephone: 01244 288 179
Fax: 01244 288 516

www.betts-associates.co.uk

Betts Geo Environmental Ltd trading as Betts Geo Environmental. Registered in England and Wales No. 5927295

3. Desk Study Report

Betts Geo have undertaken a Desk Study for the site (report ref: 26CGH049/DS). This report should be referred to for full details, however a summary can be provided below.

Site Description
The site is an irregular parcel of land which rises to the south and appears to be used for rough grazing although no livestock were present at the time of walkover. An area of exposed soil is present in the south adjacent to the site entrance and suggests the landowner may have placed some material in the vicinity. Overhead cables extend through the centre of the site in a northeast to southwest direction, connecting to the adjacent hotel.

Site History
The site remains historically undeveloped apart from a change in the field boundaries over the course of the historic maps and a former footpath that ran along the centre of site between 1872 – 1961.

Documented Site Geology
The site is documented to comprise superficial deposits of Glacial Till – sandy gravelly CLAY and bedrock deposits of both Limestone (majority of site) and Mudstone, Siltstone and Sandstone (north eastern corner of site). There is also a fault line recorded 2m E of the site.

Radon
The Groundsure Report indicates that the site lies within a low radon risk area where between <1-3% of homes are above the action level. However, the Radon UK mapping also shows the site lies within a 3-10% risk area and therefore basic Radon protection is required in the construction of new residential dwellings as a worst case scenario.

It is advised that a site-specific Radon report is obtained from the BGS to confirm if Radon protection is required on site based on the conflicting information above. Betts Geo can obtain this report if deemed required.

Contamination Summary
From the initial contamination conceptual model undertaken as part of the Desk Study, the site was assessed as being at a **Low – Low/Moderate** risk for contamination and ground gas (mainly from possible fill used to level the ground for the alteration of field boundaries over time).

4. Scope of Works – Betts Geo Fieldwork

Ground investigation work was carried out on the 4th August 2026 and comprised of the following (at the request of the Castle Green Homes);

- Four (4 No) machine dug trial holes to a maximum depth of 2.90mbgl using a JCB 3CX.
- Eight (8 No) chemical samples – seven (7 No) from the trial pits and one (1 No) from the material that appeared to have been spread at the site entrance.
- Two (2 No) geotechnical samples were taken and scheduled for 4 pt Atterberg testing, pH & 2:1 water soluble sulphates.

Services are present onsite. Prior to any intrusive works, each location was checked for services using a cable avoidance tool (CAT) and review of statutory service plans. An extract showing the location of the exploratory hole locations can be seen overleaf.

Old Marsh Farm Barns
Welsh Road, Sealand
Flintshire CH5 2LY
Telephone: 01244 288 179
Fax: 01244 288 516
www.betts-associates.co.uk



5. Ground Conditions

The exploratory holes were logged by a Betts Engineer in general accordance with the recommendations of BS5930:1999+A2:2010 Detailed descriptions, together with relevant comments, are given in the exploratory hole logs included the Appendix.

Ground conditions comprised of topsoil in all locations (dark brown sandy CLAY) to a maximum depth of 0.30mbgl overlying a stiff to very stiff sandy gravelly CLAY with frequent bands of medium dense to dense very clayey fine to coarse SANDS between 0.40mbgl – 1.90mbgl.

The base of the CLAY was not bottomed out, with the deepest trial pit terminated at 2.90mbgl.

All exploratory holes were recorded as stable and dry.

6. Visual and Olfactory Evidence

No evidence of any visual and/or olfactory evidence was noted during the excavation of these trial holes.

It was previously noted within the Desk Study that the farmer may have spread some sort of material on site near the site entrance. This material did look natural with no evidence of any anthropogenic debris. A chemical sample was taken from this material and further information can be found in Section 9 below.

Old Marsh Farm Barns
Welsh Road, Sealand
Flintshire CH5 2LY
Telephone: 01244 288 179
Fax: 01244 288 516
www.betts-associates.co.uk

Betts Geo Environmental Ltd trading as Betts Geo Environmental. Registered in England and Wales No. 5927295

7. Obstructions

No obstructions were encountered during the excavation of these trial holes.

8. Groundwater – Fieldwork

No groundwater was encountered during the excavation of these trial holes.

9. Soils Contamination Summary

Eight (8 No) chemical samples were taken across the GI work – seven (7 No) from the trial pits and one (1 No) from the material that appeared to have been spread at the site entrance. These were screened for heavy metals, TPH's, PAH's and asbestos.

All results have been screened against LQM S4UL residential with homegrown produce guidance. All determinants for fell below the residential home grown produce guidance levels within all samples tested. No asbestos was detected.

As no significant contamination was identified across the site during the initial GI, it is likely that no remedial cover systems will be required (subject to any further necessary GI). A 300mm growing medium (comprising 150mm topsoil/150mm subsoil) should be applied across garden/POS areas as per NHBC guidance.

10. Groundwater/Surface Water and Aquifer Risk

No significant risk to groundwaters are anticipated due to the lack of any significant contamination on site to date and the cohesive clay superficial geology preventing any downward migration pathways.

11. Ground Gas Risk Assessment

No gas/groundwater monitoring wells were installed as part of the initial GI. Based on the strata encountered in the exploratory holes undertaken to date, there is deemed to be a low risk of ground gas production on site, however further GI should be undertaken at a later date to confirm.

Furthermore, given the presence of sands bands of circa 1m thickness within the clay, groundwater monitoring would be beneficial to full understand ground conditions.

Basic Radon protection measures may be required across site given the conflicting information within the Groundsure data set and the Radon UK mapping. It is advised that a site-specific Radon report is obtained from the BGS to confirm - Betts Geo can obtain this report if required.

12. Piped Drinking Water Supplies

Based on the results of the contamination testing to date, barrier pipe is not anticipated to be required on site. However, further testing and a relevant pipeline risk assessment may be required by third parties to confirm.

13. Geotechnical Assessment

- All excavations should be planned and due consideration should be given to providing temporary support or suitable battering. Excavations in close proximity to mains services will need to ensure that the excavation

walls are stable or appropriately battered to a safe angle. Localised land drainage is also likely given the sites use as arable land.

- No groundwater was encountered during these trial pits therefore it is only likely that pumping/shuttering will be necessary during excavations of foundation trenches during wet weather and to deeper excavations for sewers. Groundwater well installation & monitoring is advised as part of additional GI given the presence of sand bands circa 1m thick within the clay.
- Based on the stiff clays and dense sands encountered at shallow depth across the site, it is likely that strip foundations/reinforced strip foundations can be utilised across site with the following allowable bearing capacities – stiff to very stiff CLAY: 150kN/m2 and dense SAND – 100kN/m2. This should limit total foundation settlement to less than 15mm for foundation widths of up to 1m. If shallow groundwater is encountered on site, then allowable bearing capacities should be reduced by half.
- Deepening of foundations is accordance with the NHBC standards will be required where foundations are within the zone of influence of existing or proposed trees and proposed shrub planting and shrinkable soils are encountered at foundation level.
- Where foundations are within the influence of trees and are deeper than 1.5mbgl, a suitable compressible material or void will be required. Where foundations require deepening to greater than 2.5mbgl, they must be designed by an engineer as specified in NHBC Technical Requirement R5.
- Suspended floor construction e.g. either in-situ RC slabs or black and beam flooring are recommended as per NHBC guidance.
- Two plasticity tests were undertaken during the initial GI. Low to moderate plasticity clays were encountered on site and as such foundations should be designed accordingly.
- It is considered for concrete design purposes that natural ground conditions and static groundwater conditions are applicable. A design class of DS-1 and an ACEC class of AC-1s is recommended across site based on the results of the initial GI.
- A CBR value of 2-3% on the clay is anticipated however, confirming in-situ CBRs should be undertaken once layouts are known. Placement of geotextiles within the areas of roads/parking could also be designed to minimise the subgrade thickness.

We trust that this information is satisfactory and should you require any further clarification, please do not hesitate to contact me.

Yours sincerely

Jenny Skues
Senior Geo-Environmental Engineer
BETTS GEO ENVIRONMENTAL

Appendix –
Betts Exploratory Hole Location Plan
Betts Exploratory Hole Logs
Betts Contamination & Geotechnical Results

Site Location Plan - 19-08-2026

Project Name	Project No.	Start Date	End Date
Abergele Area 6	26CGH049	2026-08-04	2026-08-04

Client	Consultant	Contractor
Castle Green Homes	Betts Geo	



0 20m 40m 60m 80m

1:2179 approx. when printed at A4
1cm = approx. 21.79m
Do not scale from this drawing.

N

Description
Exploratory Hole Location Plan - Satellite Imagery

Key

TP - Trial Pit

BETTS GEO
CONSULTING ENGINEERS

Key to exploratory hole symbols and abbreviations

SAMPLE TYPES

ACM - Asbestos sample
AMAL - Amalgamated sample
B - Bulk disturbed sample
BLK - Block sample
C - Core sample
CBR - CBR test sample
D - Disturbed sample
ES - Environmental sample
EW - Environmental water sample
G - Gas sample
J - Jar sample
L - Liner sample
TW - Pushed thin wall sample
U - Undisturbed sample
UT - Undisturbed thin wall sample
W - Water sample

IN-SITU TESTS

HV - Hand shear vane
HV(r) - Hand shear vane residual
PID - Photo ionisation detector
PP - Hand penetrometer
SPT - Standard penetration test
SPT(C) - SPT using cone

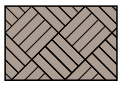
GROUNDWATER

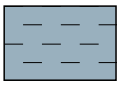
Groundwater strike
Groundwater rest level

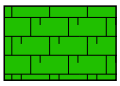
ROTARY CORE DETAILS

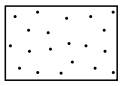
TCR - Total core recovery (%)
SCR - Solid core recovery (%)
RQD - Rock quality designation (%)
FI - Fracture index
NI - Non-intact core
AZCL - Assumed zone of core loss

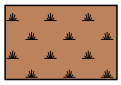
LEGEND

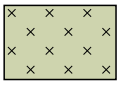

Topsoil

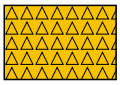

Clay

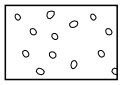

Chalk

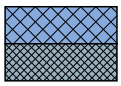

Sand backfill

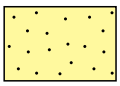

Peat

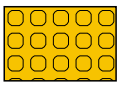

Silt

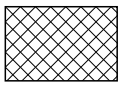

Breccia

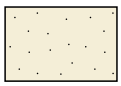

Gravel backfill

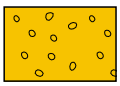

Made ground [cohesive]


Sand

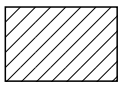

Conglomerate

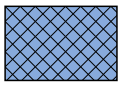

Arisings

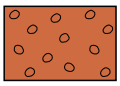

Concrete

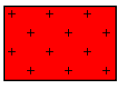

Gravel

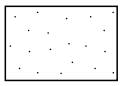

Metamorphic

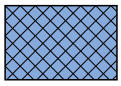

Bentonite

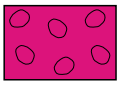

Wood


Cobbles


Igneous

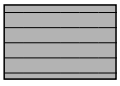

Concrete


Brick


Boulders

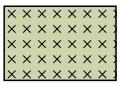

Grout


Bituminous material

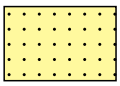

Mudstone


Plain pipe

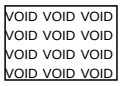

Gypsum


Siltstone

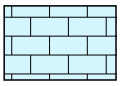

Coal


Sandstone


Slotted pipe



Void


Limestone

Trial Pit

TP1

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	295388.00	377085.00		1:25
Project Name		**Project No.**	**Start Date**	**End Date**
Abergele Area 6		26CGH049	2026-08-04	2026-08-04

Client
Castle Green Homes

Consultant
Betts Geo

Contractor

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Samples and Tests: Type/ Ref	Samples and Tests: Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Strata: Description
		0.20	ES			(0.30) 0.30		TOPSOIL Grass over dark brown sandy CLAY [TOPSOIL]
		0.50	ES			(0.30) 0.60		Stiff brown very sandy CLAY. Occasional sandy pockets.
		1.50	D			(1.80) 2.40		Very stiff dark brown occasionally grey slightly gravelly CLAY
								End of Trial Pit at 2.40m

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0

Remarks
Termiated at target depth.
No visual or olfactory evidence of contamination.
Dry.

Method, Plant, Stability, Dimensions
0.00 - 2.40m TP
Stable

Logger
J Skues

Trial Pit

TP2

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	295444.00	377045.00		1:25

Project Name	Project No.	Start Date	End Date
Abergele Area 6	26CGH049	2026-08-04	2026-08-04

Client
Castle Green Homes

Consultant
Betts Geo

Contractor

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Samples and Tests: Type/ Ref	Samples and Tests: Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Strata: Description
		0.10	ES			(0.25) 0.25		TOPSOIL Grass over dark brown sandy CLAY [TOPSOIL]
						(0.65) 0.90		Stiff brown very sandy CLAY
		1.00	ES			(1.00) 1.90		Dense red brown very clayey fine-coarse SAND
		2.00	D			(0.50) 2.40		Very stiff to hard dark brown CLAY
								End of Trial Pit at 2.40m

Remarks
Termiated at target depth.
No visual or olfactory evidence of contamination.
Dry.

Method, Plant, Stability, Dimensions
0.00 - 2.40m TP
Stable

Logger
J Skues

Trial Pit

TP3

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	295367.00	376966.00		1:25

Project Name	Project No.	Start Date	End Date
Abergele Area 6	26CGH049	2026-08-04	2026-08-04

Client
Castle Green Homes

Consultant
Betts Geo

Contractor

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Samples and Tests: Type/ Ref	Samples and Tests: Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Strata: Description
		0.10	ES			(0.20)		TOPSOIL Grass over dark brown sandy CLAY. Relic roots [TOPSOIL]
						0.20		
						(0.20)		Stiff brown very sandy CLAY
		0.40	ES			0.40		
						(1.10)		Dense red brown very clayey fine-coarse SAND
						1.50		
						(1.40)		Very stiff dark brown occasionally grey mottled slightly gravelly CLAY. Occasional large cobbles / small boulders present with depth.
								Possible grey weathered bedrock - within clay matrix. (2.60 - 2.90m)
						2.90		*End of Trial Pit at 2.90m*

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0

Remarks
Termiated at target depth.
No visual or olfactory evidence of contamination.
Dry.

Method, Plant, Stability, Dimensions
0.00 - 2.90m TP
Stable

Logger
J Skues

Trial Pit

TP4

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	295383.00	376878.00		1:25

Project Name	Project No.	Start Date	End Date
Abergele Area 6	26CGH049	2026-08-04	2026-08-04

Client
Castle Green Homes

Consultant
Betts Geo

Contractor

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Samples and Tests: Type/ Ref	Samples and Tests: Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Strata: Description
						(0.20) 0.20		TOPSOIL Grass over dark brown sandy CLAY [TOPSOIL]
						(0.30) 0.50		Stiff brown very sandy CLAY
						(0.40) 0.90		Very stiff red brown occasionally grey mottled slightly gravelly CLAY
		1.50	ES			(0.80) 1.70		Medium dense brown clayey fine-coarse SAND. Frequent clay pockets.
						(1.20) 2.90		Very stiff red brown occasionally grey mottlet gravelly sandy CLAY
								End of Trial Pit at 2.90m

Remarks
Termiated at target depth.
No visual or olfactory evidence of contamination.
Dry.

Method, Plant, Stability, Dimensions
0.00 - 2.90m TP
Stable

Logger
J Skues

SUMMARY OF CONTAMINATION ANALYSIS: METALS

BETTS GEO
CONSULTING ENGINEERS

Project Name 0
Project No 0
Date 26/09704/1

SOIL TYPE	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES
SAMPLE LOCATION	TP1	TP1	TP2	TP2	TP3	TP3	TP4	S1
DEPTH (m)	0.20	0.50	0.10	1.00	0.10	0.40	1.50	0.20
pH	8	8.2	7.96	8.59	7.23	8.52	8.31	7.02
Sulphate (water sol 2:1)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.08
Organic matter	1.66	0.41	2.17	0.22	2.52	<0.14	0.23	5.88
Arsenic	6	5	6	5	6	3	4	6
Cadmium	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Copper	14	21	15	16	13	25	17	16
Chromium (hexavalent)	<1	<1	<1	<1	<1	<1	<1	<1
Lead	65	15	22	7	44	18	17	49
Mercury	0.26	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Nickel	21	36	24	25	18	32	28	20
Selenium	<1	<1	<1	<1	<1	<1	<1	<1
Zinc	43	51	45	35	47	53	48	61
Asbestos in Soil	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Matrix	0	0	0	0	0	0	0	0
Quantification	0	0	0	0	0	0	0	0
Organic matter	1.66	0.41	2.17	0.22	2.52	<0.14	0.23	5.88

Metals	Mean Value Test *	Range		LQM 2009	DEFRA C4SL 2017
	US_{95}	Largest Value (mg/kg)	Smallest Value (mg/kg)	With Homegrown Produce (1% SOM)	
pH	8.36	8.59	7.02		-
Sulphate (water sol 2:1)	0.04	0.08	<0.01		-
Organic matter	2.96	5.88	<0.14		
Arsenic	5.88	6.00	3.00	**37**	**37**
Cadmium	1.00	<1.0	<1.0	**11**	**22.1**
Copper	19.79	25.00	13.00	**2400**	-
Chromium (hexavalent)	1.00	<1	<1	**6**	**20.5**
Lead	43.29	65.00	7.00		**200**
Mercury	0.20	0.26	<0.17	**11**	-
Nickel	29.64	36.00	18.00	**130**	
Selenium	1.00	<1	<1	**250**	-
Zinc	52.98	61.00	35.00	**3700**	-

NOTE:
Any individual results and mean value tests above SGVs are shown RED highlighted.
Any outlier values which exceed relevant SGVs are shown in red

* - The calculations for the mean value test include outliers

**- Results for this determinand are assessed with no background levels taken into account

Results are expressed as mg/kg unless otherwise stated

ALL RESULTS PRESENTED ARE ASSESSED UNDER THE COMBINED CLEA ASSESSMENT CRITERION AS OUTLINED WITHIN SR4 ASSUMING **NO** FREE PRODUCT WAS OBSERVED DURING FIELDWORK- SEE 'GUIDANCE NOTES ON CONTAMINATION'.

LQM CIEH 2009 (+Nickel update 2105) guidance levels used. C4SL levels also referred to where necessary. LQM profiling tool should be used in order for Benzo(a)Pyrene to be used as a surrogate marker..
NAD - NO ASBESTOS DETECTED

TS - Topsoil, MG - Made Ground and N - Natural Ground

BETTS GEO
CONSULTING ENGINEERS

SUMMARY OF CONTAMINATION ANALYSIS: TPH

Project Name 0
Project No 0
Date 26/09704/1

SOIL TYPE	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES
SAMPLE LOCATION	TP1	TP1	TP2	TP2	TP3	TP3	TP4	S1
DEPTH (m)	0.20	0.50	0.10	1.00	0.10	0.40	1.50	0.20
Ali >C5-C6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Ali >C6-C8	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Ali >C8-C10	<1	<1	<1	<1	<1	<1	<1	<1
Ali >C10-C12	<1	<1	<1	<1	<1	<1	<1	<1
Ali >C12-C16	<1	<1	<1	<1	<1	<1	<1	<1
Ali >C16-C21	<1	<1	<1	<1	<1	<1	<1	<1
Ali >C21-C35	2	<1	2	<1	2	<1	<1	4
Total Aliphatics	2	<1	2	<1	2	<1	<1	4
Aro >C5-C7	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aro >C7-C8	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aro >C8-C10	<1	<1	<1	<1	<1	<1	<1	<1
Aro >C10-C12	<1	<1	<1	<1	<1	<1	<1	<1
Aro >C12-C16	<1	<1	<1	<1	<1	<1	<1	<1
Aro >C16-C21	<1	<1	<1	<1	<1	<1	<1	<1
Aro >C21-C35	<1	<1	<1	<1	<1	<1	<1	<1
Total Aromatics	<1	<1	<1	<1	<1	<1	<1	<1
TPH (Ali & Aro)	2	<1	2	<1	2	<1	<1	4
BTEX - Benzene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BTEX - Toluene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BTEX - Ethyl Benzene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BTEX - m & p Xylene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BTEX - o Xylene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MTBE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Organic Matter	1.66	0.41	2.17	0.22	2.52	<0.14	0.23	5.88

TPH	Mean Value Test *	Range		LQM S4UL 2009		
	US_{95}	Largest Value (mg/kg)	Smallest Value (mg/kg)	1% SOM	2.5% SOM	6% SOM
Ali >C5-C6	0.01	<0.01	<0.01	42	78	160
Ali >C6-C8	0.01	<0.01	<0.01	100	230	530
Ali >C8-C10	1.00	<1	<1	27	35	150
Ali >C10-C12	1.00	<1	<1	130	330	760
Ali >C12-C16	1.00	<1	<1	1100	2400	4300
Ali >C16-C21	1.00	<1	<1	65000	92000	110000
Ali >C21-C35	2.44	4.00	<1			
Total Aliphatics	2.44	4.00	<1			
Aro >C5-C7	0.01	<0.01	<0.01	70	140	300
Aro >C7-C8	0.01	<0.01	<0.01	130	290	660
Aro >C8-C10	1.00	<1	<1	34	83	190
Aro >C10-C12	1.00	<1	<1	74	180	380
Aro >C12-C16	1.00	<1	<1	140	330	660
Aro >C16-C21	1.00	<1	<1	260	540	930
Aro >C21-C35	1.00	<1	<1	1100	1500	1700
Total Aromatics	1.00	<1	<1			
TPH (Ali & Aro)	2.44	4.00	<1			
BTEX - Benzene	0.01	<0.01	<0.01	0.087	0.17	0.37
BTEX - Toluene	0.01	<0.01	<0.01	130	290	660
BTEX - Ethyl Benzene	0.01	<0.01	<0.01	47	110	260
BTEX - m & p Xylene	0.01	<0.01	<0.01	115	370	890
BTEX - o Xylene	0.01	<0.01	<0.01	60	140	330
MTBE	0.01	<0.01	<0.01	47	110	260

Results expressed as mg/kg air dried unless otherwise stated.

* - The calculations for the mean value test include outliers

NOTES:

LQM CIEH 2009 (+Nickel update 2105) guidance levels used. C4SL levels also referred to where necessary. LQM profiling tool should be used in order for Benzo(a)Pyrene to be used as a surrogate marker..
NAD - NO ASBESTOS DETECTED

SUMMARY OF CONTAMINATION ANALYSIS: PAH

Project Name 0
Project No 0
Date 26/09704/1

SOIL TYPE	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES
SAMPLE LOCATION	TP1	TP1	TP2	TP2	TP3	TP3	TP4	S1
DEPTH (m)	0.20	0.50	0.10	1.00	0.10	0.40	1.50	0.20
Acenaphthene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Acenaphthylene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Anthracene	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo(a)anthracene	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Benzo(a)pyrene	<0.04	<0.04	<0.04	<0.04	0.04	<0.04	<0.04	<0.04
Benzo(b)fluoranthene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(ghi)perylene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
Chrysene	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Dibenzo(ah)anthracene	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Fluoranthene	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Fluorene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Indeno(123-cd)pyrene	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Naphthalene	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Phenanthrene	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Pyrene	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
Organic Matter	1.66	0.41	2.17	0.22	2.52	<0.14	0.23	5.88

PAH	Mean Value Test *	Range		LQM S4UL 2009		
	US_{95}	Largest Value (mg/kg)	Smallest Value (mg/kg)	1% SOM	2.5% SOM	6% SOM
Acenaphthene	0.01	<0.01	<0.01	210	510	1100
Acenaphthylene	0.01	<0.01	<0.01	170	420	920
Anthracene	0.02	<0.02	<0.02	2400	5400	11000
Benzo(a)anthracene	0.04	<0.04	<0.04	7.2	11	13
Benzo(a)pyrene	0.04	0.04	<0.04	2.2	2.7	3
Benzo(b)fluoranthene	0.05	<0.05	<0.05	2.6	3.3	3.7
Benzo(ghi)perylene	0.05	<0.05	<0.05	320	340	350
Benzo(k)fluoranthene	0.07	<0.07	<0.07	77	93	100
Chrysene	0.06	<0.06	<0.06	15	22	27
Dibenzo(ah)anthracene	0.04	<0.04	<0.04	0.24	0.28	0.3
Fluoranthene	0.08	<0.08	<0.08	280	560	890
Fluorene	0.01	<0.01	<0.01	170	400	860
Indeno(123-cd)pyrene	0.03	<0.03	<0.03	27	36	41
Naphthalene	0.03	<0.03	<0.03	2.3	5.6	13
Phenanthrene	0.03	<0.03	<0.03	95	220	440
Pyrene	0.07	<0.07	<0.07	620	1200	2000

Results expressed as mg/kg air dried unless otherwise stated.

* - The calculations for the mean value test include outliers

NOTES:

LQM CIEH 2009 (+Nickel update 2105) guidance levels used. C4SL levels also referred to where necessary. LQM profiling tool should be used in order for Benzo(a)Pyrene to be used as a surrogate marker..
NAD - NO ASBESTOS DETECTED

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 26/09704
Issue Number: 1 **Date:** 01 September, 2026

Client:
Betts Geo Environmental
Block D
Parkway Business Centre
Deeside Industrial Estate
Flintshire
CH5 2LE

Project Manager: Betts Geolab/Jenny Skues/Kristian Bennet
Project Name: Abergele PH 6
Project Ref: 26CGH049
Order No: BG6429
Date Samples Received: 05/08/26
Date Instructions Received: 06/08/26
Date Analysis Completed: 01/09/26

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 26/09704

Client Project Name: Abergele PH 6

Client Project Ref: 26CGH049

Lab Sample ID	26/09704/1	26/09704/2	26/09704/3	26/09704/4	26/09704/5	26/09704/6	26/09704/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP1	TP1	TP1	TP2	TP2	TP2	TP3			
Depth to Top	0.20	0.50	1.50	0.10	1.00	2.00	0.10			
Depth To Bottom										
Date Sampled	04-Aug-26	04-Aug-26	04-Aug-26	04-Aug-26	04-Aug-26	04-Aug-26	04-Aug-26			
Sample Type	SOIL - ES	SOIL - ES	SOIL - D	SOIL - ES	SOIL - ES	SOIL - D	SOIL - ES			
Sample Matrix Code	4AE	6E	6A	4AE	6A	6A	4AE			
% Stones >10mm$_A$	8.7	<0.1	<0.1	<0.1	<0.1	<0.1	2.8	% w/w	0.1	A-T-044
pH$_D^{M\#}$	8.00	8.20	8.44	7.96	8.59	8.38	7.23	pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	g/l	0.01	A-T-026s
Organic Matter$_D^{M\#}$	1.66	0.41	-	2.17	0.22	-	2.52	% w/w	0.14	A-T-032s
Arsenic$_D^{M\#}$	6	5	-	6	5	-	6	mg/kg	1	A-T-024s
Cadmium$_D^{M\#}$	<1.0	<1.0	-	<1.0	<1.0	-	<1.0	mg/kg	1	A-T-024s
Copper$_D^{M\#}$	14	21	-	15	16	-	13	mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	<1	-	<1	<1	-	<1	mg/kg	1	A-T-040s
Lead$_D^{M\#}$	65	15	-	22	7	-	44	mg/kg	1	A-T-024s
Mercury$_D$	0.26	<0.17	-	<0.17	<0.17	-	<0.17	mg/kg	0.17	A-T-024s
Nickel$_D^{M\#}$	21	36	-	24	25	-	18	mg/kg	1	A-T-024s
Selenium$_D^{M\#}$	<1	<1	-	<1	<1	-	<1	mg/kg	1	A-T-024s
Zinc$_D^{M\#}$	43	51	-	45	35	-	47	mg/kg	1	A-T-024s
VPH total (>C5-C10)	<1.00	<1.00	-	<1.00	<1.00	-	<1.00	mg/kg	1	Calc-stone+moi s
(1.01) Item 1a Moisture Content of Soil (Oven Dried Method)$_A^{\#}$	-	-	Appended	-	-	Appended	-			Subcon IFA
(1.02) Item 2.4 4 Point Liquid & Plastic Limit by Cone Penetrometer$_A^{\#}$	-	-	Appended	-	-	Appended	-			Subcon IFA

Envirolab Job Number: 26/09704

Client Project Name: Abergele PH 6

Client Project Ref: 26CGH049

Lab Sample ID	26/09704/1	26/09704/2	26/09704/3	26/09704/4	26/09704/5	26/09704/6	26/09704/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP1	TP1	TP1	TP2	TP2	TP2	TP3			
Depth to Top	0.20	0.50	1.50	0.10	1.00	2.00	0.10			
Depth To Bottom										
Date Sampled	04-Aug-26	04-Aug-26	04-Aug-26	04-Aug-26	04-Aug-26	04-Aug-26	04-Aug-26			
Sample Type	SOIL - ES	SOIL - ES	SOIL - D	SOIL - ES	SOIL - ES	SOIL - D	SOIL - ES			
Sample Matrix Code	4AE	6E	6A	4AE	6A	6A	4AE			
Asbestos in Soil (inc. matrix)^										
Asbestos in soil$_D^{\#}$	NAD	NAD	-	NAD	NAD	-	NAD			A-T-045
Asbestos Matrix (visual)$_D$	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope)$_D$	-	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	N/A	N/A	-	N/A	N/A	-	N/A			A-T-045

Envirolab Job Number: 26/09704

Client Project Name: Abergele PH 6

Client Project Ref: 26CGH049

Lab Sample ID	26/09704/1	26/09704/2	26/09704/3	26/09704/4	26/09704/5	26/09704/6	26/09704/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP1	TP1	TP1	TP2	TP2	TP2	TP3			
Depth to Top	0.20	0.50	1.50	0.10	1.00	2.00	0.10			
Depth To Bottom										
Date Sampled	04-Aug-26	04-Aug-26	04-Aug-26	04-Aug-26	04-Aug-26	04-Aug-26	04-Aug-26			
Sample Type	SOIL - ES	SOIL - ES	SOIL - D	SOIL - ES	SOIL - ES	SOIL - D	SOIL - ES			
Sample Matrix Code	4AE	6E	6A	4AE	6A	6A	4AE			
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	<0.02	-	<0.02	<0.02	-	<0.02	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	<0.04	-	<0.04	<0.04	-	<0.04	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	<0.04	-	<0.04	<0.04	-	0.04	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	<0.07	-	<0.07	<0.07	-	<0.07	mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06	<0.06	-	<0.06	<0.06	-	<0.06	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	<0.04	-	<0.04	<0.04	-	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	<0.08	-	<0.08	<0.08	-	<0.08	mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01^U	<0.01^U	-	<0.01^U	<0.01^U	-	<0.01^U	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	<0.03	-	<0.03	<0.03	-	<0.03	mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	<0.03	-	<0.03	<0.03	-	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	<0.03	-	<0.03	<0.03	-	<0.03	mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07	<0.07	-	<0.07	<0.07	-	<0.07	mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	<0.08	<0.08	-	<0.08	<0.08	-	<0.08	mg/kg	0.01	A-T-019s

Envirolab Job Number: 26/09704

Client Project Name: Abergele PH 6

Client Project Ref: 26CGH049

Lab Sample ID	26/09704/1	26/09704/2	26/09704/3	26/09704/4	26/09704/5	26/09704/6	26/09704/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP1	TP1	TP1	TP2	TP2	TP2	TP3			
Depth to Top	0.20	0.50	1.50	0.10	1.00	2.00	0.10			
Depth To Bottom										
Date Sampled	04-Aug-26	04-Aug-26	04-Aug-26	04-Aug-26	04-Aug-26	04-Aug-26	04-Aug-26			
Sample Type	SOIL - ES	SOIL - ES	SOIL - D	SOIL - ES	SOIL - ES	SOIL - D	SOIL - ES			
Sample Matrix Code	4AE	6E	6A	4AE	6A	6A	4AE			
TPH CWG with Clean Up										
Ali >C5-C6$_A$	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8$_A$	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	<1	<1	-	<1	<1	-	<1	mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	<1	<1	-	<1	<1	-	<1	mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	<1	<1	-	<1	<1	-	<1	mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	<1	<1	-	<1	<1	-	<1	mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	2	<1	-	2	<1	-	2	mg/kg	1	A-T-055s
Total Aliphatics$_A$	2	<1	-	2	<1	-	2	mg/kg	1	Calc-As Recd
Aro >C5-C7$_A^{\#}$	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	<1	<1	-	<1	<1	-	<1	mg/kg	1	A-T-055s
Aro >C10-C12$_A$	<1	<1	-	<1	<1	-	<1	mg/kg	1	A-T-055s
Aro >C12-C16$_A$	<1	<1	-	<1	<1	-	<1	mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	<1	<1	-	<1	<1	-	<1	mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	<1	<1	-	<1	<1	-	<1	mg/kg	1	A-T-055s
Total Aromatics$_A$	<1	<1	-	<1	<1	-	<1	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_A$	2	<1	-	2	<1	-	2	mg/kg	1	Calc-As Recd
BTEX - Benzene$_A^{\#}$	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	0.01	A-T-022s

Envirolab Job Number: 26/09704

Client Project Name: Abergele PH 6

Client Project Ref: 26CGH049

Lab Sample ID	26/09704/8	26/09704/9	26/09704/10					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP3	TP4	S1							
Depth to Top	0.40	1.50	0.20							
Depth To Bottom										
Date Sampled	04-Aug-26	04-Aug-26	04-Aug-26							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4A	5	4AE							
% Stones >10mm$_A$	<0.1	<0.1	<0.1					% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	8.52	8.31	7.02					pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	<0.01	<0.01	0.08					g/l	0.01	A-T-026s
Organic Matter$_D$$^{M\#}$	<0.14	0.23	5.88					% w/w	0.14	A-T-032s
Arsenic$_D$$^{M\#}$	3	4	6					mg/kg	1	A-T-024s
Cadmium$_D$$^{M\#}$	<1.0	<1.0	<1.0					mg/kg	1	A-T-024s
Copper$_D$$^{M\#}$	25	17	16					mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	<1	<1					mg/kg	1	A-T-040s
Lead$_D$$^{M\#}$	18	17	49					mg/kg	1	A-T-024s
Mercury$_D$	<0.17	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	32	28	20					mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	<1	<1					mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	53	48	61					mg/kg	1	A-T-024s
VPH total (>C5-C10)	<1.00	<1.00	<1.00					mg/kg	1	Calc-stone+moi s

Envirolab Job Number: 26/09704

Client Project Name: Abergele PH 6

Client Project Ref: 26CGH049

Lab Sample ID	26/09704/8	26/09704/9	26/09704/10					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP3	TP4	S1							
Depth to Top	0.40	1.50	0.20							
Depth To Bottom										
Date Sampled	04-Aug-26	04-Aug-26	04-Aug-26							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4A	5	4AE							
Asbestos in Soil (inc. matrix)^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD							A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-							A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A							A-T-045

Envirolab Job Number: 26/09704

Client Project Name: Abergele PH 6

Client Project Ref: 26CGH049

Lab Sample ID	26/09704/8	26/09704/9	26/09704/10					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP3	TP4	S1							
Depth to Top	0.40	1.50	0.20							
Depth To Bottom										
Date Sampled	04-Aug-26	04-Aug-26	04-Aug-26							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4A	5	4AE							
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	<0.02	<0.02					mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06	<0.06	<0.06					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	<0.08	<0.08					mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01^U	<0.01^U	<0.01^U					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	<0.08	<0.08	<0.08					mg/kg	0.01	A-T-019s

Envirolab Job Number: 26/09704

Client Project Name: Abergele PH 6

Client Project Ref: 26CGH049

Lab Sample ID	26/09704/8	26/09704/9	26/09704/10					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP3	TP4	S1							
Depth to Top	0.40	1.50	0.20							
Depth To Bottom										
Date Sampled	04-Aug-26	04-Aug-26	04-Aug-26							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4A	5	4AE							
TPH CWG with Clean Up										
Ali >C5-C6$_A$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8$_A$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	<1	<1	4					mg/kg	1	A-T-055s
Total Aliphatics$_A$	<1	<1	4					mg/kg	1	Calc-As Recd
Aro >C5-C7$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C10-C12$_A$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16$_A$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Total Aromatics$_A$	<1	<1	<1					mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_A$	<1	<1	4					mg/kg	1	Calc-As Recd
BTEX - Benzene$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
Subscript "@"	Result is an opinion
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:

For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:

EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:

Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Betts Geo Environmental, Block D, Parkway Business Centre, Deeside Industrial Estate, Flintshire, CH5 2LE

Project: Abergele PH 6

Clients Project No: 26CGH049

Project No: 26/09704

Date Received: 06/08/2026 (am)

Cool Box Temperatures (°C): 15.9

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	26/09704/1	26/09704/2	26/09704/3	26/09704/4	26/09704/5	26/09704/6	26/09704/7	26/09704/8	26/09704/9	26/09704/10
Client Sample No										
Client Sample ID/Depth	TP1 0.20m	TP1 0.50m	TP1 1.50m	TP2 0.10m	TP2 1.00m	TP2 2.00m	TP3 0.10m	TP3 0.40m	TP4 1.50m	S1 0.20m
Date Sampled	04/08/26	04/08/26	04/08/26	04/08/26	04/08/26	04/08/26	04/08/26	04/08/26	04/08/26	04/08/26
A-T-019s	11/08/2026	11/08/2026		11/08/2026	11/08/2026		11/08/2026	11/08/2026	11/08/2026	11/08/2026
A-T-022s	11/08/2026	11/08/2026		11/08/2026	11/08/2026		11/08/2026	11/08/2026	11/08/2026	11/08/2026
A-T-024s	12/08/2026	12/08/2026		12/08/2026	12/08/2026		12/08/2026	12/08/2026	12/08/2026	12/08/2026
A-T-026s	13/08/2026	13/08/2026	13/08/2026	13/08/2026	13/08/2026	13/08/2026	13/08/2026	13/08/2026	13/08/2026	13/08/2026
A-T-031s	12/08/2026	12/08/2026	12/08/2026	12/08/2026	12/08/2026	12/08/2026	12/08/2026	12/08/2026	12/08/2026	12/08/2026
A-T-032s	17/08/2026	17/08/2026		17/08/2026	17/08/2026		17/08/2026	17/08/2026	17/08/2026	17/08/2026
A-T-040s	13/08/2026	13/08/2026		13/08/2026	13/08/2026		13/08/2026	13/08/2026	13/08/2026	13/08/2026
A-T-044	12/08/2026	12/08/2026	12/08/2026	12/08/2026	12/08/2026	12/08/2026	12/08/2026	12/08/2026	12/08/2026	12/08/2026
A-T-045	07/08/2026	07/08/2026		07/08/2026	07/08/2026		07/08/2026	07/08/2026	07/08/2026	07/08/2026
A-T-055s	11/08/2026	11/08/2026		11/08/2026	11/08/2026		11/08/2026	11/08/2026	11/08/2026	11/08/2026
Calc-As Recd	11/08/2026	11/08/2026		11/08/2026	11/08/2026		11/08/2026	11/08/2026	11/08/2026	11/08/2026
Calc-stone+mois	11/08/2026	11/08/2026		11/08/2026	11/08/2026		11/08/2026	11/08/2026	11/08/2026	11/08/2026

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

IAN FARMER ASSOCIATES

Unit 4, Faraday Close, Pattinson North Industrial Estate, Washington, NE38 8QJ Tel: 0191 482 8500
washington@ianfarmer.co.uk www.ianfarmer.co.uk

Envirolab Ltd
Housesteads
Off Stockport Road
Hattersley
SK14 3QU

F.A.O.

Final Test Report - 2283038 / 1

Site:	26CGH049
Job Number:	2283038
Originating Client:	Envirolab Ltd
Originating Reference:	2283038
Date Sampled:	Not Given
Date Scheduled:	17/08/2026
Date Testing Started:	21/08/2026
Date Testing Finished:	26/08/2026

Previous Reports		Amendments	Date Issued

Amendments:

Authorised By:

Tim Robinson
Quality Supervisor

Report Issue Date: 28/08/2026

Constructionline Part of Capita plc

Ian Farmer Associates (1998) Limited. Registered in England and Wales. No. 3661447.
Registered Office. Spring Lodge 172 Chester Road, Helsby, Frodsham, England, WA6 0AR.
Offices in: Cornwall (01872) 261775. Coventry (024) 7630 3422. Harpenden (01582) 460018. Llanelli (01554) 566566.
Newcastle upon Tyne (0191) 482 8500. Motherwell (01698) 230231. Warrington (01925) 855440. Washington (0191) 482 8500.

AGS

IAN FARMER ASSOCIATES

Laboratory Test Report 2283038 / 1

Site: 26CGH049 **Job Number:** 2283038

Client: Envirolab Ltd **Page:** 2

Determination of Moisture Content, Liquid Limit and Plastic Limit and Derivation of Plasticity and Liquidity Index

Borehole / Trial Pit	Depth (m)	Sample	Natural Moisture Content %	Natural - Stones removed by hand Sieved - Washed on 425 µm sieve			Liquid Limit %	Plastic Limit %	Plasticity Index %	Liquidity Index	Class	Description / Remarks
				Natural / Sieved	Percentage Passing %	Moisture Content %						
TP1	1.50		20	Natural	100	20	45	21	24	-0.04	CI	Brown slightly gravelly CLAY
TP2	2.00		16	Natural	94	17	38	19	19	-0.12	CI	Brown slightly gravelly CLAY

Method of Preparation: BS 1377 : Part 1 : 1990 : Clause 7 Preparation of disturbed samples for testing
BS 1377 : Part 1 : 2016 : Clause 8.4.3 Preparation of samples for plasticity tests
BS 1377 : Part 2 : 1990 : Clause 4.2 Preparation of samples for plastic limit tests

Method of Test: BS 1377 : Part 2 : 1990 : Clause 3.2 Determination of moisture content
BS 1377 : Part 2 : 1990 : Clause 4.3 or 4.4 Determination of the liquid limit
BS 1377 : Part 2 : 1990 : Clause 5.3 Determination of the plastic limit and plasticity index

UKAS TESTING 1464

Results reported relate only to the samples tested.

Final Test Report - 2283038 / 1

Site:	26CGH049
Job Number:	2283038
Originating Client:	Envirolab Ltd

All opinions and interpretations contained within this report are outside of our Scope of Accreditation.

This test report shall not be reproduced, except in full and only with the written permission of Ian Farmer Associates Ltd.

Samples will be retained for 28 days from date of issue of the final test report before being disposed of, unless we receive written instruction to the contrary.

Report End

Report Issue Date: 28/08/2026

Castle Green Homes

Desk Study Report

For

Land at Bryn Derw, Abergele Phase 6

June 2026

REPORT NO: 26CGH049/DS

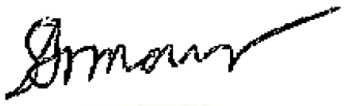
- *Desk Studies and Site Walkovers*
- *Intrusive Contaminated Land Investigations*
- *Geotechnical Appraisals and Ground Investigations*
- *Landfill Gas Assessments and Remedial Design*
- *Remediation Design and Implementation*
- *Remediation Project Management and Supervision*
- *Site Abnormal Assessments (Foundations and Contaminated Land)*

GEOTECHNICAL - CONTAMINATED LAND - FLOOD RISK

© Betts Geo Environmental Ltd 2026

DOCUMENT ISSUE RECORD

Contract No:	26CGH049/DS
Client:	Castle Green Homes
Contract:	Land at Bryn Derw, Abergele PH6
Document:	Desk Study Report

Prepared by:		S Armour/K Bennett
Checked by:		B Lewis
Approved by:		J Skues
Date:		June 2026

REVISION RECORD

Revision	Date	Description	Prepared by
0	Jun 26	Draft for comments	SA/KB

BETTS GEO
CONSULTING ENGINEERS

CONTENTS

1 EXECUTIVE SUMMARY 1

2 SITE DESCRIPTION 3

2.1 Introduction
2.2 Site Location
2.3 Site Description

3 SITE HISTORY 5

3.1 Site History from Ordnance Survey Maps
3.2 Summary of Site History

4 GEOLOGY 9

4.1 Published Geology
4.2 Geological Features
4.3 Radon
4.4 Hydrogeological and Hydrological Features

5 ENVIRONMENTAL DATA 14

5.1 Current Industrial Land Use
5.2 Waste and Landfill
5.3 Past Land Use
5.4 UXO

6 SUMMARY OF ENVIRONMENTAL SENSITIVITY 17

6.1 Sources
6.2 Pathways and Receptors

7 INITIAL CONTAMINATION CONCEPTUAL MODEL 19

7.1 Source-Pathway-Receptor-Linkages
7.2 Contamination Summary
7.3 Geotechnical Constraints

8 SCOPE OF GROUND INVESTIGATION 22

8.1 Objectives of the Ground Investigation
8.2 Proposed Initial Ground Investigation Scope

9 REFERENCES 23

© Betts Geo Environmental Ltd 2026

APPENDIX A
i) Site Location Plan
ii) Site Photographs
APPENDIX B
i) Historical Mapping
APPENDIX C
i) Groundsure Report
APPENDIX D
i) Conceptual Model
APPENDIX E
i) Notes on Limitations

© Betts Geo Environmental Ltd 2026

1 EXECUTIVE SUMMARY

Note – The following summary is not exhaustive and is to be used for guidance purposes only. The full report should be consulted for full details.

Site Location
The site is located north of St George Road, Abergele, LL22 9AU. The coordinates on the National Grid Reference are 295399, 377016. The site is approximately 4.16ha in total.

Proposed Development
Proposed residential development including residential dwellings and associated infrastructure.

Site Description
Access to the Site is via a locked gate off St George Road. Note you cannot access Phase 5 from the access road to 'The Kinmel' which extends off St George Road due to security barriers. The Site is an irregular parcel of agricultural land which rises to the south. An area of exposed soils is present in the south, adjacent to the site entrance. It appears that these may be soils which have been deposited on the site surface rather than removal of vegetation across this area, but this cannot be confirmed. The exposed soils were natural in appearance consisting of a light brown clay soil. No anthropogenic inclusions were observed.

A footpath runs along the western site boundary with a drainage ditch flowing south to north. Ground conditions were firm at time of visit. The Site slopes gently from south to north.

Site History
The site has remained undeveloped over the course of the historic maps, with field boundaries changing on site several times. Field boundaries on and around site have remained unchanged since 2022.

Surrounding Area
The surrounding area was predominantly undeveloped until circa 1911 & 1961 where residential development was shown to the west and 1970 where the A55 was constructed to the northeast. Circa 2025, residential development is shown immediately west of the site.

Published Geology
The BGS map shows the geology (1:50,000) beneath the site as the following:

- Artificial Ground – None recorded.
- Superficial – Till, Devensian – Sandy gravelly CLAY.
- Bedrock Deposits – Majority of site - Clwyd Limestone Group - Limestone
- Bedrock Deposits – Northeast corner of site - Warwickshire Group – Mudstone, siltstone and sandstone.

Coal
The site is not situated within a Coal Mining Remediation Authority reporting area therefore no further risk assessment is required in relation to shallow coal workings.

Radon Protection
The Groundsure Report indicates that the site lies within a low radon risk area where between 1-3% of homes are above the action level. However, the Radon UK mapping also shows the site lies within a 3-10% risk area and therefore basic Radon protection is required in the construction of new residential dwellings as a worst case scenario.

It is advised that a site-specific Radon report is obtained from the BGS to confirm if Radon protection is required on site based on the conflicting information above. Betts Geo can obtain this report if deemed required.

Summary of Environmental Data
Possible Contamination Sources;

- **Current Site Use** – Open Grassland, Significant Risk; No.
- **Historic Site Use –** Footpath, Significant Risk; Possible - Localised
- **Historic Site Use –** Changes in Field Boundaries, Significant Risk; Possible – Localised
- **A55 Construction – 250m NE,** Significant Risk; Unlikely
- **Sewage Pumping Station / Electricity Substation – 180-250m,** Significant Risk; Unlikely

© Betts Geo Environmental Ltd 2026

- **Historic Surrounding Area –** Ponds, Significant Risk; Possible

Pathways and Receptors
- **Aquifers –** Below Site – Significant Risk; Unlikely
- **Site End Users/Construction Workers** – Onsite – Significant Risk; Unlikely.
- **Surface Water Courses** – Onsite – Significant Risk; Unlikely.
- **Surrounding Site Users** – Adjacent to Site – Significant Risk; Unlikely.

Qualitative Risk Assessment:
In this qualitative risk assessment, a generally Low – Low/Moderate risk for contamination and ground gas is anticipated. Remedial action may be necessary at the site; however, this cannot be confirmed until a geotechnical and contamination ground investigation has been completed.

Proposed Ground Investigation Scope:
On assessing the potential risks on site, we have compiled the following recommendations for site investigation:

- One (1 No) day window sampling (circa 6 positions) to a maximum depth of 5m and all installed with gas/groundwater monitoring wells.
- Six (6 no) ground gas monitoring visits over a period of at least 3 months with varying barometric pressures.
- One (1 No) day trial pitting with a JCB or tracked excavator (depending on ground conditions) to assess superficial geology and to collect geo-environmental and geotechnical soil samples to aid any remediation strategy and foundation design.
- Fifteen (15 No) soil samples taken from within the topsoil, made ground and natural strata to benchmark contamination levels across the site. Proposed testing will include but not be limited to the following; heavy metals suite (comprising; As, Cd (low level), Cr Vi, Pb, Hg, Se, Ni, Cu, Zn), Organic Matter, Sulphate, pH, speciated polycyclic aromatic hydrocarbons and TPH CWG and PAH. Asbestos testing within topsoil and Made Ground.
- Geotechnical analysis of samples if clay strata is encountered for tree heave protection (anticipated).
- If elevated determinants are found within the site soils in close proximity to the watercourse along the western site boundary, then leachate and/or surface water sampling may be required as a follow on.

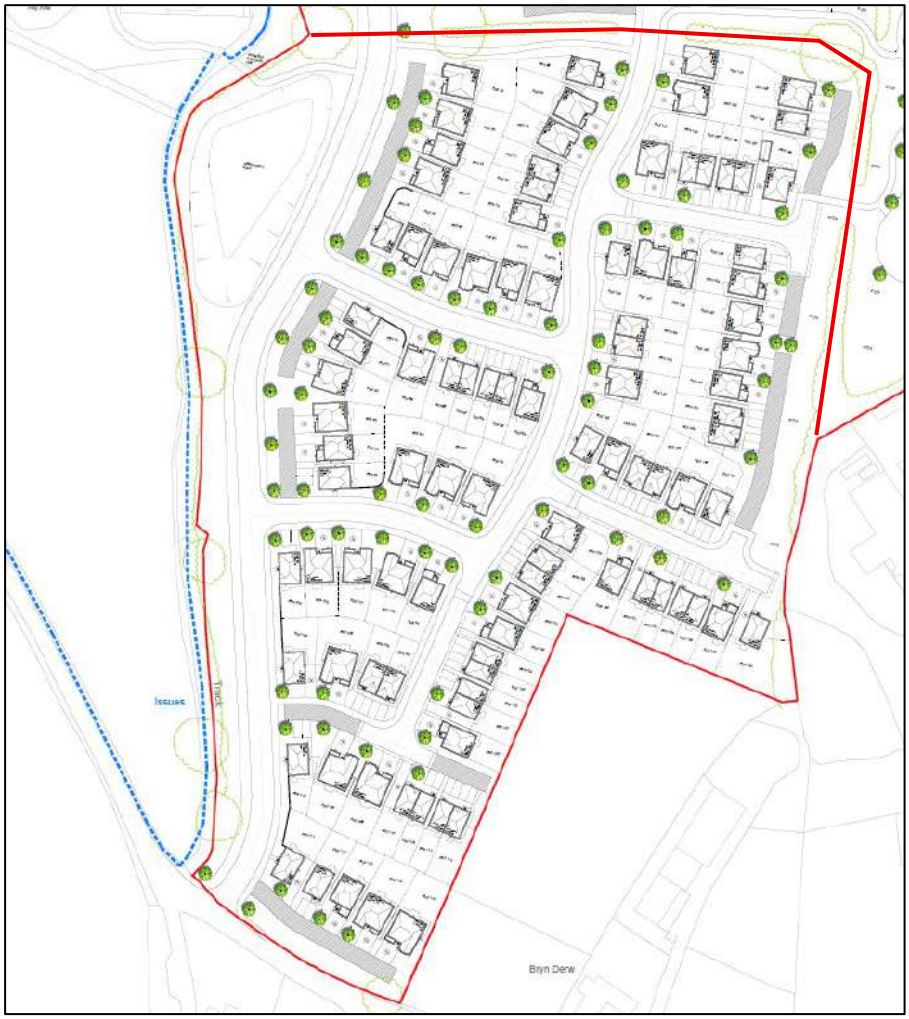
The scope of works should be agreed with the Local Authority prior to the intrusive ground investigation.

© Betts Geo Environmental Ltd 2026

2 SITE DESCRIPTION

2.1 Introduction

This investigation was carried out on the instruction of Castle Green Homes. The purpose of the work was to carry out a Desk Study to provide preliminary geotechnical and contamination risk assessment information to support a planning application for a proposed residential development including residential dwellings and associated infrastructure. The site location boundary has been provided by the client and can be found below.



Extract taken from 'Site Layout – Masterplan', Date 05/11/2025, Ref: BD-ABRGL_SL.03 by Castle Green Homes

2.2 Site Location

The site is located north of St George Road, Abergele, LL22 9AU. The coordinates on the National Grid Reference are 295399, 377016. The site is approximately 4.16ha in total. See Site Location Plan in Appendix A.

© Betts Geo Environmental Ltd 2026

2.3 Site Description

2.3.1 On Site

Site was visited by a Geo-Environmental Engineer on the 3rd of June 2026. Photos can be seen in Appendix A with a site description provided below;

Access to the Site is via a locked gate off St George Road. Note you cannot access Phase 5 from the access road to 'The Kinmel' which extends off St George Road due to security barriers. The Site is an irregular parcel of agricultural land which rises to the south.

An area of exposed soils is present in the south, adjacent to the site entrance. It appears that these may be soils which have been deposited on the site surface rather than removal of vegetation across this area, but this cannot be confirmed. The exposed soils were natural in appearance consisting of a light brown clay soil. No anthropogenic inclusions were observed.

No livestock were present in the field at the time of the walkover.

Suspected fox dens or badger setts were observed in the northeast of the site along the northern boundary. These appear to still be occupied with evidence of recent excavations and flattened vegetation.

Access to the Site is wide and more than sufficient for all plant including low-loaders to pass through. It appears that relatively recent widening of the site entrance has taking place with some exposed soils present on the verge into the site.

Overhead cables (possible telecoms?) extend through the centre of the site in a northeast to southwest direction, connecting to adjacent hotel.

A manhole was observed in the north of the Site. The direction of any drains or sewers is uncertain.

Site boundaries:

- **North** – Mixture of mature hedgerows and trees.
- **East** – Mature hedgerow onto 'The Kinmel' hotel and spa. In the southeast a wire mesh fence extends onto the property of Bryn Derw. The property of Bryn Derw is a bungalow with large commercial/agricultural shed/building.
- **South** – Wire and wooden post fence with site access gate onto St George Road.
- **West** – Mixture of mature hedgerows and trees onto public footpath and residential development

2.3.2 Surrounding Area

Surrounding land uses for the site are as follows:

- **North** – Agricultural land, crosscut by the A55.
- **East** – Commercial property immediately east, followed by agricultural land.
- **South** – Primarily agricultural land and pockets of woodland, with isolated residential dwellings and farms.
- **West** – Primarily agricultural land and occasional farms, with a residential development immediately northwest.

© Betts Geo Environmental Ltd 2026

3 SITE HISTORY

3.1 Site History from Ordnance Survey Maps

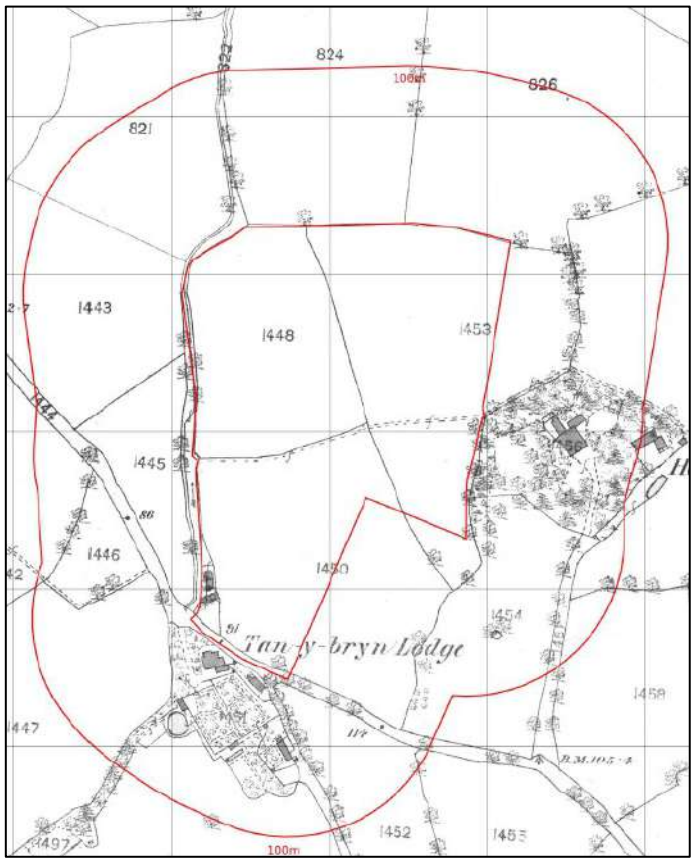
A search of available historic maps was undertaken to establish the land use history of the site. Extracts of the maps are discussed below and can be found in full in Appendix B of this report. All maps are Ordnance Survey unless otherwise stated. All distances quoted on OS maps are taken from the site boundary, which is marked on the map.

3.2 Summary of Site History

3.2.1 On Site

The earliest available map of the site is the 1872-1873 1:2,500 map which shows the site as undeveloped. The site is split across multiple field boundaries, with a footpath running east/west through the centre of site. A stream/watercourse is shown beyond the western site boundary flowing northwards. An extract of this map is shown below:

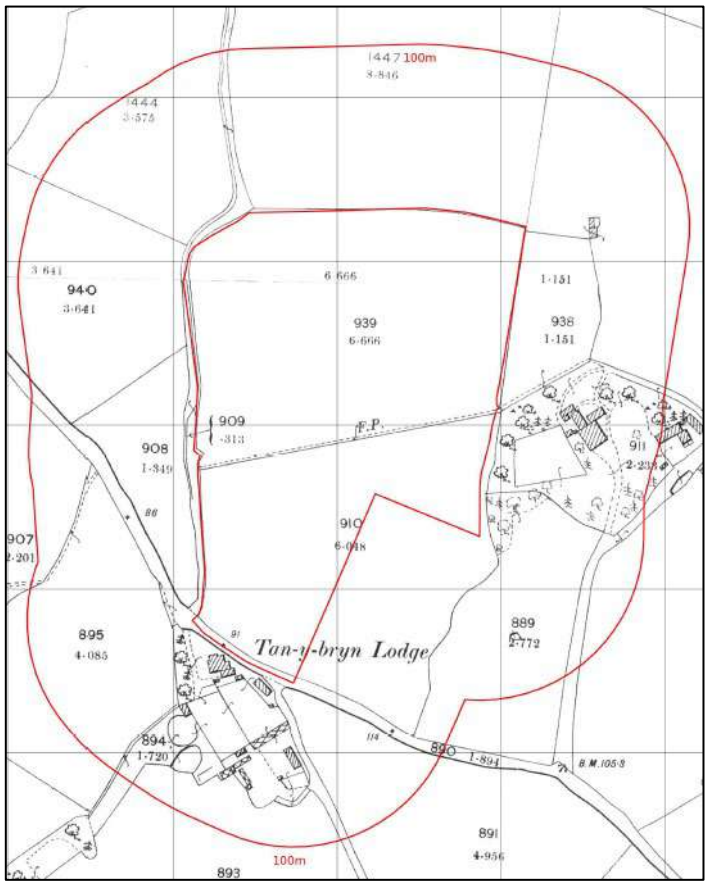
1872-1873 1:2,500 Map



© Betts Geo Environmental Ltd 2026

The next available map is the 1898 1:10,560 map which shows changed field boundaries on site. The N/S boundary is no longer shown, and a straightened E/W boundary alongside the footpath is present in the centre of site. This is shown in greater detail on the 1899 1:2500 map below.

1899 1:2,500 Map

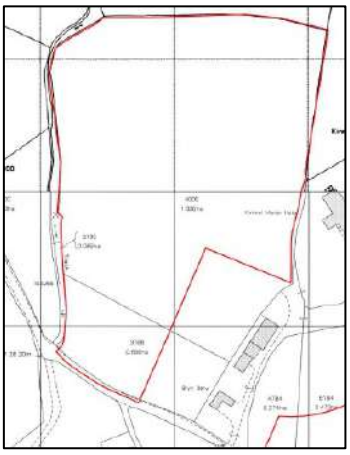


Circa 1961, the footpath on site is no longer shown.

Circa 1984, the central field boundary on site is no longer shown.

Circa 1991, a new field boundary is shown E/W in the southern portion of site.

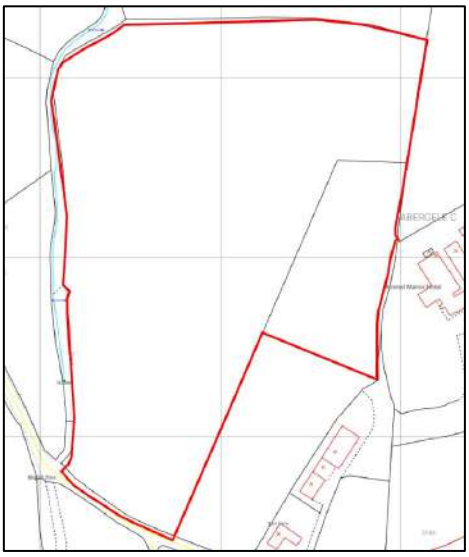
1991-1994 1:2,500 Map



© Betts Geo Environmental Ltd 2026

Circa 2003, the southern field boundary is no longer shown, and a new field boundary is shown in the east of site.

2003 1:2,500 Map



In satellite view, this field boundary is shown until 2020, when no field boundaries are shown on site.

Circa 2006 – present (2026) telecommunications poles are shown crossing the site E/W on Google Earth satellite and street view. These are not shown on any OS mapping.

Google Earth Satellite Imagery 03/06/2025



© Betts Geo Environmental Ltd 2026

3.2.2 Surrounding Area

The following table summarises the significant changes in historical use surrounding the site.

Date First Shown	Land Uses
1875	Isolated farmsteads in the surrounding area. **0m S** – St George Road (still present) **0m W** – Stream & Issue (still present) **0m W** – Footpath (still present) **15m E** – Hendre-gyda House (Labelled Kinmel Manor circa 1953, expanded and labelled hotel 1990, expanded 2001, 2010, 2025) **60m SW** – Pond (no longer shown circa 1899) **60m SE** – Pond (no longer shown circa 1961) **120m E** – Pond (no longer shown circa 1964)
1898	**75m SW** – Pond (expanded 1911, no longer shown circa 1990)
1911	**70m N** – Pond (no longer shown circa 1961) **80m NE** – Pond (no longer shown circa 1989) **100m – 200m** – Earthworks / Cutting (no longer shown circa 1990)
1938	No significant changes
1949 - 1953	**400m – 500m NW** – Residential dwellings (still present)
1964	No significant changes
1980	**200m NE** – A55 (still present)
1989 - 1990	**110m SW** – Tan-y-bryn nursing home (no longer shown circa 2010) **250m – 400m NW** – Cricket ground (no longer shown circa 2025) **350m – 500m NW** – Residential dwellings (still present)
2001	No significant changes
2015	No significant changes
2025	**0m – 320m NW** – Residential development (still present)

© Betts Geo Environmental Ltd 2026

4 GEOLOGY

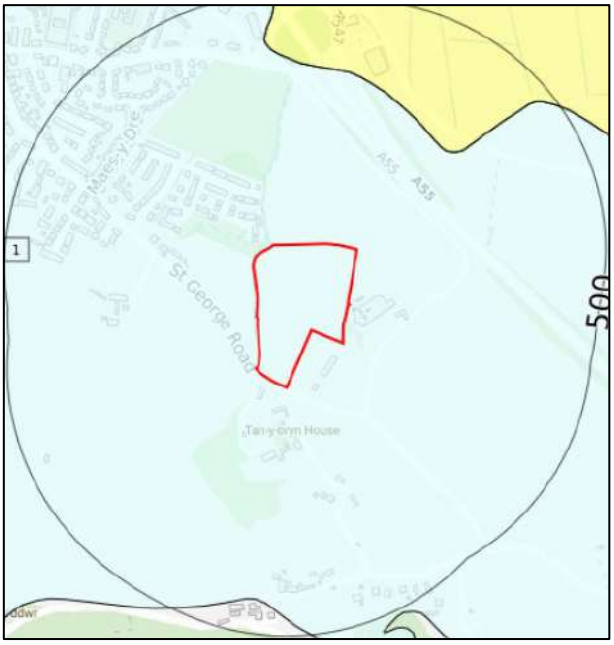
The following section details the published and available geological data available for the site and the surrounding area. All data is taken from the Groundsure Data report located in Appendix C unless otherwise stated. This report should be referred to for full details.

4.1 Published Geology

The documented geology of the site is summarised on the British Geological Survey map principally, with further site-specific details detailed below.

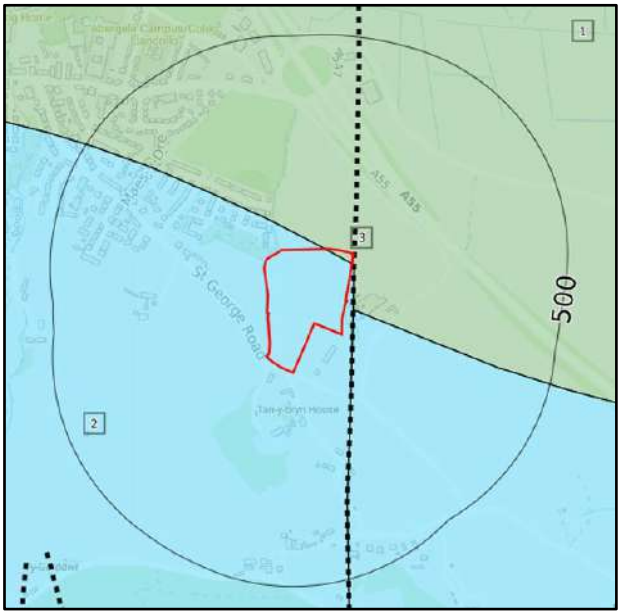
Geology	Artificial Ground & Land Slip	Drift	Solid
1:50,000	None shown on site	Till, Devensian – Sandy gravelly CLAY	Northeast corner - Warwickshire Group – Mudstone, siltstone and sandstone
			Majority of site - Clwyd Limestone Group - Limestone

Superficial Geology



© Betts Geo Environmental Ltd 2026

Bedrock Geology



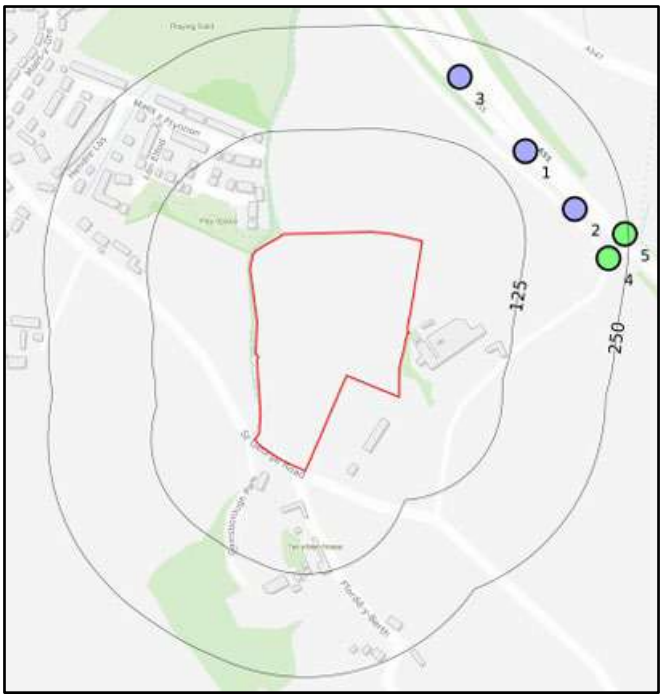
4.1.1 Linear Features

There is one (1 No) linear feature recorded within 250m of site as detailed below and shown on the bedrock geology map above).

ID	Location	Category	Description
3	2m E	FAULT	Fault, inferred, crossmark on downthrow side, throw in metres

4.1.2 Historic Borehole Records

There are five (5 No) BGS boreholes recorded within 250m of the site. None of these boreholes are within 50m of the site. Locations of these five boreholes are shown on the map below. For full details please refer to Appendix C.



© Betts Geo Environmental Ltd 2026

4.2 Geological Features

The table below summarises the presence/absence of recorded mining, extraction and natural cavities records within 500m of site. If entries are present within 250m, further details are provided in the relevant section below.

Data Type	On Site	0 – 50m	50 – 250m	250 – 500m
Geological				
Natural Cavities	-	-	-	-
Mining Cavities	-	-	-	-
BritPits	-	-	-	-
Surface Ground Workings	-	-	-	-
Underground Workings	-	-	-	-
Historic Mineral Planning Areas	-	-	-	-
Non Coal Mining	1	-	-	2
Coal Mining	None identified (within 0m)			
Brine Area	None identified (within 0m)			

4.2.1 Non Coal Mining

There is one (1 No) record of possible non coal mining within 250m of site as detailed below;

ID	Location	Name	Commodity	Class	Likelihood
1	On site	Not available	Vein Mineral	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.

Due to the Groundsure stating that '*potential for difficult ground conditions are unlikely and are at a level where they need not be considered*', these possible sources of contamination are deemed to be low risk to site.

4.2.2 Coal Mining

The site does not lie within a Coal Mining Reporting Area according to the Mining Remediation Authority therefore no further risk assessment is required in relation to potential shallow coal mining.

4.3 Radon

The Groundsure Report indicates that the site lies within a low radon risk area where between <1-3% of homes are above the action level. However, the Radon UK mapping also shows the site lies within a 3-10% risk area and therefore basic Radon protection is required in the construction of new residential dwellings as a worst case scenario.

It is advised that a site-specific Radon report is obtained from the BGS to confirm if Radon protection is

© Betts Geo Environmental Ltd 2026

required on site based on the conflicting information above. Betts Geo can obtain this report if deemed required.

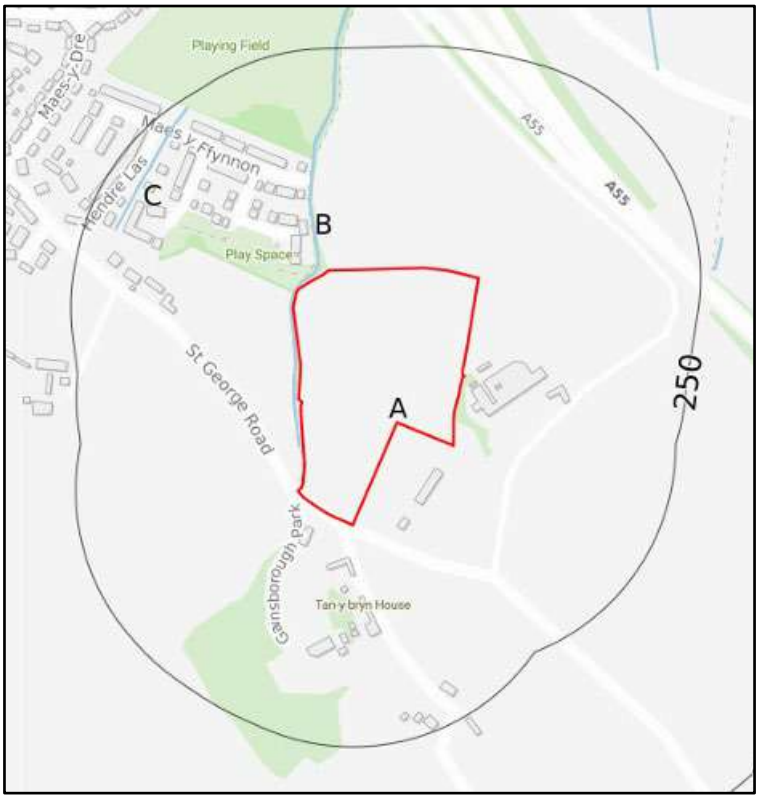
4.4 Hydrogeological and Hydrological Features

The table below summarises the presence/absence of any hydrological licences and incidents within 500m of the proposed site. If entries are present within 250m, further details are provided in the relevant subsection below;

Data Type	On Site	0 – 50m	50 – 250m	250 – 500m
Hydrogeology & Hydrology				
Licensed Discharges to Controlled Waters	-	-	1	1
Pollutant Release to Surface Waters (Red List Discharge Consents)	-	-	-	-
Groundwater Abstraction Licences	-	-	-	-
Surface Water Abstraction Licences	-	-	-	-
Potable Water Abstraction Licences	-	-	-	-
Source Protection Zones	-	-	-	-
Surface Water Features	-	1	3	-

4.4.1 Surface Water Features

There are (2 No) surface water features recorded within 250m of the site boundary, one (1 No) of which is recorded on site and refers to the watercourse along the western site boundary. This is shown on the extract below (reference A):



© Betts Geo Environmental Ltd 2026

4.4.2 Hydrogeology

- The superficial deposits of the clay are classed as a Secondary Undifferentiated Aquifer.
- The bedrock deposits of the mudstone, siltstone and sandstone are classed as a Secondary A Aquifer.
- The site does not lie within a Source Protection Zone as define by Natural Resources Wales.
- There are no groundwater or surface water abstraction licenses within 500m of the site.
- The is one (1 No) surface water feature located on site (watercourse/ditch along eastern site boundary).

© Betts Geo Environmental Ltd 2026

5 ENVIRONMENTAL DATA

The following section details environmental data available for the site and the surrounding area. Full details can be found in the Groundsure Report by located in Appendix C.

The table below summarises the presence/absence of any waste, hazardous substance sites of industrial land uses within 500m of the proposed site. If entries are present within 250m, further details are provided in the relevant section below.

Data Type	On Site	0 – 50m	50 – 250m	250 – 500m
Current Industrial Land Use				
Recent Industrial Land Uses	-	-	3	-
Current or Recent Petrol Stations	-	-	-	-
Electricity Cables	-	-	-	-
Gas Pipelines	-	-	-	-
Sites Determined as Contaminated Land	-	-	-	-
Control of Major Accident Hazards	-	-	-	-
Regulated Explosive Sites	-	-	-	-
Hazardous Substance/Storage	-	-	-	-
Historical Licensed Industrial Activities (IPC)	-	-	-	-
Licensed Industrial Activities	-	-	-	-
License Pollutant Release	-	-	-	3
Radioactive Substance Authorisations	-	-	-	-
Pollutant Release to Surface Waters	-	-	-	-
Pollutant Release to Public Sewer	-	-	-	-
List 1 & 2 Dangerous Substances	-	-	-	-
Pollution Incidents (EA/NRW)	-	1	-	1
Pollution Inventory Substances	-	-	-	-
Pollution Inventory Waste Transfers	-	-	-	-
Pollution Inventory Radioactive Waste	-	-	-	-
Waste and Landfill				
Active or recent landfill (EA/NRW)	-	-	-	-
Historical Landfill (BGS Records)	-	-	-	-
Historic Landfill (LA)	-	-	-	-
Historic Landfill (EA/ NRW)	-	-	-	-
Historical Waste Sites	-	-	-	-
Licenced Waste Sites (EA / NRW)	-	-	-	-
Waste Exemptions	-	-	1	-
Past Land Use				

© Betts Geo Environmental Ltd 2026

Historical Industrial Land Uses	-	-	-	2
Historical Tanks	-	-	-	-
Historical Energy Features	-	-	1	3
Historical Petrol Stations	-	-	-	-
Historical Garages	-	-	-	4
Environmental Designations				
Sites of Special Scientific Interest (SSSI)	-	-	-	-
Special Areas of Conservation (SAC)	-	-	-	-
Special Protection Areas (SPA)	-	-	-	-
Areas of Outstanding Natural Beauty (AONB)	-	-	-	-
National Parks	-	-	-	-
Green Belt Land	-	-	-	-
Nitrate Vulnerable Zones	-	-	-	-

5.1 Current Industrial Land Use

5.1.1 Recent Industrial Land Uses

There are three (3 No) entries for recent industrial land uses within 250m of site, none of which are on site. These are detailed below. For full details please refer to Appendix C.

ID	Location	Company	Address	Activity	Category
3	190m S	Electricity Sub Station	Clwyd, LL22	Electrical Features	Infrastructure and Facilities
A	225m NW	Electricity Sub Station	Clwyd, LL22	Electrical Features	Infrastructure and Facilities
A	245m NW	Sewage Pumping Station	Clwyd, LL22	Waste Storage, Processing and Disposal	Infrastructure and Facilities

Uses over 50m from site are deemed low risk due to the anticipated cohesive superficial geology on site and surrounding the site limiting any potential migration pathways.

5.1.2 Pollution Incidents

There is one (1 No) pollution incidents recorded within 250m of site as detailed below;

ID	Location	Details	
1	5m NW	Incident Date: 26/03/2014 Incident Identification: 1221362 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: - Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

Although the closets pollution incident occurred only 5m away from site, this pollution incident was a minor incident involving biodegradable materials and the incident took place a considerable amount of time ago in 2014. Due to the minor nature and length in time since the incident, there is little risk to be concerned with for pollution incidents on this site.

© Betts Geo Environmental Ltd 2026

5.2 Waste and Landfill

5.2.1 Waste Exemptions

There is one (1 No) Waste Exemption recorded within 250m of the site, as detailed below;

ID	Location	Site	Reference	Category	Sub-Category	Description
1	185m W	Anwyl Construction Company Limited, Land Off St George Road, Abergele, Conwy, LI229ar	NRW-WME020028	Storing waste exemption	Not on a farm	Storage of waste in a secure place

Due to the waste exemptions distance from site, and the category of the exemption relating to storage of waste in a secure place, the risk of any possible contamination from this source to site is deemed low.

5.3 Past Land Use

5.3.1 Historical energy features

There is one (1 No.) historical energy feature within 250m of site as detailed below;

ID	Location	Land use	Dates present	Group ID
1	183m S	Electricity Substation	1991	17001

As this feature was first recorded on 1991 mapping, there is unlikely to be any risk of contamination to site from this source, as PCBs were phased out of substations before this time.

5.4 UXO

Online Zetica Mapping indicates that the site is at a low risk of UXO with no strategic targets within 2000m of site.

© Betts Geo Environmental Ltd 2026

6 SUMMARY OF ENVIRONMENTAL SENSITIVITY

The following section is a review of the environmentally sensitivity of the site as discussed in Sections 2 - 5. Significant potential risks are discussed in the following subsections and will then be evaluated as part of the Site Conceptual Model in Section 7.

Sources are defined as where pollution comes from, pathways are a route in which the pollution travels and receptors are anything affected by a pollutant. Further details on Source-Pathway-Receptor methodology can be found in Appendix D.

The table in section 6.1 focuses on significant site-specific sources, pathways and receptors. More 'generic' pathways and receptors (such as site end uses) will be covered as part of the full Site Conceptual Model in Section 7.

6.1 Sources

Source	Distance/ Direction	Details	Significant Risk
Current Site Use – Open Grassland	On Site	The site is currently soft standing ground with long grass. Due to the undeveloped nature of the site, the risk of any contamination sources from the current site use is deemed low. Low residence agrochemicals are not deemed to be a significant threat to the site.	**No**
Historic Site Use – Change in Field Boundaries	On Site	Some slight changes in field boundaries are shown over the course of the historic maps however these are very localised to the north western and south eastern corners of site. Possible made ground in these locations or former hedge lines. Ground investigation and ground gas monitoring to confirm.	**Possible - Localised**
Historic Site Use – Footpath	On Site	Footpath shown E/W across the centre of site circa 1872-1961. Potential for localised made ground therefore contamination along this route. Ground investigation to confirm.	**Unlikely**
A55 Construction	250m NE	A55 & associated roundabout was constructed 10m N/NE circa 1970 and expanded circa 1980. Possible made ground in the northern area of site as a result of this construction although deemed unlikely. Ground investigation to confirm.	**Unlikely**
Sewage Pumping Station / Electricity Substation	183m S, 245NW and 225NW	The closest sewage pumping station is 245m NW and the closest electricity substations are 183m S and 225m NW. Sewage pumping station is far from site so contamination is unlikely even if leaks have occurred, any leakages likely to have been contained by cohesive superficial geology.	**Unlikely**
Historic Surrounding Area – Ponds	Within 100m	A number of ponds were located in the immediate area on the historic mapping which have either changed in size, shape or been infilled. Possible sources of ground gas and contamination depending on infill material. Migration pathway unlikely to be present due to cohesive superficial deposits. Ground investigation and ground gas monitoring to confirm.	**Possible**

© Betts Geo Environmental Ltd 2026

6.2 Pathways and Receptors

Pathways and Receptors	Distance/ Direction	Details	Significant Risk
Aquifers	Below Site	The superficial geology is classed as a Secondary Undifferentiated Aquifer and the bedrock is classed as a Principal Aquifer. Some possible contamination sources identified on site however cohesive superficial deposits should limit any downward migration.	**Unlikely**
Site End Users/ Construction Workers	On Site	Proposed site end use is residential. PPE to protect construction workers and remedial measures recommended for site end users if any significant contamination is present.	**Unlikely**
Surface Water Courses	On Site	Drain/watercourse located along the western site boundary. Possible receptor for any contamination however cohesive superficial deposits should limit any lateral migration. Ground investigation to confirm then surface water testing if required.	**Unlikely**
Surrounding Site Users	Adjacent to Site	Surrounding land use is mainly a road to the south, agricultural to the north and residential to the east. Cohesive superficial deposits should limit any lateral migration. Ground investigation to confirm.	**Unlikely**

© Betts Geo Environmental Ltd 2026

7 INITIAL CONTAMINATION CONCEPTUAL MODEL

For details on how the conceptual model is evaluated please refer to Appendix D.

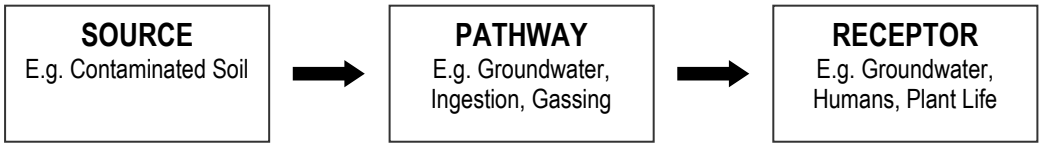
This section of the report aims to identify land which could potentially be affected by contamination, such that it could affect the value or re-use of the land, or such that mitigation would be required for certain proposed end uses of the land.

Potential contamination sources and environmentally sensitive receptors have been discussed in Section 6. Potentially significant risks are evaluated as part of the subsequent sub-sections.

7.1 Source-Pathway-Receptor-Linkages

The risk assessment uses a 'Source-Pathway-Receptor' methodology for assessing whether a source of contamination could potentially lead to harmful consequences. This means that there needs to be a pollutant linkage from source to receptor for harm to be caused, this linkage consisting of; a source of pollution; a pathway for the pollutant to move along; a receptor that is affected by the pollutant.

The current potential risks to site arising from various Source-Pathway-Receptor linkages are assessed below. A risk may be considered significant if all three of the stages are present and therefore providing a pollution linkage. The various sources, pathways and receptors are considered separately. The assessment is based on the future use, which is understood to be residential with homegrown produce.



© Betts Geo Environmental Ltd 2026

Type of Contamination	Potential Sources	Potential Pathway	Potential Receptors	Pollution Linkage	Comment	Estimated Level of Risk
Ground Gas	Current Site Use Historic Site Use	Inhalation of Vapours	Construction/ Maintenance Workers	**Active**	Localised made ground anticipated in former field boundary areas. PPE to protect to construction workers.	**Low**
		Vapours Penetrating Unprotected Buildings	Future Site Users	**Active**	As above. Future site use to be residential dwellings which are a high risk receptor. Future buildings to be designed with adequate protection (if ground gas is present) to minimise risk.	**Low – Low / Moderate**
Surface and Near Surface Contaminants Within Soils	Current Site Use Historic Site Use	Ingestion, Inhalation, Dermal Contact	Current Site Users	**Active**	Some Made Ground anticipated on site from possible infilling activities during the alteration of field boundaries. Current site use is agricultural which lowers any potential risk. SI required to confirm contamination status of the site.	**Low**
			Construction Workers	**Active**	Some Made Ground anticipated on site from possible infilling activities during the alteration of field boundaries. PPE to protect construction workers during ground breaking works.	**Low**
			Future Site Users	**Active**	Some Made Ground anticipated on site from possible infilling activities during the alteration of field boundaries. Future site use is residential with home grown produce (high sensitivity).	**Low – Low / Moderate**
			Adjacent Land Users	**Potentially Active**	Site surrounded by agricultural land to the north, south and west, commercial land to the east and a road to the south. Some Made Ground anticipated on site from possible infilling activities during alteration of field boundaries. Limited migration pathways off site due to anticipated cohesive superficial geology	**Low**
		Direct Contact	Structures	**Potentially Active**	Possible high/low sulphates and pH's in any Made Ground on site.	**Low – Low / Moderate**
		Absorption in Root Zone	Plants	**Potentially Active**	Some possible contamination sources identified on site. Future site use is residential with homegrown produce (high sensitivity).	**Low – Low / Moderate**
Mobile Contaminants, Leachables e.g. from Pollution Sources Adjacent to Site/On Site	Current Site Use Historic Site Use	Leaching into Groundwater	Groundwater	**Potentially Active**	Some possible contamination sources identified on site. Site is anticipated to be covered by cohesive superficial geology which limits any migration pathway into the underlying Principal and Secondary A Aquifers. Ground investigation to target and confirm.	**Low**
		Off-site Migration in Groundwater	Abstractions	**Active**	No groundwater or surface water abstractions within 500m of the site. Site not situated with a Source Protection Zone.	**Low**
			Controlled Waters	**Potentially Active**	Watercourse located along western boundary of site with possible sources of contamination identified on site. Cohesive superficial geology should limit any migration pathway however SI to confirm and surface water/leachate testing to be undertaken if elevated determinants found in soils.	**Low – Low / Moderate**
Organic and Inorganic Contaminants Within Soils / Groundwater	Current Site Use Historic Site Use	Potable Water Supply Pipes	Utilities Workers	**Potentially Active**	Potential for TPH contamination in localised made ground. SI required to confirm. Pipeline Assessment will be required once waterpipe line route known.	**Low – Low / Moderate**

© Betts Geo Environmental Ltd 2026

7.2 Contamination Summary

In this qualitative risk assessment, a generally **Low – Low/Moderate** risk for contamination and ground gas is anticipated on site (mainly from possible fill used to level the ground for the alteration of field boundaries over time). Remedial action may be necessary at the site; however, this cannot be confirmed until a geotechnical and contamination ground investigation has been completed.

7.3 Geotechnical Constraints

- Existing and/or redundant services across site.
- Made Ground associated with changing field boundaries within site.
- Potential tree heave in cohesive superficial geology along site boundaries. (anticipated)
- Possible alluvial deposits in vicinity of watercourse along western site boundary.

© Betts Geo Environmental Ltd 2026

8 SCOPE OF GROUND INVESTIGATION

8.1 Objectives of the Ground Investigation

The objectives of the intrusive ground investigation will be to:

- Clarify the 'Initial Contamination Conceptual Model'.
- Clarify the initial risk assessment.
- Benchmark the contamination status of the site.
- Provide data for the design of any remedial works that may be required.
- Provide a geotechnical appraisal for the site.

8.2 Proposed Initial Ground Investigation Scope

On assessing the potential risks on site, we have compiled the following recommendations for site investigation:

- One (1 No) day window sampling (circa 6 positions) to a maximum depth of 5m and all installed with gas/groundwater monitoring wells.
- Six (6 no) ground gas monitoring visits over a period of at least 3 months with varying barometric pressures.
- One (1 No) day trial pitting with a JCB or tracked excavator (depending on ground conditions) to assess superficial geology and to collect geo-environmental and geotechnical soil samples to aid any remediation strategy and foundation design.
- Fifteen (15 No) soil samples taken from within the topsoil, made ground and natural strata to benchmark contamination levels across the site. Proposed testing will include but not be limited to the following; heavy metals suite (comprising; As, Cd (low level), Cr Vi, Pb, Hg, Se, Ni, Cu, Zn), Organic Matter, Sulphate, pH, speciated polycyclic aromatic hydrocarbons and TPH CWG and PAH. Asbestos testing within topsoil and Made Ground.
- Geotechnical analysis of samples if clay strata is encountered for tree heave protection (anticipated).
- If elevated determinants are found within the site soils in close proximity to the watercourse along the western site boundary, then leachate and/or surface water sampling may be required as a follow on.

<u>The scope of works should be agreed with the Local Authority prior to the intrusive ground investigation.</u>

Notes on limitations of this report can be found in Appendix E.

© Betts Geo Environmental Ltd 2026

9 REFERENCES

9.1 *BS 5930:2015 Code of Practice for Ground Investigation.*

9.2 Investigation of Potentially contaminated sites BS10175:2011 +A1:2013.

9.3 BS8576:2013 Guidance on investigations for ground gas.

9.4 R & D Publication CLR 8 (March 2002) Assessment of Risks to Human Health from Land Contamination: An Overview of the Development of Soil Guideline Values and Related Research. Environment Agency.

9.5 R & D Publication CLR 10 (March 2002) The Contaminated Land Exposure Assessment Model (CLEA): Technical basis and algorithms. Environment Agency.

9.6 Contaminated Land Risk Assessment; a Guide to Good Practice; CIRIA C552: 2001.

9.7 BRE 211 Radon: guidance on protective measures for new buildings (including supplementary advice for extensions, conversions and refurbishment) (2007 edition).

9.8 Assessment of risks to human health from land contamination: an overview of the development of guideline values and related research. EA, 2002.

9.9 Health and Safety in Construction, HSG150, HSE, 1996.

9.10 Baker W (1987), Investigation Strategy - lecture at City of Birmingham Development Department Symposium on Methane Generating Sites, 9 December 1987, Industrial Research Laboratories, Birmingham.

9.11 NHBC Standards, Chapter 4.2, 2017 Building Near Trees.

9.12 'Guidance on Evaluation of Development Proposals on Sites Where Methane and Carbon Dioxide are Present', Report Edition No.04 March 2007 NHBC – designed for use with low rise residential properties.

9.13 CIRIA C665 'Assessing risks posed by hazardous ground gases for buildings' 2007 - for high rise residential / flats.

9.14 BS8485:2015 'Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings'.

9.15 BRE 414 'Protective measures for housing on gas-contaminated land' Roger Johnson, Parkman Environment 2001.

9.16 BS 8500-2:2015+A1:2016 'Concrete British Standard to BS EN 206. Specification for constituent materials and concrete'.

9.17 CLR11 'Model Procedures for the Management of Land Contamination' DEFRA 2004.

9.18 'Land Contamination Risk Management (LCRM)' Environment Agency (October 2020).

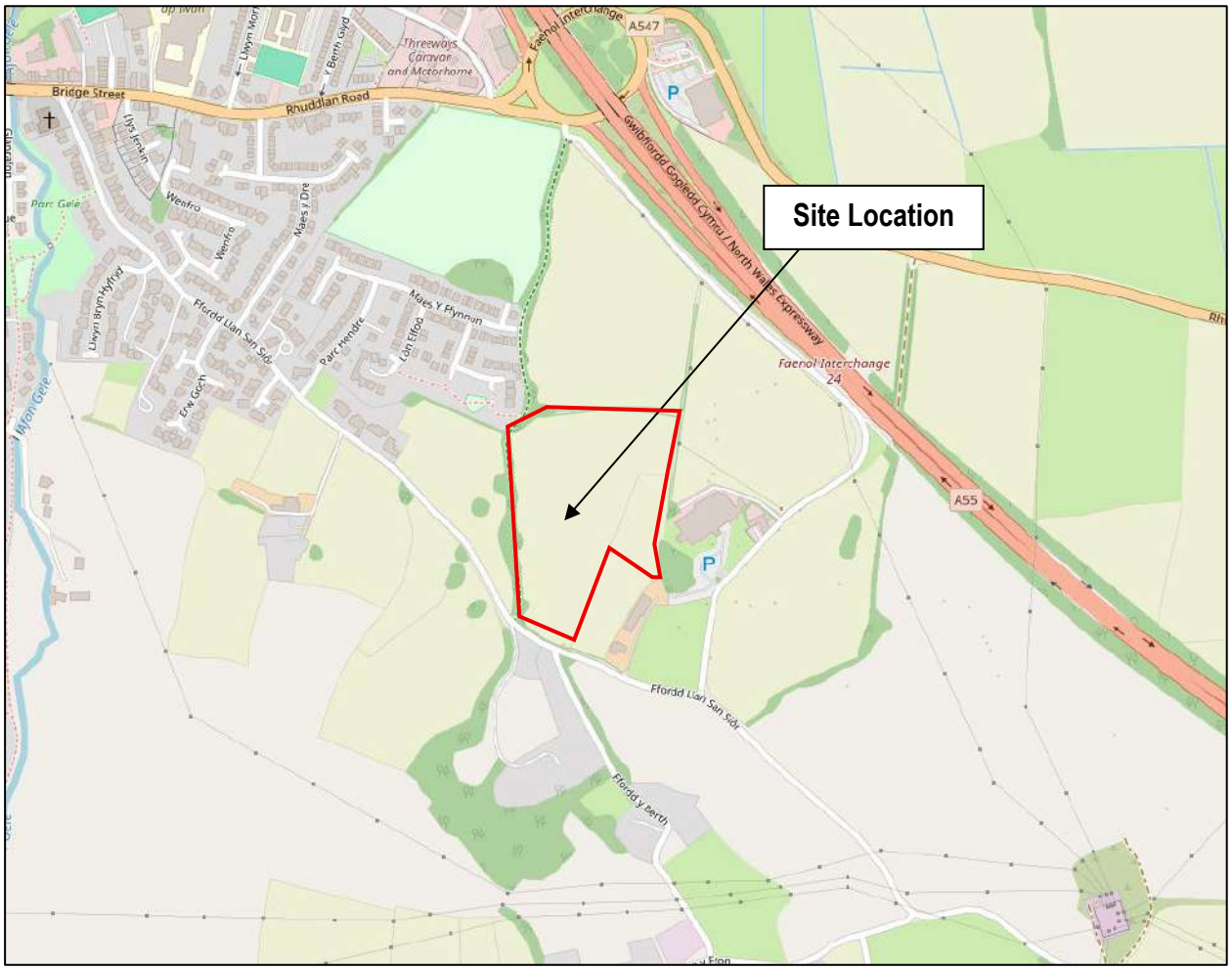
9.19 Ciria C758D Abandoned mine workings manual (C758D) September 2019

9.20 The Mining Remediation Authority App

© Betts Geo Environmental Ltd 2026

APPENDIX A

(i) Site Location Plan



Site Location Plan
The site is located north of St George Road, Abergele, LL22 9AU. The coordinates on the National Grid Reference are 295399, 377016. The site is approximately 4.16ha in total.

© Betts Geo Environmental Ltd 2026

iii) Site Photos



Access into the site off St George Road



Exposed soil in verge/embankment into site



Area of exposed soils in south of the site. Assumed to be deposited soils which appear to be natural clay soil



Northern view



Northeastern view along route of overhead cables



Site's western boundary onto public footpath

© Betts Geo Environmental Ltd 2026


Southern view of the site from northwest corner


Manhole present in the north


Recently excavated soils and depressed vegetation of suspected fox den or badger sett


Fenceline extending onto adjacent residential property of Bryn Derw


Southern view of access gate into Site. New residential development taking place to the south (background)



Residential development to the immediate south beyond St George Road under construction

© Betts Geo Environmental Ltd 2026



© Betts Geo Environmental Ltd 2026

APPENDIX B

(i) Historical Mapping

© Betts Geo Environmental Ltd 2026

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	County Series
Map date:	1875
Scale:	1:10,560
Printed at:	1:10,560

N
W E
S

Date: 1875
Surveyed: 1875
Revised: 1875

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

294500 295000 295500 296000 296500

378000 377500 377000 376500 376000

750m
500m
500m
750m

ABERGELE
Penire-mawr
Castle Terrace
Pwll-coch
Vicarage
Pentre-uchaf
Peel Garden
St Michael's Church
New York
Glan-aber
Methodist Chapel
Police Station
Gas Works
Jenkins St.
Bryn-teg
Bryn-hyfryd
Bryn-coch
Glan-y-weirglawdd
Electric Telegraph
Acres
9438·342
Old Flour Mill
Tan-y-adderwen
Tan-y-bryn Lodge
Hendre-gyda
Hendre-fawr
Hendre-bach
Pant-glâs
Bryn-aber
Hill Pond
Ffordd-las
Bryn-gwenallt
Siambr Wen
Ty-garddwr
Greenland
Bryn-y-berllan
Tan-y-fron
Tyddyn-ddrewm
Kinmel Brick Works
Ty-newydd
Hendre-uchaf
Pen-yr-allt
Watch Tower in Ruins
Limekiln
Pen-y-graig
Ffordd-las-bach
Pen-y-cae
Gwaenynog
Marsh T.P.
ABERGELE STASAPH
LLANRWST ABERGELE

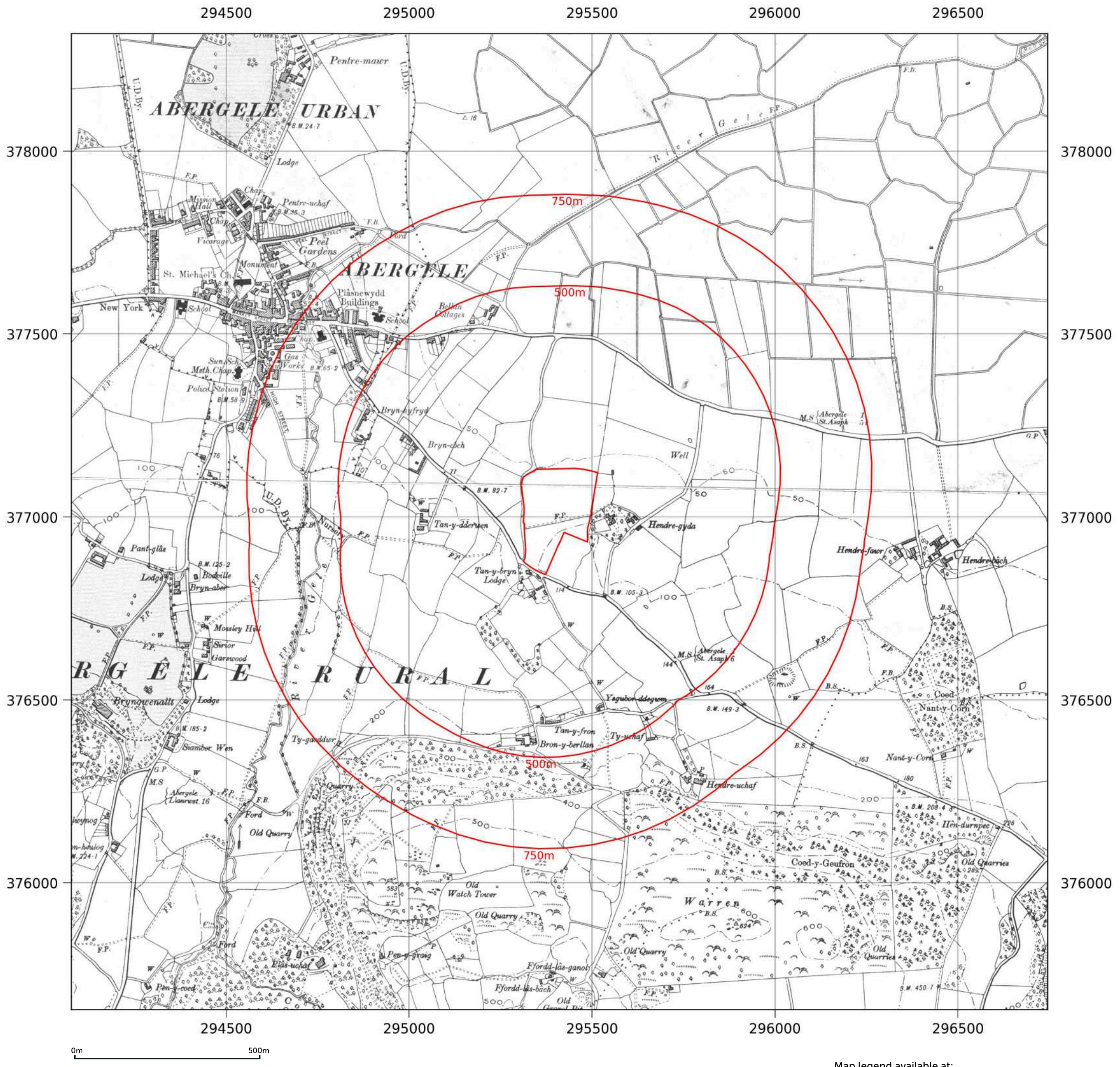
0m 500m

© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data



© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	County Series
Map date:	1898
Scale:	1:10,560
Printed at:	1:10,560

N
W E
S

Date: 1898
Surveyed: 1872
Revised: 1898

Date: 1898
Surveyed: 1875
Revised: 1898

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

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	County Series
Map date:	1911
Scale:	1:10,560
Printed at:	1:10,560

N
W E
S

Date: 1911
Surveyed: 1871
Revised: 1911

Date: 1911
Surveyed: 1874
Revised: 1911

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

294500 295000 295500 296000 296500

378000 377500 377000 376500 376000

750m
500m
500m
750m

ABERGELE
ABERGELE RURAL
Acres 9692·047

0m 500m

© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	County Series
Map date:	1911
Scale:	1:10,560
Printed at:	1:10,560

N
W E
S

Date: 1911
Surveyed: 1871
Revised: 1911

Date: 1911
Surveyed: 1874
Revised: 1911

294500 295000 295500 296000 296500

378000 377500 377000 376500 376000

750m
500m
500m
750m

ABERGELE
ABERGELE RURAL
Pentre-mawr
Pentre-uchaf
New York
St. Michael's Ch.
Glan-aber
Auction Mart
Police Station
CEMETERY
Bryn-hyfryd
Bryn-coch
Hendre-gyda
Tan-y-ddeiryen
Pant-ylâs
Bodtrille
Bryn-aber
Mousley Hill
Dehewfryn
Sirior
Garnwood
Brynygwenallt
Siamber-ucha
Abergele Llanrwst 16
Old Limekiln
Plâs-granny
Plâs Uchaf
Pen-y-coed
Fferdd-lâs-bach
Fferdd-las-ganol
Gravel Pit
Playhouse
Old Watch Tower
Tan-y-bryn
Bron-y-berllan
Cae-fron
Ty-isaf
Ty-uchaf
Fron
Hendre-uchaf
Nant-y-Corn
Coed Nant-y-Corn
Coed y Geufron
Warren
Warren Cottage
Hendre-favor
Hendre-bach
Hen-durnpec
Old Quarry
Spring
Sheepfold
Lodge
School
Gas Wks.
Sunday School
Calc Methl. Chap.
Chapel
Ford
Tank
Weir
Pheasantry
River Gele
U.D.By.
F.P.
F.B.
B.M. 24·7
B.M. 65·1
B.M. 58·9
B.M. 79·0
B.M. 82·8
B.M. 105·3
B.M. 125·2
B.M. 185·2
B.M. 224·1
B.M. 149·3
B.M. 200·9
B.M. 342·6
B.M. 361·3
B.M. 450·9
B.M. 23·0
B.M. 17·0
B.M. 18·4
B.M. 41·7
B.M. 35·3
M.S
G.P.
W.T.

0m 500m

© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

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

Groundsure
LOCATION INTELLIGENCE

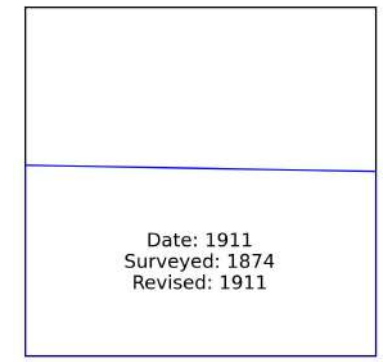
Ordnance Survey
Licensed Data

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	County Series
Map date:	1911
Scale:	1:10,560
Printed at:	1:10,560

N
W E
S



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

294500 295000 295500 296000 296500

378000 377500 377000 376500 376000

750m
500m

0m 500m

© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	County Series
Map date:	1938
Scale:	1:10,560
Printed at:	1:10,560

N
W E
S

Date: 1938
Surveyed: 1871
Revised: 1938
Edition: 1938

Date: 1938
Surveyed: 1874
Revised: 1938
Edition: 1938

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

294500 295000 295500 296000 296500

378000 377500 377000 376500 376000

0m 500m

© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	County Series
Map date:	1949-1953
Scale:	1:10,560
Printed at:	1:10,560

N
W E
S

Date: 1953
Surveyed: 1871
Revised: 1952
Copyright: 1953

Date: 1949
Surveyed: 1874
Revised: 1949

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

294500 295000 295500 296000 296500

378000 377500 377000 376500 376000

750m
500m
500m
750m

ABERGELE UD
ABERGELE URB
ABERGELE
Pentre-mawr
Sheepfold
School
Kinmel Manor
Tan-y-bryn
Hendre-fawr
Hendre-bach
Nant-y-Corn
Coed Nant-y-Corn
Coed y Geufron
Warren
Warren Cottage
Bron-y-berllan
Hendre-uchaf
Plas Uchaf
Playhouse
Watch Tower
River Gele

0m 500m

© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	Provisional
Map date:	1964
Scale:	1:10,560
Printed at:	1:10,560

N
W E
S

Date: 1964
Surveyed: 1964
Revised: 1964

Date: 1964
Surveyed: 1964
Revised: 1964

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

294500 295000 295500 296000 296500

378000 377500 377000 376500 376000

750m
500m
500m
250m

A B E R G E L E U
A B E R G E L E U R B

Pentre Mawr
Club House
Maes Canol
Stone Axe found DT1936
Peel Gardens
Auction Mart
Playing Field
Llwyn Morfa School
The Mount
School
Church
Pol Sta
Cemy
Parc Gele
Maes-y-dre
Bryn Coch Farm
Bryn-hyfryd Cottages
Green Acre
Cae Glas
Bryn Owen
Kinmel Manor
Tandderwen
Plas-isaf
Pant-glas
Lodge
Gele (Mon Gele)
River
Tan-y-bryn
Berthes Road
Tan-y-fron Road
Bryngwenallt
Stamber-wen
Ty-gar-dwr
Bronyberllan
Twll-twynog
Ford
Hendre-uchaf
Hendre-fawr
Hendre-bach
St George's Road
Coed Nant-y-corn
Nant-y-corn
Hen-durn
Coed y Geufron
Watch Tower (Dis)
Tower Hill
The Warren
Hoard of Bronze Age Horse Trappings found
PLAS-UCHAF (Chest Hospital)
Ffordd-las Bach
Warren Cottage
Fire Hill

0m 500m

© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Groundsure
LOCATION INTELLIGENCE

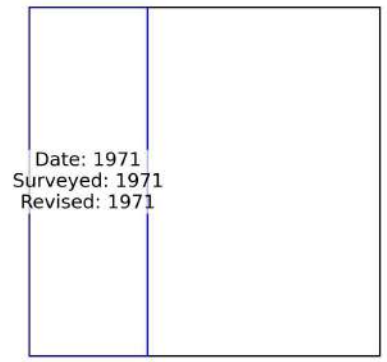
Ordnance Survey
Licensed Data

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	National Grid
Map date:	1971
Scale:	1:10,000
Printed at:	1:10,000

N
W E
S



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

294500 295000 295500 296000 296500

378000 377500 377000 376500 376000

750m
500m
500m
750m

0m 500m

© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	National Grid
Map date:	1980
Scale:	1:10,000
Printed at:	1:10,000

N
W E
S

Date: 1980
Surveyed: 1977
Revised: 1980

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

294500 295000 295500 296000 296500

378000 377500 377000 376500 376000

750m
500m
500m
750m

ABERGELE C

Playing Field
Schools
Playing Field
Berthglyd
Sch
RHUDDLAND ROAD
Kinmel Manor
Tandderwen
Tan-y-bryn
Berthes Road
Caerffynnon
Tan-y-fron Road
Bronyberllan
Hendre-uchaf
St George's Road
Nant-y-corn
Hendre-fawr
Hendre-bach
Stone
Quarry (dis)
Coed y Geufron
Watch Tower (Dis)
Tower Hill
The Warren
Weir
Track
Path
Drain
Fron

0m 500m

© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data



© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

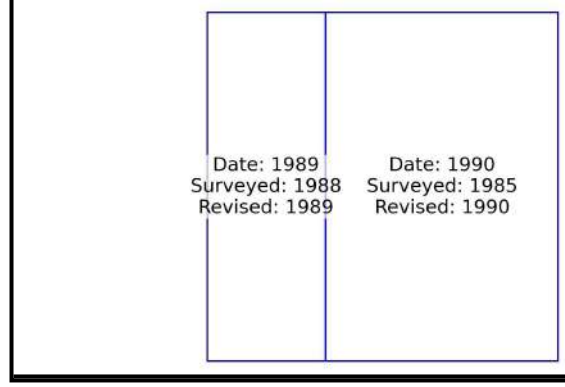
Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	National Grid
Map date:	1989-1990
Scale:	1:10,000
Printed at:	1:10,000

N
W E
S



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

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	National Grid
Map date:	2001
Scale:	1:10,000
Printed at:	1:10,000

N
W E
S

Date: 2001	Date: 2001

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

294500 295000 295500 296000 296500

378000 377500 377000 376500 376000

Recreation Ground
Awel -y-Mor
Maes Canol
Schools
750m
500m
Fire Sta
Car Park
Pav
Wks
Tel Ex
School
Berthglyd
Pol Sta
Liby
Gele Bridge
PO
Depot
Cricket Ground
Parc Gele
Hotel
Lodge
Tandderwen
Plas-isaf
Hendre-fawr
Hendre-bach
Tan-y-bryn
Caer Ffynnon
Reservoir (covered)
Bryngwenallt
Lodge
Bron Berllan
Slamber-wen
Gas Gov
Fron Cottage
Hendre Uchaf
Nant-y-com
Coed Abergele
Toll Cottage
Coed-Abergele
750m
Coed y Geufron
Watch Tower
Tower Hill
The Warren
Pen-y-graig
Plas Uchaf Farm
River Gele (Afon Gele)
0m 500m

© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

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

N
W E
S

Date: 2010	Date: 2010

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

294500 295000 295500 296000 296500

378000 377500 377000 376500 376000

750m
500m
500m
750m

Maes Canol
Schools
Berthglyd
Ysgol
Coleg
Fire Sta
Pol Sta
Liby
Gele Bridge
Depot
Parc Gele
Recreation Ground
Tandderwen Cottage
Tandderwen
Plas-isaf
Hotel
Lodge
Hendre-fawr
Hendre-bach
Tan-y-bryn House
Caer Pfynnon
Afon Gele/River Gele
Bryngwenallt Hall
Siamber-wen
Gas Gov
Bron Berllan
Fron Cottage
Hendre Uchaf
Kennels
Seren-y-Mor
Nant Y Corn
Coed Abergele
Toll Cottage
Coed y Geufron
Tower Hill
The Warren
Plas Uchaf
Pen-y-graig
Ty Twn
Fforddlas Bach
Squirrel Cottage

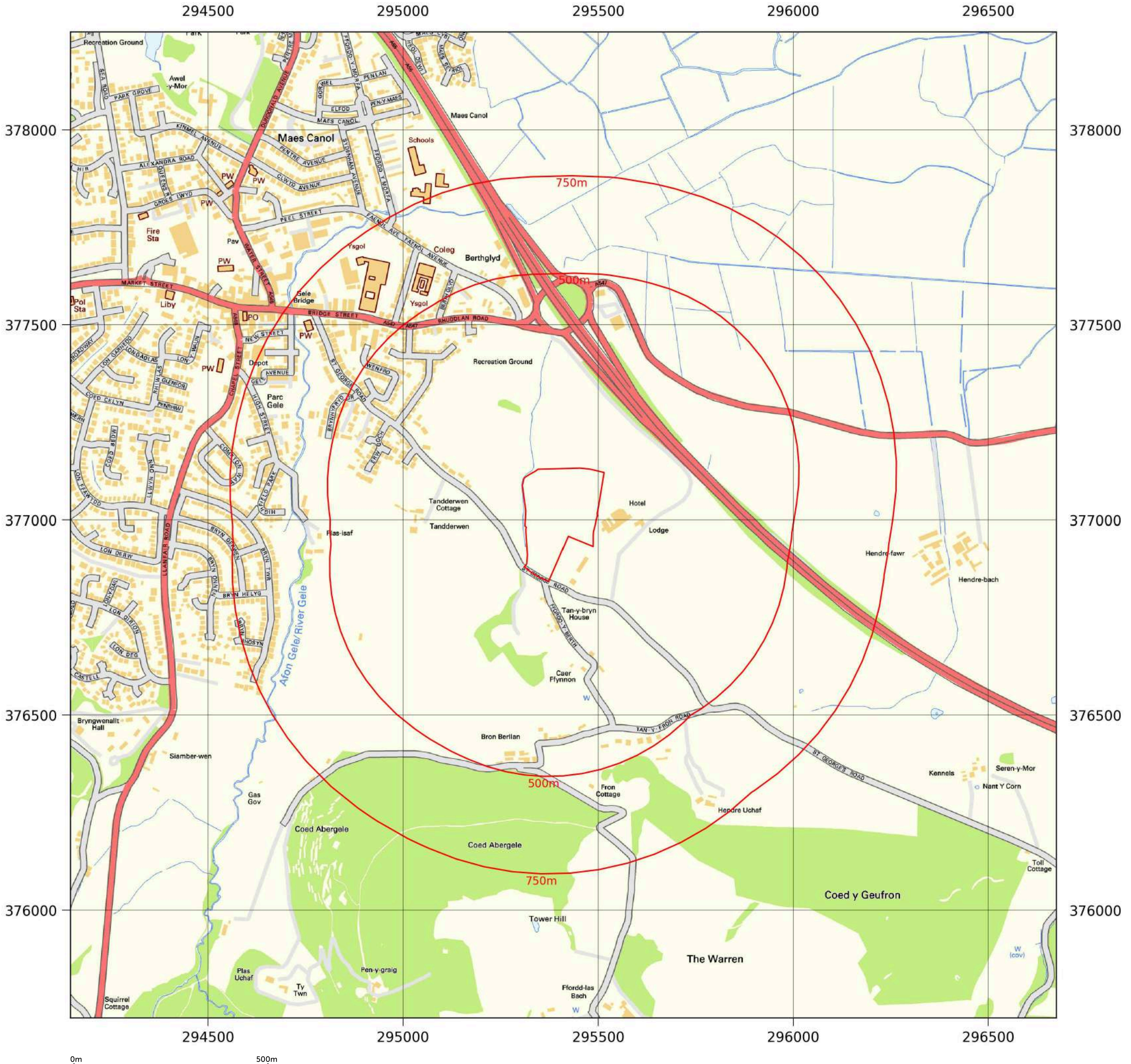
0m 500m

© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data



© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	National Grid
Map date:	2015
Scale:	1:10,000
Printed at:	1:10,000

N
W E
S

Date: 2015	Date: 2015

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

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	National Grid
Map date:	2025
Scale:	1:10,000
Printed at:	1:10,000

N
W E
S

Date: 2025	Date: 2025

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

294500 295000 295500 296000 296500

378000 377500 377000 376500 376000

0m 500m

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	County Series
Map date:	1872-1873
Scale:	1:2,500
Printed at:	1:2,500

N
W E
S

Date: 1872
Surveyed: 1872
Revised: 1872

Date: 1873
Surveyed: 1873
Revised: 1873

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

295100 295200 295300 295400 295500 295600 295700

377300 377200 377100 377000 376900 376800 376700

817 818 821 822 824 826 829 1441 1442 1443 1444 1445 1446 1447 1448 1450 1452 1453 1454 1455 1456 1458 1459 1460 1497 1498 1500

100m

B.M. 82·7 B.M. 105·4

y-dderwen Hendre-gyda Tan-y-bryn Lodge

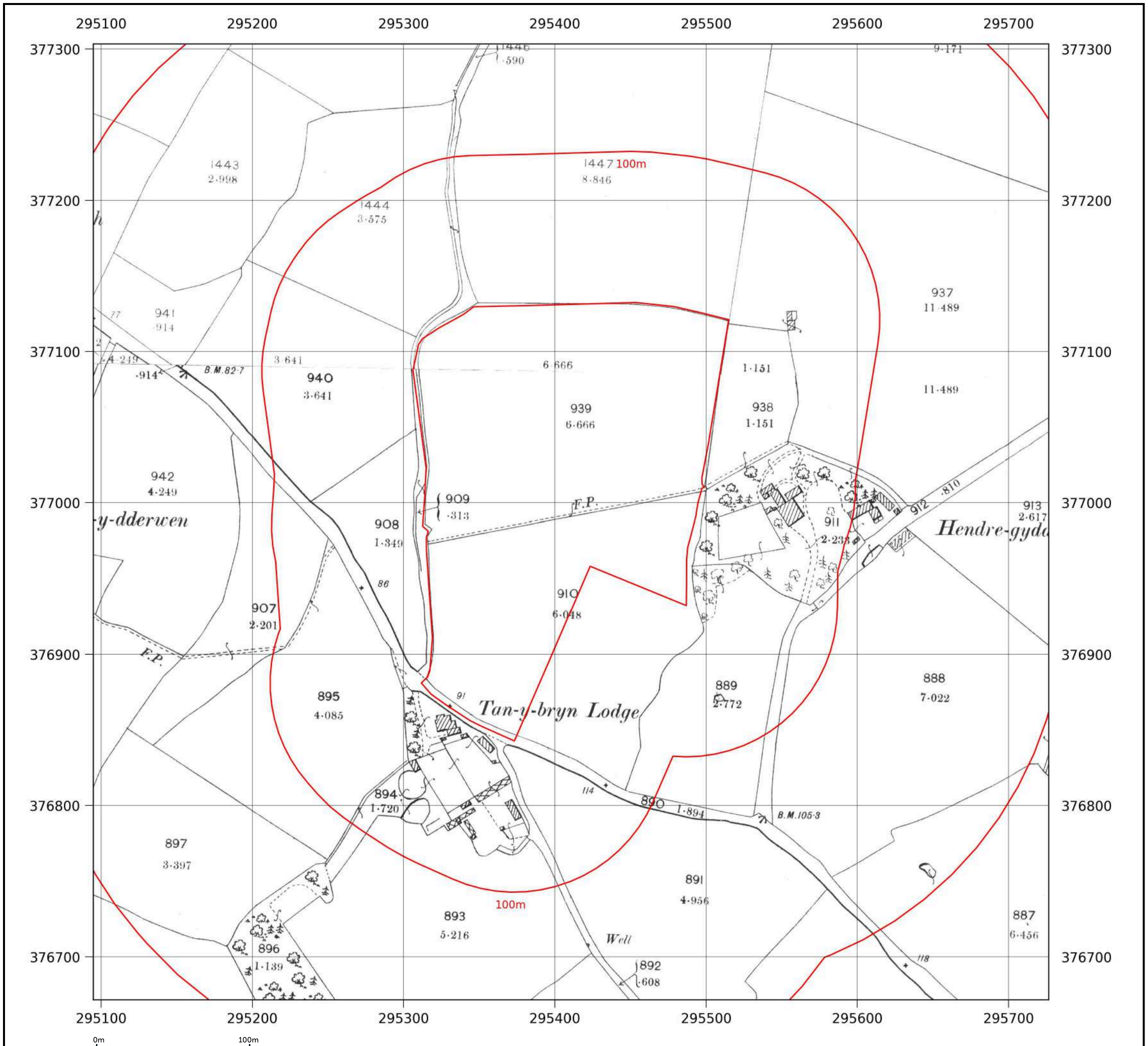
0m 100m

© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Groundsure LOCATION INTELLIGENCE

Ordnance Survey Licensed Data



© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	County Series
Map date:	1899
Scale:	1:2,500
Printed at:	1:2,500

N
W E
S

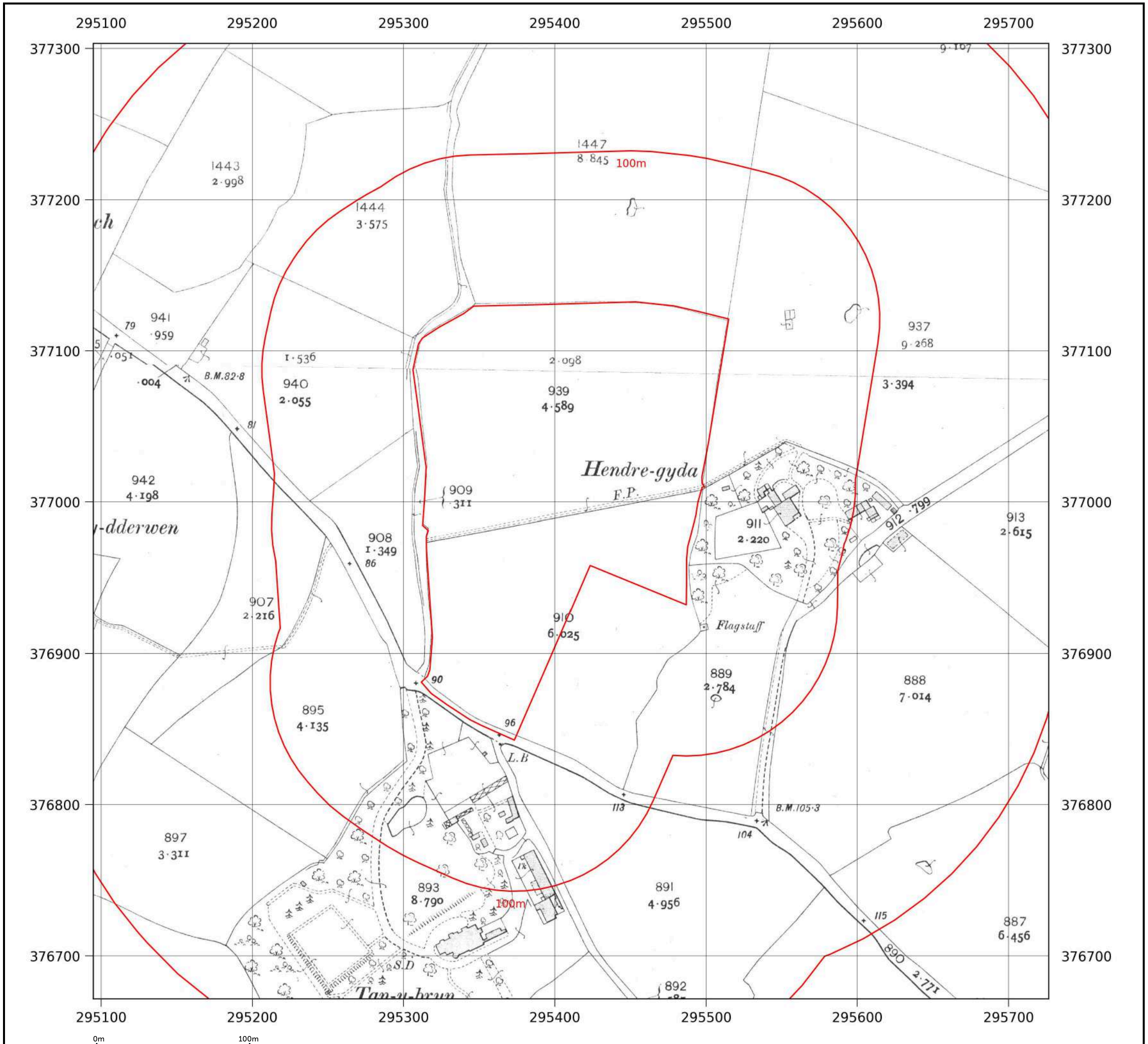
Date: 1899
Surveyed: 1899
Revised: 1899

Date: 1899
Surveyed: 1899
Revised: 1899

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

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data



© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	County Series
Map date:	1913
Scale:	1:2,500
Printed at:	1:2,500

N
W E
S

Date: 1913
Surveyed: 1913
Revised: 1913

Date: 1913
Surveyed: 1913
Revised: 1913

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

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	National Grid
Map date:	1961
Scale:	1:2,500
Printed at:	1:2,500

N
W E
S

Date: 1961
Surveyed: 1960
Revised: 1960
Copyright: 1961
Levelled: 1953

Date: 1961

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

© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	National Grid
Map date:	1961
Scale:	1:2,500
Printed at:	1:2,500

N
W E
S

Date: 1961
Surveyed: 1960
Revised: 1960
Copyright: 1961
Levelled: 1953

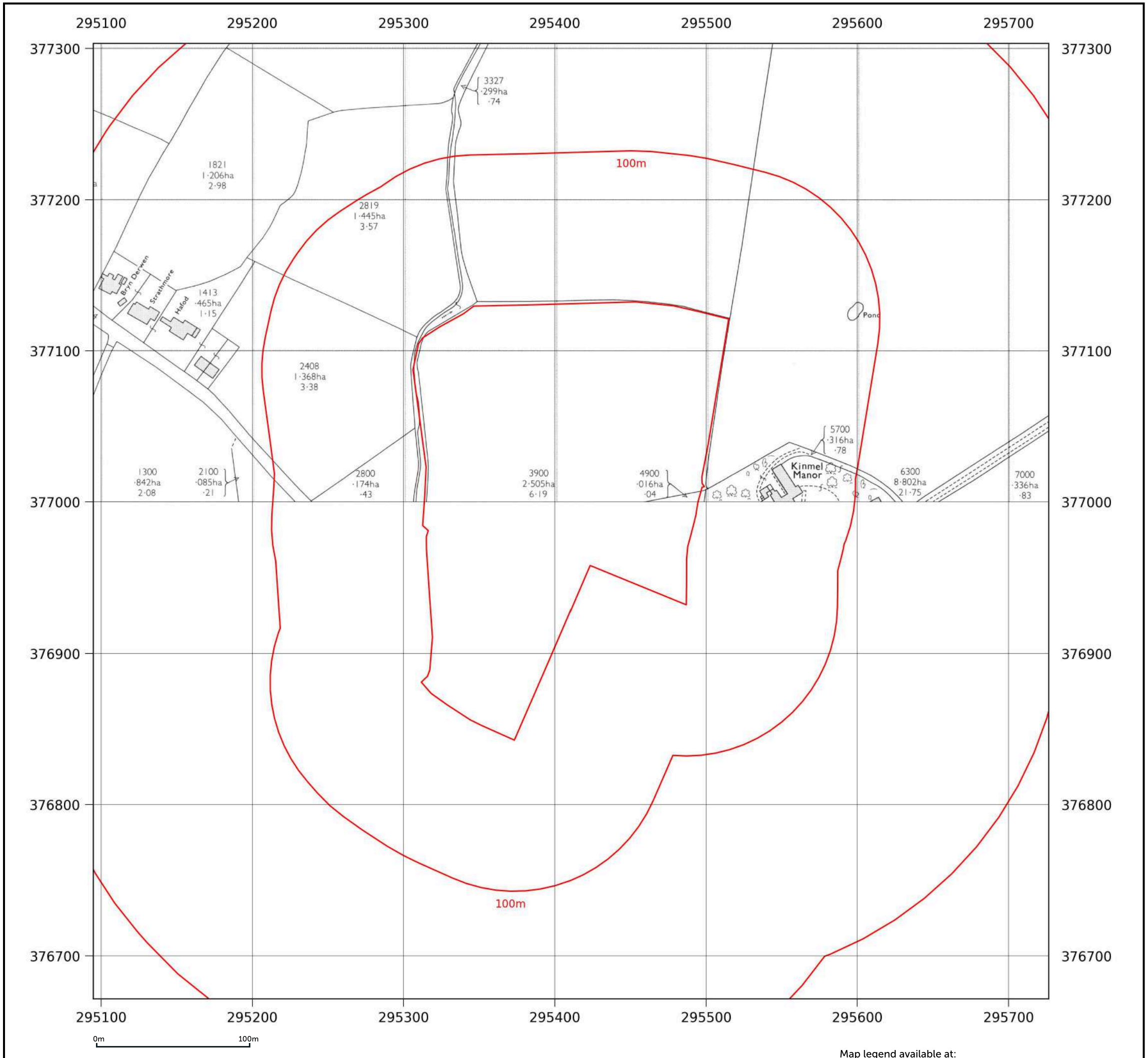
Contact us with any questions at:
info@groundsure.com
01273 257 755

© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data



© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	National Grid
Map date:	1970
Scale:	1:2,500
Printed at:	1:2,500

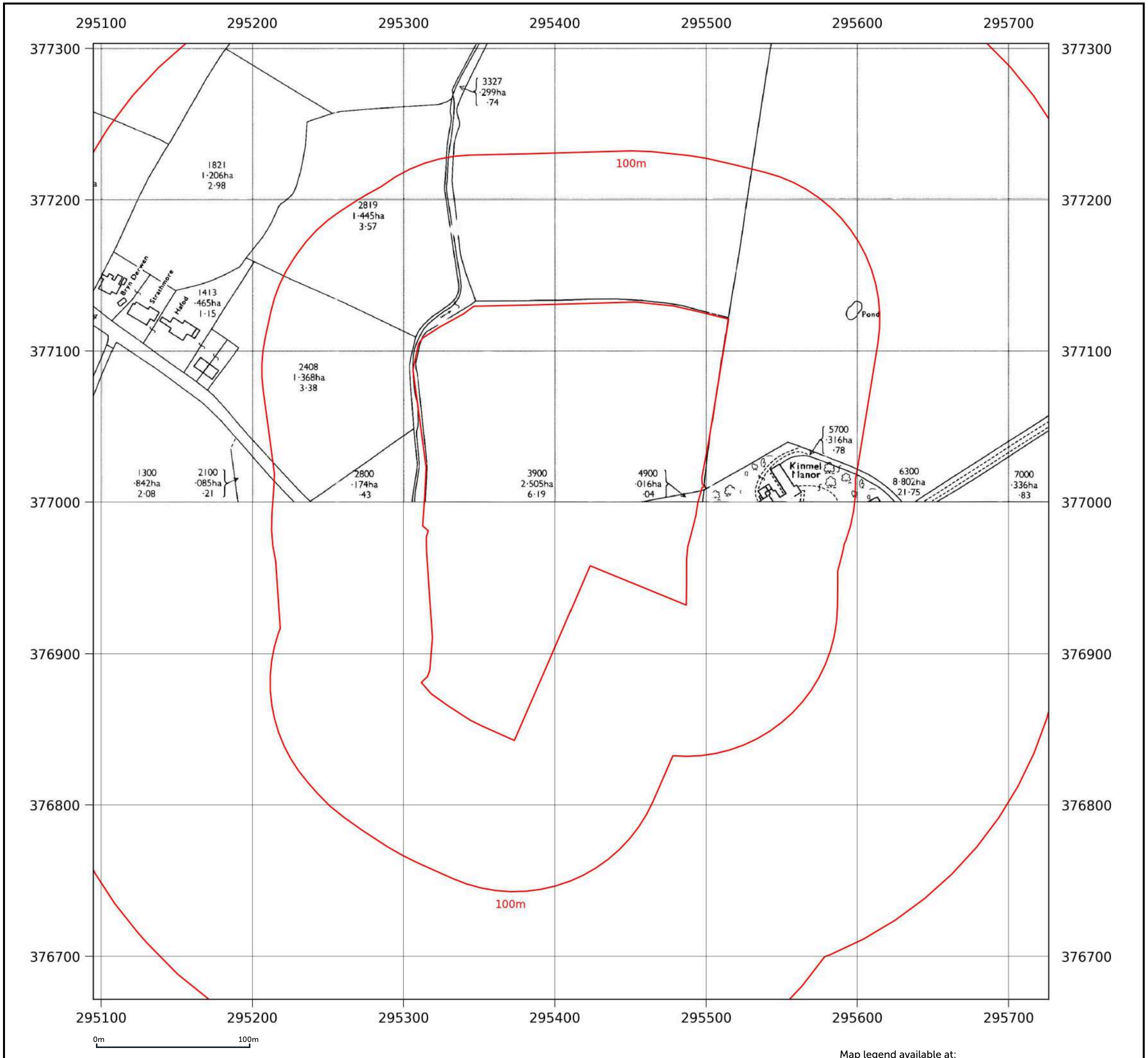
N
W E
S

Date: 1970
Surveyed: 1969
Revised: 1969
Copyright: 1970
Levelled: 1956

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

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data



© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

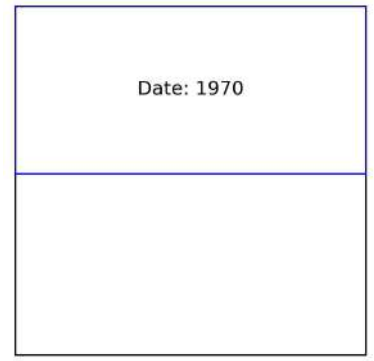
Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	National Grid
Map date:	1970
Scale:	1:2,500
Printed at:	1:2,500

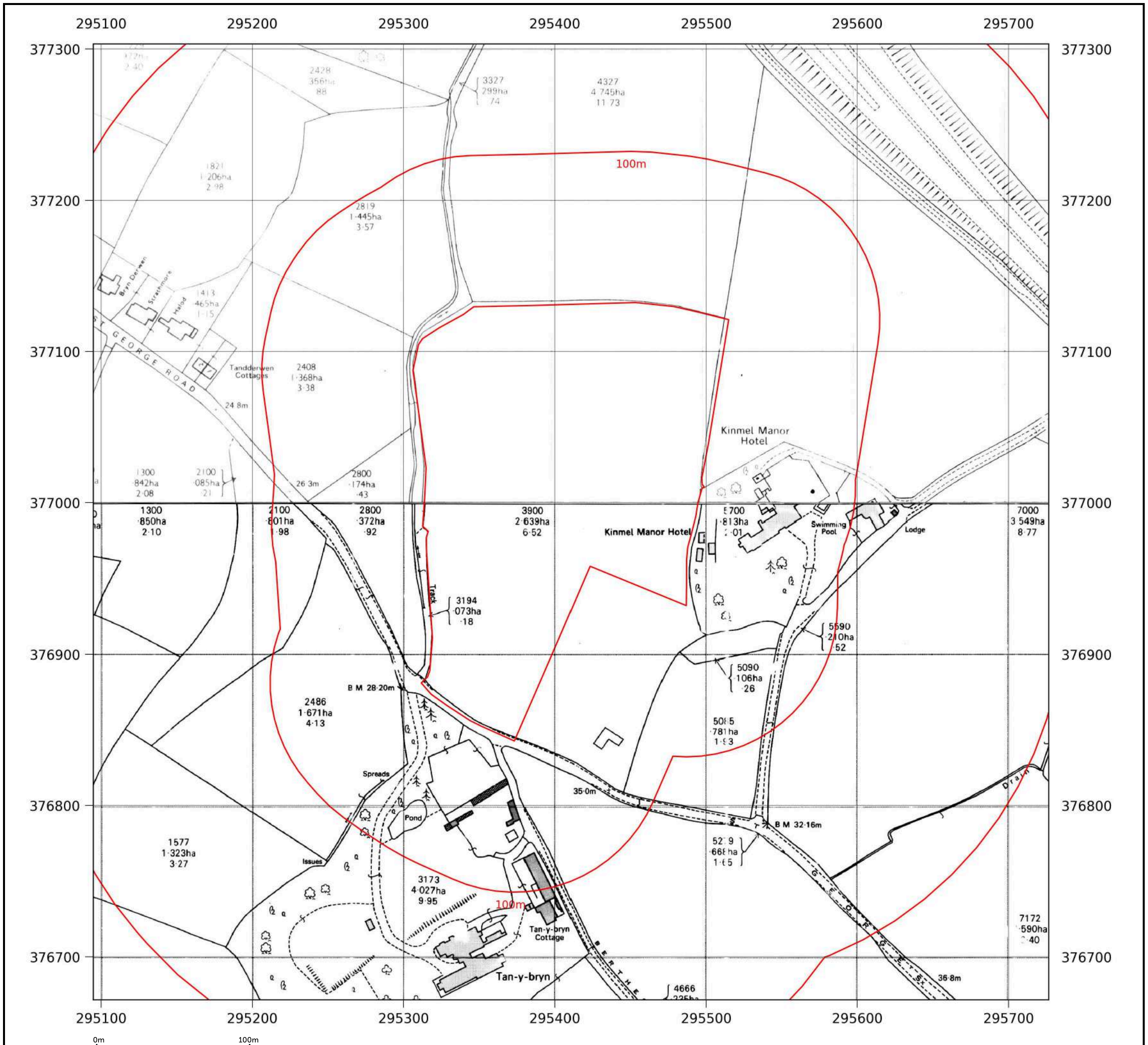
N
W E
S



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

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data



© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	National Grid
Map date:	1983-1984
Scale:	1:2,500
Printed at:	1:2,500

N
W E
S

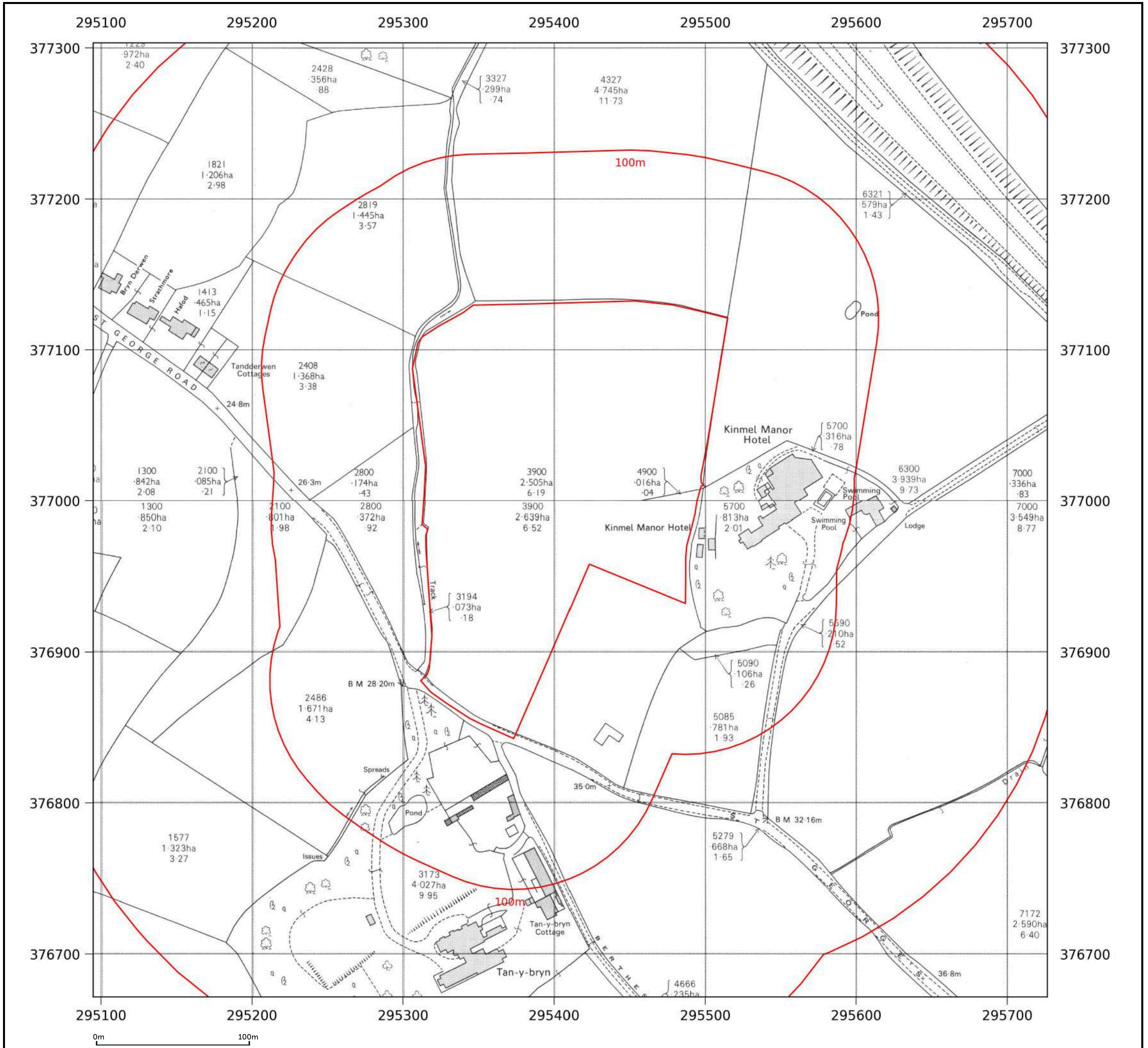
Date: 1983
Surveyed: 1970
Revised: 1982
Copyright: 1983
Levelled: 1970

Date: 1984

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

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data



© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	National Grid
Map date:	1983-1984
Scale:	1:2,500
Printed at:	1:2,500

N
W E
S

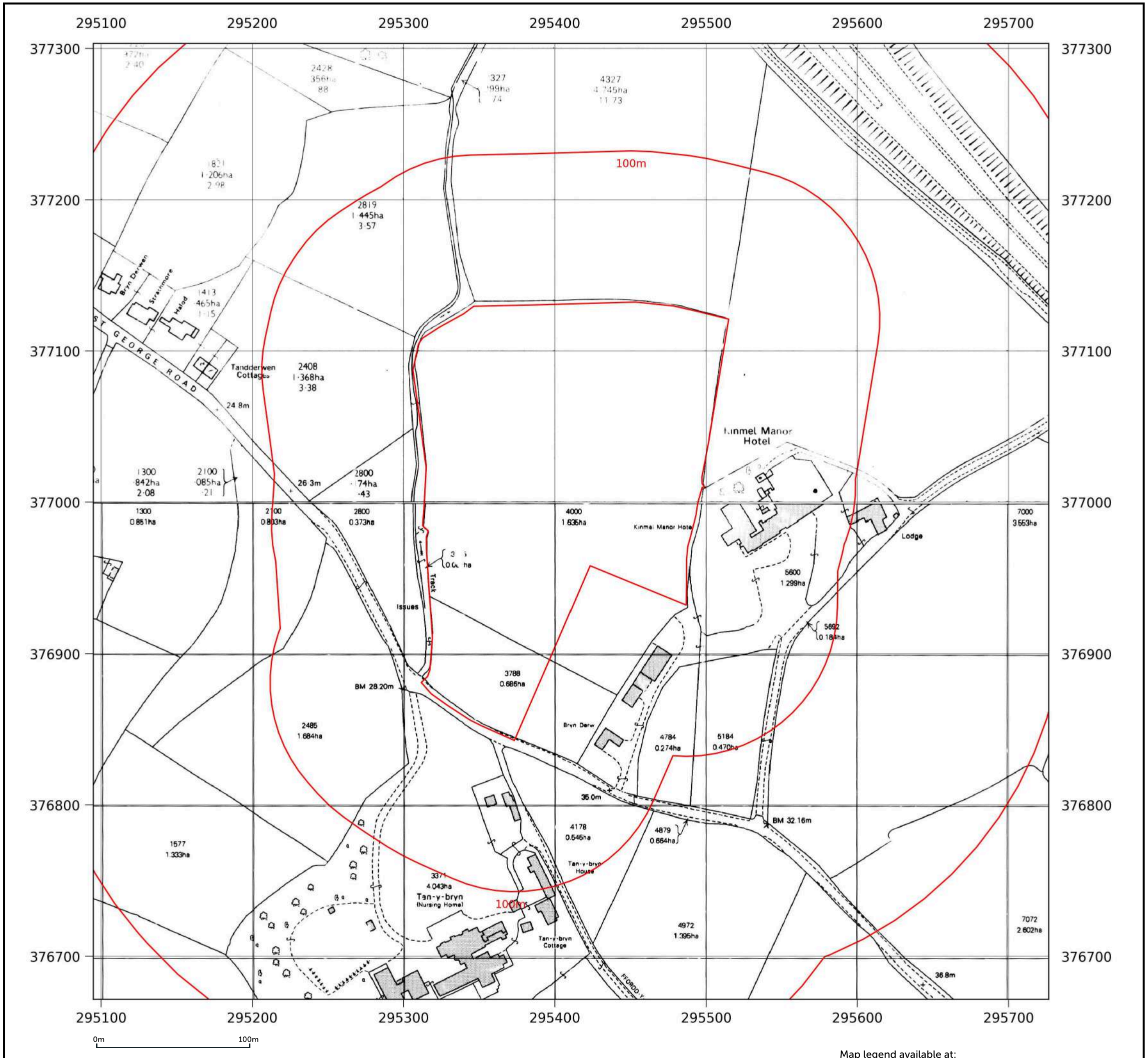
Date: 1983
Surveyed: 1982
Revised: 1982
Copyright: 1983
Levelled: 1970

Date: 1984
Surveyed: 1983
Revised: 1983
Copyright: 1984
Levelled: 1969

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

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data



© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	National Grid
Map date:	1989-1991
Scale:	1:2,500
Printed at:	1:2,500

N
W E
S

Date: 1989
Revised: 1989
Copyright: 1983

Date: 1991

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

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

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

N
W E
S

Date: 1994
Copyright: 1994

Date: 1991
Surveyed: 1990
Revised: 1990
Copyright: 1991

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

© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data

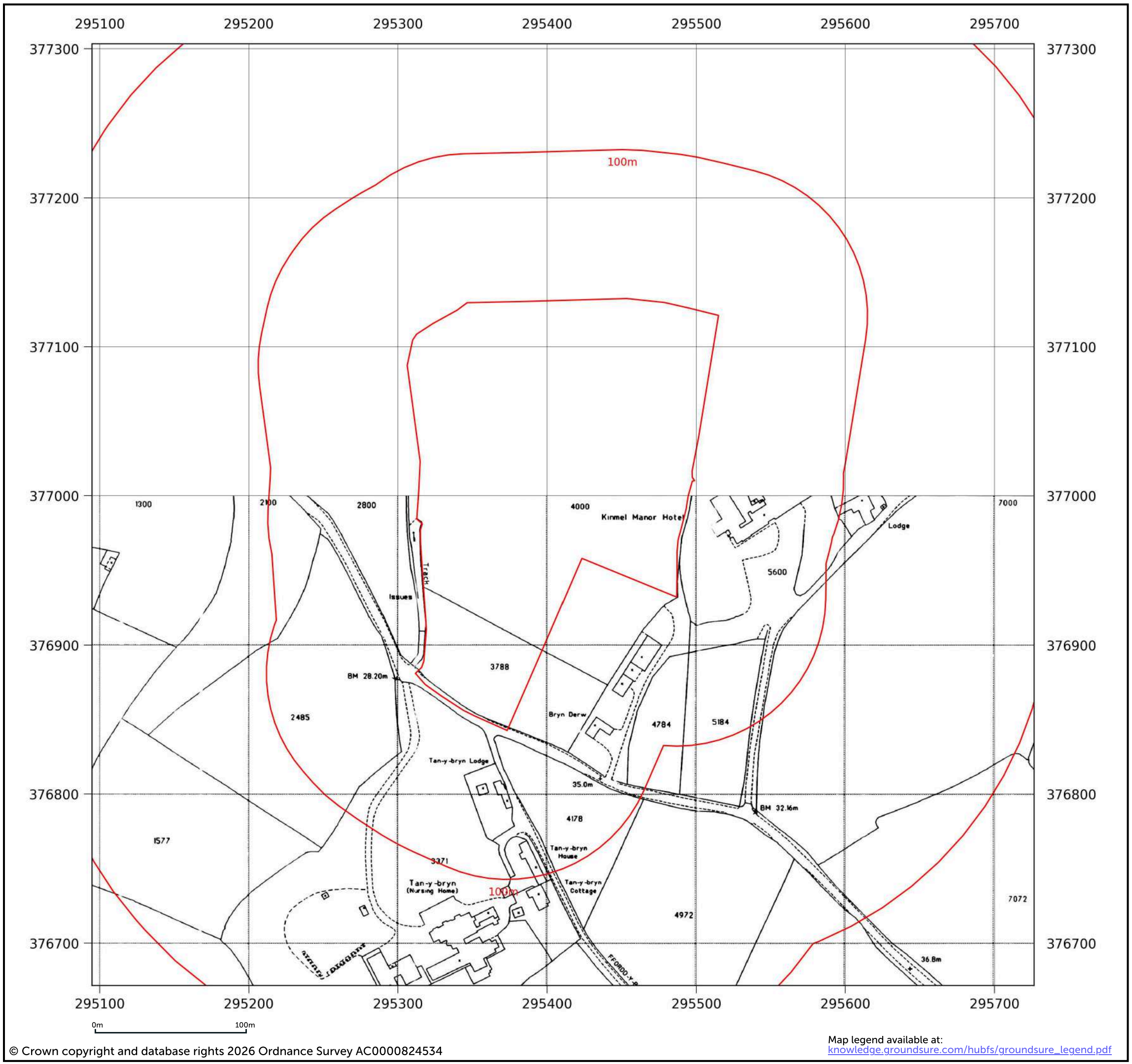
Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	National Grid
Map date:	1994
Scale:	1:2,500
Printed at:	1:2,500

N
W E
S

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



© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data



© Crown copyright and database rights 2026 Ordnance Survey AC0000824534

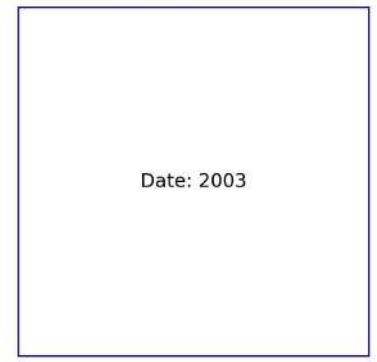
Map legend available at:
knowledge.groundsure.com/hubfs/groundsure_legend.pdf

Map Insight

Site details:	ABERGELE PH6
Client ref:	26CGH049 - BG6301
Report ref:	GS-BXZ-MN3-TXH-FUV
Grid ref:	295399.35, 377016.13
Production date:	11 May 2026

Map name:	LandLine
Map date:	2003
Scale:	1:1,250
Printed at:	1:1,250

N
W E
S



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

Groundsure
LOCATION INTELLIGENCE

Ordnance Survey
Licensed Data

APPENDIX C

(i) Groundsure Report

© Betts Geo Environmental Ltd 2026

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo Insight

ABERGELE PH6

Order Details

Date: 11/05/2026

Your ref: 26CGH049 - BG6301

Our Ref: GS-2CF-OFW-6SR-ZBO

Site Details

Location: 295399 377016

Area: 4.16 ha

Authority: Conwy County Borough Council ↗

Site plan



Quick Links

Summary of findings p. 2 >

OS MasterMap site plan p.14 >

Aerial image p. 9 >

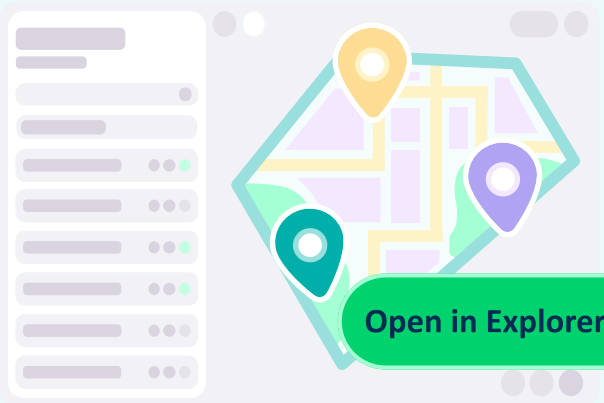
Insight User Guide ↗

Open this site in Explorer!

Access the data now in our interactive workspace.

- Map and interpret 130+ datasets across 170 years
- Generate insights and visuals quickly
- Revisit and collaborate with your team

Access to Groundsure Explorer requires an Insights account.
12 months access begins at purchase.



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 >	0	0	0	2	-
16	1.2	Historical tanks	0	0	0	0	-
16 >	1.3 >	Historical energy features >	0	0	1	2	-
16	1.4	Historical petrol stations	0	0	0	0	-
17 >	1.5 >	Historical garages >	0	0	0	3	-
17	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
18 >	2.1 >	Historical industrial land uses >	0	0	0	3	-
19	2.2	Historical tanks	0	0	0	0	-
19 >	2.3 >	Historical energy features >	0	0	1	3	-
19	2.4	Historical petrol stations	0	0	0	0	-
20 >	2.5 >	Historical garages >	0	0	0	4	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
21	3.1	Active or recent landfill	0	0	0	0	-
21	3.2	Historical landfill (BGS records)	0	0	0	0	-
22	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
22	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
22	3.5	Historical waste sites	0	0	0	0	-
22	3.6	Licensed waste sites	0	0	0	0	-
22 >	3.7 >	Waste exemptions >	0	0	1	0	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
24 >	4.1 >	Recent industrial land uses >	0	0	3	-	-
25	4.2	National Geographic Database (NGD) - Current or recent tanks	0	0	0	-	-
25	4.3	Current or recent petrol stations	0	0	0	0	-
25	4.4	Electricity cables	0	0	0	0	-
25	4.5	Gas pipelines	0	0	0	0	-

25	4.6	Sites determined as Contaminated Land	0	0	0	0	-
26	4.7	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
26	4.8	Regulated explosive sites	0	0	0	0	-
26	4.9	Hazardous substance storage/usage	0	0	0	0	-
26	4.10	Historical licensed industrial activities (IPC)	0	0	0	0	-
26	4.11	Licensed industrial activities (Part A(1))	0	0	0	0	-
27 >	**4.12 >**	**Licensed pollutant release (Part A(2)/B) >**	0	0	0	3	-
27	4.13	Radioactive Substance Authorisations	0	0	0	0	-
27 >	**4.14 >**	**Licensed Discharges to controlled waters >**	0	0	1	1	-
28	4.15	Pollutant release to surface waters (Red List)	0	0	0	0	-
28	4.16	Pollutant release to public sewer	0	0	0	0	-
28	4.17	List 1 Dangerous Substances	0	0	0	0	-
28	4.18	List 2 Dangerous Substances	0	0	0	0	-
29 >	**4.19 >**	**Pollution Incidents (EA/NRW) >**	0	1	0	1	-
29	4.20	Pollution inventory substances	0	0	0	0	-
29	4.21	Pollution inventory waste transfers	0	0	0	0	-
30	4.22	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	**Hydrogeology >**	On site	0-50m	50-250m	250-500m	500-2000m
31 >	**5.1 >**	**Superficial aquifer >**	Identified (within 500m)				
33 >	**5.2 >**	**Bedrock aquifer >**	Identified (within 500m)				
35 >	**5.3 >**	**Groundwater vulnerability >**	Identified (within 50m)				
36 >	**5.4 >**	**Groundwater vulnerability- soluble rock risk >**	Identified (within 0m)				
37	5.5	Groundwater vulnerability- local information	None (within 0m)				
38 >	**5.6 >**	**Groundwater abstractions >**	0	0	0	0	4
39 >	**5.7 >**	**Surface water abstractions >**	0	0	0	0	1
40	5.8	Potable abstractions	0	0	0	0	0
40	5.9	Source Protection Zones	0	0	0	0	-
40	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	**Hydrology >**	On site	0-50m	50-250m	250-500m	500-2000m

41 >	6.1 >	Water Network (OS NGD) >	0	1	5	-	-
42 >	6.2 >	Surface water features >	0	1	3	-	-
42 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
43 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
43 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding >	On site	0-50m	50-250m	250-500m	500-2000m
44	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
45 >	7.2 >	Historical Flood Events >	0	0	2	-	-
45	7.3	Flood Defences	0	0	0	-	-
45	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
46	7.5	Flood Storage Areas	0	0	0	-	-
47	7.6	Flood Zone 2	None (within 50m)				
47	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
48 >	8.1 >	Surface water flooding >	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding >					
50 >	9.1 >	Groundwater flooding >	Low (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
51 >	10.1 >	Sites of Special Scientific Interest (SSSI) >	0	0	0	0	2
52	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
52	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
52	10.4	Special Protection Areas (SPA)	0	0	0	0	0
52	10.5	National Nature Reserves (NNR)	0	0	0	0	0
53	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
53 >	10.7 >	Designated Ancient Woodland >	0	0	1	1	50
55	10.8	Biosphere Reserves	0	0	0	0	0
55	10.9	Forest Parks	0	0	0	0	0
55	10.10	Marine Conservation Zones	0	0	0	0	0
56	10.11	Green Belt	0	0	0	0	0

56	10.12	Proposed Ramsar sites	0	0	0	0	0
56	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
56	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
56	10.15	Nitrate Sensitive Areas	0	0	0	0	0
57	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
58	10.17	SSSI Impact Risk Zones	0	-	-	-	-
58	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
59	11.1	World Heritage Sites	0	0	0	-	-
59	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
59	11.3	National Parks	0	0	0	-	-
59	11.4	Listed Buildings	0	0	0	-	-
60	11.5	Conservation Areas	0	0	0	-	-
60	11.6	Scheduled Ancient Monuments	0	0	0	-	-
60	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	**Agricultural designations** >	On site	0-50m	50-250m	250-500m	500-2000m
61 >	**12.1** >	**Agricultural Land Classification** >	Grade 3b (within 250m)				
62	12.2	Open Access Land	0	0	0	-	-
62	12.3	Tree Felling Licences	0	0	0	-	-
62	12.4	Environmental Stewardship Schemes	0	0	0	-	-
63	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
64	13.1	Priority Habitat Inventory	0	0	0	-	-
64	13.2	Habitat Networks	0	0	0	-	-
64	13.3	Open Mosaic Habitat	0	0	0	-	-
64	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
65 >	**14.1** >	**10k Availability** >	Identified (within 500m)				
66	14.2	Artificial and made ground (10k)	0	0	0	0	-

67	14.3	Superficial geology (10k)	0	0	0	0	-
67	14.4	Landslip (10k)	0	0	0	0	-
68	14.5	Bedrock geology (10k)	0	0	0	0	-
68	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	**Geology 1:50,000 scale >**	On site	0-50m	50-250m	250-500m	500-2000m
69 >	15.1 >	**50k Availability >**	Identified (within 500m)				
70	15.2	Artificial and made ground (50k)	0	0	0	0	-
70	15.3	Artificial ground permeability (50k)	0	0	-	-	-
71 >	15.4 >	**Superficial geology (50k) >**	1	0	0	1	-
72 >	15.5 >	**Superficial permeability (50k) >**	Identified (within 50m)				
72	15.6	Landslip (50k)	0	0	0	0	-
72	15.7	Landslip permeability (50k)	None (within 50m)				
73 >	15.8 >	**Bedrock geology (50k) >**	2	1	0	0	-
74 >	15.9 >	**Bedrock permeability (50k) >**	Identified (within 50m)				
74 >	15.10 >	**Bedrock faults and other linear features (50k) >**	0	1	0	0	-
Page	Section	**Boreholes >**	On site	0-50m	50-250m	250-500m	500-2000m
75 >	16.1 >	**BGS Boreholes >**	0	0	5	-	-
Page	Section	**Natural ground subsidence >**					
77 >	17.1 >	**Shrink swell clays >**	Very low (within 50m)				
78 >	17.2 >	**Running sands >**	Very low (within 50m)				
79 >	17.3 >	**Compressible deposits >**	Negligible (within 50m)				
80 >	17.4 >	**Collapsible deposits >**	Very low (within 50m)				
81 >	17.5 >	**Landslides >**	Very low (within 50m)				
82 >	17.6 >	**Ground dissolution of soluble rocks >**	Low (within 50m)				
Page	Section	**Mining and ground workings >**	On site	0-50m	50-250m	250-500m	500-2000m
84	18.1	BritPits	0	0	0	0	-
85	18.2	Surface ground workings	0	0	0	-	-
85	18.3	Underground workings	0	0	0	0	0
85	18.4	Underground mining extents	0	0	0	0	-

85	18.5	Historical Mineral Planning Areas	0	0	0	0	-
85 >	18.6 >	Non-coal mining >	1	0	0	2	2
86	18.7	JPB mining areas	None (within 0m)				
86	18.8	The Coal Authority non-coal mining	0	0	0	0	-
87 >	18.9 >	Researched mining >	0	0	0	1	-
87	18.10	Mining record office plans	0	0	0	0	-
87	18.11	BGS mine plans	0	0	0	0	-
87	18.12	Coal mining	None (within 0m)				
88	18.13	Brine areas	None (within 0m)				
88	18.14	Gypsum areas	None (within 0m)				
88	18.15	Tin mining	None (within 0m)				
88	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes >	On site	0-50m	50-250m	250-500m	500-2000m
89	19.1	Natural cavities	0	0	0	0	-
90 >	19.2 >	Mining cavities >	0	0	0	0	1
90	19.3	Reported recent incidents	0	0	0	0	-
90	19.4	Historical incidents	0	0	0	0	-
Page	Section	Radon >					
91 >	20.1 >	Radon >	Between 1% and 3% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
93 >	21.1 >	BGS Estimated Background Soil Chemistry >	6	5	-	-	-
93	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
94	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
95	22.1	Underground railways (London)	0	0	0	-	-
95	22.2	Underground railways (Non-London)	0	0	0	-	-
95	22.3	Railway tunnels	0	0	0	-	-
95	22.4	Historical railway and tunnel features	0	0	0	-	-
95	22.5	Royal Mail tunnels	0	0	0	-	-

96	22.6	Historical railways	0	0	0	-	-
96	22.7	Railways	0	0	0	-	-
96	22.8	Crossrail 2	0	0	0	0	-
96	22.9	HS2	0	0	0	0	-

Recent aerial photograph



Capture Date: 14/08/2022

Site Area: 4.16ha

Recent site history - 2020 aerial photograph



Capture Date: 06/05/2020

Site Area: 4.16ha

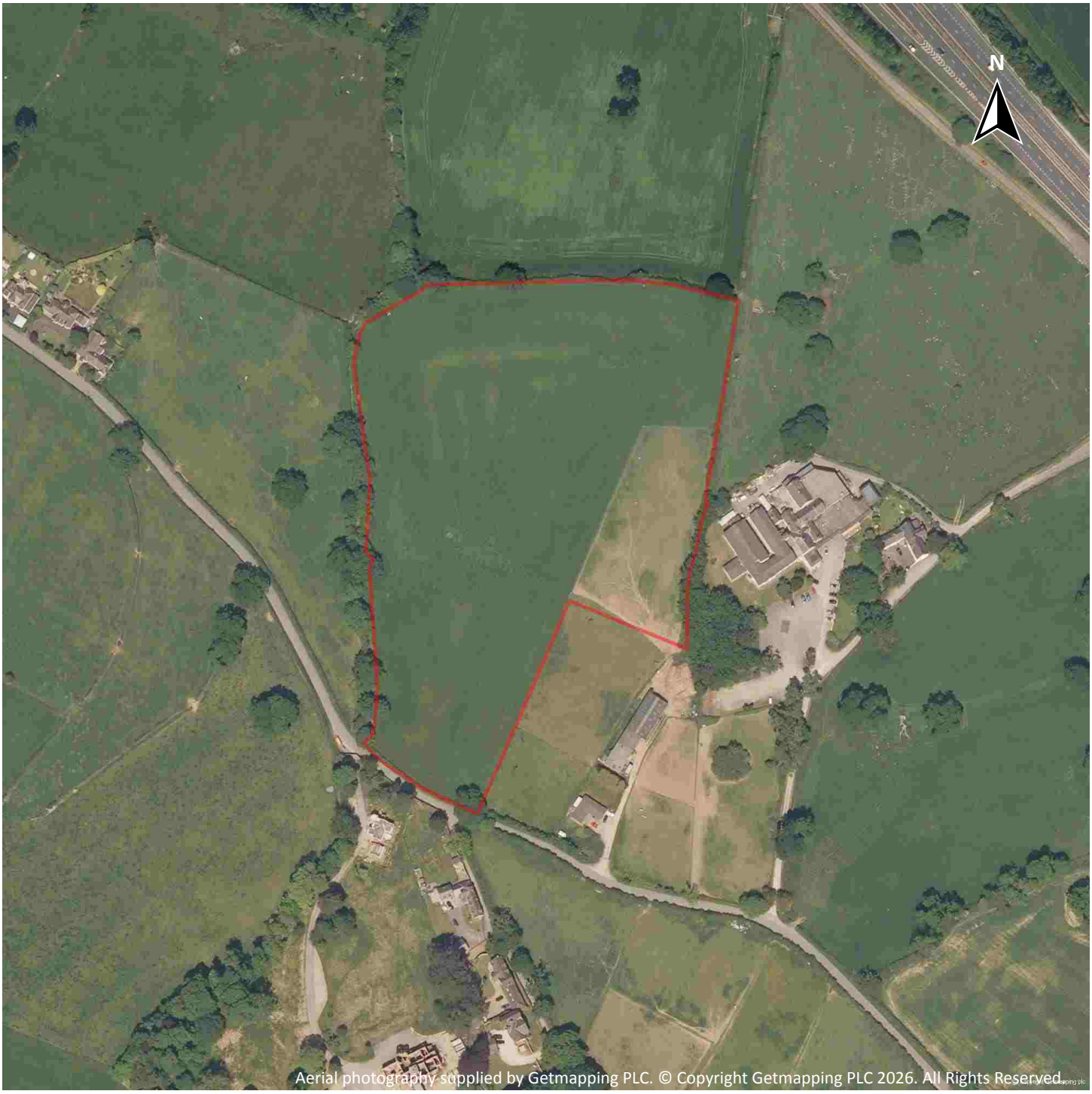
Recent site history - 2016 aerial photograph



Capture Date: 04/07/2016

Site Area: 4.16ha

Recent site history - 2009 aerial photograph



Capture Date: 01/06/2009

Site Area: 4.16ha

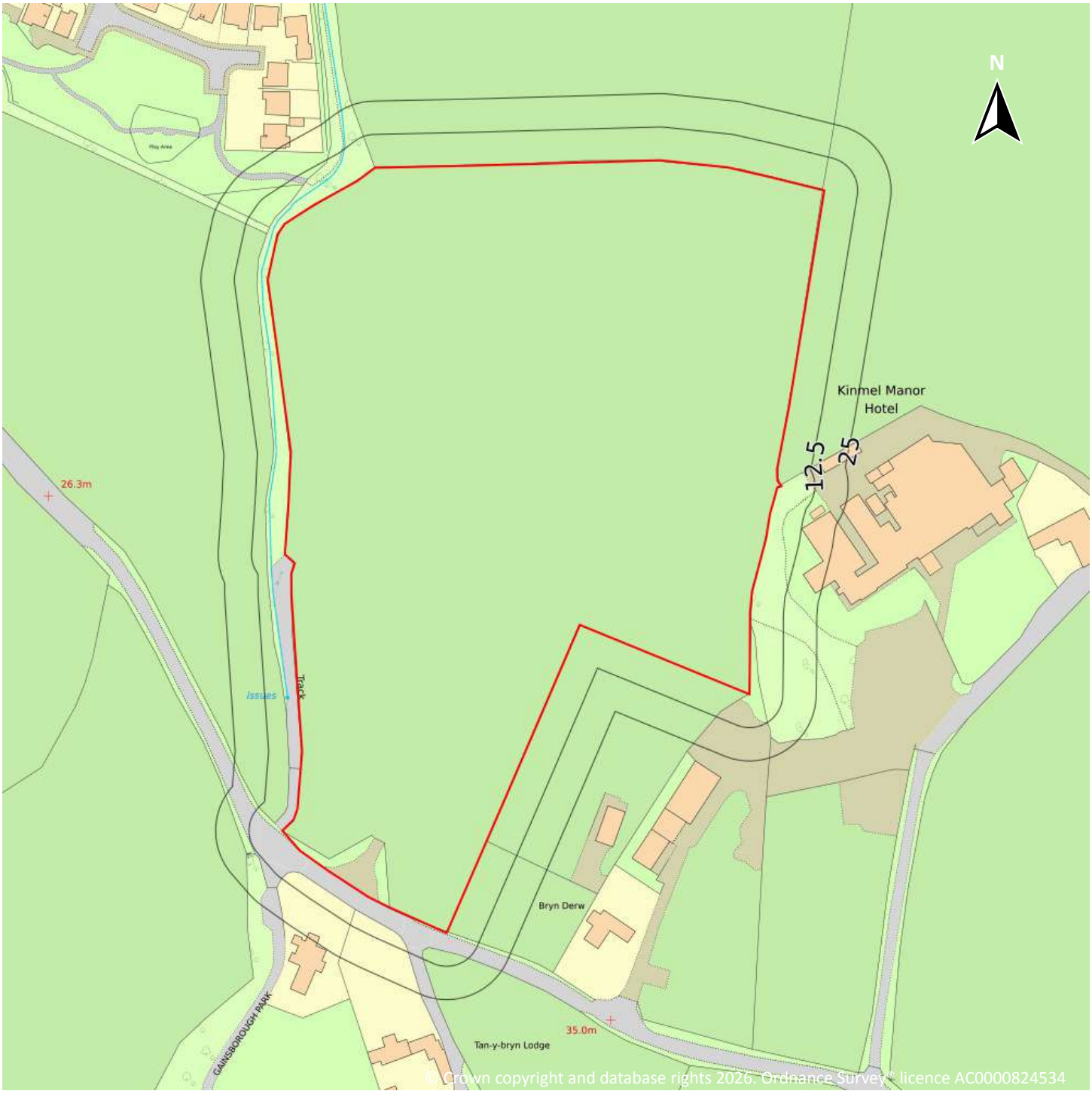
Recent site history - 2000 aerial photograph



Capture Date: 24/08/2000

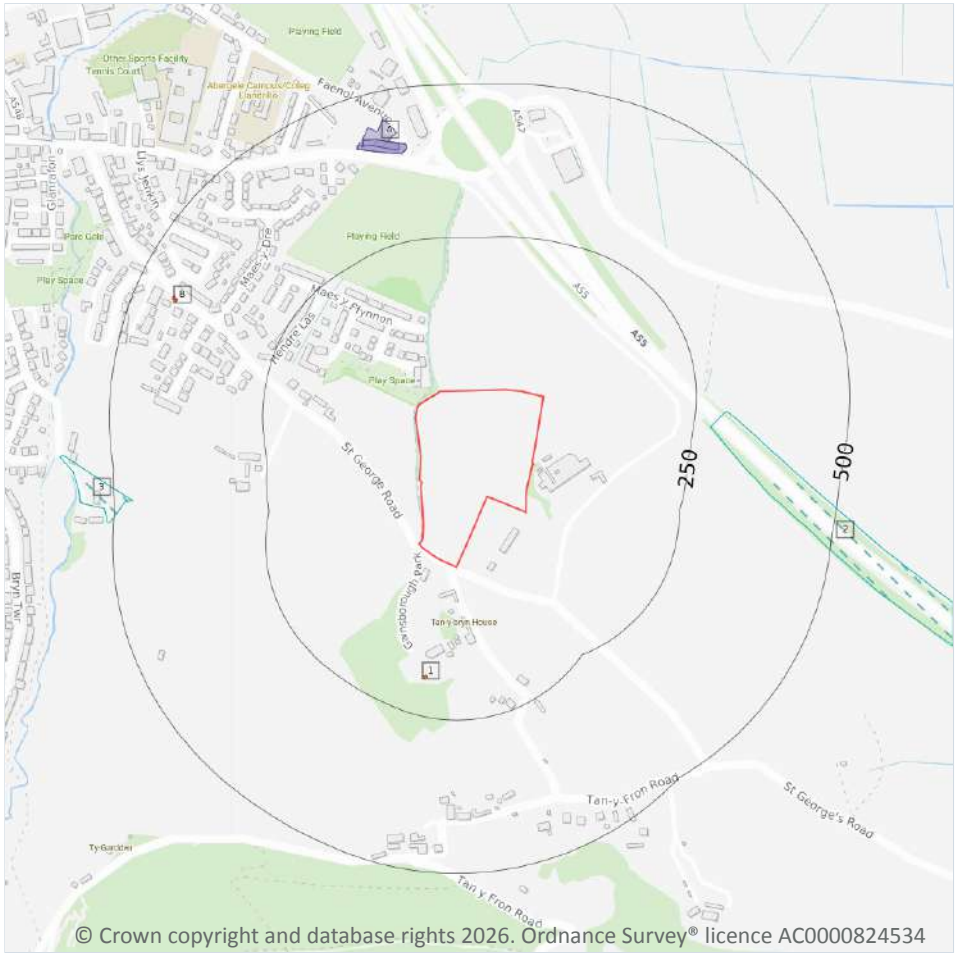
Site Area: 4.16ha

OS MasterMap site plan



Site Area: 4.16ha

1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical energy features

Historical garages

1.1 Historical industrial land uses

Records within 500m	2

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

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

ID	Location	Land use	Dates present	Group ID
2	277m E	Cuttings	1980 - 1990	233527

ID	Location	Land use	Dates present	Group ID
3	469m W	Nursery	1898	228658

This data is sourced from Ordnance Survey® / Groundsure.

1.2 Historical tanks

Records within 500m	0

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

This data is sourced from Ordnance Survey® / Groundsure.

1.3 Historical energy features

Records within 500m	3

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
1	183m S	Electricity Substation	1991	17001
B	429m NW	Electricity Substation	1983	17000
B	433m NW	Electricity Substation	1983 - 1997	17939

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	3

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'.

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

ID	Location	Land use	Dates present	Group ID
A	393m N	Garage	1970 - 1983	6055
A	393m N	Garage	1983	6284
A	400m N	Garage	1983	6210

This data is sourced from Ordnance Survey® / Groundsure.

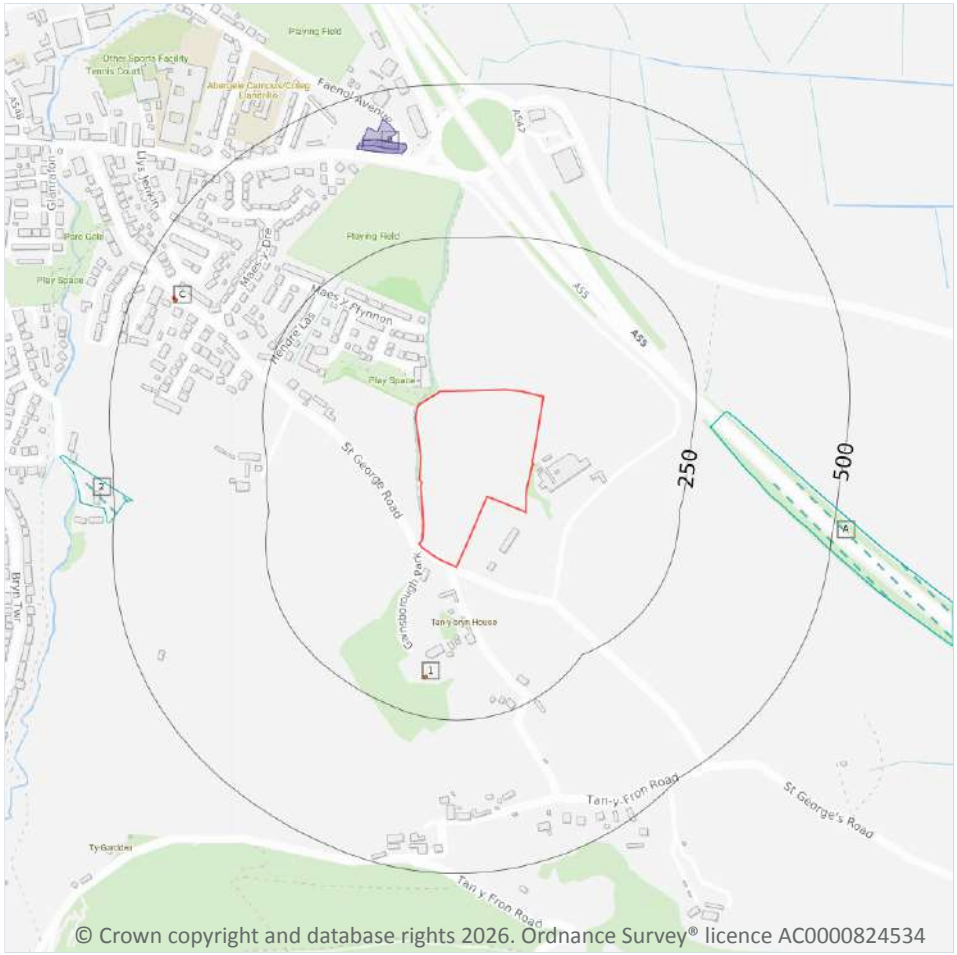
1.6 Historical military land

Records within 500m	0

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

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

2 Past land use - un-grouped



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical energy features

Historical garages

2.1 Historical industrial land uses

Records within 500m	3

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

Features are displayed on the Past land use - un-grouped map on **page 18 >**

ID	Location	Land Use	Date	Group ID
A	277m E	Cuttings	1980	233527
A	277m E	Cuttings	1990	233527
2	469m W	Nursery	1898	228658

This data is sourced from Ordnance Survey® / Groundsure.

2.2 Historical tanks

Records within 500m	0

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

This data is sourced from Ordnance Survey® / Groundsure.

2.3 Historical energy features

Records within 500m	4

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 18 >**

ID	Location	Land Use	Date	Group ID
1	183m S	Electricity Substation	1991	17001
C	429m NW	Electricity Substation	1983	17000
C	433m NW	Electricity Substation	1997	17939
C	435m NW	Electricity Substation	1983	17939

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	4

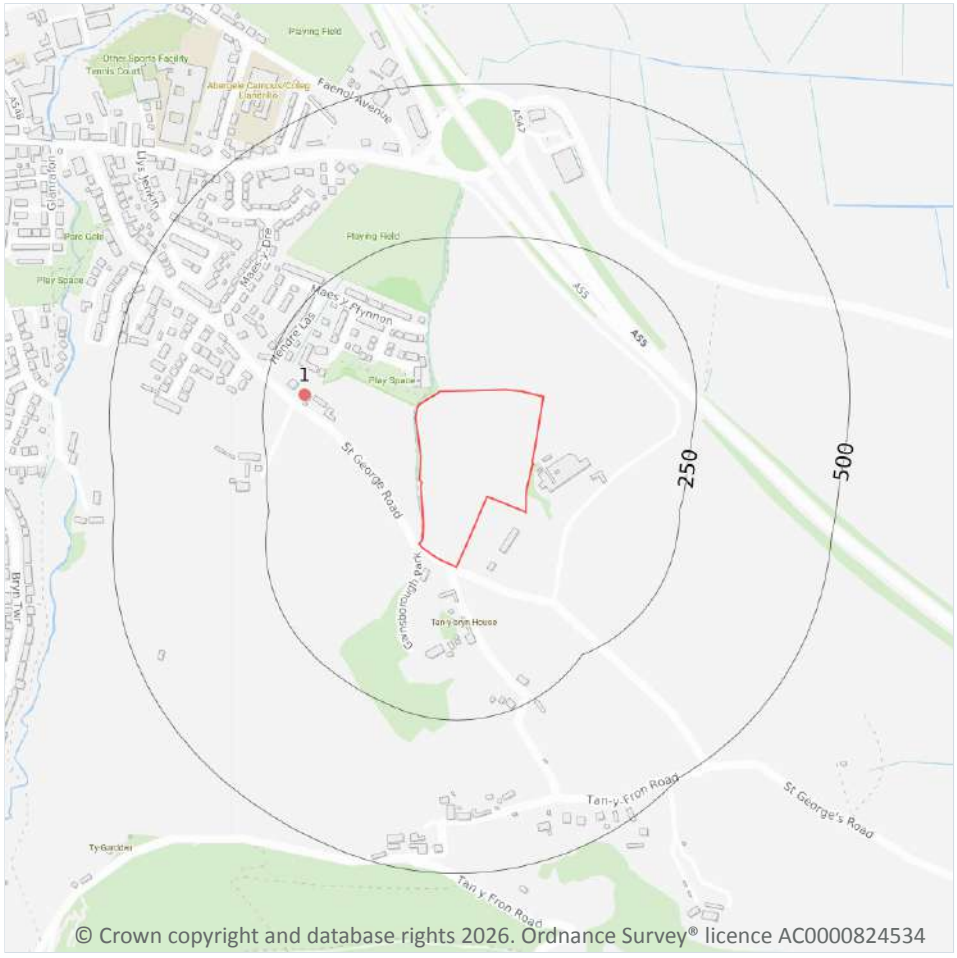
Garages digitised from historical Ordnance Survey® mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 18 >**

ID	Location	Land Use	Date	Group ID
B	393m N	Garage	1970	6055
B	393m N	Garage	1983	6284
B	400m N	Garage	1983	6210
B	417m N	Garage	1983	6055

This data is sourced from Ordnance Survey® / Groundsure.

3 Waste and landfill



Site Outline

Search buffers in metres (m)

Waste exemptions

3.1 Active or recent landfill

Records within 500m	0

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

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

3.2 Historical landfill (BGS records)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

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

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

3.5 Historical waste sites

Records within 500m	0

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

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

3.6 Licensed waste sites

Records within 500m	0

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

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

3.7 Waste exemptions

Records within 500m	1

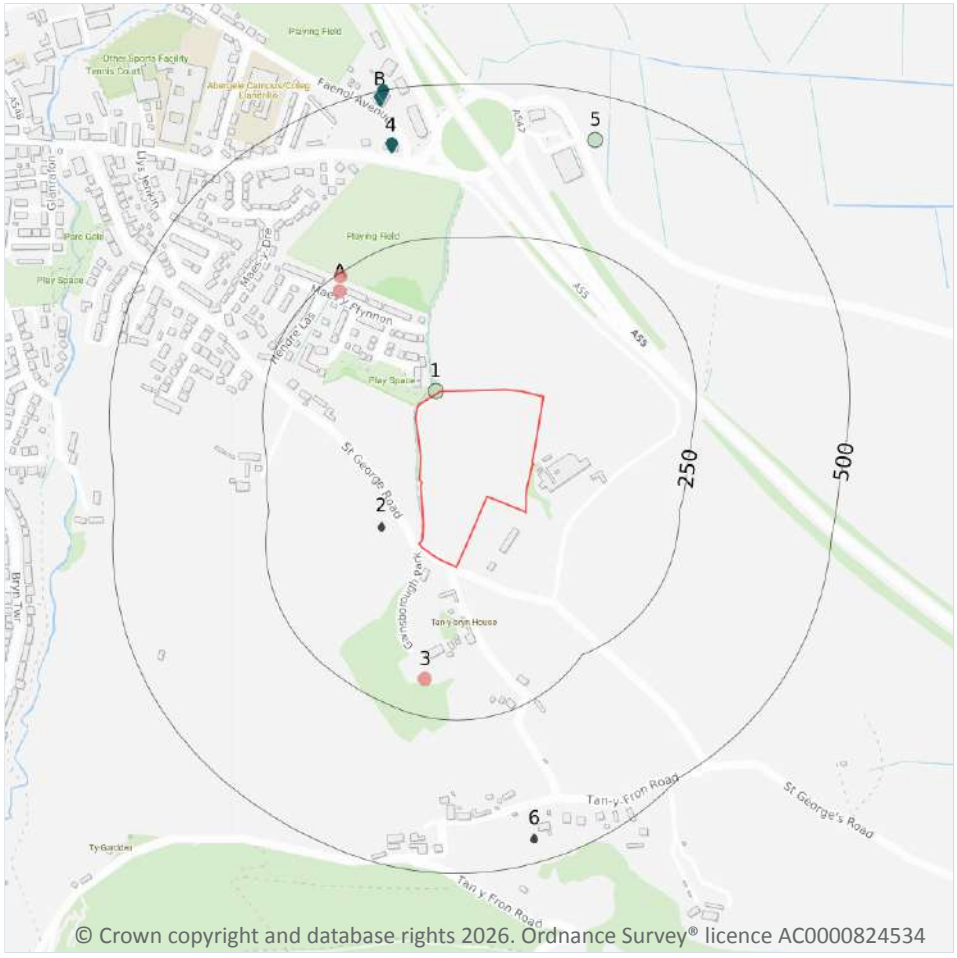
Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on **page 21 >**

ID	Location	Site	Reference	Category	Sub-Category	Description
1	185m W	Anwyl Construction Company Limited, Land Off St George Road, Abergele, Conwy, Ll229ar	NRW-WME020028	Storing waste exemption	Not on a farm	Storage of waste in a secure place

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

4 Current industrial land use



© Crown copyright and database rights 2026. Ordnance Survey® licence AC0000824534

Site Outline

Search buffers in metres (m)

Recent industrial land uses

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

Licensed Discharges to controlled waters

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	3

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 24 >**

ID	Location	Company	Address	Activity	Category
3	190m S	Electricity Sub Station	Clwyd, LL22	Electrical Features	Infrastructure and Facilities
A	225m NW	Electricity Sub Station	Clwyd, LL22	Electrical Features	Infrastructure and Facilities

ID	Location	Company	Address	Activity	Category
A	245m NW	Sewage Pumping Station	Clwyd, LL22	Waste Storage, Processing and Disposal	Infrastructure and Facilities

This data is sourced from Ordnance Survey®.

4.2 National Geographic Database (NGD) - Current or recent tanks

Records within 250m	0

Current or recent tanks identified from the Ordnance Survey® NGD.

This data is sourced from Ordnance Survey®.

4.3 Current or recent petrol stations

Records within 500m	0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.4 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.5 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.6 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.

4.7 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.

4.8 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.

4.9 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.

4.10 Historical licensed industrial activities (IPC)

Records within 500m	0

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

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

4.11 Licensed industrial activities (Part A(1))

Records within 500m	0

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

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

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

Records within 500m	3

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 24 >**

ID	Location	Address	Details	
4	409m N	Threeways Garage, Faenol Avenue, Abergele, LL22 7HT	Process: Waste Oil Burner 0.4 MW Status: New Legislation Applies Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
B	487m N	Threeways Service Station, Threeways Garage, Faenol Avenue, Abergele, LL22 7HT	Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
B	497m N	Threeways Service Station, Threeways Garage, Faenol Avenue, Abergele, LL22 7HT	Process: Unloading of Petrol into Storage at Service Stations Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified

This data is sourced from Local Authority records.

4.13 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.

4.14 Licensed Discharges to controlled waters

Records within 500m	2

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 24 >**

ID	Location	Address	Details	
2	68m NW	ABERGELESTGEORGEROADTANYBRYN, ABERGELESTGEORGEROADTANYBR, STGEORGEROADTANYBRYN, TANYBRYN	Effluent Type: UNSPECIFIED Permit Number: CM0097001 Permit Version: 1 Receiving Water: TRIB.OF BODORYN CUT	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 18/04/1984 Effective Date: 18/04/1984 Revocation Date: 05/04/1995
6	460m S	ABERGELEWTWCHLORINATEDOF	Effluent Type: UNSPECIFIED Permit Number: CG0193801 Permit Version: 1 Receiving Water: GROUND	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 02/10/1989 Effective Date: 02/10/1989 Revocation Date: 17/03/1994

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

4.15 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.

4.16 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.

4.17 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.

4.18 List 2 Dangerous Substances

Records within 500m	0

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

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

4.19 Pollution Incidents (EA/NRW)

Records within 500m	2

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 24 >**

ID	Location	Details	
1	5m NW	Incident Date: 26/03/2014 Incident Identification: 1221362 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: - Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
5	427m N	Incident Date: 12/09/2002 Incident Identification: 107258 Pollutant: General Biodegradable Materials and Wastes Pollutant Description: Food and Drink	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)

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

4.20 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.

4.21 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.

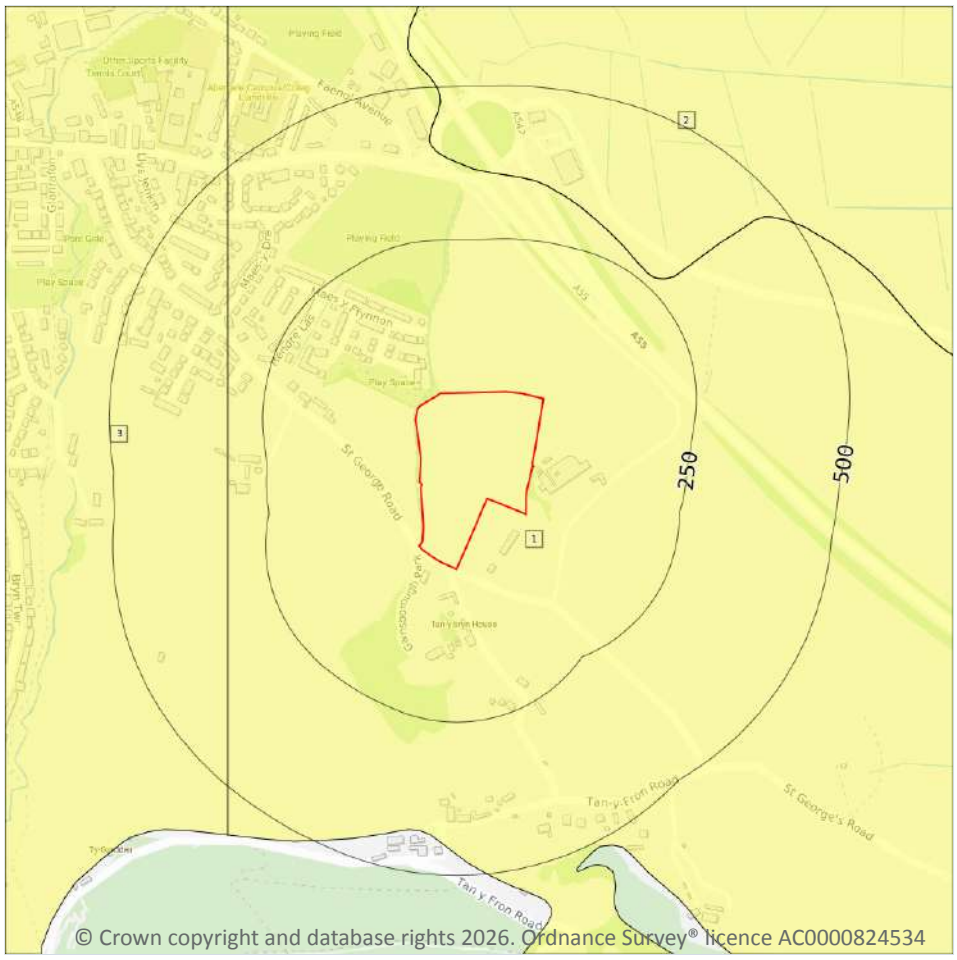
4.22 Pollution inventory radioactive waste

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	3

Aquifer status of groundwater held within superficial geology.

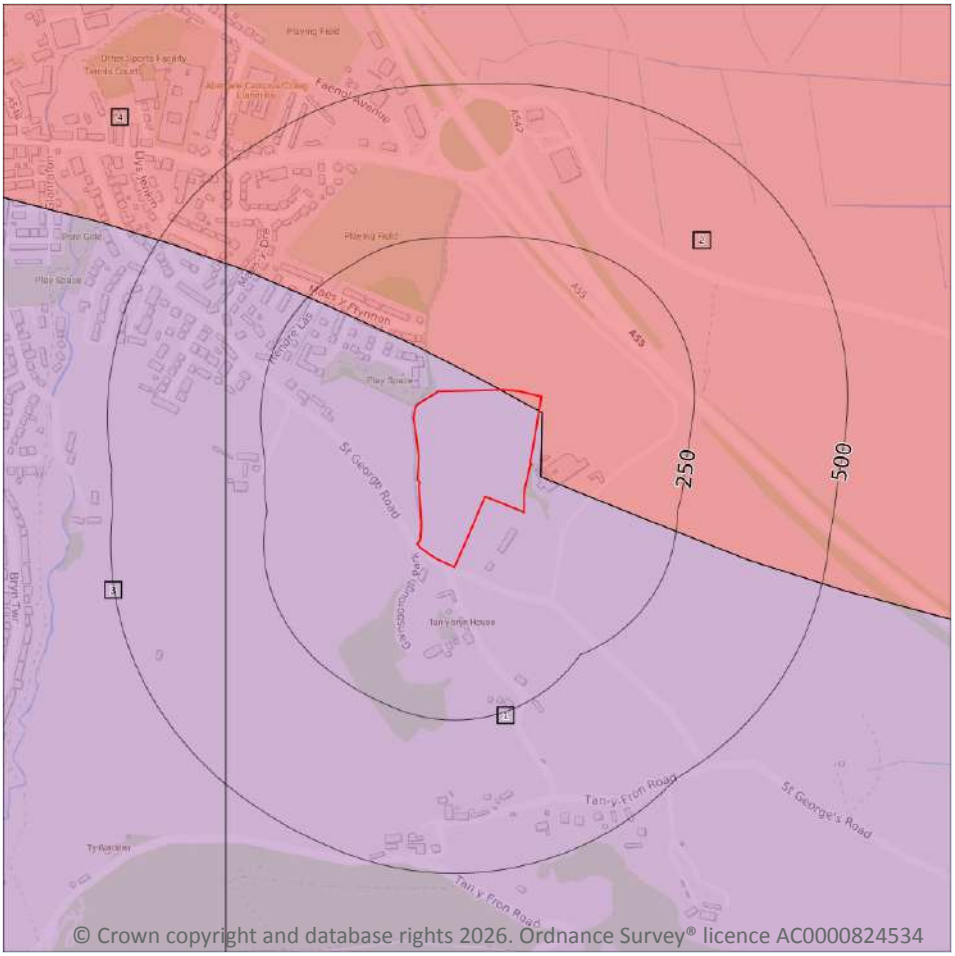
Features are displayed on the Hydrogeology map on **page 31 >**

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**
2	266m NE	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

ID	Location	Designation	Description
3	306m W	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



Site Outline

Search buffers in metres (m)

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

5.2 Bedrock aquifer

Records within 500m	4

Aquifer status of groundwater held within bedrock geology.

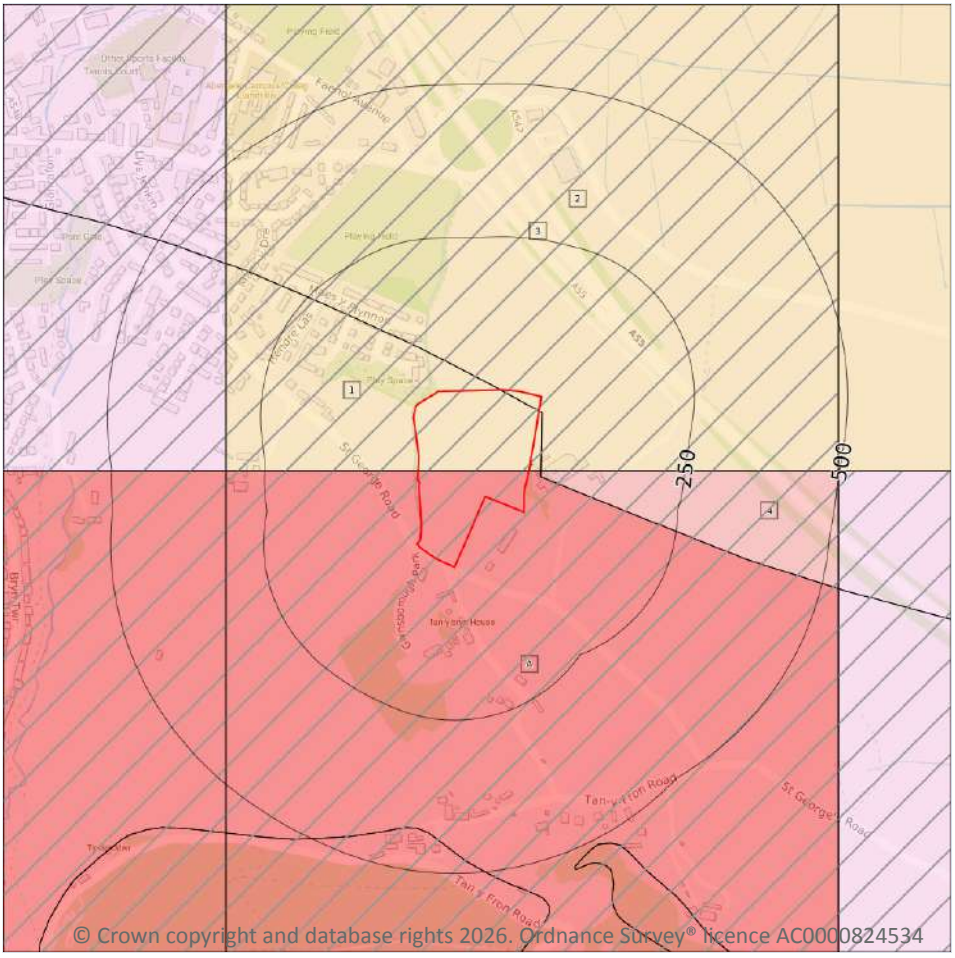
Features are displayed on the Bedrock aquifer map on **page 33 >**

ID	Location	Designation	Description
1	On site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
2	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

ID	Location	Designation	Description
3	306m W	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
4	388m NW	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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

Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability

- Principal superficial aquifer, high vulnerability
- Secondary superficial aquifer, high vulnerability
- Principal superficial aquifer, medium vulnerability
- Secondary superficial aquifer, medium vulnerability
- Principal superficial aquifer, low vulnerability
- Secondary superficial aquifer, low vulnerability

Bedrock vulnerability

- Principal bedrock aquifer, high vulnerability
- Secondary bedrock aquifer, high vulnerability
- Principal bedrock aquifer, medium vulnerability
- Secondary bedrock aquifer, medium vulnerability
- Principal bedrock aquifer, low vulnerability
- Secondary bedrock aquifer, low vulnerability

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	4

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 35 >**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	**On site**	**Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year**	**Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: High**	**Vulnerability: Low Aquifer type: Principal Flow mechanism: Well connected fractures**
2	**On site**	**Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year**	**Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: High**	**Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures**
A	**On site**	**Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: Intermediate Infiltration value: 40-70% Dilution value: 300-550mm/year**	**Vulnerability: Medium Aquifer type: Secondary Thickness: 3-10m Patchiness value: <90% Recharge potential: No Data**	**Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures**
4	18m SE	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Intermediate Infiltration value: 40-70% Dilution value: 300-550mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: 3-10m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High 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	**2**

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

ID	Maximum soluble risk category	Percentage of grid square covered by maximum risk
3	**Significant soluble rocks are likely to be present. Low possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow.**	**11.0%**

ID	Maximum soluble risk category	Percentage of grid square covered by maximum risk
A	**Very significant soluble rocks are likely to be present with a moderate possibility of localised natural subsidence or dissolution-related degradation of bedrock, especially in adverse conditions such as concentrated surface or subsurface water flow.**	**30.0%**

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

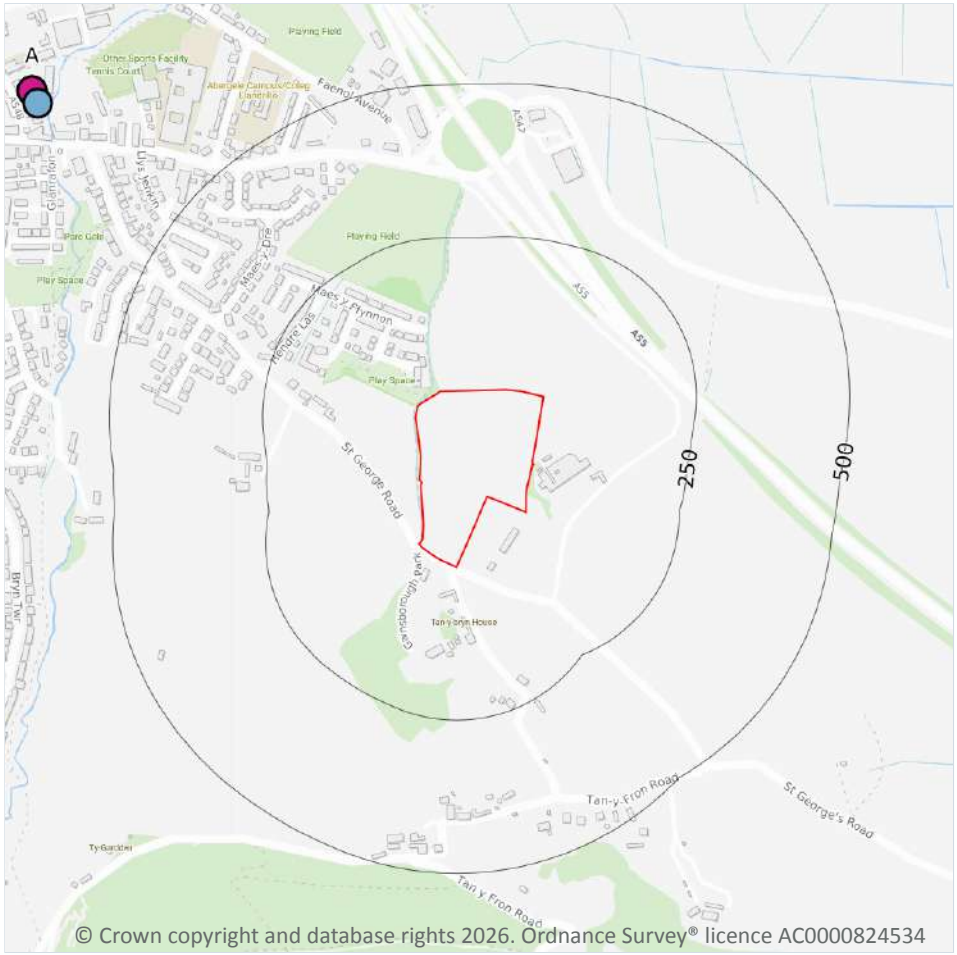
5.5 Groundwater vulnerability- local information

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



Site Outline

Search buffers in metres (m)

- Source Protection Zone 1 — Inner catchment
- Source Protection Zone 2 — Outer catchment
- Source Protection Zone 3 — Total catchment
- Source Protection Zone 4 — Zone of Special Interest
- Source Protection Zone 1c — Inner catchment - confined aquifer
- Source Protection Zone 2c — Outer catchment - confined aquifer
- Source Protection Zone 3c — Total catchment - confined aquifer
- Drinking water abstraction licences
- Drinking water abstraction licences — Polygon features
- Drinking water abstraction licences — Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m	4

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 38 >**

ID	Location	Details	
A	814m NW	Status: Historical Licence No: 24/66/7/0043 Details: General Washing/Process Washing Direct Source: EAW Groundwater Point: 100M DEEP, 120MM DIA. BOREHOLE Data Type: Point Name: Roberts And Co. Ltd Easting: 294680 Northing: 377620	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 30/06/1998 Expiry Date: 30/06/2001 Issue No: 100 Version Start Date: 30/06/1998 Version End Date: -
A	814m NW	Status: Historical Licence No: 24/66/7/0045 Details: General Washing/Process Washing Direct Source: EAW Groundwater Point: 100M DEEP, 120MM DIA. BOREHOLE Data Type: Point Name: Roberts And Co. Ltd Easting: 294680 Northing: 377620	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 20/08/2001 Expiry Date: 20/08/2004 Issue No: 1 Version Start Date: 01/04/2003 Version End Date: -
-	1626m SE	Status: Historical Licence No: 24/66/7/0044 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: BOREHOLE A Data Type: Point Name: Morgan Easting: 296260 Northing: 375480	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 07/09/1999 Expiry Date: 07/09/2004 Issue No: 1 Version Start Date: 07/09/1999 Version End Date: -
-	1626m SE	Status: Historical Licence No: 24/66/7/0046 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: BOREHOLE A Data Type: Point Name: Morgan Easting: 296260 Northing: 375480	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 08/09/2004 Expiry Date: 31/03/2017 Issue No: 1 Version Start Date: 08/09/2004 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 38 >**

ID	Location	Details	
A	793m NW	Status: Historical Licence No: 24/66/7/0038 Details: General Washing/Process Washing Direct Source: EAW Surface Water Point: RIVER GELE Data Type: Point Name: Roberts And Co. Ltd Easting: 294690 Northing: 377600	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 11/07/1974 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2000 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	**0**

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

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

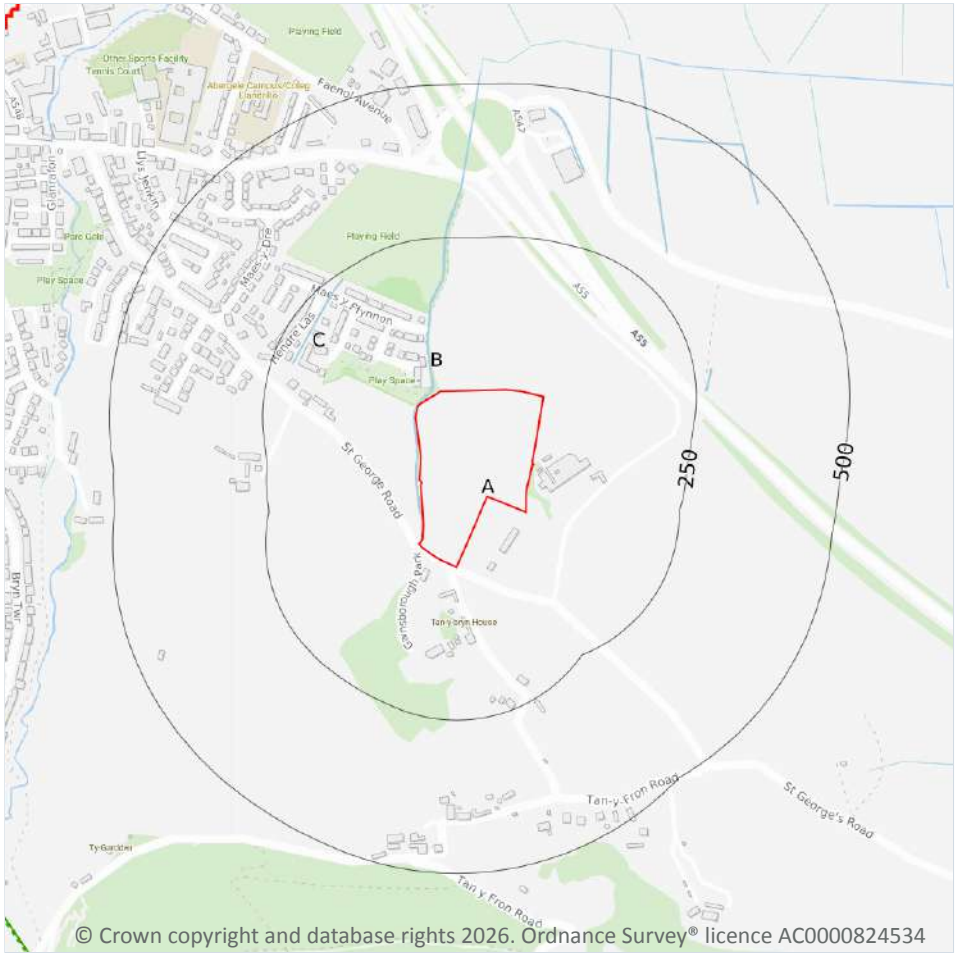
5.10 Source Protection Zones (confined aquifer)

Records within 500m	**0**

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

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

6 Hydrology



© Crown copyright and database rights 2026. Ordnance Survey® licence AC0000824534

Site Outline

Search buffers in metres (m)

Water Network (OS NGD)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS NGD)

Records within 250m	6

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 41 >**

ID	Location	Type of water feature	Ground level	Permanence	Name
B	2m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
C	214m NW	Drain. A manmade watercourse for the removal of excess water from an area.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	215m NW	Drain. A manmade watercourse for the removal of excess water from an area.	Underground	Watercourse contains water year round (in normal circumstances)	-
C	216m NW	Drain. A manmade watercourse for the removal of excess water from an area.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	228m NW	Drain. A manmade watercourse for the removal of excess water from an area.	Underground	Watercourse contains water year round (in normal circumstances)	-
C	233m NW	Drain. A manmade watercourse for the removal of excess water from an area.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey®.

6.2 Surface water features

Records within 250m	**4**

Covering rivers, streams and lakes (some overlap with OS NGD 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 41 >**

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 41 >**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	**On site**	**River**	**Gele**	**GB110066059980**	**Gele**	**Clwyd**

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 41 >**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	561m W	River	Gele	GB110066059980	Moderate	High	Moderate	2024

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

6.5 WFD Groundwater bodies

Records on site	1

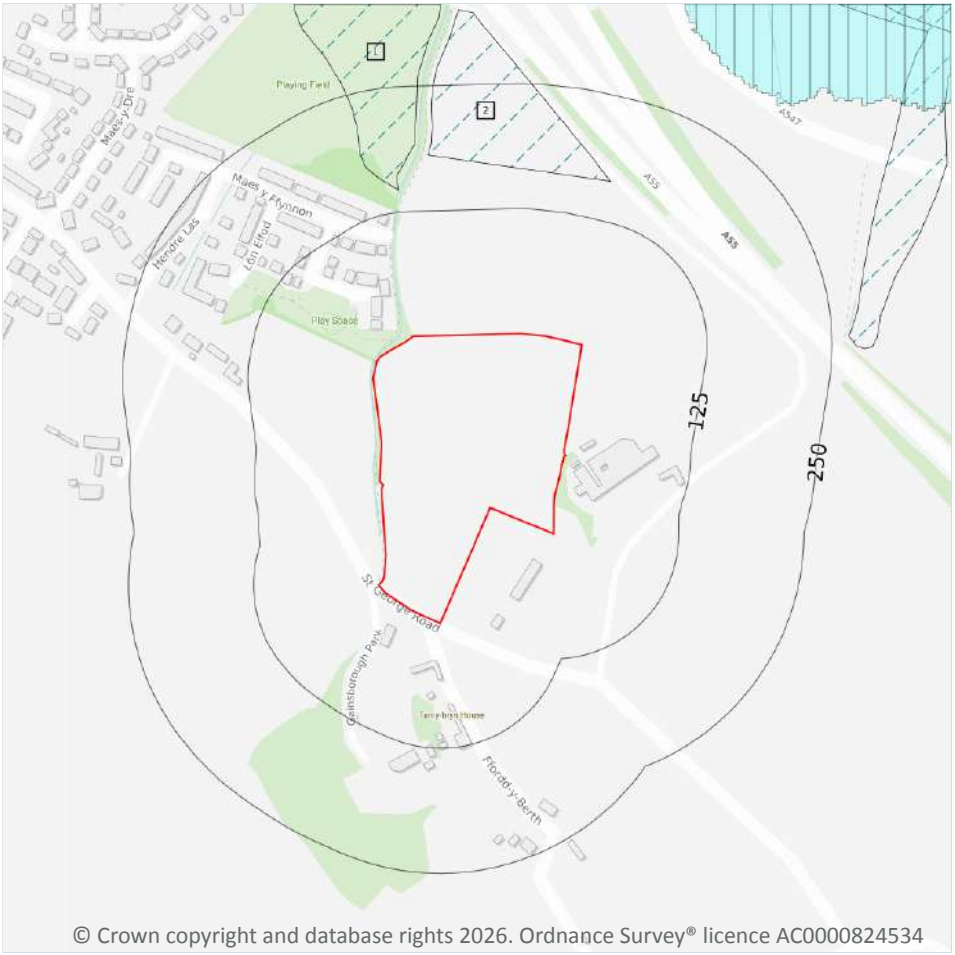
Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place.

Features are displayed on the Hydrology map on **page 41 >**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	**On site**	**Clwyd Permo-Triassic Sandstone**	**GB41001G202100**	**Good**			**2021**

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

7 River and coastal flooding



© Crown copyright and database rights 2026. Ordnance Survey® licence AC0000824534

Site Outline

Search buffers in metres (m)

River and coastal flooding:

- High
- Medium
- Low
- Very Low
- Historical Flood Events
- Areas Used for Flood Storage
- Areas Benefiting from Flood Defences
- Flood Defences

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	2

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.

Features are displayed on the River and coastal flooding map on **page 44 >**

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
1	147m N	Abergele / Rhuddlan Marshes 1977 01	1977-02-11 1977-02-12	Main river	Overtopping of defences	Fluvial
2	163m N	Abergele / Rhuddlan Marshes 1977 01	1977-02-11 1977-02-12	Main river	Overtopping of defences	Fluvial

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.

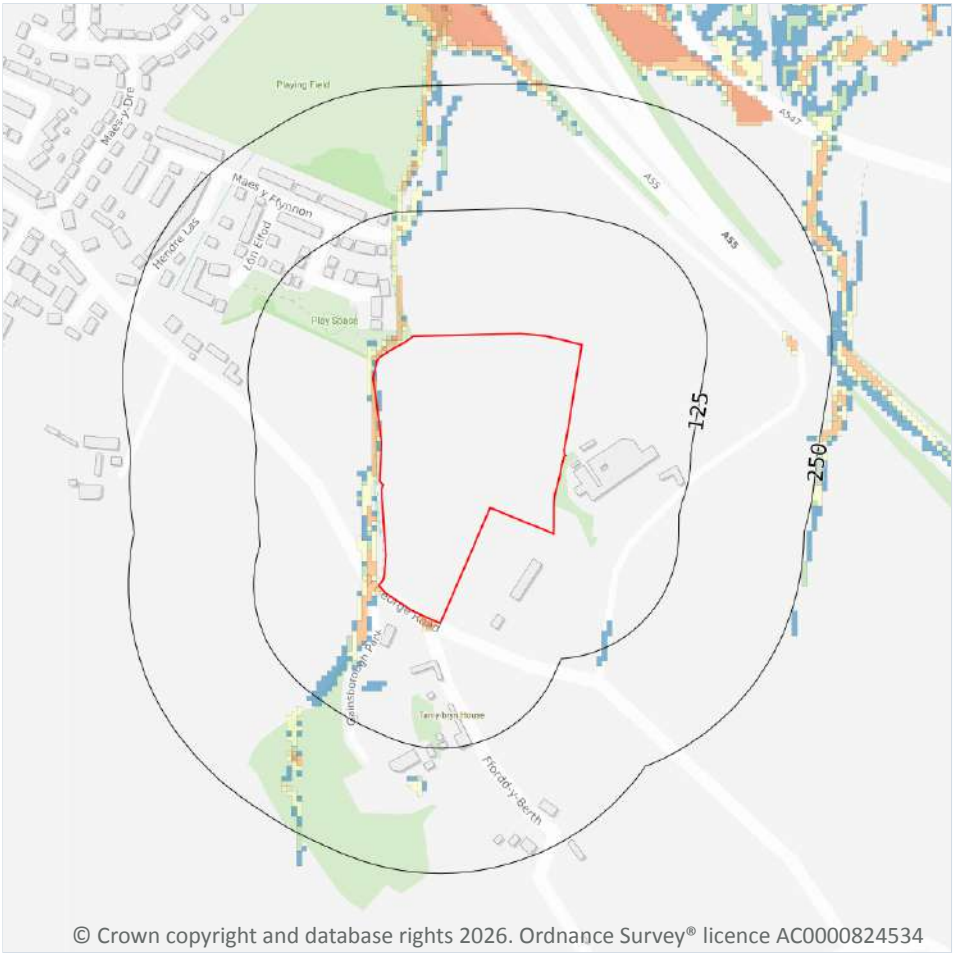
7.7 Flood Zone 3

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



© Crown copyright and database rights 2026. Ordnance Survey® licence AC0000824534

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, 0.3m - 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 48 >**

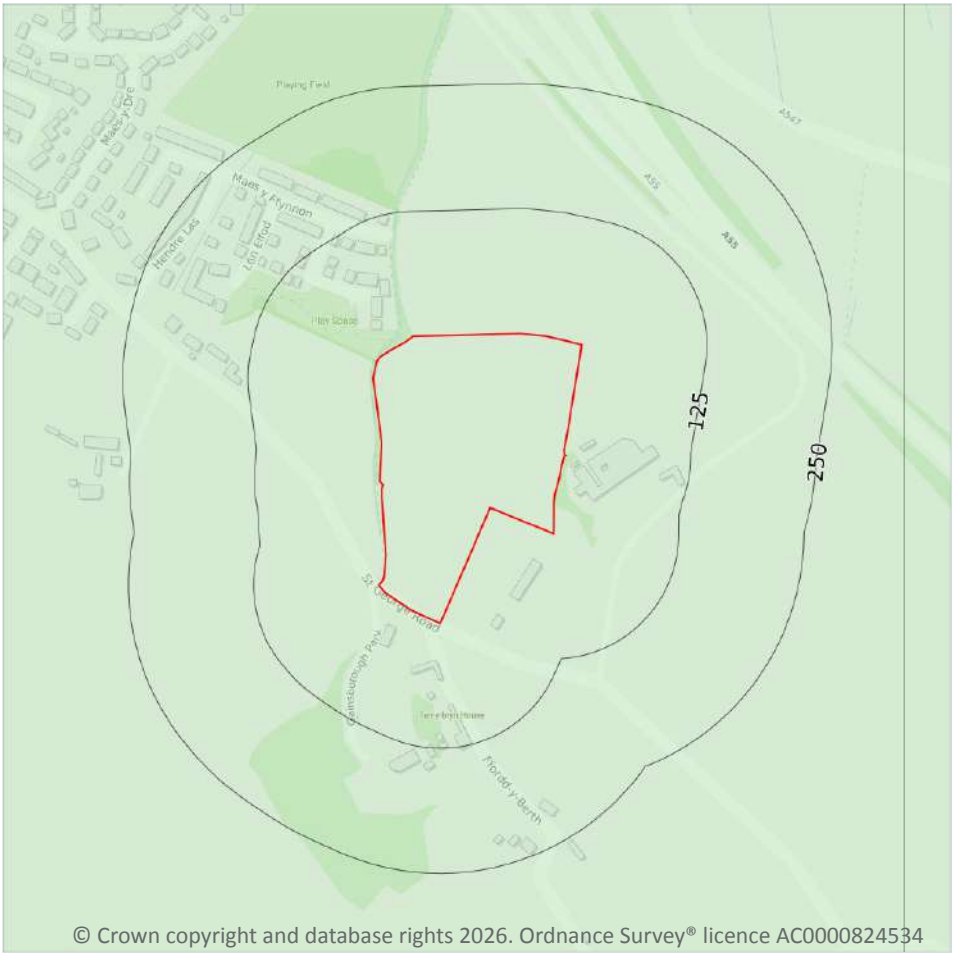
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on

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	Between 0.3m and 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.3m and 1.0m
1 in 30 year	Between 0.3m and 1.0m

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



© Crown copyright and database rights 2026. Ordnance Survey® licence AC0000824534

Site Outline

Search buffers in metres (m)

High

Moderate - High

Moderate

Low

Negligible

9.1 Groundwater flooding

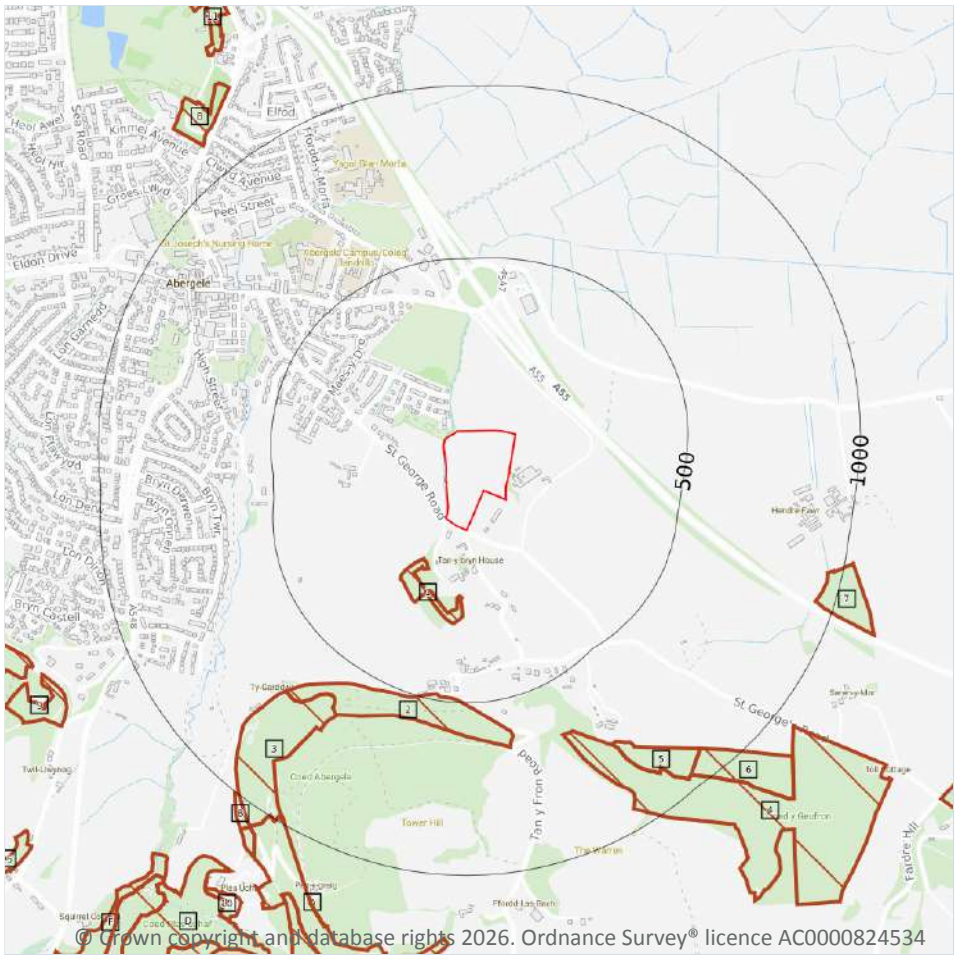
Highest risk on site	**Low**
Highest risk within 50m	**Low**

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 50 >**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



© Crown copyright and database rights 2026. Ordnance Survey® licence AC0000824534

Site Outline

Search buffers in metres (m)

Sites of Special Scientific Interest (SSSI)

Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	2

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.

Features are displayed on the Environmental designations map on **page 51 >**

ID	Location	Name	Data source
-	1457m W	Coed y Gopa	Natural Resources Wales

ID	Location	Name	Data source
-	1815m NW	Traeth Pensarn	Natural Resources Wales

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	52

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 51 >**

ID	Location	Name	Woodland Type
1	133m SW	Unknown	Restored Ancient Woodland Site
2	483m S	Unknown	Ancient Semi Natural Woodland
3	608m SW	Unknown	Plantation on Ancient Woodland Site
4	655m SE	Unknown	Restored Ancient Woodland Site
5	749m SE	Unknown	Ancient Semi Natural Woodland
6	916m SE	Unknown	Restored Ancient Woodland Site
7	946m E	Unknown	Restored Ancient Woodland Site
A	985m SW	Unknown	Ancient Semi Natural Woodland
B	1000m SW	Unknown	Plantation on Ancient Woodland Site
B	1057m SW	Unknown	Ancient Semi Natural Woodland
8	1102m NW	Unknown	Ancient Semi Natural Woodland
A	1168m SW	Unknown	Plantation on Ancient Woodland Site
C	1171m SW	Unknown	Plantation on Ancient Woodland Site
D	1194m SW	Unknown	Plantation on Ancient Woodland Site
9	1219m SW	Unknown	Restored Ancient Woodland Site

ID	Location	Name	Woodland Type
10	1249m SW	Unknown	Plantation on Ancient Woodland Site
E	1270m W	Unknown	Restored Ancient Woodland Site
F	1271m SW	Unknown	Ancient Semi Natural Woodland
11	1300m NW	Unknown	Ancient Semi Natural Woodland
F	1326m SW	Unknown	Ancient Semi Natural Woodland
-	1340m S	Unknown	Ancient Semi Natural Woodland
C	1353m S	Unknown	Ancient Semi Natural Woodland
-	1377m S	Unknown	Ancient Semi Natural Woodland
-	1378m S	Unknown	Ancient Semi Natural Woodland
-	1378m W	Unknown	Plantation on Ancient Woodland Site
D	1396m SW	Unknown	Ancient Semi Natural Woodland
-	1439m W	Unknown	Plantation on Ancient Woodland Site
-	1441m W	Unknown	Plantation on Ancient Woodland Site
-	1456m S	Unknown	Ancient Semi Natural Woodland
-	1459m W	Unknown	Plantation on Ancient Woodland Site
-	1487m W	Unknown	Plantation on Ancient Woodland Site
15	1516m SW	Unknown	Ancient Semi Natural Woodland
16	1531m SE	Unknown	Plantation on Ancient Woodland Site
-	1553m SW	Unknown	Ancient Semi Natural Woodland
-	1566m SW	Unknown	Ancient Semi Natural Woodland
-	1567m S	Unknown	Ancient Semi Natural Woodland
-	1596m SW	Unknown	Plantation on Ancient Woodland Site
-	1602m W	Unknown	Restored Ancient Woodland Site
-	1604m S	Unknown	Ancient Semi Natural Woodland
-	1606m W	Unknown	Restored Ancient Woodland Site
-	1610m W	Unknown	Restored Ancient Woodland Site
-	1611m W	Unknown	Restored Ancient Woodland Site
-	1708m E	Unknown	Restored Ancient Woodland Site

ID	Location	Name	Woodland Type
-	1734m SW	Unknown	Ancient Semi Natural Woodland
-	1740m W	Unknown	Plantation on Ancient Woodland Site
-	1742m NW	Unknown	Ancient Semi Natural Woodland
-	1744m SW	Unknown	Ancient Semi Natural Woodland
-	1759m W	Unknown	Restored Ancient Woodland Site
-	1784m SW	Unknown	Plantation on Ancient Woodland Site
-	1791m W	Unknown	Plantation on Ancient Woodland Site
-	1824m SE	Unknown	Restored Ancient Woodland Site
-	1882m SE	Unknown	Restored Ancient Woodland Site

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	0

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.

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.

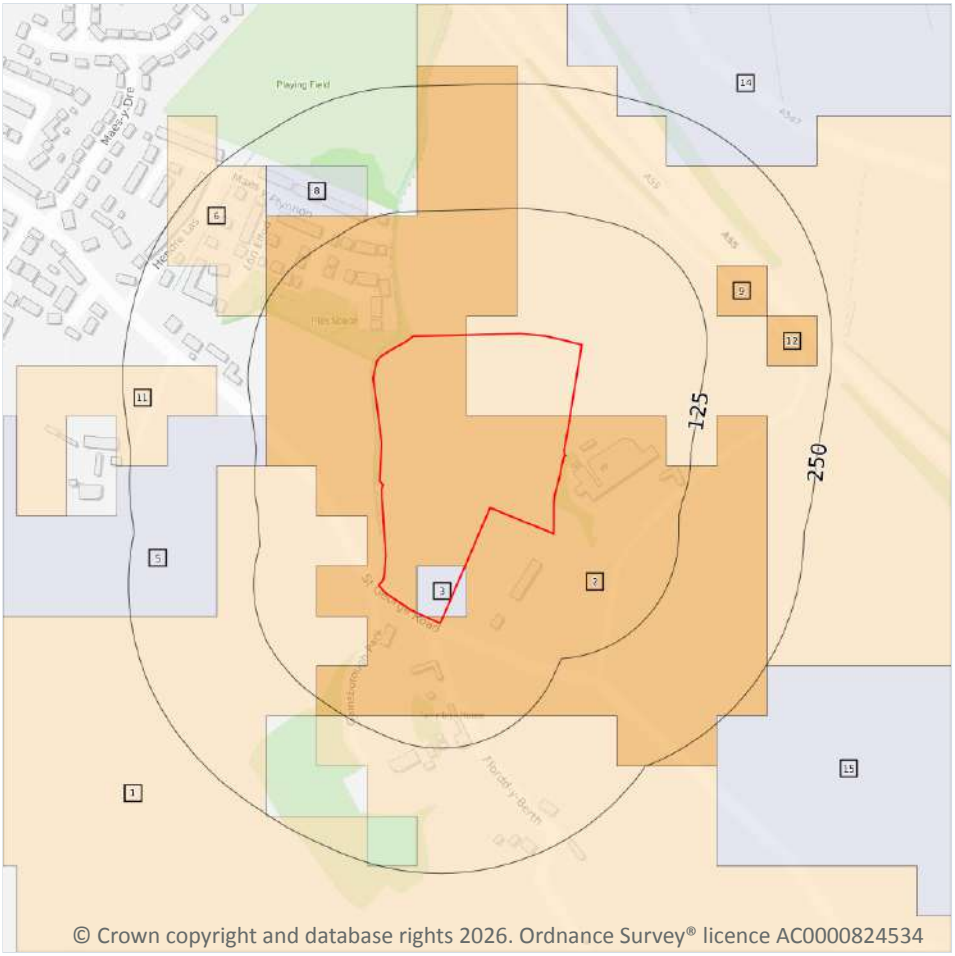
11.7 Registered Parks and Gardens

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	11

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 61 >**

ID	Location	Classification	Description
1	On site	Grade 3a	Good to moderate quality agricultural land
2	On site	Grade 2	Good quality agricultural land
3	On site	Grade 3b	Moderate quality agricultural land

ID	Location	Classification	Description
5	110m W	Grade 3b	Moderate quality agricultural land
6	119m W	Grade 3a	Good to moderate quality agricultural land
8	129m N	Grade 3b	Moderate quality agricultural land
9	138m E	Grade 2	Good quality agricultural land
11	156m W	Grade 3a	Good to moderate quality agricultural land
12	185m E	Grade 2	Good quality agricultural land
14	198m NE	Grade 3b	Moderate quality agricultural land
15	245m 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.

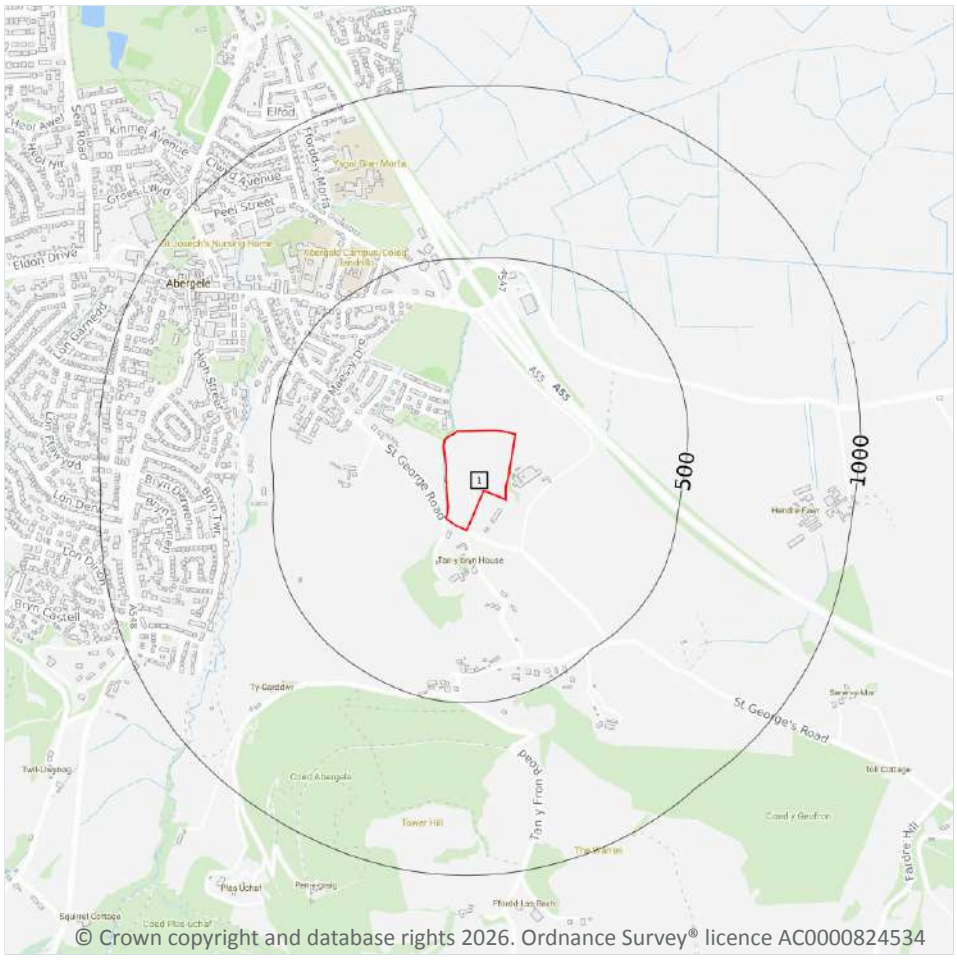
13.4 Limestone Pavement Orders

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



© Crown copyright and database rights 2026. Ordnance Survey® licence AC0000824534

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 65 >**

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

This data is sourced from the British Geological Survey.

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

14.2 Artificial and made ground (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial

14.3 Superficial geology (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock

14.5 Bedrock geology (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

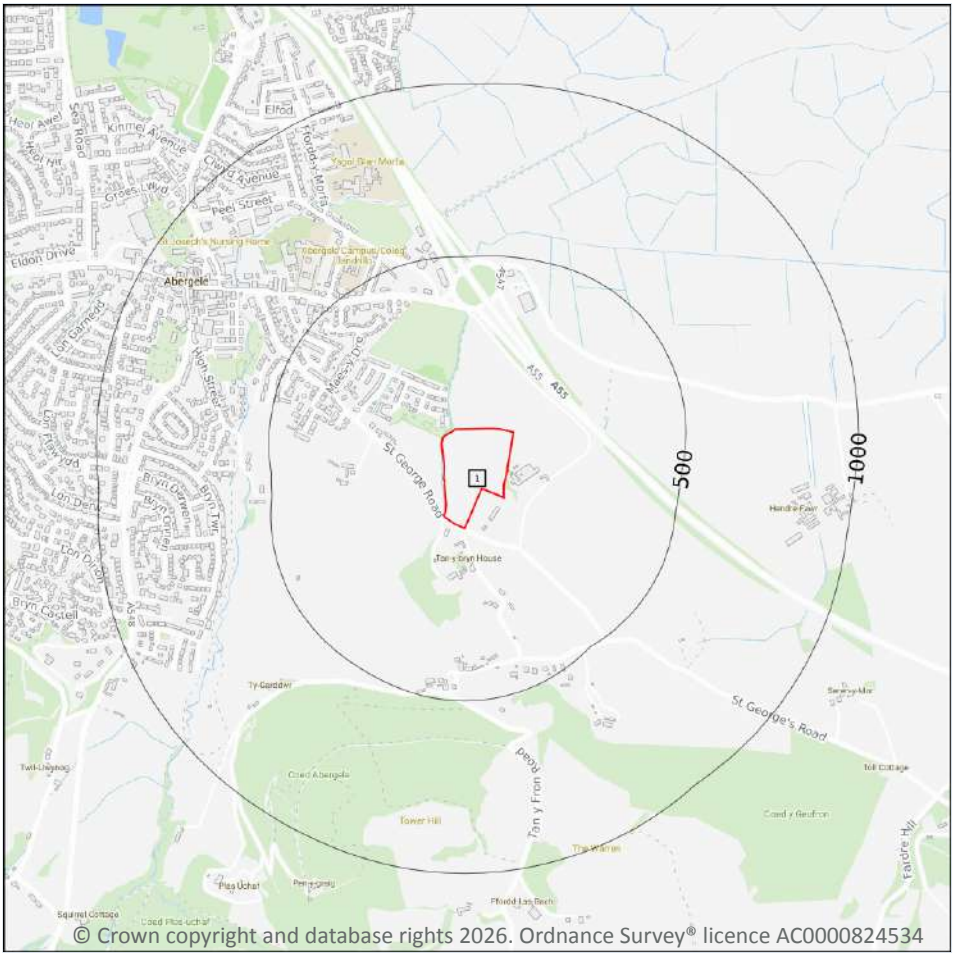
14.6 Bedrock faults and other linear features (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	1

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 69 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**No coverage**	**Full**	**Full**	**Full**	**EW095_rhyl_v4**

This data is sourced from the British Geological Survey.

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

15.2 Artificial and made ground (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

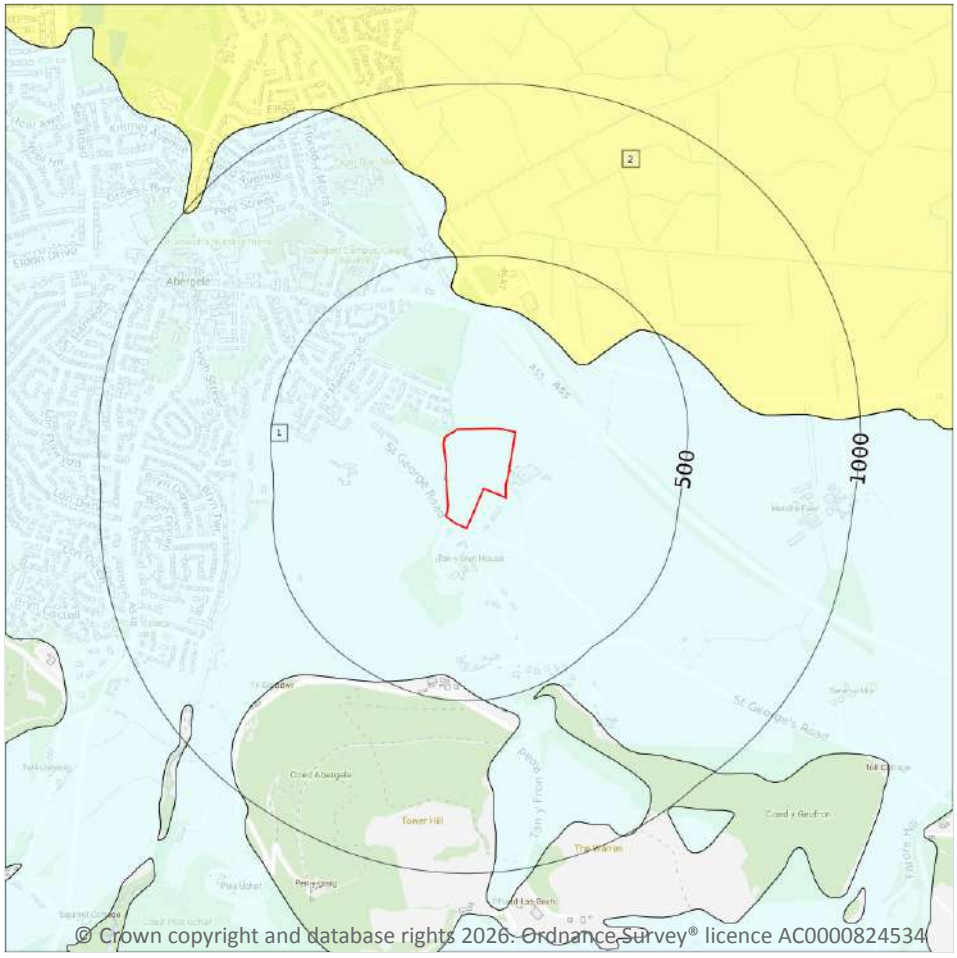
15.3 Artificial ground permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



© Crown copyright and database rights 2026. Ordnance Survey® licence AC0000824534

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 71 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TILLD-DMTN**	**Till, Devensian**	**Diamicton**
2	266m NE	TFD-XCZS	Tidal flat deposits	Clay, silt and sand

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.

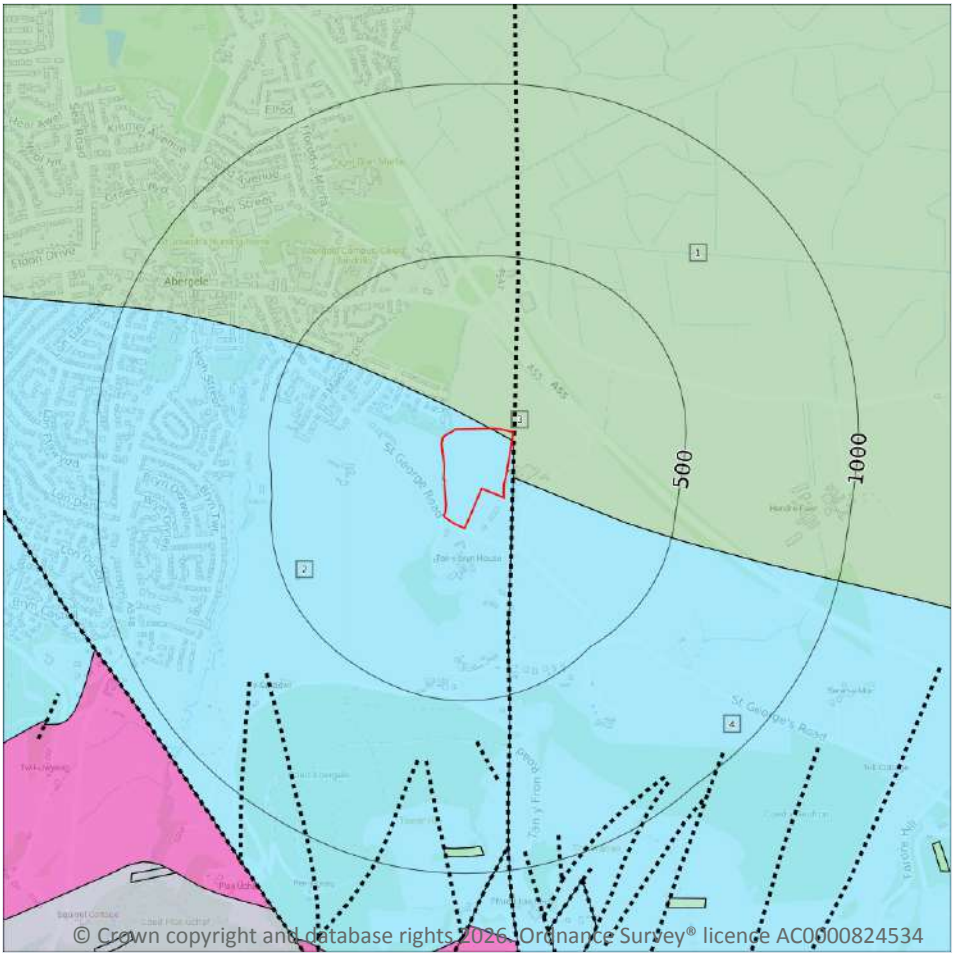
15.7 Landslip permeability (50k)

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



© Crown copyright and database rights 2026 Ordnance Survey® licence AC0000824534

Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m	3

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 73 >**

ID	Location	LEX Code	Description	Rock age
1	On site	WAWK-MDSS	Warwickshire Group-Mudstone, siltstone and sandstone	Westphalian
2	On site	CLWYD-LMST	Clwyd Limestone Group-Limestone	Visean

ID	Location	LEX Code	Description	Rock age
4	21m E	CLWYD-LMST	Clwyd Limestone Group-Limestone	Visean

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	**2**

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**
On site	**Fracture**	**Very High**	**High**

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	**1**

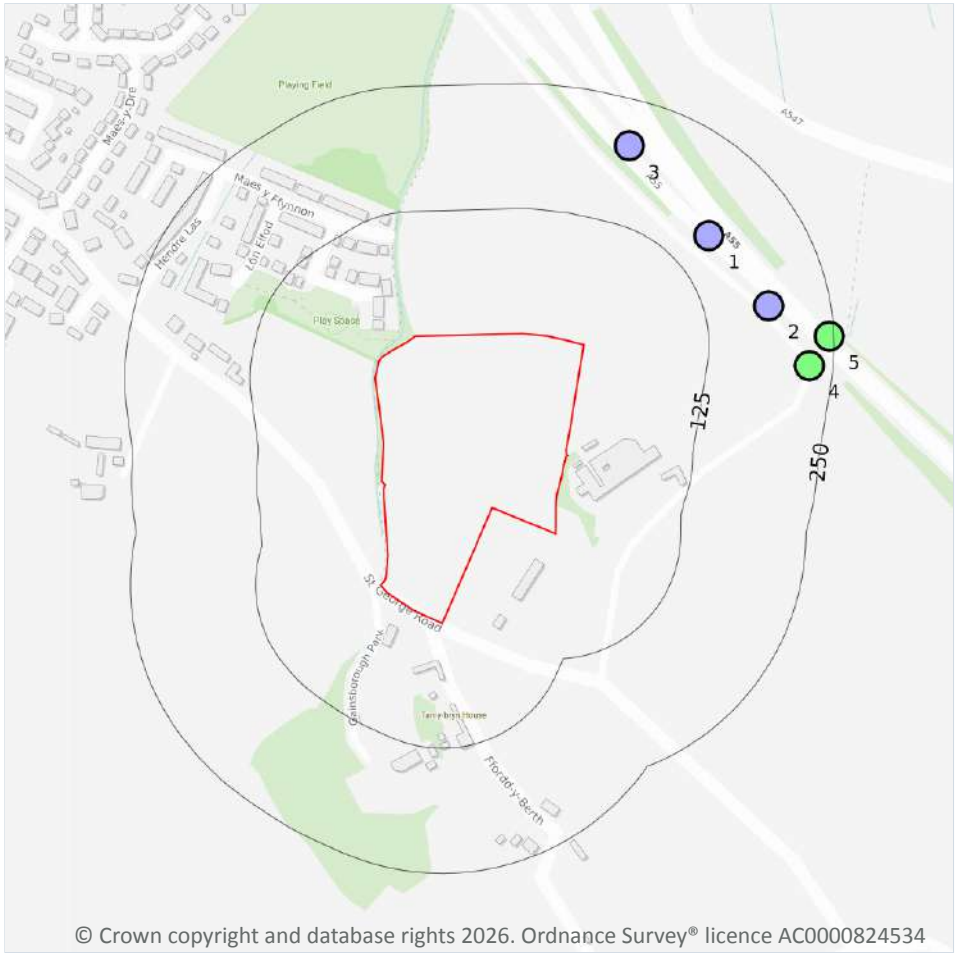
Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 73 >**

ID	Location	Category	Description
3	2m E	FAULT	Fault, inferred, crossmark on downthrow side, throw in metres

This data is sourced from the British Geological Survey.

16 Boreholes



© Crown copyright and database rights 2026. Ordnance Survey® licence AC0000824534

Site Outline

Search buffers in metres (m)

Confidential

0 - 10m

10 - 30m

30m+

Unknown

16.1 BGS Boreholes

Records within 250m	5

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.

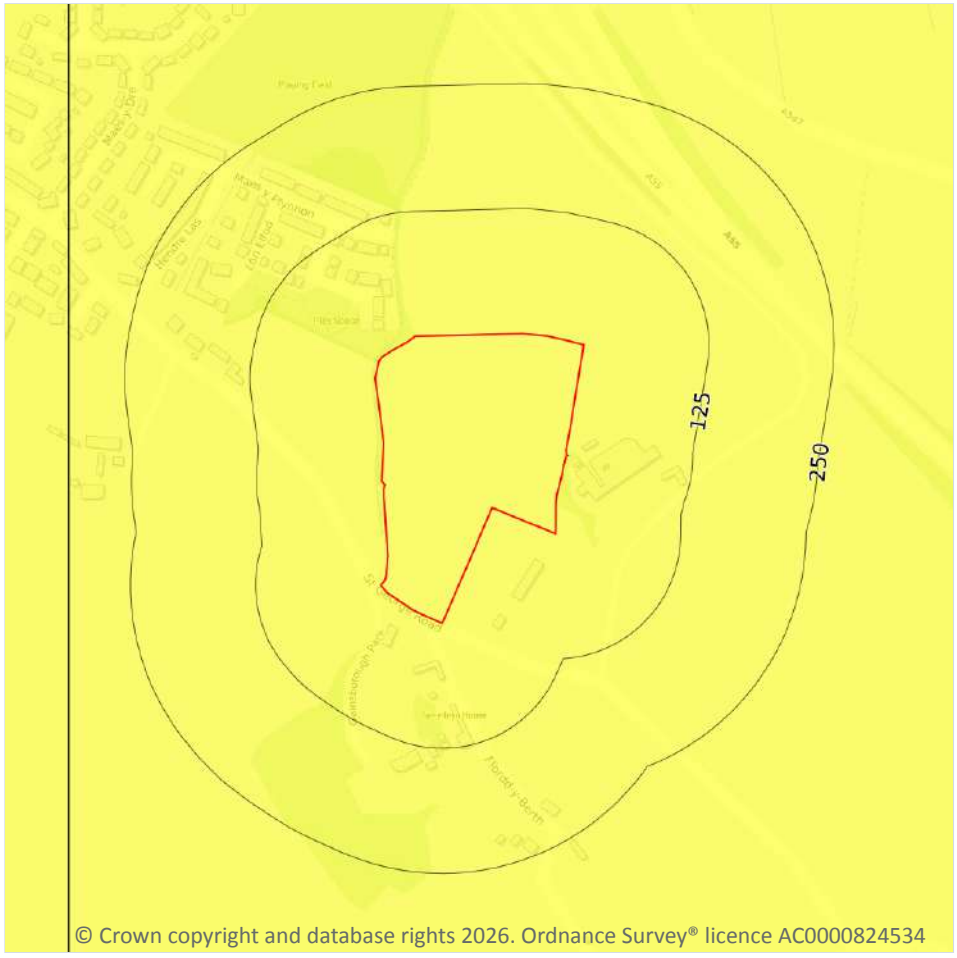
Features are displayed on the Boreholes map on **page 75 >**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	166m NE	295640 377230	A55 DIVERSION 11	5.0	N	140269 ↗
2	189m E	295700 377160	A55 DIVERSION 12	3.0	N	140270 ↗

ID	Location	Grid reference	Name	Length	Confidential	Web link
3	204m N	295560 377320	A55 DIVERSION 10	3.0	N	140268 ↗
4	226m E	295740 377100	A55 DIVERSION 15	14.5	N	140273 ↗
5	245m E	295760 377130	A55 DIVERSION 14	12.0	N	140272 ↗

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



© Crown copyright and database rights 2026. Ordnance Survey® licence AC0000824534

Site Outline

Search buffers in metres (m)

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

17.1 Shrink swell clays

Records within 50m	1

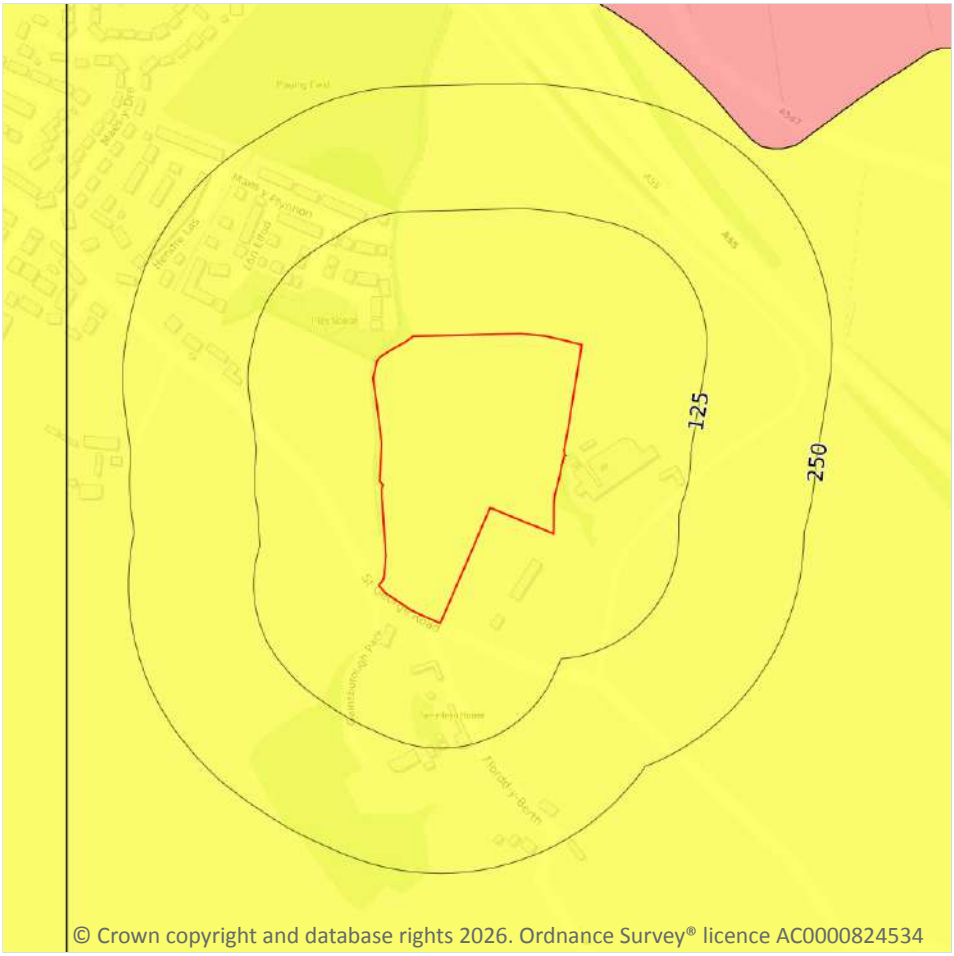
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 77 >**

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	1

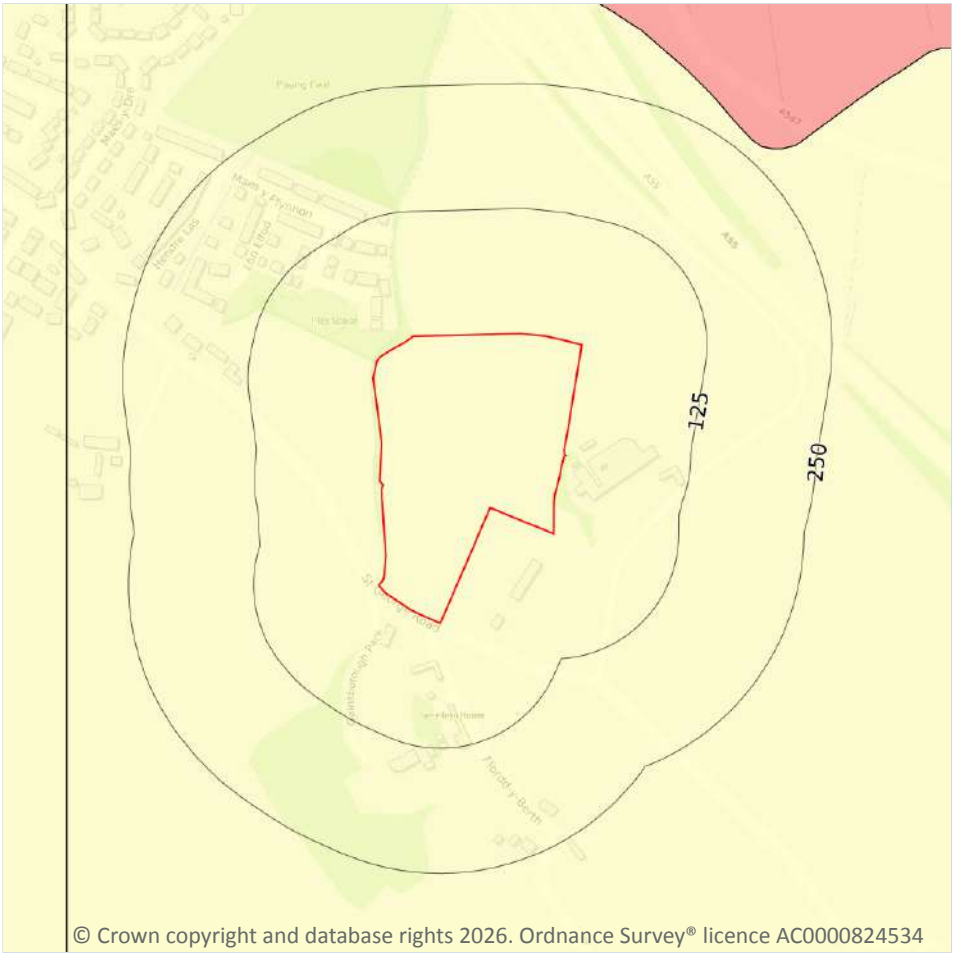
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 78 >**

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



© Crown copyright and database rights 2026. Ordnance Survey® licence AC0000824534

Site Outline

Search buffers in metres (m)

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

17.3 Compressible deposits

Records within 50m	1

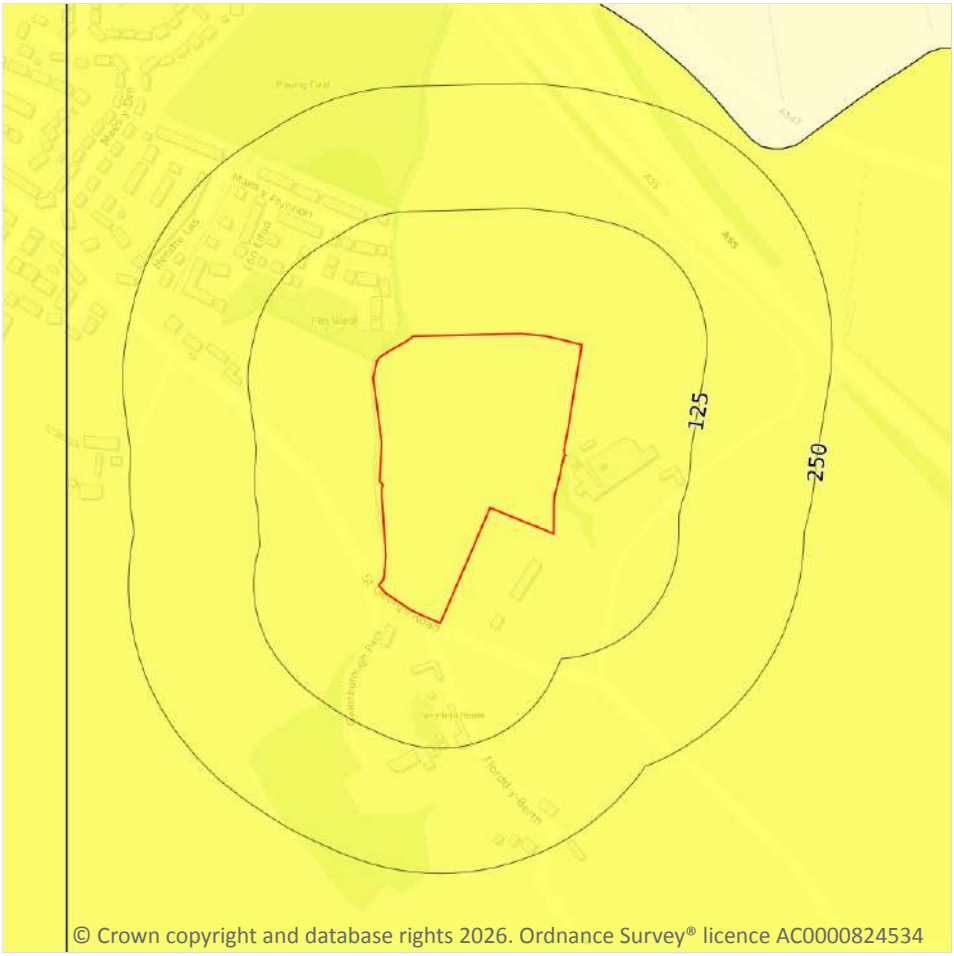
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 79 >**

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

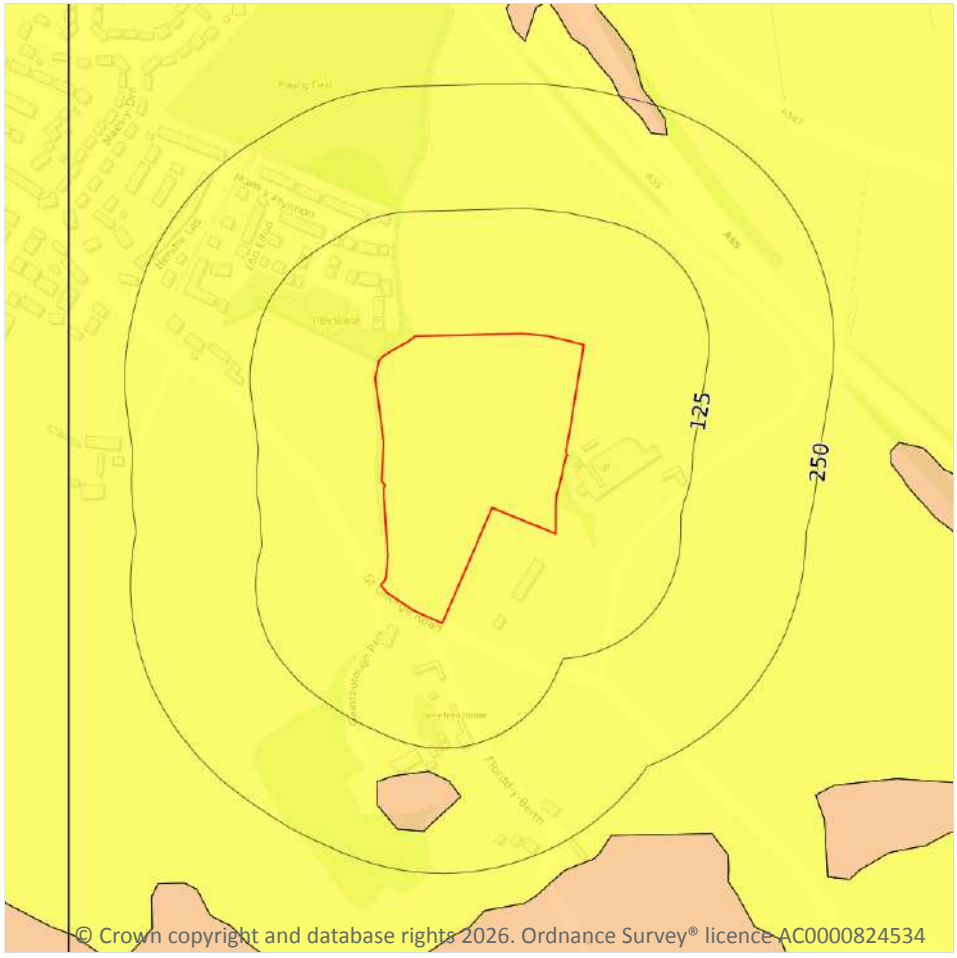
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 80 >**

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

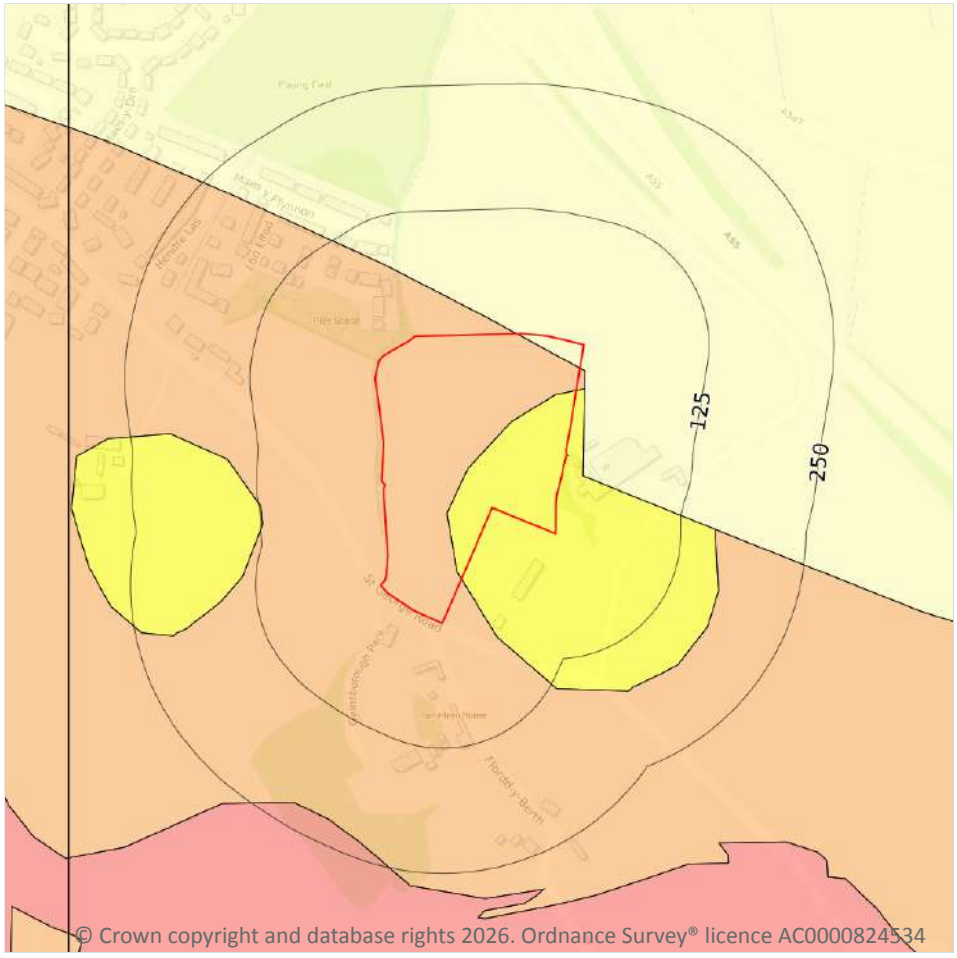
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 81 >**

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



© Crown copyright and database rights 2026. Ordnance Survey® licence AC0000824534

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	3

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.

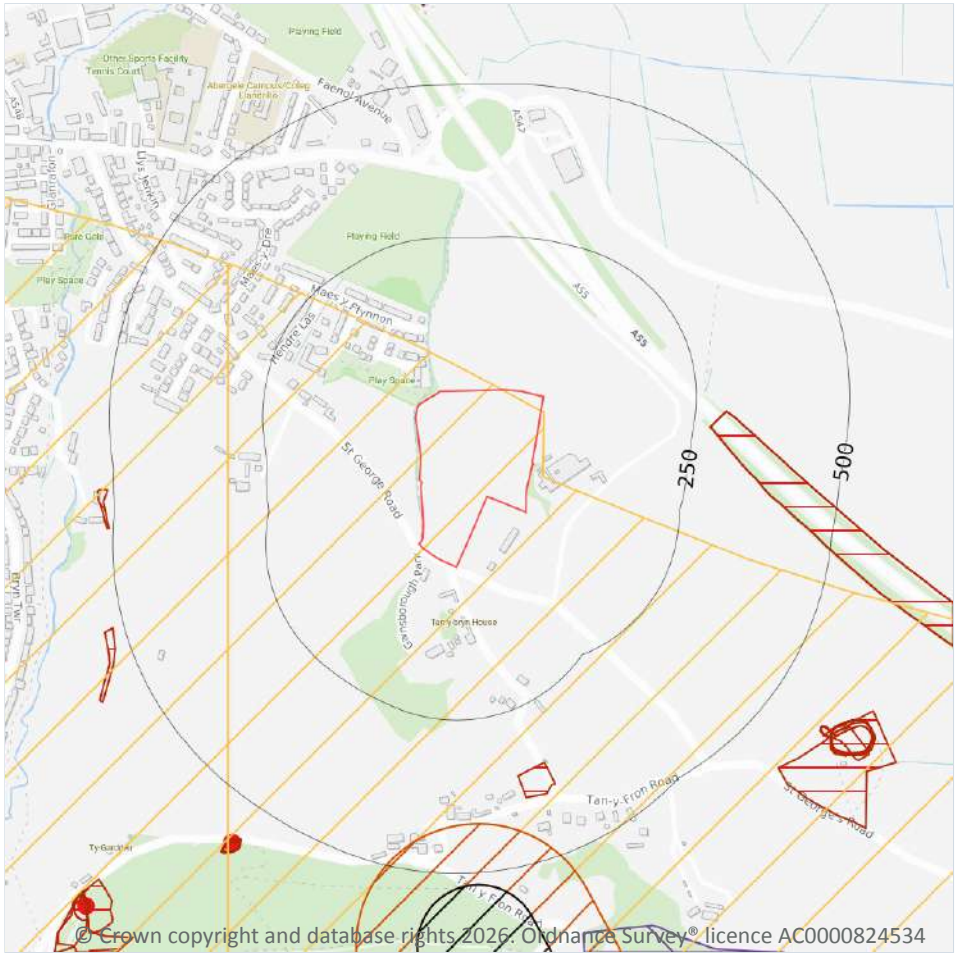
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 82 >**

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.**

Location	Hazard rating	Details
On site	**Very low**	**Soluble rocks are present within the ground. Few dissolution features are likely to be present. Potential for difficult ground conditions or localised subsidence are at a level where they need not be considered.**
On site	**Low**	**Soluble rocks are present within the ground. Some dissolution features may be present. Potential for difficult ground conditions are at a level where they may be considered, localised subsidence need not be considered except in exceptional circumstances.**

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	0

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.

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	5

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

Features are displayed on the Mining and ground workings map on **page 84 >**

ID	Location	Name	Commodity	Class	Likelihood
1	**On site**	**Not available**	**Vein Mineral**	**B**	**Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.**
2	306m W	Not available	Vein Mineral	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
4	420m S	Not available	Vein Mineral	D	Underground mining is considered likely to have occurred within or close to the area. The location, extent and nature of mining should be considered in any site investigation. Potential for difficult ground conditions should be considered.
7	520m S	Not available	Vein Mineral	E	Underground mining is known or considered likely within or very close to the area. The location, extent and nature of mining should be considered in any site investigation. Potential for difficult ground conditions should be considered.
-	853m S	Not available	Vein Mineral	E	Underground mining is known or considered likely within or very close to the area. The location, extent and nature of mining should be considered in any site investigation. Potential for difficult ground conditions should be considered.

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	1

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.

Location	Mineral type
497m S	Metals

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	0

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

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.

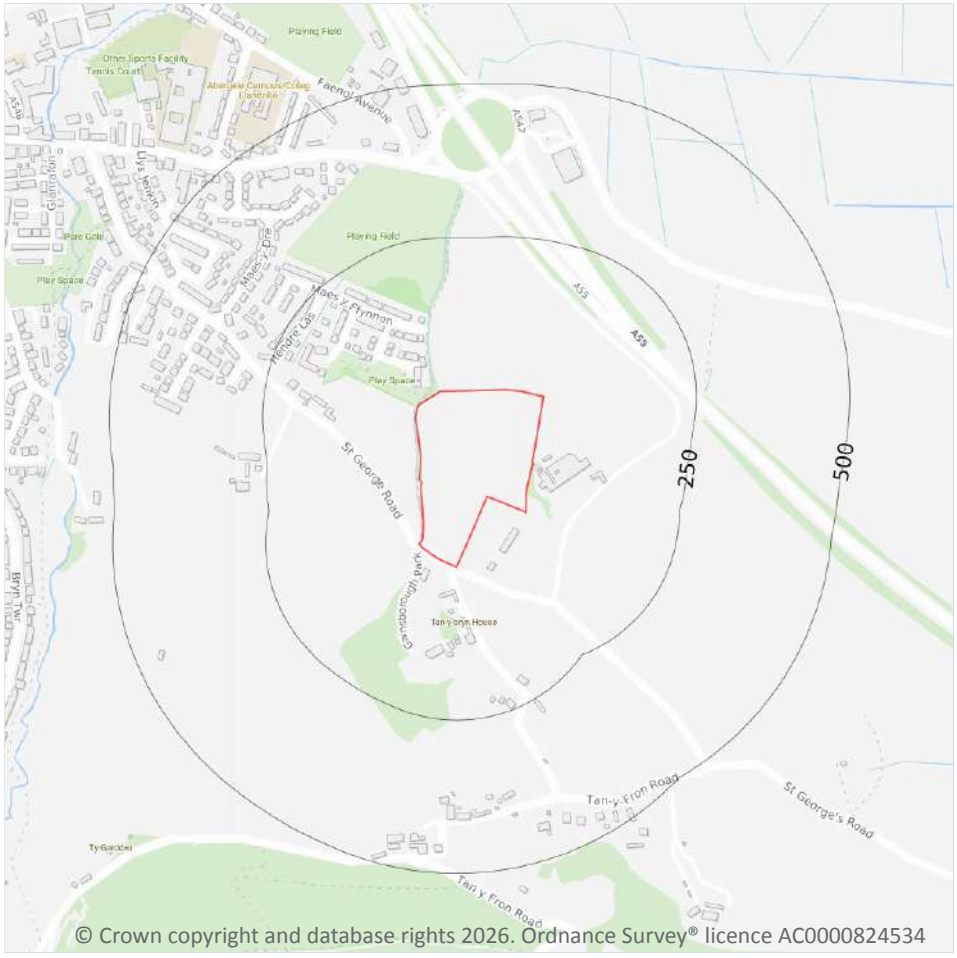
18.16 Clay mining

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



© Crown copyright and database rights 2026. Ordnance Survey® licence AC0000824534

Site Outline

Search buffers in metres (m)

Natural cavities (Area)

Natural cavities (Point)

Mining cavities

Reported recent incidents

Historical incidents

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	1

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.

Features are displayed on the Ground cavities and sinkholes map on **page 89 >**

ID	Location	Mine Address	Mineral
-	852m S	Ffordd-Las-Bach, Clwyd	Blende, Zinc, Sphalerite, Smithsonite

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

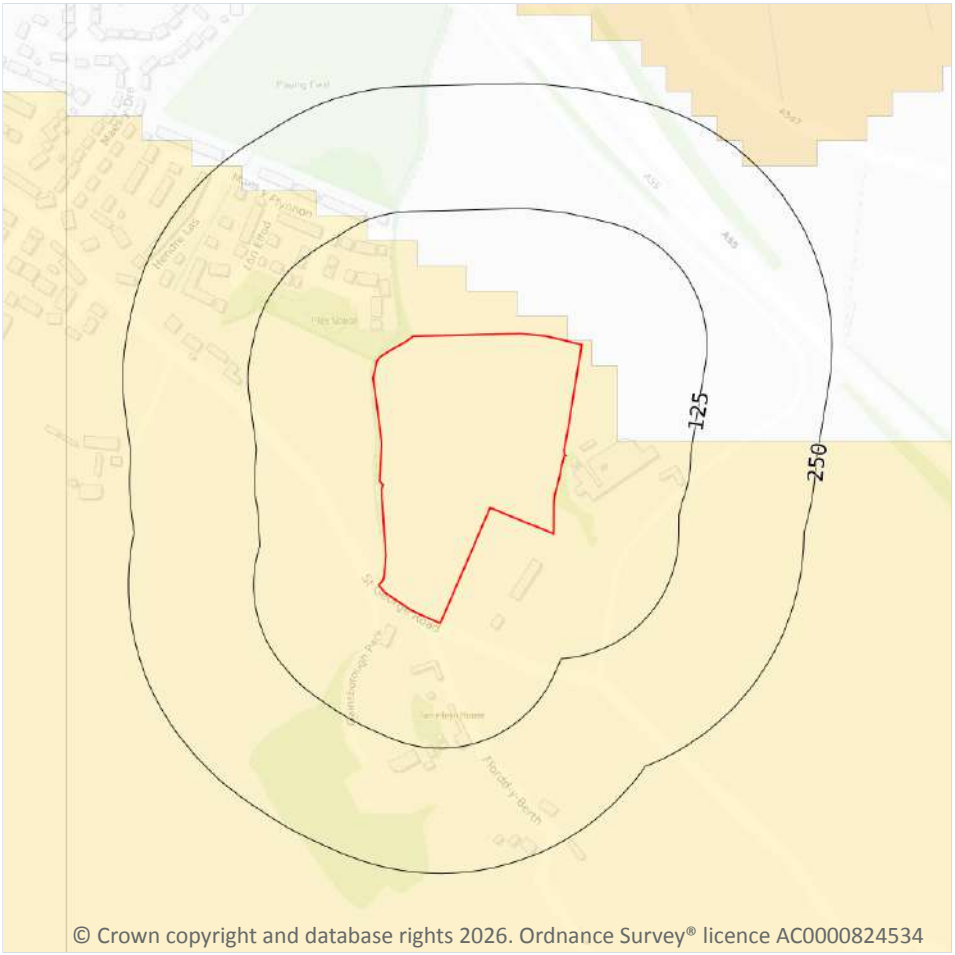
Records within 500m	0

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



© Crown copyright and database rights 2026. Ordnance Survey® licence AC0000824534

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 91 >**

Location	Estimated properties affected	Radon Protection Measures required
On site	**Between 1% and 3%**	**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	11

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**
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**
5m E	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
5m E	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
18m SE	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
18m SE	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
21m E	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

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	0

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

This data is sourced from Ordnance Survey®/Groundsure.

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.

Data providers

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

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: www.groundsure.com/terms-conditions-april-2026/ ↗.

APPENDIX D

(i) Conceptual Model

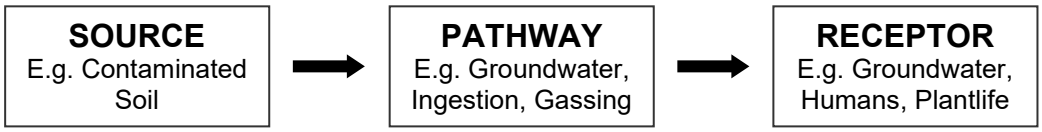
The report aims to identify land which could potentially be affected by contamination, such that it could affect the value or re-use of the land, or such that mitigation would be required for certain proposed end uses of the land.

The assessment also aims to identify land which would be regarded as 'contaminated land' under the terms of the Environmental Protection Act 1990, Part IIa. This act includes a stricter test for contaminated land than that outlined above. Land is considered to be contaminated if either: the land is causing significant harm to people, ecosystems or infrastructure; or there is a significant possibility that such harm could be caused; or pollution of controlled waters is being, or is likely to be, caused.

The following situations are defined as being where harm is to be regarded as significant: chronic or quite toxic effect, serious injury or death to humans; irreversible or other adverse harm to the ecological system; substantial damage to or failure of buildings; death of, or disease or other physical damage affecting, livestock or crops; pollution of controlled waters.

The risk assessment uses a 'Source-Pathway-Receptor' methodology for assessing whether a source of contamination could potentially lead to harmful consequences. This means that there needs to be a pollutant linkage from source to receptor for harm to be caused, this linkage consisting of: a source of pollution; a pathway for the pollutant to move along; a receptor that is affected by the pollutant.

As an example, the pollutant source could be an identified leak of oil or an area of dumped waste.



The pathways could include transport of the contaminant by groundwater, surface water, windblown dust, or vapours, and for human receptors will include the means by which contaminants enter the body, for example skin contact, ingestion and inhalation.

Receptors include people, other living organisms, the built environment and groundwater and surface waters (these latter two also being contaminant pathways).

The source-pathway-receptor methodology relationship allows an assessment of the environmental risk to be determined, based on the nature of the source, the degree of exposure of the receptor to the source and the sensitivity of the receptor.

This section of the report is based on the information set out in the previous sections of the report and should not be read independently of such sections.

© Betts Geo Environmental Ltd 2026

Initial Conceptual Model

From the available information the preliminary conceptual model is visualised as follows:

Target (Receptor)	POTENTIAL SOURCE-PATHWAY LINKAGE
Site Users / Residents	Inhalation of soil gas, odours or dust.
	Ingestion of, and skin contact with, contaminated soil.
	Ingestion of contaminants in vegetables etc. or in soils adhering to vegetables, etc.
Construction/ Maintenance Workers.	Inhalation of soil gas, odours or dust.
	Ingestion of, and skin contact with, contaminated soil
Plants	Adverse effects on growth caused by presence of contaminants in soil
Buildings and Structures	Flow of ground gas into buildings. Asphyxiation, toxicity, explosion and fire hazards
	Sulphate attack of foundations
	Hydrocarbons penetrating plastic water supply pipes
Groundwater	Migration of soluble contaminants into groundwater on or off site. Migration of oils into groundwater on or off site.
Surface water	Migration of soluble contaminants and/or direct run-off of contaminants. Migration of oils into groundwater on or off site.

Initial Environmental Risk Assessment - General

It is accepted that an environmental risk assessment can be based on a source-pathway-target model. An examination is carried out as to whether a target will be at risk from a contamination source, that a source exists, and whether there are any pathways (routes of exposure) which might actually link the source to the target.

Environmental risk assessments rely heavily on numerical trigger concentrations or guidelines because exposure of targets to contamination is difficult to quantify directly. Quantification of risk is therefore mainly undertaken for general scenarios in order to derive trigger levels. These are derived for various contaminants for particular targets and routes of exposure. An example of a sensitive target would be users of a domestic back garden, where routes of exposure might be skin contact, dust inhalation, direct ingestion and indirect ingestion via cultivation and consumption of fruit and vegetables. In March 2002, the first parts of the new CLEA risk assessment guidance were released by DEFRA/Environment Agency.

The risk assessment approach is an extension of the 'fit for use' concept whereby land is cleaned up to a standard fit for the proposed use, that is, so all remaining risks are acceptable. However, as well as being 'fit for use', the environmental risk assessment approach also addresses the soil and water environment so that these are also safeguarded where necessary. For example if a site was contaminated with heavy metals and the development comprised the proposed construction of hard standings and buildings only, the fit-for-use approach might require no remediation for the site. However, consideration of the wider environment needs to address whether groundwater is being contaminated, and if so whether remediation is required for this reason.

The following classification presented by CIRIA has been used in the assessment of risk:

Estimation of risk from consideration of magnitude, consequences and probabilities				
Probability	**Consequences**			
	Severe	**Moderate**	**Mild**	**Minor**
High	Very high	High	Moderate	Moderate / Low
Medium	High	Moderate	Moderate / Low	Low
Low	Moderate	Moderate / Low	Low	Very Low
Unlikely	Moderate / Low	Low	Very Low	Very Low

Reference: Contaminated Land Risk Management; A Guide to Good Practice, CIRIA C552:2001

© Betts Geo Environmental Ltd 2026

APPENDIX E

(i) Notes on Limitations

The desk study report includes examination and provision of historical maps and an environmental database search covering geology, hydrogeology, historical, land use, water abstractions, groundwater source protection zones, landfill sites, radon, trade directory entries, petrol filling stations and nature reserves for the site and surrounding area.

This report does not consider ecological impacts (e.g. bats) or botanical risks (e.g. Japanese knotweed). It is recommended that these are considered as part of the assessment of development constraints for the site.

The assessment and judgements given in this report are directed by both the finite data on which they are based and the proposed works to which they are addressed. The data essentially comprised a study of available documented information from various sources together with discussions with relevant authorities and other interested parties. There may also be circumstances at the site that are not documented. The information reviewed is not exhaustive and has been accepted in good faith as providing representative and true data pertaining to site conditions. If additional information becomes available which might impact our environmental conclusions, we request the opportunity to review the information, reassess the potential concerns and modify our opinion if warranted.

It should be noted that any risks identified in this report are perceived risks based on the available information. Actual risks can only be assessed following a physical investigation of the site.

This report was prepared by Betts Geo Environmental Ltd for the sole and exclusive use of the client specified at the beginning of this report with response to particular instructions. Any other parties using the information contained in this report do so at their own risk and any duty of care to those parties is excluded.

This document has been prepared for the titled project only and should any third party wish to use or rely upon the contents of the report, written approval from Betts Geo Environmental with must be sought.

Betts Geo Environmental Ltd accepts no responsibility or liability for the consequences of this document being used for the purpose other than that for which it was commissioned and for this document to any other party other than the person by whom it was commissioned.

© Betts Geo Environmental Ltd 2026