



GEO-ENVIRONMENTAL CONSULTING ENGINEERS

bEk Enviro Ltd

Suite One | No 3 Mitton Road Business Park
Mitton Road | Whalley | Lancashire | BB7 9YE

01254 377622

mbuckley@bekenviron.co.uk | bekenviron.co.uk

LAND OFF GWELLYN AVENUE, KINMEL BAY

Phase 1 - Preliminary Risk Assessment



Prepared for:

Rikki Proffitt

Report Ref: BEK-23060-1

June 2023



GEO-ENVIRONMENTAL CONSULTING ENGINEERS

bEk Enviro Ltd

Suite One | No 3 Mitton Road Business Park
Mitton Road | Whalley | Lancashire | BB7 9YE

01254 377622

mbuckley@bekenviro.co.uk | bekenviro.co.uk

Project Quality Assurance Information Sheet

Site	Land off Gwellyn Avenue, Kinmel Bay
Report Title	Phase 1 - Preliminary Risk Assessment
Report Status	Final
Report No	BEK-23060-1
Date	April 2023
Prepared For	Rikki Proffitt Kingsway St Asaph Avenue Kinmel Bay Rhyl LL18 5HB
Prepared By	BEK ENVIRO LIMITED Suite One No 3 Mitton Road Business Park Mitton Road Whalley Lancashire BB7 9YE
Author	Adam Hope BSc (Hons)
Checked	Alice Molyneux BSc (Hons)
Authorised	Michael Buckley BSc (Hons) MSc MEnvSci CEnv
Contact	mbuckley@bekenviro.co.uk www.bekenviro.co.uk Office: 01254 377622 Mobile: 07906753583



GEO-ENVIRONMENTAL CONSULTING ENGINEERS

bEk Enviro Ltd

Suite One | No 3 Mitton Road Business Park
Mitton Road | Whalley | Lancashire | BB7 9YE

01254 377622

mbuckley@bekenviro.co.uk | bekenviro.co.uk

LAND OFF GWELLYN AVENUE, KINMEL BAY

Phase 1 - Preliminary Risk Assessment

PROJECT NO: 23060

REPORT REF: BEK-23060-1

DATE: June 2023

REVISION STATUS / HISTORY

Rev	Date	Issue / Comment	Prepared	Checked

GENERAL REPORT LIMITATIONS

BEK Enviro Limited (BEK) has prepared this report for the sole use of the client, showing reasonable skill and care, for the intended purposes as stated in the agreement under which this work was completed. The report may not be relied upon by any other party without the express agreement of the client and BEK. No other warranty, expressed or implied, is made as to the professional advice included in this report.

Where any data supplied by the client or from other sources have been used, it has been assumed that the information is correct. No responsibility can be accepted by BEK for inaccuracies in the data supplied by any other party. The conclusions and recommendations in this report are based on the assumption that all relevant information has been supplied by those bodies from whom it was requested.

No part of this report may be copied or duplicated without the express permission of BEK and the party for whom it was prepared. Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

Unless explicitly agreed otherwise, in writing, this report has been prepared under BEK's limited standard Terms and Conditions as included within our proposal to the Client.

The report needs to be considered in the light of the BEK proposal and associated limitations of scope. The report needs to be read in full and isolated sections cannot be used without full reference to other elements of the report and any previous works referenced within the report.

TABLE OF CONTENTS

1.	INTRODUCTION
1.1	Appointment
1.2	Proposed Development
1.3	Objective & Scope of Work
1.4	Limitations
2.	SITE DESCRIPTION
2.1	Site Location
2.2	Site Layout & Description
2.3	Surrounding Land Use
3.	SITE HISTORY
4.	ENVIRONMENTAL SETTING
4.1	Geology
4.2	Mining & Ground Stability
4.3	Hydrogeology
4.4	Hydrology
4.5	Contaminated Land & Landfill Activities
4.6	Sensitive Land Uses
4.7	Radon
4.8	Unexploded Ordnance
5.	POTENTIAL POLLUTANT LINKAGES
5.1	General
5.2	Potential Contaminants of Concern
5.3	Potential Pathways
5.4	Receptors
5.5	Preliminary Conceptual Model
5.6	Potentially Significant Pollutant Linkages
6.	RECOMMENDATIONS
APPENDICES	
Appendix A	Historical OS Maps
Appendix B	Enviro & Geo Insight Report
Appendix C	Preliminary Conceptual Model
Appendix D	BGS Boreholes
Appendix E	Site Photographs
Appendix F	Drawings
DRAWINGS	
BEK Drawing 23060-1	Site Location
BEK Drawing 23060-2	Site Layout
Planscape Architects Drawing No. P.1533/2	Proposed Residential Development

1. INTRODUCTION

1.1 Appointment

1.1.1 BEK Enviro (BEK) has been commissioned by Rikki Proffitt to prepare a Phase 1 - Preliminary Risk Assessment for an area of land located off Gwellyn Avenue, Kinmel Bay (hereafter referred to as 'the site') to assess the potential risks associated with contamination and ground gas.

1.1.2 The site location is shown on BEK Drawing No 23060-1 and the general site layout is presented on BEK Drawing No 23060-2. Copies of these drawings are presented in Appendix F.

1.2 Proposed Development

1.2.1 This report has been prepared to support a planning application for the construction of 83 residential dwellings with associated access roads, private gardens, landscaped areas and a holding pond, following the demolition of existing buildings.

1.2.2 The 'Proposed Residential Development' is presented on Planscape Architectural Design Consultants Drawing No. P.1533/2, dated June 2022, a copy of which is presented in Appendix E. An extract of the proposed development is presented in Figure 1 below:



Figure 1: Proposed Site Plan

1.3 Objective & Scope of Work

1.3.1 This report provides the details of the works undertaken by BEK to assess the potential risks from contamination considering the residential end use (with homegrown produce).

1.3.2 To achieve the objective BEK will undertake the following:

- Carry out a site inspection and collect photographs
- Review the available relevant background information for the site, including:
 - Recent Ordnance Survey Maps
 - Site Specific GroundSure Reports
 - Site Specific Historical Maps
 - Available Google Earth Images
 - Coal Authority Interactive Website
 - Specific Layout Drawings
 - Zetica UXO Website
- Develop a preliminary conceptual site model in accordance with guidance to identify potentially significant pollutant linkages specific to the proposed development
- Establish areas of potential concern based on identified risks and/or potential risks
- Identify any actions required to assess or reduce the risks identified

1.4 Limitations

1.4.1 The conclusions and recommendations presented in this report are the result of our professional interpretation of the information currently available. BEK reserves the right to amend the conclusions and recommendations if further information becomes available.

1.4.2 However, it should be noted that much of the information has been derived from reports written by others and BEK takes no responsibility for the accuracy of that information. Notwithstanding the above, the reports reviewed have all been written by professional environmental consultants with a duty of care to provide relevant and accurate information.

1.4.3 Issues associated with invasive plant species are outside the remit of this assessment.

2. SITE DESCRIPTION

2.1 Site Location

2.1.1 The site is located to the south of Gwellyn Avenue and to the east of St Asaph Avenue, approximately 1.64 km south-east of Kinmel Bay village centre and some 21 km east of Llandudno town centre.

2.1.2 The National Grid Reference for the centre of the site is 299322, 378799. The site location is presented on BEK Drawing No 23060-1, a copy of which is presented in Appendix F.

2.2 Site Layout & Description

2.2.1 A walkover/inspection was conducted by an engineer from BEK on 20th April 2023. Anecdotal information is also provided where relevant, which was obtained during liaison with the landowner. A selection of photographs illustrating the existing site layout are referenced in this section and are presented in Appendix E. The site layout is presented on BEK Drawing No 23060-1, a copy of which is presented in Appendix F.

2.2.2 The site was accessed off St Asaph Avenue. The site covers an irregular shaped plot of land, occupying an area of approximately 36,500 m². The site is currently occupied by mixed use commercial/industrial area which includes a caravan trader, mechanics workshop, breakdown & recovery service and a recycling works. Disused poultry houses with associated infrastructure and machinery are present in the east of the site. A key features plan showing the existing site layout at the time of inspection is presented in Figure 2.

North & North-east of the site - Grassed Area & Northernmost Poultry House

2.2.3 An L-shaped, fenced grassed area is located in the north of the site and occupied horses at the time of walkover (photograph 25). A hardstanding driveway is located east of the grassed area and provides site access off Gwellyn Avenue (photograph 24). A large poultry house (disused) is located south of the grassed area, as well as two large silos/hoppers to the south of the poultry house (photograph 22). The poultry house was inaccessible at the time of visit, although furniture and miscellaneous items were visible inside. A small unit with a suspected asbestos sheet roof was located south of an off-site residential dwelling in the north-east of the site (photograph 23).

East, South-east and South of the site - Poultry Houses, Warehouse & Small Grassed Area

2.2.4 Six disused poultry houses are located in the east and south-east of the site. All poultry houses are underlain by hardstanding concrete (according to landowner) and are predominantly empty (photograph 9). Gaps between the poultry houses are grassed and some contain old machinery (photograph 12). Electrical units are present on the interior and exterior of some poultry houses (photographs 10 & 18).

2.2.5 A hardstanding concrete track runs from the entry off Gwellyn Avenue to the south of

the site, as well as west into a mixed-use industrial area (photograph 21). A small track links the hardstanding track to an area used for caravan storage in the east of the site (photographs 19 & 26). A small building, electrical transformer, stockpiles of timber, and stockpiles of woodchips are present to the west of the hardstanding track, east of the centre of the site (photographs 20 & 21). A warehouse with suspected asbestos sheet roofing is present east of the centre of the site between two poultry houses (photographs 14, 15 & 16).

- 2.2.6 Stockpiles of coarse aggregate and a plastic tank are present towards the south of the site (photographs 6 & 7). A small grassed area borders the southern site periphery.

Western and Central section of the site – Mixed-use industrial area & made ground stockpile

- 2.2.7 The majority of the western section of the site is occupied by a caravan trader, with the land used to store caravans and associated tools/equipment. This area is predominantly paved with concrete hardstanding and contains sporadic propane tanks and an aggregate stockpile approximately 10 m south of the northern periphery of this western section (photograph 29). The hardstanding extends west to Kingway and further to St Asaph Avenue where the site access is located (photographs 1 & 30).
- 2.2.8 A large stockpile of made ground containing anthropogenic material was observed some 20 m south-east of the center of the site (photographs 3 & 4). Anecdotal evidence during the site walkover suggests the stockpile originated from on-site construction and comprises largely topsoil. Immediately south of the stockpile lies a grease/oil barrel which had visibly leaked onto a pallet and vehicle parts nearby (photograph 5).
- 2.2.9 A recycling works understood to belong to CBR Recycling Ltd is located circa 20 m north of the made ground stockpile (photograph 27). The works is fenced off from the surrounding site and was inaccessible at the time of visit.
- 2.2.10 It is understood that Blakoe Recovery Services operates on-site, although the exact location on-site is unknown. Lorry cabs, trailers, equipment and a shipping container thought to belong to this company were observed some 40 m south of the center of the site (photograph 2).
- 2.2.11 A mechanics workshop operates in south-west of the site and contained cars and equipment at the time of visit (photograph 28). There were also many cars and car parts observed throughout the western section of the site.

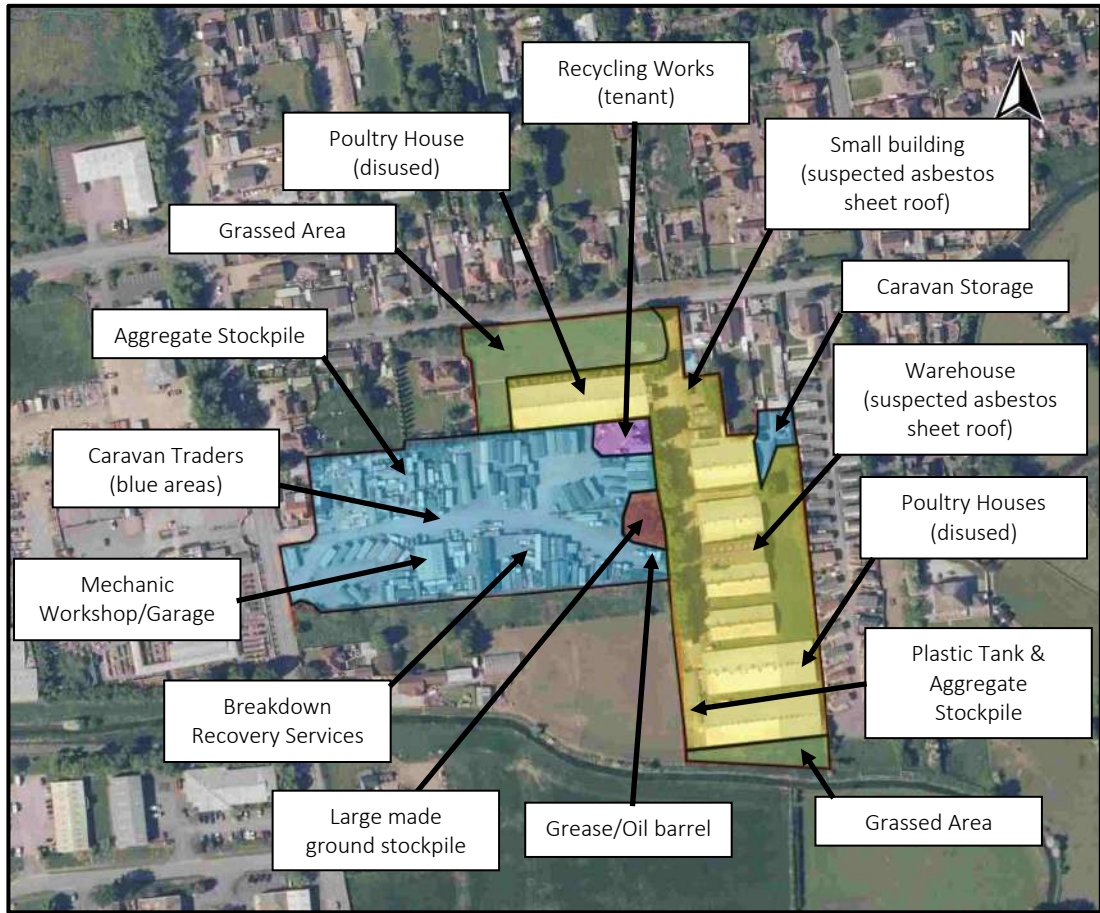


Figure 2: Key Features Plan & Existing Site Layout

2.3 Surrounding Land Use

2.3.1 The site is located in a semi-rural mixed-use area. The River Gele is located approximately 8 m south of the site. Open fields lie to the south of the site and to the east beyond a caravan park. Residential properties lie immediately north-west of the site, as well to the north beyond Gwellyn Avenue which borders the northern site periphery. Industrial areas are present to the west and south-west beyond St Asaph Avenue which borders the western site periphery.

3. SITE HISTORY

3.1 The history of the site has been established using historical OS maps supplied by Groundsure. A selection of historical OS maps reviewed is presented in Appendix A.

1871-1813

3.2 The earliest available maps show the site to be vacant and set in a rural area amongst open fields which surround the site. A drainage channel borders the northern site boundary. An unmarked road is present immediately west of the site, beyond which a building (likely residential) lies some 10 m west of the site. The River Gele is present approximately 20 m south and 90 m east of the site at its closest points. A pond is present approximately 200 m south-west of the site.

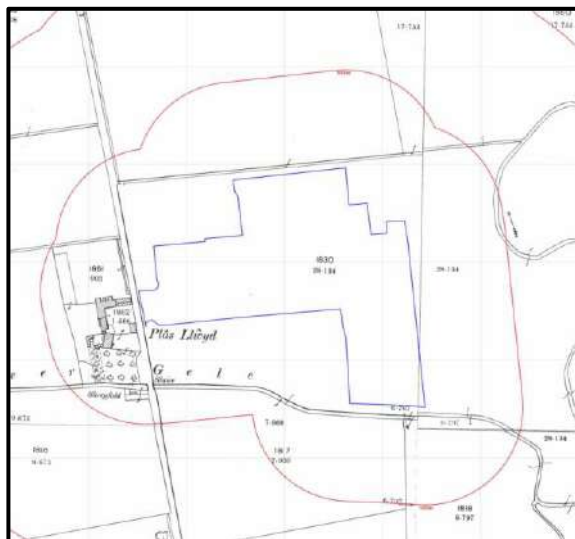


Figure 3: Extract from the 1899 Map

1938-1949

3.3 These maps show the site remains vacant. The drainage ditch is absent and Gwellyn Avenue is now present immediately north of the site, beyond which are a number of unspecified buildings. Further unspecified buildings are present along new roads in areas to the north, north-east, north-west, west, south-west and east of the site.

1961

3.4 Buildings are now present in the west and north-east and a portion of the north of the site is labelled 'nursery'. Areas in the east and south of the site are now appear divided vertically into sections (possibly fenced). An additional nursery is present immediately east of the site. Residential development has taken place in areas surrounding the site, approximately 5 m east, 30 m north, 70 m east, 80 m east and 140 m north-east of the site.

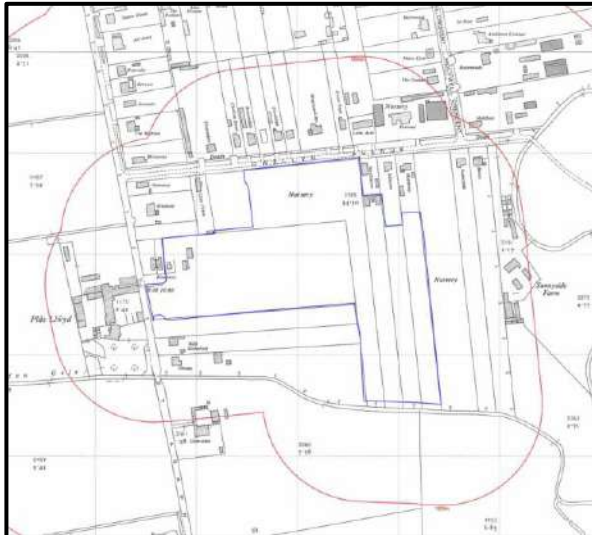


Figure 4: Extract from the 1961 Map

1983-1986

- 3.5 These maps show five large poultry houses are present in the east of the site. The rest of the site appears unchanged. An industrial area with access roads is present approximately 150 m south-west of the site.

1986-1994

- 3.6 These maps show an additional three larger poultry houses are present on site with one present in the northern area and two in the south-east of the site. The north of the site is no longer marked as 'nursery'. Three small outbuildings are present in the north-east of the site, as well as an additional building to the south-west of the center of the site. A property located some 20 m west of the site is now marked as a garden centre. Industrial development has occurred at 'Tir Llwyd Industrial Estate', approximately 150 m south-west of the site.



Figure 5: Extract from the 1986-1989 Map

2003-2023

- 3.7 These maps show the site remains unchanged. A caravan park is present immediately east of the site. New buildings have been constructed some 40 m south of the western section of the site. An industrial unit with an associated yard is present some 160 m west of the site.

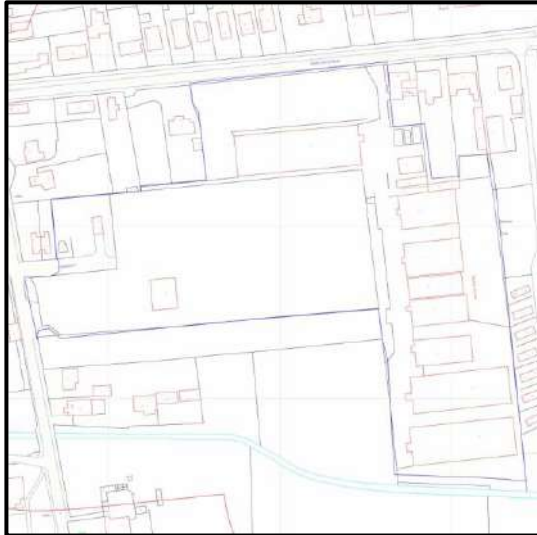


Figure 6: Extract from the 2003 Map

Aerial Images

2003

- 3.8 Aerial photographs from 2003 show a large area of hardstanding present in the west of the site and hardstanding to the west of the poultry houses in the east of the site.

2013

- 3.9 Aerial photographs from 2013 show significant quantities of vehicles and industrial equipment present on the hardstanding area in the west. Industrial units are present circa 60 m and 150 m north-west of the western section of the site.

2020

- 3.10 Aerial photographs from 2020 show no significant changes to the site. There are no significant changes to the areas surrounding the site.

4. ENVIRONMENTAL SETTING

4.0.1 An Enviro & Geo Insight Report has been obtained from Groundsure and information provided in these reports has been used within this section. A copy of the report is presented in Appendix B.

4.1 Geology

4.1.1 The site geology is illustrated in the Enviro & Geo Insight Report which has sourced data from several sources including British Geological Society (BGS), BRITPITS database and the Coal Authority.

4.1.2 There are two BGS boreholes available to view within 250 m of the site. The strata experienced in these boreholes is summarised in Table 1 below. Copies of these BGS boreholes are provided within Appendix D.

Borehole Ref	Location	Depth (m)	Strata
SH97NE/15	139 m south-west	0 - 0.35	Turf and topsoil
		0.35 - 1.90	Firm to stiff brown and grey silty clay with root traces
		1.90 - 2.70	Soft grey brown silty clay and grey clayey silt with occasional shells
		2.70 - 5.30	Loose grey medium to fine sand with occasional shells
		5.30 - 8.90	Medium dense grey medium to fine sand with occasional shells, thin seams of soft grey silty clay and peat traces
		8.90 - 9.20	Very soft grey silty clay with patches of decomposed vegetation merging into soft to firm light clayey sandy silt.
SH97NE/16	202 m south-west	0 - 0.30	Turf and topsoil
		0.30 - 1.00	Stiff brown and grey mottled silty clay with root traces
		1.00 - 1.90	Stiff becoming soft brown and grey mottled silty clay
		1.90 - 3.80	Soft grey very silty clay
		3.80 - 9.20	Loose to medium dense grey medium to fine sand with occasional shells and thin seams of grey silty clay
		9.20 - 9.80	Interbedded soft grey silty clay and firm grey clayey silt with traces of decomposed vegetation

Table 1: Summary of Strata for the two BGS boreholes within 250 m of the site.

Made Ground

4.1.3 According to the Enviro & GeoInsight Report there is no artificial ground (made ground) present beneath or within 250 m of the site.

4.1.4 However, as the majority of the site has been subject to development, the presence of made ground is considered likely. A large stockpile of made ground with anthropogenic material was also observed during the site walkover.

Superficial Geology

- 4.1.5 The Enviro & Geo Insight Report indicates that superficial deposits underlying the site comprise 'Tidal Flat Deposits' which typically comprise clay, silt and sand. The permeability of this strata generally varies from very low to moderate.
- 4.1.6 Within the off-site BGS boreholes to the south-west, 'silty clay' was encountered to depths varying from 2.7 m (SH97NE/15) to 3.8 m (SH97NE/16) and was noted to soften towards the base of the unit. Underlying clay at both boreholes comprised loose to medium dense 'medium to fine sand' which varied in depth from 8.9 m (SH97NE/15) to 9.2 m (SH97NE/16). Underlying sand at both boreholes was soft to very soft 'grey silty clay' which varied in depth from 9.2 m (SH97NE/15) to 9.8 m (SH97NE/16).

Bedrock

- 4.1.7 The Enviro & Geo Insight Report states that solid geology underlying the site comprises the 'Kinnerton Sandstone Formation' which is generally described as sandstone, red-brown to yellow, generally pebble-free and fine to medium grained. This strata generally has a high permeability.

Faults & Linear Features

- 4.1.8 There are no fault lines or linear features located on/within 250 m of the site.

4.2 Mining & Ground Stability

- 4.2.1 Information on the Coal Authority Interactive Map indicates that the site is not located within an area which is considered to have been affected by coal mining.
- 4.2.2 The Enviro & Geo Insight Report provides hazard ratings associated with natural ground subsidence at the site, as summarised below:

Shrink-Swell Clay:	Very Low
Running Sands:	Moderate
Compressible Deposits:	Moderate
Collapsible Deposits:	Negligible
Landslides:	Very Low
Ground Dissolution of Soluble Rocks:	Negligible

- 4.2.3 It can be seen from the above that the site is unlikely to be affected by ground instability, with the exception of moderate ratings for running sands and compressible deposits.

4.3 Hydrogeology

- 4.3.1 According to the Enviro & Geo Insight Report the superficial tidal flat deposits underlying the site are classified by the EA as a 'Secondary Undifferentiated' aquifer

which is assigned where 'It is not possible to attribute either category A or B to a rock type'.

4.3.2 The underlying sandstone bedrock is classified as a 'Principal' aquifer which is described as 'usually providing a high level of water storage and may support water supply/river base flow on a strategic scale'.

4.3.3 The Enviro & Geo Insight Report indicates that there are no groundwater abstractions situated on/within 250 m of the site.

4.3.4 The site is not located within a groundwater Source Protection Zone.

4.4 Hydrology

4.4.1 The Enviro & Geo Insight Report indicates that there are several surface water features present within 250 m of the site, the closest of which refers to the River Gele some 8 m south of the site. The surface water features within 250 m of the site are summarised in Table 2 below:

Location	Description
8 m south	River Gele (WFD River)
9 m south-east	Surface water feature <5m
155 m west	Surface water feature <5m
149 m south-east	Surface water feature <5m
210 m south-west	Surface water feature <5m

Table 2: Summary of surface water features on/within 250 m of the site

4.4.2 The Enviro & Geo Insight Report indicates that there are two licensed discharges to controlled waters within 250 m of the site. These refer to discharges at two locations (each under permit version 1) which are summarised in Table 3:

Location	Effluent Type	Receiving Water	Permit Dates
79 m SW	Unspecified	River Gele	Permit 1: 17/03/1982 to 17/06/1996
189 m W	Unspecified	River Gele	Permit 1: 17/03/1982 to 17/06/1996

Table 3: Summary of Licensed Discharge Consents on/within 250 m of the Site

4.4.3 There are no surface water abstractions located on or within 250 m of the site.

4.4.4 The Enviro & Geo Insight Report indicates that the north-western section of the site is located within an EA designated Flood Zone 3, whilst the south-eastern section is within a Flood Zone 2.

4.5 Contaminated Land & Landfill Activities

4.5.1 Information provided in the Enviro & Geo Insight Report indicates that there are no historic or current landfill sites (LA/EA/NRW records) or waste sites located within 250 m of the site.

4.5.3 There were 15 waste exemptions within 250m of the site. The closest three exemptions belong to a caravan traders some 79 m north-west and involve the storage of waste in secure containers, storage of waste in a secure place and storage of sludge. Other noted exemptions are upwards of 196 m from the site and are unlikely to have any impact.

4.5.4 There are five Environmental Agency recorded pollution incidents located within 250 m of the site. These are summarised in Table 4:

Location	Incident ID	Pollutant Description	Impact	Incident Date
58 m south-west	91078	Not Identified	Water: Minor	12/07/2002
			Land: No Impact	
			Air: No Impact	
74 m north-east	1802687	Household Waste	Water: No details	17/05/2018
			Land: Significant	
			Air: No Details	
115 m east	1104036	Not Identified	Water: No Details	18/04/2013
			Land: No Details	
			Air: No Details	
221 m west	1209648	Crude Sewage	Water: No Details	18/02/2014
			Land: No Impact	
			Air: Minor	
221 m west	1202427	Adhesives	Water: No Details	06/02/2014
			Land: Minor	
			Air: No Impact	

Table 4: Summary of EA recorded pollution incidents within 250 m of the site.

4.5.5 There are no NIHHS or COMAH sites located on/within 250 m of the site.

4.5.6 There are no Part A(1) or Part A(2)/B IPPC Authorised Activities located within 250 m of the site.

4.5.7 Enviro & Geo Insight Report states there are 18 potentially contaminative land uses located within 250 m of the site, five of which are located on-site. Those located on-site are summarised in Table 5:

Company	Address	Activity
Poultry Houses	Clwyd, LL18	Poultry Farming, Equipment and Supplies
Tony Peake Caravan Sales	Unit 4, Kingsway, Kinmel Bay, Clwyd, LL18 5HB	Vehicle Hire and Rental
Caravan Traders	St. Asaph Avenue, Kinmel Bay, Rhyl, Clwyd, LL18 5TU	New Vehicles
C B R Recycling Ltd	Kingsway, St Asaph Avenue, Kinmel Bay, Rhyl, Clywd, LL18 5HB	Recycling, Reclamation and Disposal
Blakoe Recovery Service	Kingsway, St Asaph Avenue, Kinmel Bay, Rhyl, Clywd, LL18 5HB	Vehicle Breakdown and Recovery Services

Table 5: Summary of Recent Potentially Contaminative Land Uses On Site



4.5.8 Other off-site industries are >70 m from the site and are unlikely to impact upon it.

4.5.9 There are two recorded historical potentially contaminative land uses for the site and these refer to nurseries.

4.6 Sensitive Land Uses

4.6.1 The site is not affected by any of the ecological systems identified as a statutory receptor in the DETR Circular 01/2006.

4.7 Radon

4.7.1 The Enviro & Geo Insight Report states that the site is not in a Radon Affected Area as less than 1% of properties are above the Action Level. Therefore, no radon protective measures are necessary.

4.8 Unexploded Ordnance

4.8.1 The regional unexploded bomb risk map from Zetica (2014) indicates that the site is at LOW risk from possible Unexploded Ordnance (UXO) resulting from the Second World War.

4.8.2 BEK does not consider any further assessment to be required with respect to UXO.

5. POTENTIAL POLLUTANT LINKAGES

5.1 General

5.1.1 This section identifies the potential sources of contamination along with specific contaminants of concern, pathways and receptors that may be associated with the site based on its known history and the current condition and with respect to the re-development of the site for residential use (with homegrown produce).

5.1.2 This information is used to develop a preliminary conceptual model which is a qualitative description of potential sources of environmental pollutants, the pathways by which they are transported and the receptors:

- i) Potential sources of contamination: these include any actual or potentially contaminating materials and activities, located either on or in the vicinity of the site
- ii) Potential pathways for contamination migration: these comprise the routes or mechanisms by which contaminants may migrate from the source to the receptor including environmental migration pathways and human health exposure pathways
- iii) Potential receptors of contamination: these include future land users, ecological systems, water resources and property

5.2 Potential Contaminants of Concern

5.2.1 Based on the earliest available maps dating from 1871 the site appeared to be vacant. Circa 1961, small buildings were noted to be present on-site in the west and north-east. The north of the site was also labelled a 'nursery' around this time. Five poultry houses were present in the east of the site circa 1986 and three more present circa 1989 in the north and the east. Additional buildings were also present in the north-east and to the west of the centre of the site circa 1989. The site then remained relatively unchanged until present day.

5.2.2 Information from Historical OS Maps and the site walkover indicate that the site has been used for poultry farming. It is possible that there may have been kerosene tanks used in firing boilers to heat buildings and it is possible that chemicals were stored on site. The presence/location of any such tank is currently unknown. Poultry Farms can also represent a potential source of microbial contamination including pathogens. However, pathogens are relatively short lived in their presence and infection of humans by slurry borne organisms is not common.

5.2.3 The historical use of the northern section of the site as a nursery may represent a potential source of pesticides, herbicides, metals (often in paint) and contamination from storage of machinery/fuel containers.

- 5.2.4 Industrial uses for the site (caravan trading/vehicle breakdown services/garage/recycling works) may represent a potential source of contamination.
- 5.2.5 The site walkover encountered suspected asbestos materials in the form of roofing panels, downpipes and guttering. Asbestos was commonly used in construction of poultry houses meaning it is possible that additional sources of asbestos are present on-site.
- 5.2.6 Additionally, a large stockpile of topsoil with anthropogenic fragments is located near the centre of the site.
- 5.2.7 Much of the site is covered with concrete hardstanding, which would minimise impact of contamination sources identified above to the underlying ground. However, consideration should still be given for the potential of localised contamination in areas where hardstanding may be absent.
- 5.2.8 Made ground is also likely to be present beneath hardstanding on site, as well as in areas of the site which have been developed and areas of former buildings not shown on maps. Informal tipping is also a possibility.
- 5.2.9 The potential contaminants of concern associated with made ground and the historic/current use of the site are presented below:

Contaminants Associated with General Made Ground	
Arsenic	Zinc
Cadmium	Sulphate
Chromium	Cyanide
Copper	Phenols
Lead	Polycyclic Aromatic Hydrocarbons (PAHs)
Mercury	Total Petroleum Hydrocarbons (TPH-CWG)
Nickel	Asbestos
Selenium	pH
Contaminants Associated with Poultry Farming	
Heavy Metals	Ammonia
Phosphate	Pathogens
Contaminants Associated with Plant Nurseries	
Herbicides	Pesticides
	Metals
Contaminants Associated with Kerosene Tanks & Fuel/Fuel Oil/Grease Spills	
Speciated Petroleum Hydrocarbons (TPH-CWG)	SVOCs
	VOCs
BTEX Compounds	MTBE

Table 6: Potential Contaminants of Concern

5.2.10 It should be noted that the above list represents a broad range of potential contaminants of concern. Additional contaminants of concern may be present if ground conditions differ from those anticipated and/or visual or olfactory evidence for contamination is encountered.

5.2.11 Potential sources of carbon dioxide and methane are considered to be minimal. However, if the site investigation/groundworks provide a significant thickness of made ground (>3 m) or natural strata which has a high organic content, it may be necessary to re-assess the potential risks from ground gas.

5.3 Potential Pathways

5.3.1 The pathways through which contaminants may reach receptors are in part dependent by the nature and behavior of the contaminant and the intended end use of the site as residential (with homegrown produce).

5.3.2 The following potential pathways have been identified with respect to the existing site condition, historical uses of the site, the environmental setting and the re-development of the site to residential (with homegrown produce) which are assessed in the conceptual model:

- Dermal contact of contaminated soil
- Ingestion of contaminated soil/home grown vegetables
- Inhalation of contamination dust
- Dissolution or suspension (leaching) of contaminants into pore waters affecting plant growth
- Indoor inhalation of organic vapours and ground gas
- Dissolution or suspension (leaching) of contaminants from site soils leading to lateral/vertical migration of contamination to nearby surface waters/underlying groundwater
- Dissolution or suspension (leaching) of contaminants from site soils leading to lateral migration within perched waters to off-site receptors. Potential significant pathways include more permeable layers within the made ground/natural strata, underground services and piles/foundations
- Contamination affecting the integrity of service pipelines by direct contact
- Buildings affected by direct contact with elevated concentrations of sulphate and/or extreme pH

5.4 Receptors

5.4.1 Potential site specific receptors that may be affected by contamination at the site are listed below:

Future Site Users

5.4.2 Future residents of the site could be at risk from contamination present at the site.

5.4.3 Potential risks are associated with ingestion of soils and home grown vegetables as well as inhalation of contaminated dust (including asbestos fibres) and dermal contact with contaminants of concern. These risks are all associated with the garden areas, or any open spaces of the proposed development.

5.4.4 In addition, risks associated with indoor inhalation of ground gas/organic vapours need to be assessed.

Construction Workers

5.4.5 The primary risks to construction workers are associated with shallow excavations as asbestos could be present. Asbestos fibers (if present) can be released into the atmosphere during earthworks.

5.4.6 Standard personal protective equipment and site specific risk assessments and method statements should reduce risks associated with other contaminants of concern due to short exposure duration.

Off Site Receptors

5.4.7 Off site receptors include residents within the vicinity of the site. Human health could be at risk if asbestos fibres are released during the development.

Flora

5.4.8 Heavy metals and fuels can be phytotoxic and if present can represent a potential risk to flora in the garden areas.

Buildings & Services

5.4.9 The integrity of service pipes can be affected by concentrations of organic contamination.

Controlled Waters

5.4.10 There are no surface water features located on site. The River Gele runs east-west some 8 m south of the southern site periphery and a minor water feature is present circa 9 m south-east of the site. These features represent significant receptors.

- 5.4.11 Tidal Flat Deposits located throughout the site are classified by the EA as a 'Secondary Undifferentiated' and any trapped water within these deposits is not considered to represent a potentially significant receptor.
- 5.4.12 The sandstone bedrock underlying the site is classified by the EA as a 'Principal' aquifer and represents a significant receptor.
- 5.4.13 The site is not located within a groundwater Source Protection Zone and there are no groundwater abstractions situated on/within 250 m of the site.
- 5.5 Preliminary Conceptual Model**
- 5.5.1 The identified potential sources of contaminants, pathways and receptors have been assessed to establish plausible pollutant linkages. All potentially significant pollutant linkages are detailed in Table B, in Appendix C.
- 5.6 Potentially Significant Pollutant Linkages**
- 5.6.1 A number of possible 'significant pollutant linkages' have been identified associated with the site.
- 5.6.2 Potential risks relating to the potential harm to the health of humans and/or domestic pets both on and off site due to the potential for direct contact with contaminants in the made ground and the ingestion of contaminated soil/dust (**Link 1**).
- 5.6.3 There is also the possibility of windblown particulates being inhaled by people/animals both on site and off site (**Link 2**).
- 5.6.4 Home grown produce could be affected by ground contamination (**Link 3**) and human health could be at risk by the ingestion of home grown produce affected by contamination (**Link 4**).
- 5.6.5 Human health could be at risk by the inhalation of ground gases (**Link 5**) and/or volatile contamination migrating into properties on site (**Link 6**).
- 5.6.6 Property (including services, flora and fauna) could be affected by direct contact to high concentrations of contaminants (**Link 7**).
- 5.6.7 Dissolution or suspension (leaching) of contaminants from site soils leading to lateral migration within perched permeable layers within the made ground/natural strata, underground services and foundations leading to impact on surface water quality in the River Gele running along the southern boundary some 8 m south of the site and the minor water feature circa 9 m south-east of the southern boundary. (**Link 8**).
- 5.6.8 Dissolution or suspension (leaching) of contaminants from site soils leading to impact on the underlying principal aquifer within the bedrock. Potential significant pathways include areas where clay is absent and locations of deep piles/foundations (**Link 9**).



GEO-ENVIRONMENTAL CONSULTING ENGINEERS

- 5.6.9 Site investigation is required to identify site specific conditions and assess the risks associated with each identified plausible pollutant linkage.

6. RECOMMENDATIONS

6.1 Based on the findings of the Preliminary Risk Assessment herein, a number of potential risks associated with contamination have been identified with respect to the re-development of the site to incorporate 83 residential dwellings with associated infrastructure.

6.2 Risks have been identified to human health, controlled waters, flora and property (including services) with respect to the change of use to residential.

6.3 Site investigation works will be required to characterize the shallow ground conditions and inform a quantitative risk assessment to fully assess the potential risks from contamination, assess re-use options for site won soils and inform the requirements for any remediation/mitigation works that may be required. The site investigation should also inform a geotechnical assessment to provide recommendations for foundation design.

6.4 BEK recommends that the following works should be undertaken:

Asbestos Survey & Removal

6.5 Suspected asbestos roof sheets, guttering and downpipes have been identified within a small unit in the north-east of the site and a warehouse between poultry houses east of the center of the site. It is also possible that further asbestos containing materials are present within poultry houses and other on-site buildings.

6.6 All poultry houses and on-site buildings should be subject to an asbestos survey and any asbestos should be removed in a legislatively compliant manner prior to the commencement of site demolition/clearance works.

Site Investigation

6.7 The investigation will comprise the excavation of a series of window sample boreholes and/or trial pits to prove the nature and thickness of any made ground present and characterise the natural strata. The exploratory locations will target specific areas of the site, based on historical activities/features and nontargeted to provide indicative site wide information. In-situ strength testing should also be carried out to inform foundation design.

6.8 The site investigation should be supervised by an experienced engineer who will be responsible for recording ground conditions encountered.

6.9 Representative samples will be recovered for chemical testing. All samples will be collected in appropriate sampling vessels, stored in a precooled cool box and dispatched to the laboratory within 24 hours.

Laboratory Testing

- 6.10 Following a review of the ground conditions encountered, a selection of samples will be tested for total concentrations of the contaminants of concern listed in Table 6 of this report. If visual or olfactory evidence of contamination is encountered during the site investigation then it may be necessary to undertake additional testing.
- 6.11 At this stage it is considered unlikely that samples will need to be tested for leachable concentrations. However, if the initial findings confirm significant contamination is present then these tests will be required as part of a controlled waters risk assessment.
- 6.12 In addition, if soils are to be removed from site to facilitate the development works then it may be necessary to test soils for Waste Acceptance Criteria (WAC).
- 6.13 All testing will be carried out by a UKAS accredited laboratory to MCERTS standard (where applicable).

Risk Assessment

- 6.14 The investigation findings will be assessed as part of a quantitative risk assessment to amend the conceptual site model and identify any potential significant pollutant linkages.
- 6.15 The assessment will be undertaken in accordance with current UK guidance and policy

Reporting

- 6.16 The investigation findings should be assessed in accordance with current UK policy and guidance to identify any potentially significant pollutant linkages and determine the requirements for mitigation and/or remediation.
- 6.17 The works undertaken will be detailed in a Site Investigation & Contamination Assessment report along with full justifications for the assessment and the conclusions/recommendations.

Other Considerations

- 6.18 We recommend that the site investigation works consider the requirements for a full geotechnical assessment to provide recommendations for foundation design as well as to quantify the potential risks from contamination.
- 6.19 We would also recommend that consideration is given to the requirements of the water supply service provider and the completion of the UKWIR risk assessment for water pipe selection.

APPENDIX A

Historical OS Maps

Site Details:

Land off Gwellyn Avenue,
Kinmel Bay, LL18 5HR

Client Ref: 7782-23060-AH
Report Ref: GS-QA4-BKF-3TQ-1V4
Grid Ref: 299297, 378773

Map Name: County Series

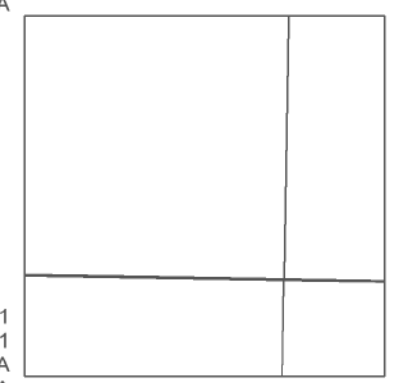
Map date: 1871-1872

Scale: 1:2,500

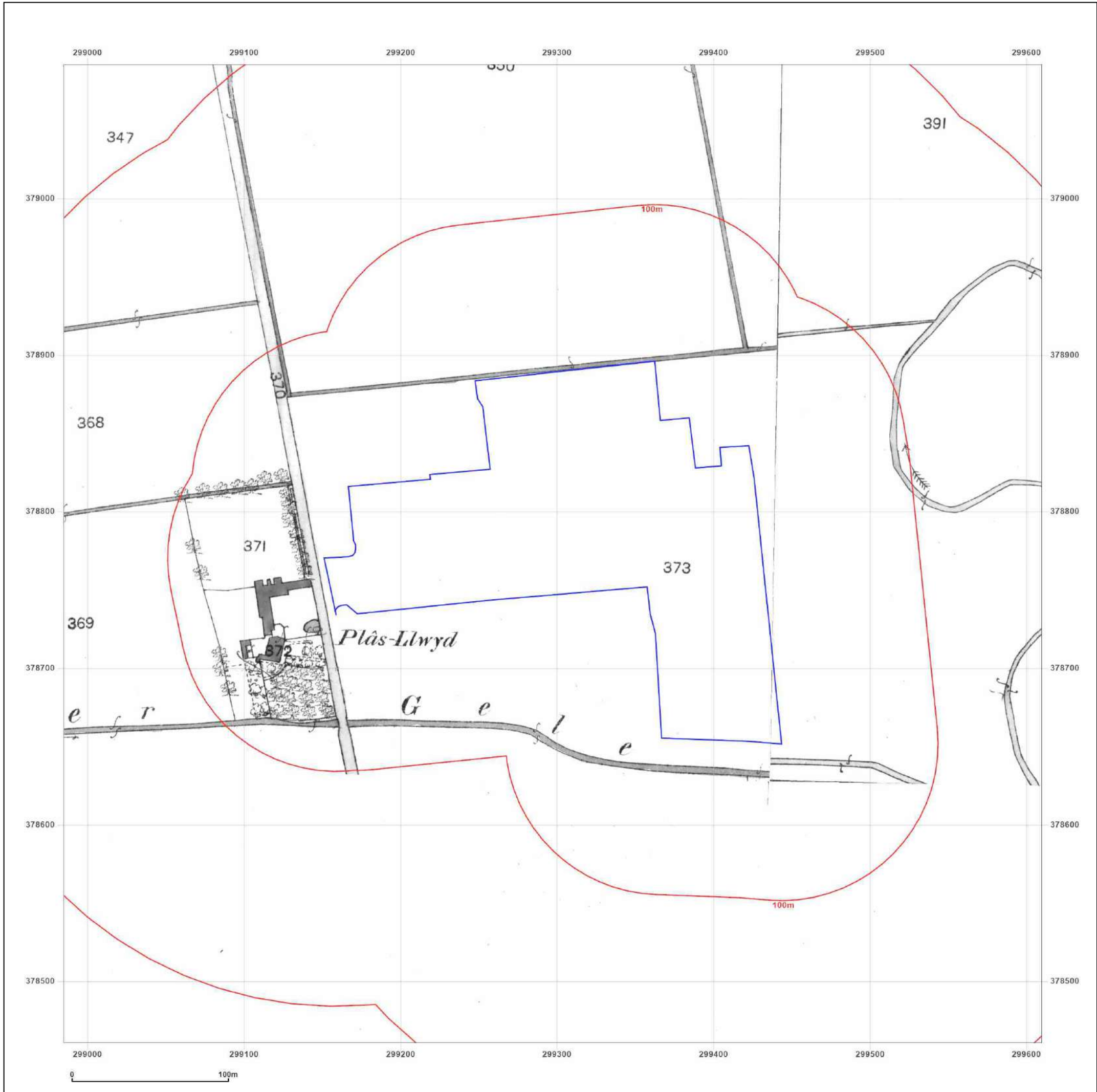
Printed at: 1:2,500



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



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



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

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 19 April 2023

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

Site Details:

Land off Gwellyn Avenue,
Kinmel Bay, LL18 5HR

Client Ref: 7782-23060-AH
Report Ref: GS-QA4-BKF-3TQ-1V4
Grid Ref: 299297, 378773

Map Name: County Series

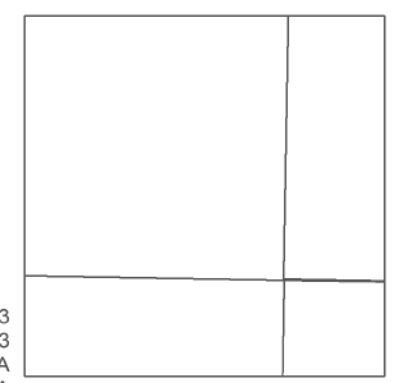
Map date: 1871-1873

Scale: 1:2,500

Printed at: 1:2,500



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



Surveyed 1873
Revised 1873
Edition N/A
Copyright N/A
Levelled N/A

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

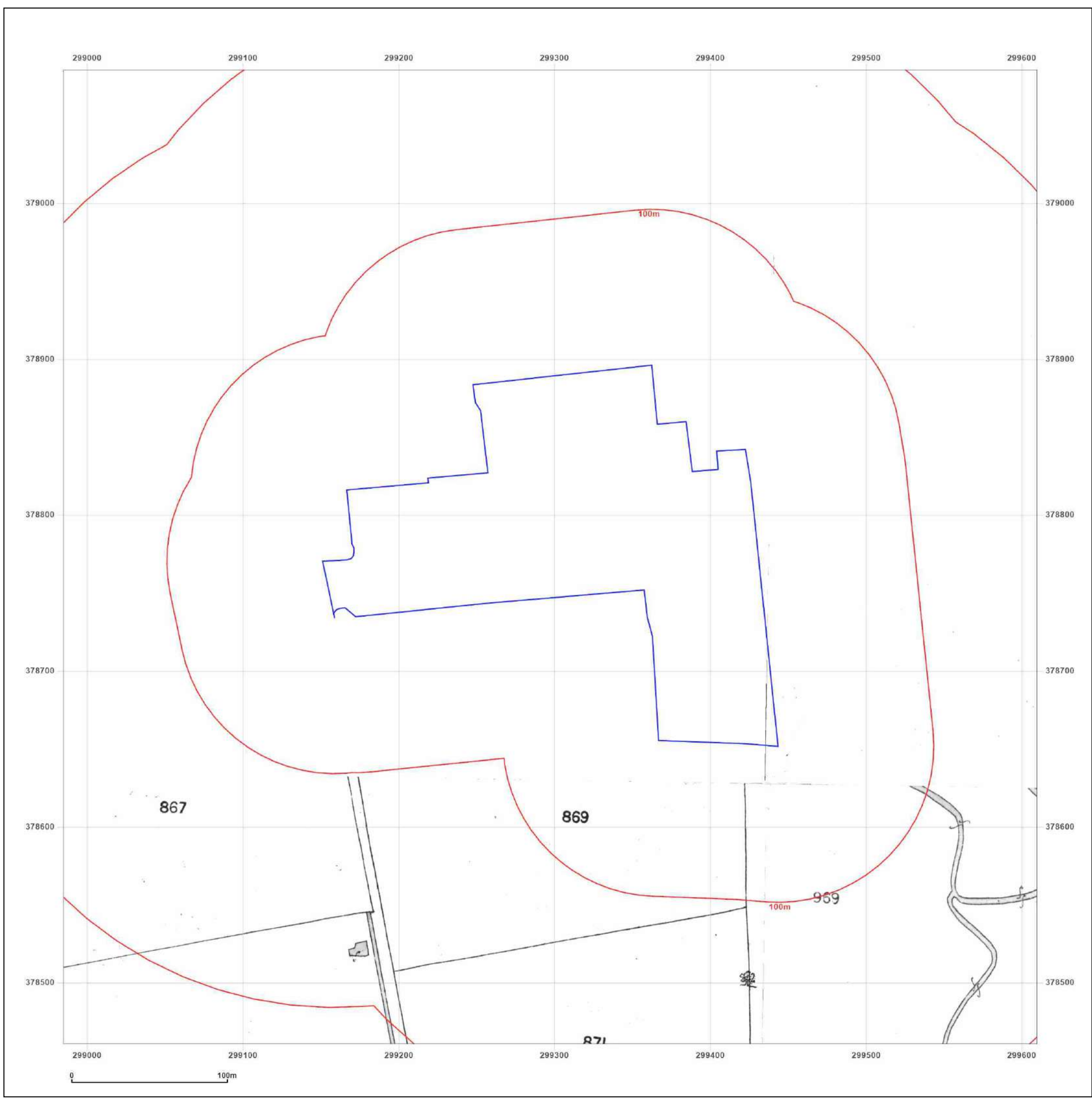


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 19 April 2023

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



Site Details:

Land off Gwellyn Avenue,
Kinmel Bay, LL18 5HR

Client Ref: 7782-23060-AH
Report Ref: GS-QA4-BKF-3TQ-1V4
Grid Ref: 299297, 378773

Map Name: County Series

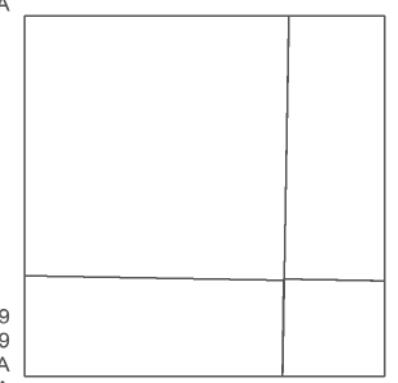
Map date: 1899

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1899
Revised 1899
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1899
Revised 1899
Edition N/A
Copyright N/A
Levelled N/A

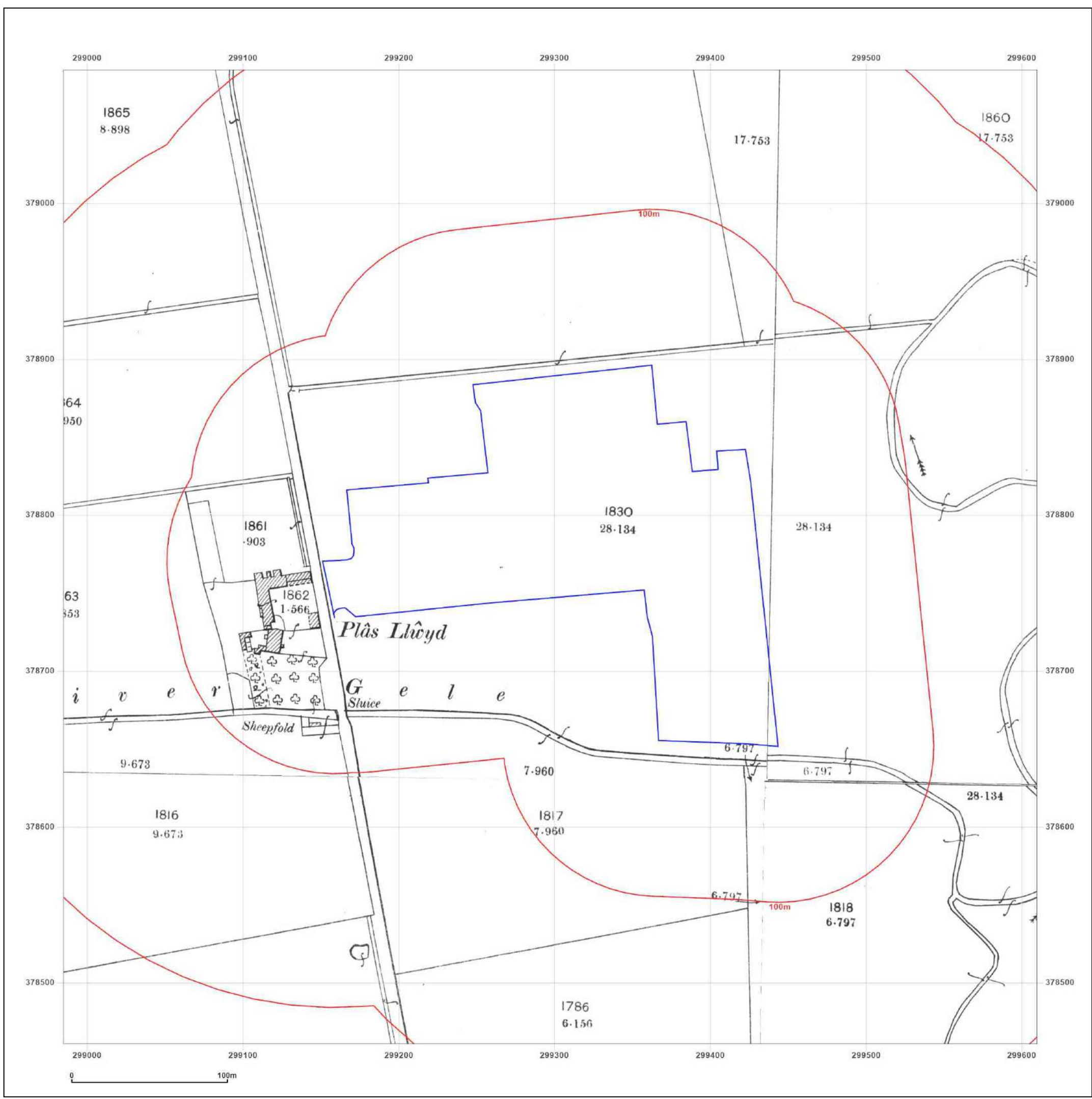


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 19 April 2023

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



Site Details:

Land off Gwellyn Avenue,
Kinmel Bay, LL18 5HR

Client Ref: 7782-23060-AH
Report Ref: GS-QA4-BKF-3TQ-1V4
Grid Ref: 299297, 378773

Map Name: County Series

Map date: 1913

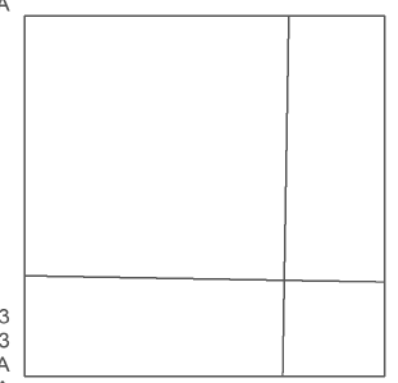
Scale: 1:2,500

Printed at: 1:2,500



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

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

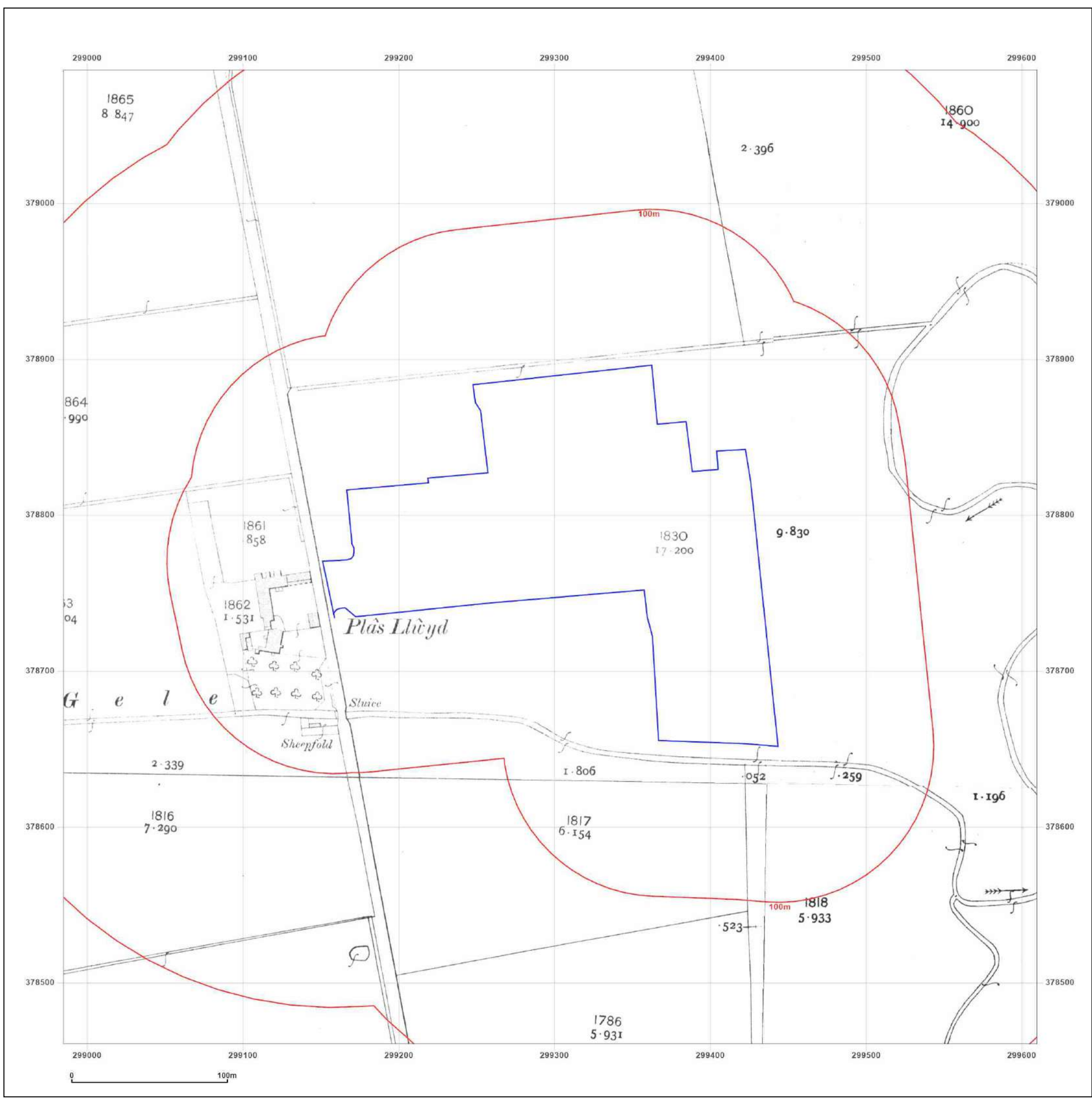


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 19 April 2023

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



Site Details:

Land off Gwellyn Avenue,
Kinmel Bay, LL18 5HR

Client Ref: 7782-23060-AH
Report Ref: GS-QA4-BKF-3TQ-1V4
Grid Ref: 299297, 378773

Map Name: National Grid

Map date: 1961

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1960
Revised 1960
Edition N/A
Copyright 1961
Levelled 1953

Surveyed 1960
Revised 1960
Edition N/A
Copyright 1961
Levelled 1955

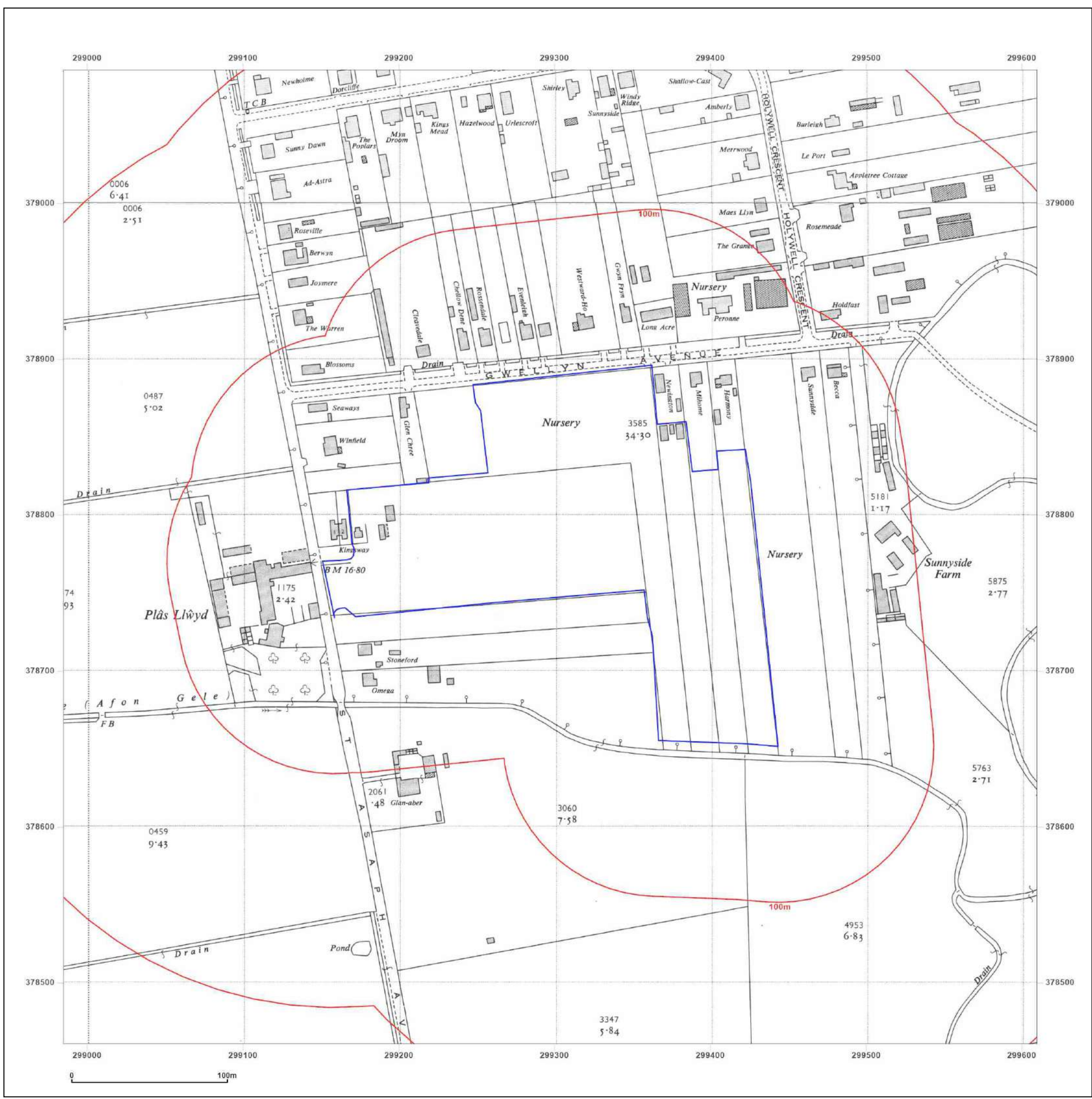


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 19 April 2023

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



Site Details:

Land off Gwellyn Avenue,
Kinmel Bay, LL18 5HR

Client Ref: 7782-23060-AH
Report Ref: GS-QA4-BKF-3TQ-1V4
Grid Ref: 299297, 378773

Map Name: National Grid

Map date: 1961

Scale: 1:2,500

Printed at: 1:2,500



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

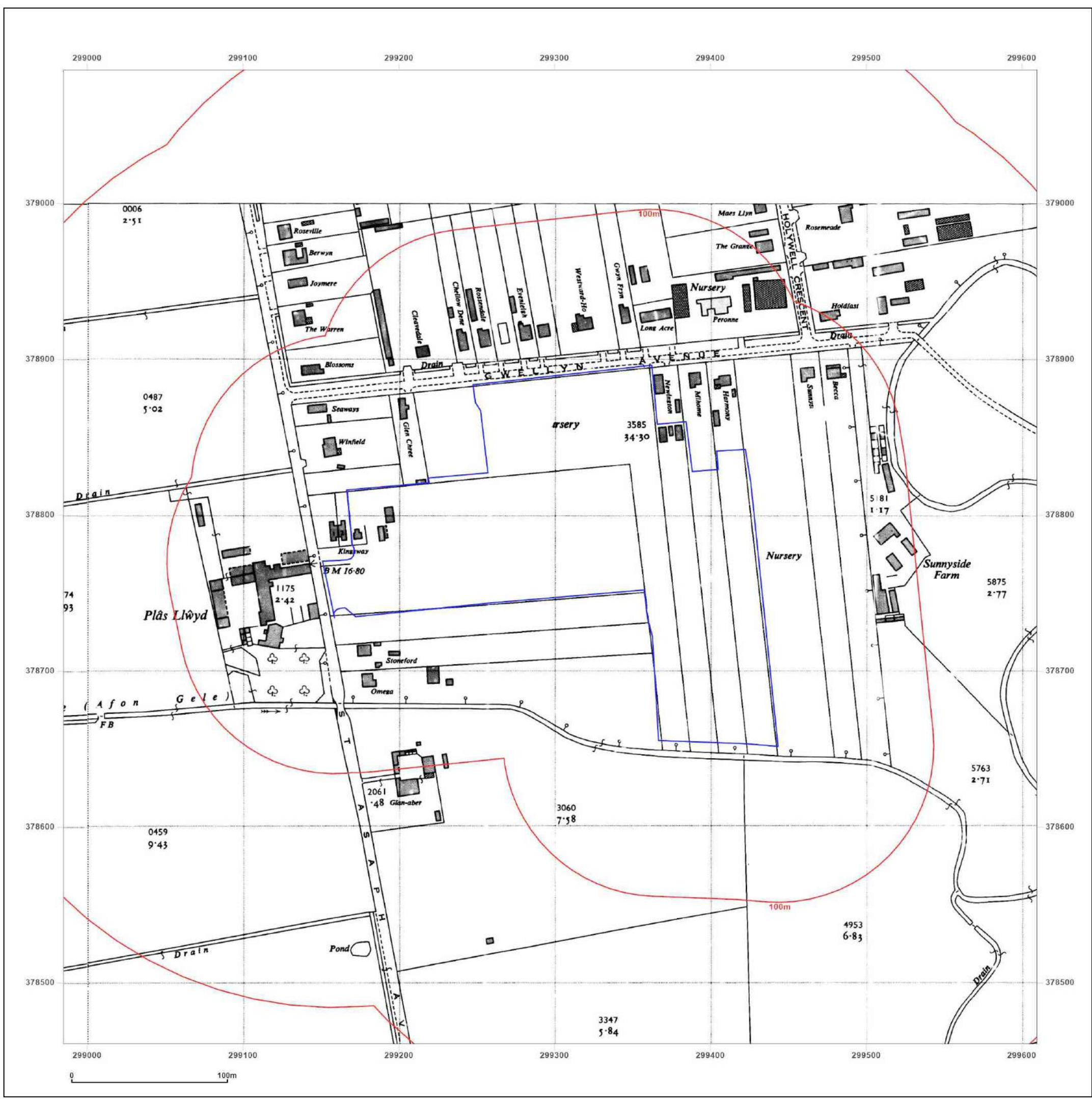


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 19 April 2023

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



Site Details:

Land off Gwellyn Avenue,
Kinmel Bay, LL18 5HR

Client Ref: 7782-23060-AH
Report Ref: GS-QA4-BKF-3TQ-1V4
Grid Ref: 299297, 378773

Map Name: National Grid

Map date: 1983-1986

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1970	Surveyed N/A
Revised 1985	Revised N/A
Edition N/A	Edition N/A
Copyright 1986	Copyright N/A
Levelled 1970	Levelled N/A

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

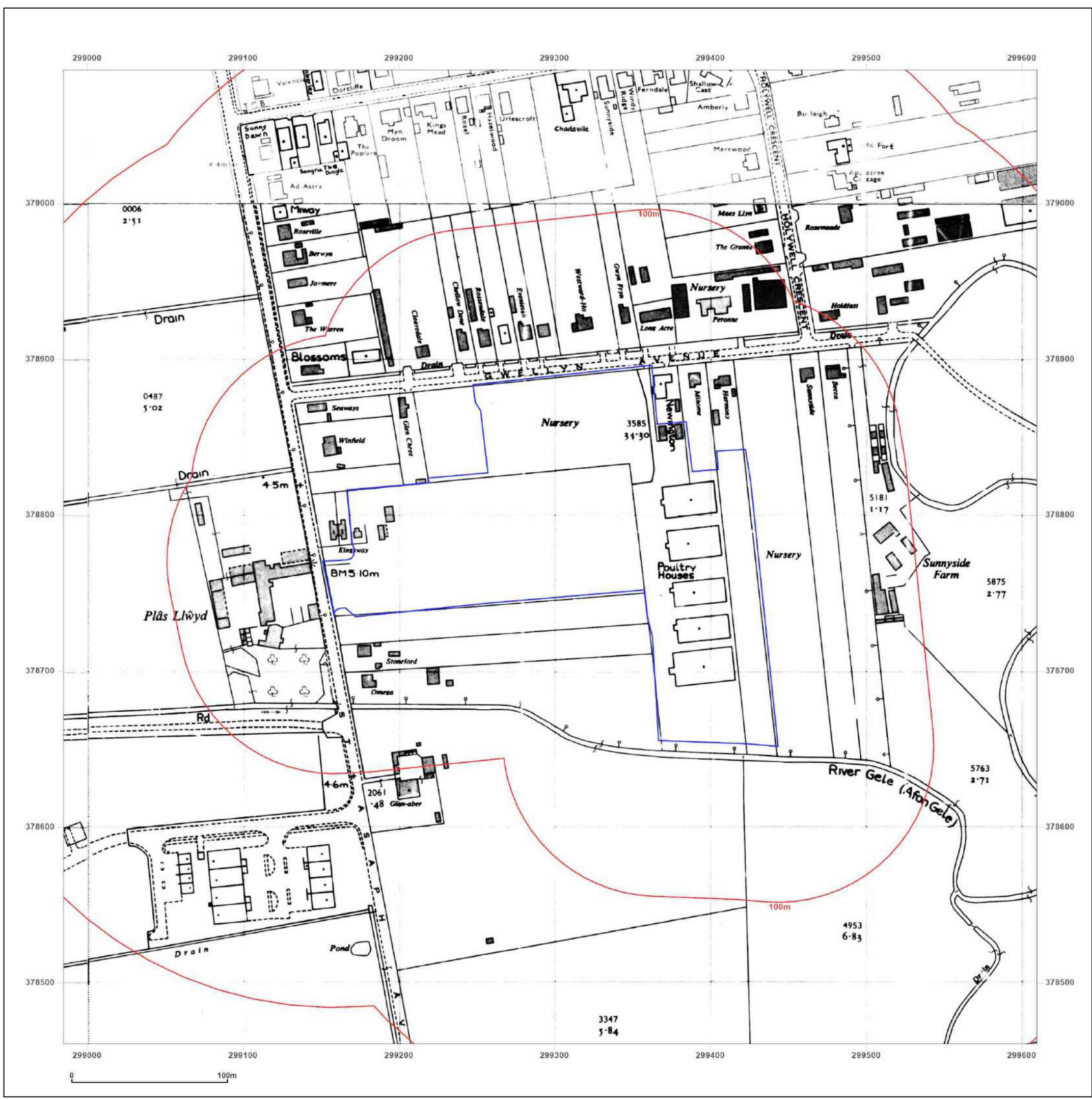


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 19 April 2023

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



Site Details:

Land off Gwellyn Avenue,
Kinmel Bay, LL18 5HR

Client Ref: 7782-23060-AH
Report Ref: GS-QA4-BKF-3TQ-1V4
Grid Ref: 299297, 378773

Map Name: National Grid

Map date: 1986

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1985
Revised 1985
Edition N/A
Copyright 1986
Levelled 1970

Surveyed 1955
Revised 1986
Edition N/A
Copyright 1986
Levelled 1955

Surveyed 1967
Revised 1986
Edition N/A
Copyright 1986
Levelled 1967

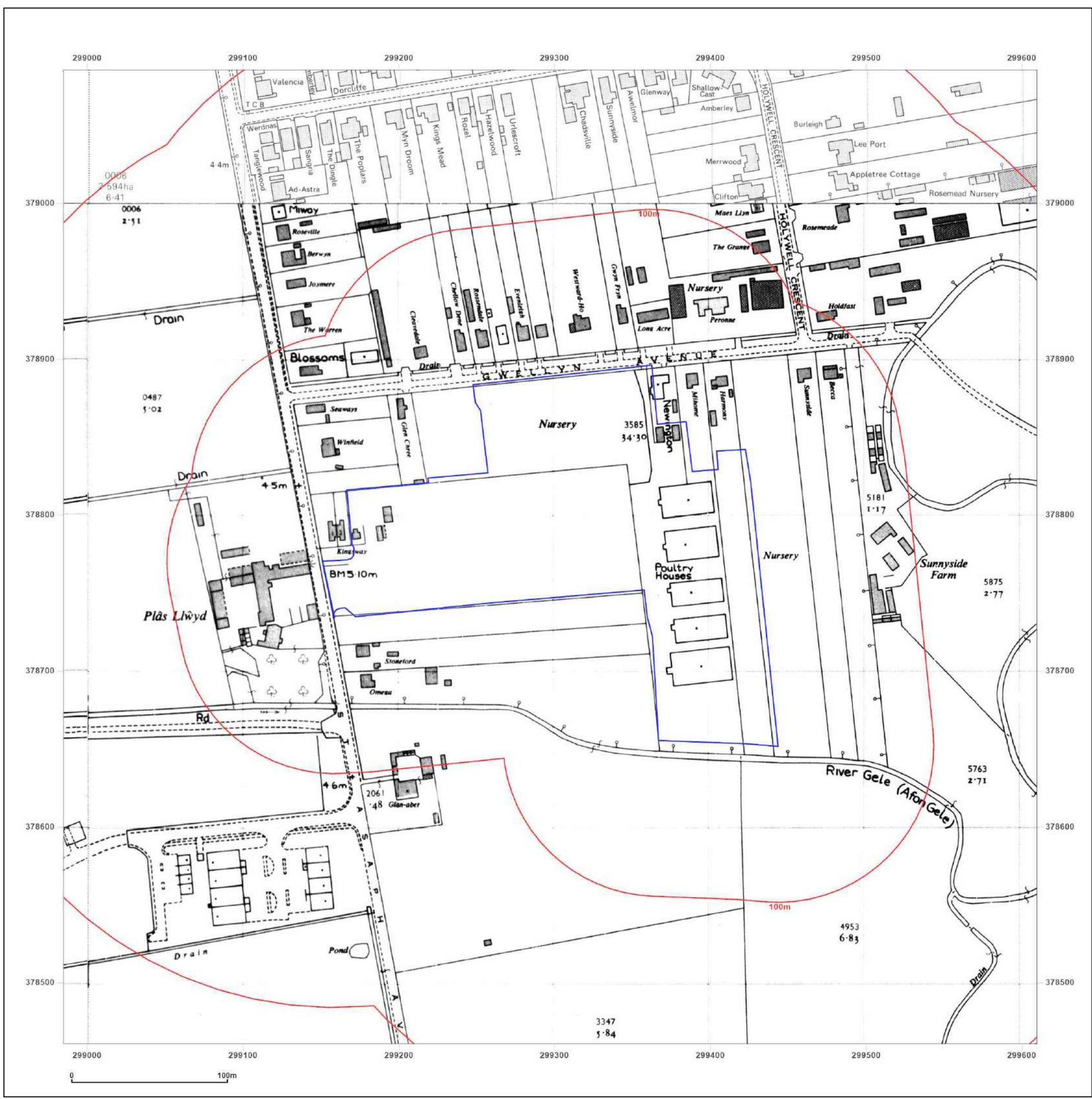


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 19 April 2023

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



Site Details:

Land off Gwellyn Avenue,
Kinmel Bay, LL18 5HR

Client Ref: 7782-23060-AH
Report Ref: GS-QA4-BKF-3TQ-1V4
Grid Ref: 299297, 378773

Map Name: National Grid

Map date: 1986-1989

Scale: 1:2,500

Printed at: 1:2,500



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

Surveyed 1955	Surveyed 1967
Revised 1989	Revised 1989
Edition N/A	Edition N/A
Copyright 1989	Copyright 1989
Levelled 1955	Levelled 1967

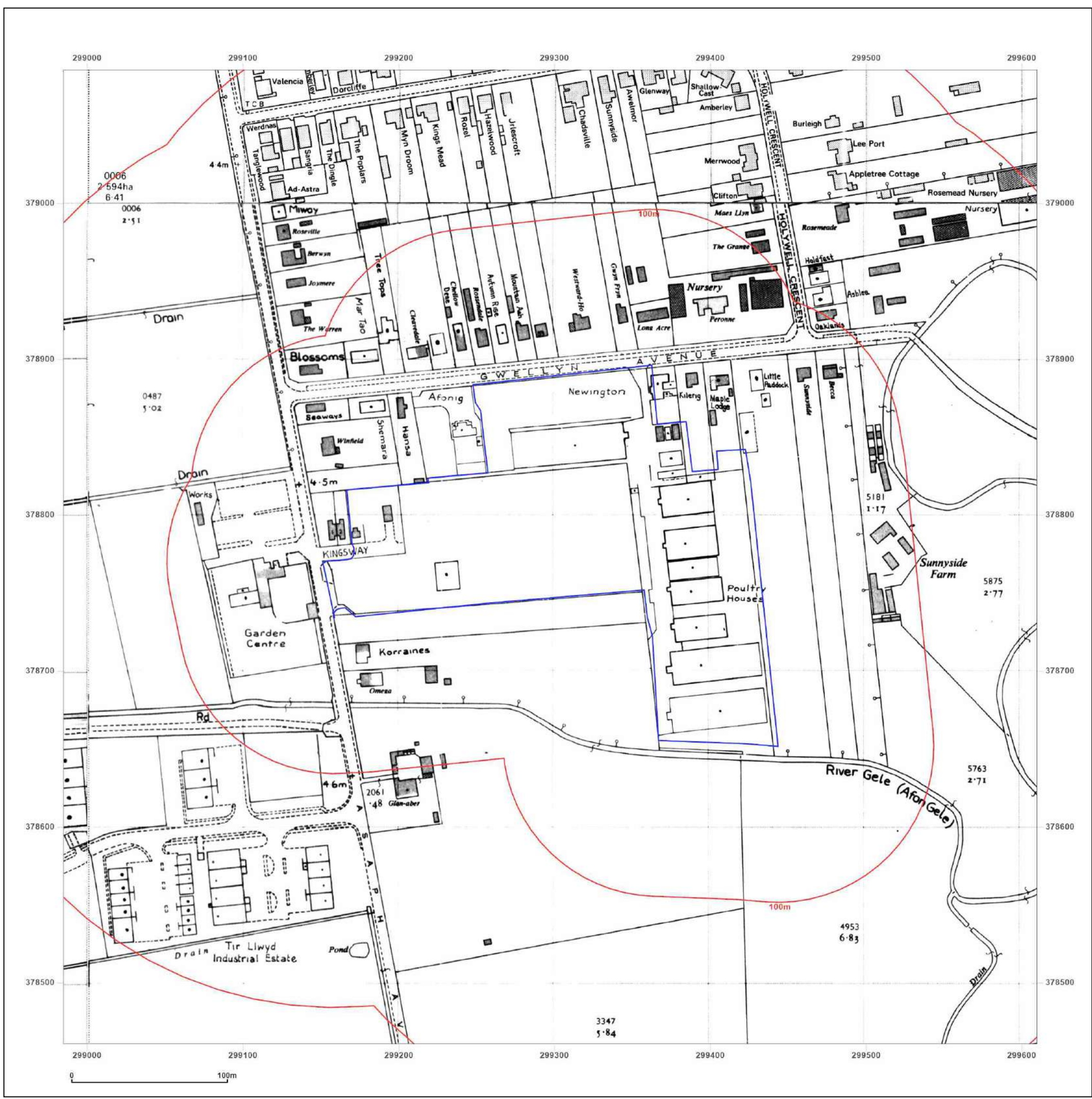


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 19 April 2023

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



Site Details:

Land off Gwellyn Avenue,
Kimmel Bay, LL18 5HR

Client Ref: 7782-23060-AH
Report Ref: GS-QA4-BKF-3TQ-1V4
Grid Ref: 299297, 378773

Map Name: National Grid

Map date: 1990-1994

Scale: 1:2,500

Printed at: 1:2,500



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

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

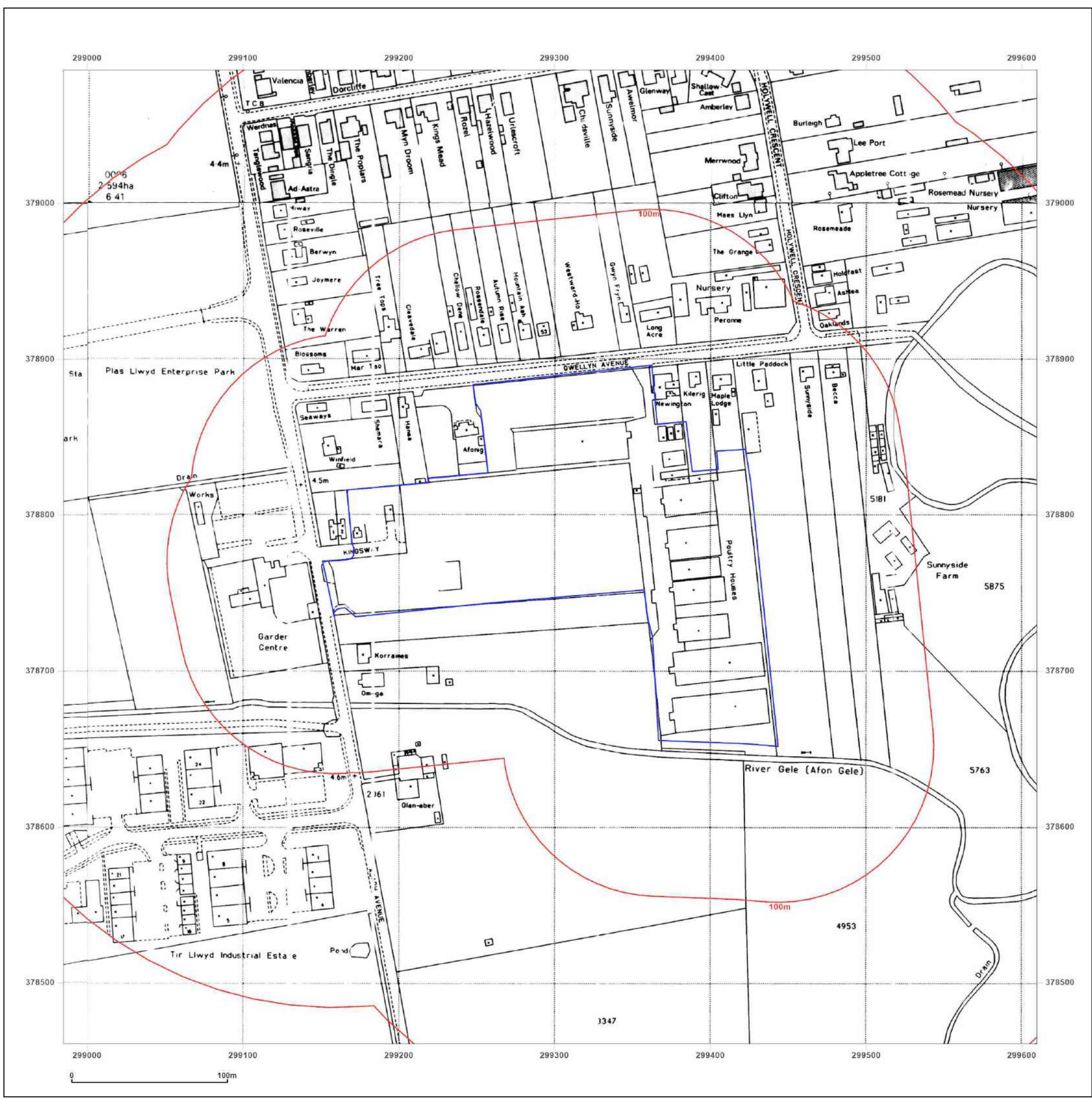


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 19 April 2023

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



Site Details:

Land off Gwellyn Avenue,
Kinmel Bay, LL18 5HR

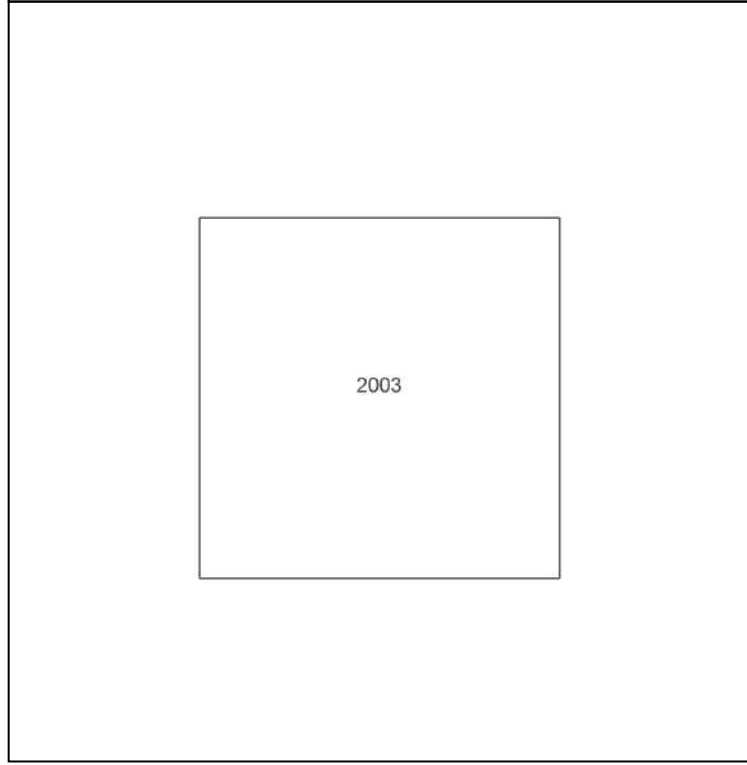
Client Ref: 7782-23060-AH
Report Ref: GS-QA4-BKF-3TQ-1V4
Grid Ref: 299297, 378773

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



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

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 19 April 2023

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



APPENDIX B

Enviro & Geo Insight Report

Land off Gwellyn Avenue, Kinmel Bay, LL18 5HR

Order Details

Date: 19/04/2023
Your ref: 7782-23060-AH
Our Ref: GS-GHV-PDI-PYK-6ZM

Site Details

Location: 299322 378799
Area: 3.65 ha
Authority: [Conwy County Borough Council](#)



© Crown copyright and database rights 2023. Ordnance Survey licence 100035207

Summary of findings

p. 2

Aerial image

p. 8

OS MasterMap site plan

p.13

groundsure.com/insightuserguide

Contact us with any questions at:

info@groundsure.com

01273 257 755

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	1.1	<u>Historical industrial land uses</u>	2	0	2	6	-
15	1.2	<u>Historical tanks</u>	0	0	0	3	-
15	1.3	<u>Historical energy features</u>	0	0	0	1	-
16	1.4	Historical petrol stations	0	0	0	0	-
16	1.5	Historical garages	0	0	0	0	-
16	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
17	2.1	<u>Historical industrial land uses</u>	3	0	3	10	-
18	2.2	<u>Historical tanks</u>	0	0	0	4	-
19	2.3	<u>Historical energy features</u>	0	0	0	1	-
19	2.4	Historical petrol stations	0	0	0	0	-
19	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
20	3.1	Active or recent landfill	0	0	0	0	-
20	3.2	Historical landfill (BGS records)	0	0	0	0	-
21	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
21	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
21	3.5	<u>Historical waste sites</u>	0	0	0	1	-
22	3.6	Licensed waste sites	0	0	0	0	-
22	3.7	<u>Waste exemptions</u>	0	0	15	7	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
25	4.1	<u>Recent industrial land uses</u>	5	0	13	-	-
27	4.2	Current or recent petrol stations	0	0	0	0	-
27	4.3	Electricity cables	0	0	0	0	-
27	4.4	Gas pipelines	0	0	0	0	-
27	4.5	Sites determined as Contaminated Land	0	0	0	0	-



27	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
28	4.7	Regulated explosive sites	0	0	0	0	-
28	4.8	Hazardous substance storage/usage	0	0	0	0	-
28	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
28	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
28	4.11	<u>Licensed pollutant release (Part A(2)/B)</u>	0	0	0	1	-
29	4.12	Radioactive Substance Authorisations	0	0	0	0	-
29	4.13	<u>Licensed Discharges to controlled waters</u>	0	0	2	4	-
30	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
30	4.15	Pollutant release to public sewer	0	0	0	0	-
30	4.16	List 1 Dangerous Substances	0	0	0	0	-
31	4.17	List 2 Dangerous Substances	0	0	0	0	-
31	4.18	<u>Pollution Incidents (EA/NRW)</u>	0	0	5	9	-
32	4.19	Pollution inventory substances	0	0	0	0	-
33	4.20	Pollution inventory waste transfers	0	0	0	0	-
33	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
34	5.1	<u>Superficial aquifer</u>	Identified (within 500m)				
35	5.2	<u>Bedrock aquifer</u>	Identified (within 500m)				
36	5.3	<u>Groundwater vulnerability</u>	Identified (within 50m)				
37	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
37	5.5	Groundwater vulnerability- local information	None (within 0m)				
38	5.6	<u>Groundwater abstractions</u>	0	0	0	0	2
39	5.7	<u>Surface water abstractions</u>	0	0	0	4	1
40	5.8	Potable abstractions	0	0	0	0	0
41	5.9	Source Protection Zones	0	0	0	0	-
41	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
42	6.1	<u>Water Network (OS MasterMap)</u>	0	4	7	-	-



43	6.2	<u>Surface water features</u>	0	2	5	-	-
44	6.3	<u>WFD Surface water body catchments</u>	1	-	-	-	-
44	6.4	<u>WFD Surface water bodies</u>	0	1	0	-	-
44	6.5	<u>WFD Groundwater bodies</u>	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
46	7.1	<u>Risk of flooding from rivers and the sea</u>	High (within 50m)				
47	7.2	<u>Historical Flood Events</u>	1	0	2	-	-
47	7.3	<u>Flood Defences</u>	0	2	3	-	-
48	7.4	<u>Areas Benefiting from Flood Defences</u>	1	1	0	-	-
48	7.5	Flood Storage Areas	0	0	0	-	-
49	7.6	<u>Flood Zone 2</u>	Identified (within 50m)				
50	7.7	<u>Flood Zone 3</u>	Identified (within 50m)				
Page	Section	Surface water flooding					
51	8.1	<u>Surface water flooding</u>	1 in 30 year, 0.1m - 0.3m (within 50m)				
Page	Section	Groundwater flooding					
53	9.1	<u>Groundwater flooding</u>	High (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
54	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
55	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
55	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
55	10.4	Special Protection Areas (SPA)	0	0	0	0	0
55	10.5	National Nature Reserves (NNR)	0	0	0	0	0
56	10.6	<u>Local Nature Reserves (LNR)</u>	0	0	0	0	2
56	10.7	<u>Designated Ancient Woodland</u>	0	0	0	0	4
56	10.8	Biosphere Reserves	0	0	0	0	0
57	10.9	Forest Parks	0	0	0	0	0
57	10.10	Marine Conservation Zones	0	0	0	0	0
57	10.11	Green Belt	0	0	0	0	0
57	10.12	Proposed Ramsar sites	0	0	0	0	0



57	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
58	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
58	10.15	Nitrate Sensitive Areas	0	0	0	0	0
58	10.16	<u>Nitrate Vulnerable Zones</u>	0	0	0	0	1
59	10.17	SSSI Impact Risk Zones	0	-	-	-	-
59	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
60	11.1	World Heritage Sites	0	0	0	-	-
60	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
60	11.3	National Parks	0	0	0	-	-
60	11.4	Listed Buildings	0	0	0	-	-
61	11.5	Conservation Areas	0	0	0	-	-
61	11.6	Scheduled Ancient Monuments	0	0	0	-	-
61	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
62	12.1	<u>Agricultural Land Classification</u>	Grade 3b (within 250m)				
63	12.2	Open Access Land	0	0	0	-	-
63	12.3	Tree Felling Licences	0	0	0	-	-
63	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	<u>10k Availability</u>	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	<u>50k Availability</u>	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	<u>Superficial geology (50k)</u>	1	0	0	0	-
72	15.5	<u>Superficial permeability (50k)</u>	Identified (within 50m)				
72	15.6	Landslip (50k)	0	0	0	0	-
72	15.7	Landslip permeability (50k)	None (within 50m)				
73	15.8	<u>Bedrock geology (50k)</u>	1	0	0	0	-
74	15.9	<u>Bedrock permeability (50k)</u>	Identified (within 50m)				
74	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
75	16.1	<u>BGS Boreholes</u>	0	0	2	-	-
Page	Section	Natural ground subsidence					
76	17.1	<u>Shrink swell clays</u>	Very low (within 50m)				
77	17.2	<u>Running sands</u>	Moderate (within 50m)				
78	17.3	<u>Compressible deposits</u>	Moderate (within 50m)				
79	17.4	<u>Collapsible deposits</u>	Negligible (within 50m)				
80	17.5	<u>Landslides</u>	Very low (within 50m)				
81	17.6	<u>Ground dissolution of soluble rocks</u>	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
82	18.1	Natural cavities	0	0	0	0	-
83	18.2	BritPits	0	0	0	0	-
83	18.3	<u>Surface ground workings</u>	0	0	3	-	-
83	18.4	Underground workings	0	0	0	0	0
83	18.5	Historical Mineral Planning Areas	0	0	0	0	-



84	18.6	Non-coal mining	0	0	0	0	0
84	18.7	Mining cavities	0	0	0	0	0
84	18.8	JPB mining areas	None (within 0m)				
84	18.9	Coal mining	None (within 0m)				
84	18.10	Brine areas	None (within 0m)				
85	18.11	Gypsum areas	None (within 0m)				
85	18.12	Tin mining	None (within 0m)				
85	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
86	19.1	Radon	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
88	20.1	BGS Estimated Background Soil Chemistry	1	0	-	-	-
88	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
88	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
89	21.1	Underground railways (London)	0	0	0	-	-
89	21.2	Underground railways (Non-London)	0	0	0	-	-
89	21.3	Railway tunnels	0	0	0	-	-
89	21.4	Historical railway and tunnel features	0	0	0	-	-
89	21.5	Royal Mail tunnels	0	0	0	-	-
90	21.6	Historical railways	0	0	0	-	-
90	21.7	Railways	0	0	0	-	-
90	21.8	Crossrail 1	0	0	0	0	-
90	21.9	Crossrail 2	0	0	0	0	-
90	21.10	HS2	0	0	0	0	-



Recent aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2023. All Rights Reserved.

Capture Date: 06/05/2020

Site Area: 3.65ha



Recent site history - 2018 aerial photograph



Capture Date: 26/07/2018

Site Area: 3.65ha



Recent site history - 2013 aerial photograph



Capture Date: 26/05/2013

Site Area: 3.65ha



Recent site history - 2003 aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2023. All Rights Reserved.

Capture Date: 31/07/2003

Site Area: 3.65ha



Recent site history - 2000 aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2023. All Rights Reserved.

Capture Date: 22/07/2000

Site Area: 3.65ha



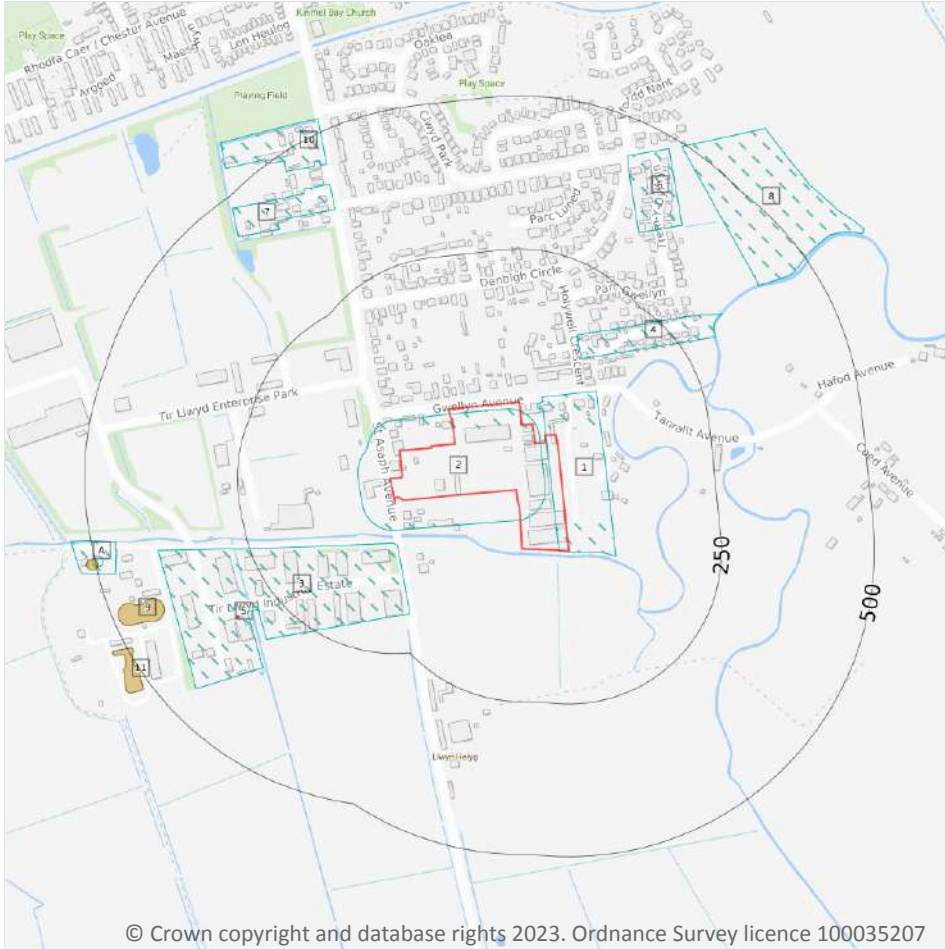
OS MasterMap site plan



Site Area: 3.65ha



1 Past land use



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features

1.1 Historical industrial land uses

Records within 500m **10**

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 14**

ID	Location	Land use	Dates present	Group ID
1	On site	Nursery	1980	214097

ID	Location	Land use	Dates present	Group ID
2	On site	Nursery	1964 - 1980	235601
3	70m SW	Industrial Estate	1990	213405
4	124m NE	Nursery	1980 - 1990	243873
6	339m NE	Nursery	1980	214099
7	377m NW	Unspecified Works	1980 - 1990	235242
8	411m NE	Nursery	1980 - 1990	242018
10	448m NW	Nursery	1990	214098
A	461m W	Sewage Works	1980 - 1990	233072
A	487m W	Sewage Tank	1980 - 1990	237072

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

3

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 ungrouped 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 14**

ID	Location	Land use	Dates present	Group ID
9	415m W	Tanks	1996	31371
11	492m SW	Tanks	1996	31372
A	496m W	Unspecified Tank	1986 - 1989	31866

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

1

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 ungrouped 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 14**

ID	Location	Land use	Dates present	Group ID
5	316m SW	Electricity Substation	1996	15850

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 ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

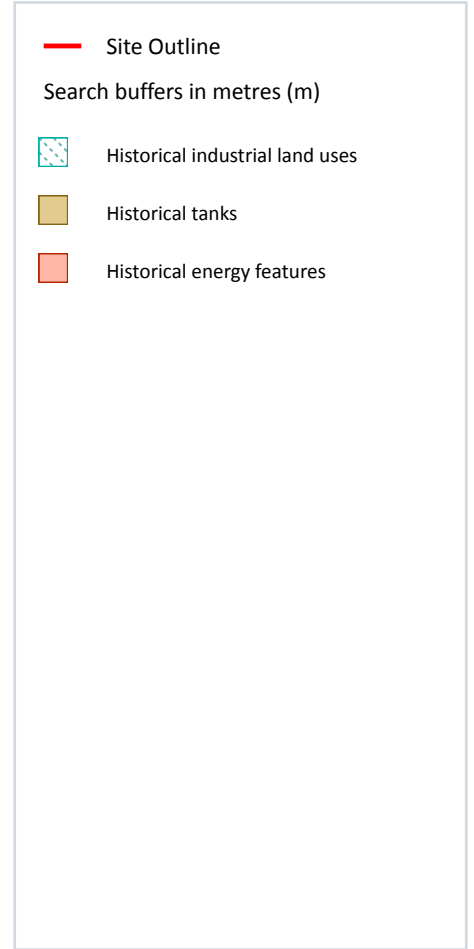
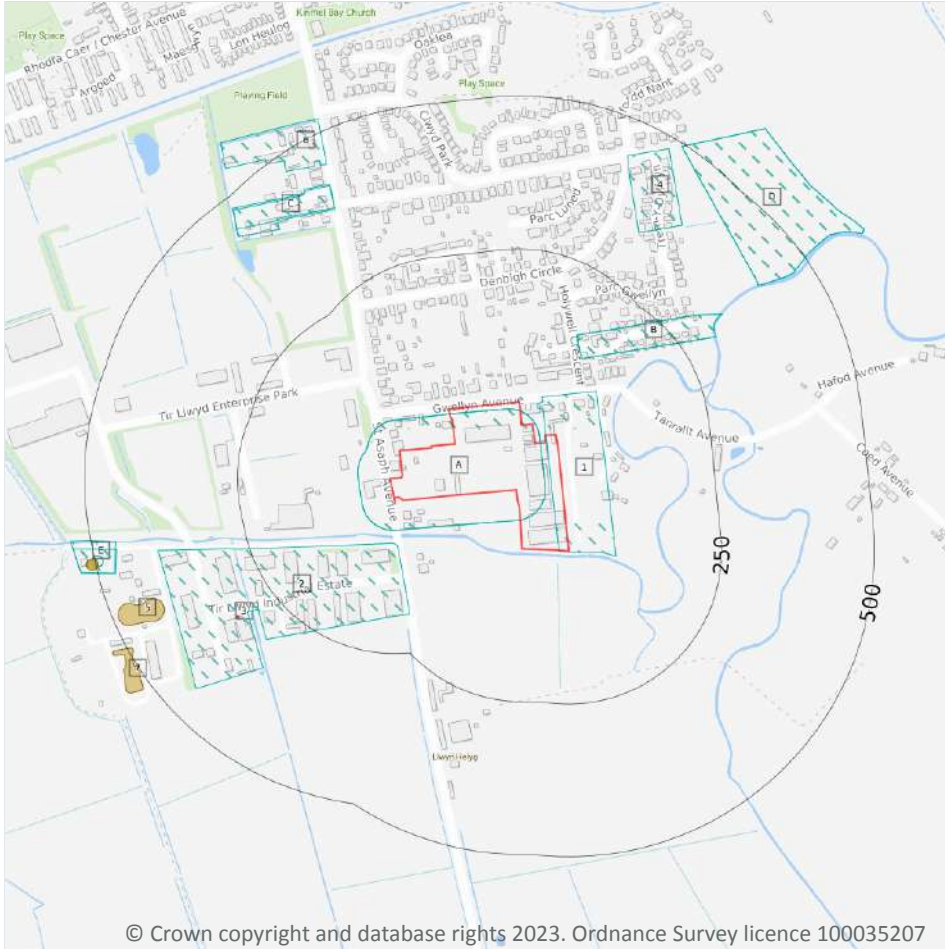
Records within 500m

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



2.1 Historical industrial land uses

Records within 500m

16

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 17**

ID	Location	Land Use	Date	Group ID
1	On site	Nursery	1980	214097
A	On site	Nursery	1964	235601
A	On site	Nursery	1980	235601

ID	Location	Land Use	Date	Group ID
2	70m SW	Industrial Estate	1990	213405
B	124m NE	Nursery	1980	243873
B	124m NE	Nursery	1990	243873
4	339m NE	Nursery	1980	214099
C	377m NW	Unspecified Works	1990	235242
C	380m NW	Unspecified Works	1980	235242
D	411m NE	Nursery	1980	242018
D	411m NE	Nursery	1990	242018
6	448m NW	Nursery	1990	214098
E	461m W	Sewage Works	1980	233072
E	462m W	Sewage Works	1990	233072
E	487m W	Sewage Tank	1980	237072
E	487m W	Sewage Tank	1990	237072

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

4

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

Features are displayed on the Past land use - un-grouped map on **page 17**

ID	Location	Land Use	Date	Group ID
5	415m W	Tanks	1996	31371
7	492m SW	Tanks	1996	31372
E	496m W	Unspecified Tank	1986	31866
E	496m W	Unspecified Tank	1989	31866

This data is sourced from Ordnance Survey / Groundsure.



2.3 Historical energy features

Records within 500m

1

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 17**

ID	Location	Land Use	Date	Group ID
3	316m SW	Electricity Substation	1996	15850

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m

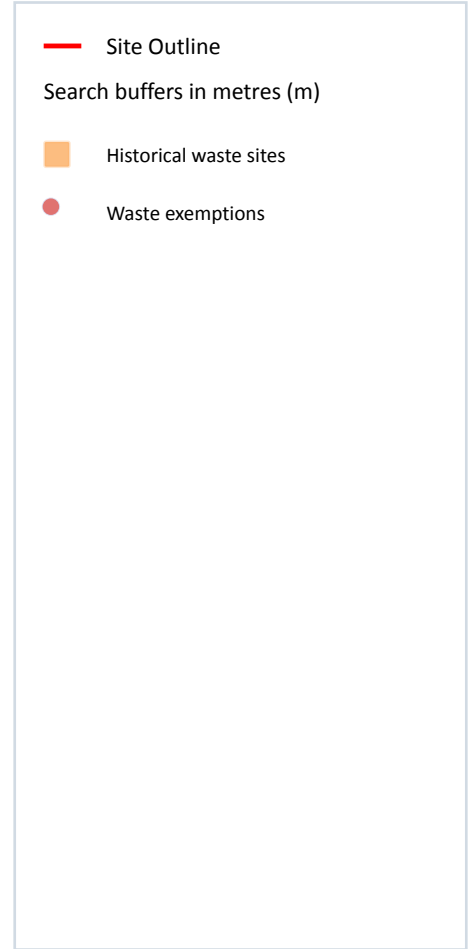
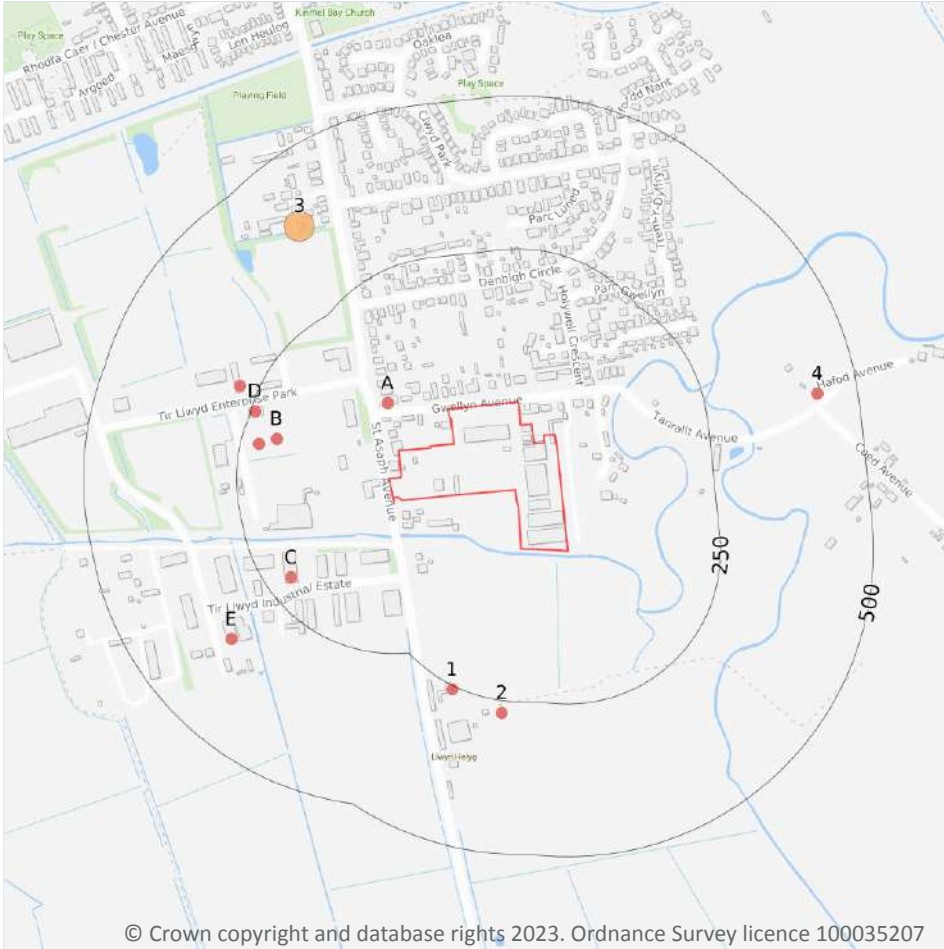
0

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

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



3.1 Active or recent landfill

Records within 500m

0

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

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

3.2 Historical landfill (BGS records)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m

0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m

0

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

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

3.5 Historical waste sites

Records within 500m

1

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

Features are displayed on the Waste and landfill map on **page 20**

ID	Location	Address	Further Details	Date
3	361m NW	Site Address: C C I Business Park,1, St. Asaph Avenue, Kinmel Bay, RHYL, Clwyd, LL18 5HA	Type of Site: Waste Transfer Station Planning application reference: 0/37417 Description: Scheme comprises change of use from metal workers workshop to waste transfer station, altered roof and elevations and new boundary wall. An application (ref: 0/37417) for detailed planning permission was withdrawn from Conwy County B.C. A detailed planning application has been withdrawn. Data source: Historic Planning Application Data Type: Point	-

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

22

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 20**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	79m NW	Peake Caravans Ltd, Peake Caravans Ltd, Kingsway, Kinmel Bay, Conwy, LL185HB	NRW-WME028979	Storing waste exemption	Not on a farm	Storage of waste in secure containers
A	79m NW	Peake Caravans Ltd, Peake Caravans Ltd, Kingsway, Kinmel Bay, Conwy, LL185HB	NRW-WME028979	Storing waste exemption	Not on a farm	Storage of waste in a secure place
A	79m NW	Peake Caravans Ltd, Peake Caravans Ltd, Kingsway, Kinmel Bay, Conwy, LL185HB	NRW-WME028979	Storing waste exemption	Not on a farm	Storage of sludge
B	196m W	Pure Residential and Commercial Limited, K & C Construction Ltd, Unit 2, Business Hub, Tir Llwyd Enterprise Park, Kinmel Bay, Rhyl, Conwy, LL18 5JZ	NRW-WME068866	Using waste exemption	Not on a farm	Use of waste in construction
C	211m SW	DEAKIN ELECTRICAL, Unit 23, Tir Llwyd Industrial Estate, Kinmel Bay, Rhyl, Conwy, LL18 5JA	NRW-WME049831	Storing waste exemption	Not on a farm	Storage of waste in a secure place
C	211m SW	Recycle Cymru Ltd, Unit 28a, Tir Llwyd Industrial Estate, Kinmel Bay, Rhyl, Conwy, LL185JA	NRW-WME037315	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)



ID	Location	Site	Reference	Category	Sub-Category	Description
C	211m SW	Recycle Cymru Ltd, Unit 28a, Tir Llwyd Industrial Estate, Kinmel Bay, Rhyl, Conwy, LL185JA	NRW-WME037315	Storing waste exemption	Not on a farm	Storage of waste in a secure place
B	220m W	Pure Residential and Commercial Limited, Enterprise House, Tir Llwyd Enterprise Park, Kinmel Bay, Rhyl, Conwy, LL18 5JZ	NRW-WME064817	Using waste exemption	Not on a farm	Use of waste in construction
D	244m W	K & C Construction, K & C Construction Ltd, Unit 2, Business Hub, Tir Llwyd Enterprise Park, Kinmel Bay, Rhyl, Conwy, LL18 5JZ	NRW-WME066836	Using waste exemption	Waste Exemption - Agricultural and Non-Agricultural	Use of waste in construction
D	244m W	Pure Residential and Commercial Limited, Branwen 3, Tir Llwyd Enterprise Park, Kinmel Bay, Conwy, LL18 5JZ	NRW-WME039123	Using waste exemption	Not on a farm	Use of waste in construction
D	244m W	Pure Residential and Commercial Ltd, Pwyll 6, Tir Llwyd Enterprise Park, Kinmel Bay, Conwy, LL18 5JZ	NRW-WME040175	Using waste exemption	Not on a farm	Use of waste in construction
D	244m W	Pure Residential and Commercial Ltd, Pwyll 8, Tir Llwyd Enterprise Park, Kinmel Bay, Conwy, LL18 5JZ	NRW-WME040176	Using waste exemption	Not on a farm	Use of waste in construction
D	244m W	Pure Residential and Commercial Ltd, Pwyll 10, Tir Llwyd Enterprise park, Kinmel Bay, Conwy, LL18 5JZ	NRW-WME040177	Using waste exemption	Not on a farm	Use of waste in construction
D	244m W	Pure Residential and Commercial Ltd, Enterprise House, Tir Llwyd Enterprise Park, Kinmel Bay, Conwy, LL185JZ	NRW-WME029116	Using waste exemption	Not on a farm	Use of waste in construction
D	244m W	Pure Residential and Commercial Limited, Branwen 1, Tir Llwyd Enterprise Park, Kinmel Bay, Conwy, LL185JZ	NRW-WME034756	Using waste exemption	Not on a farm	Use of waste in construction

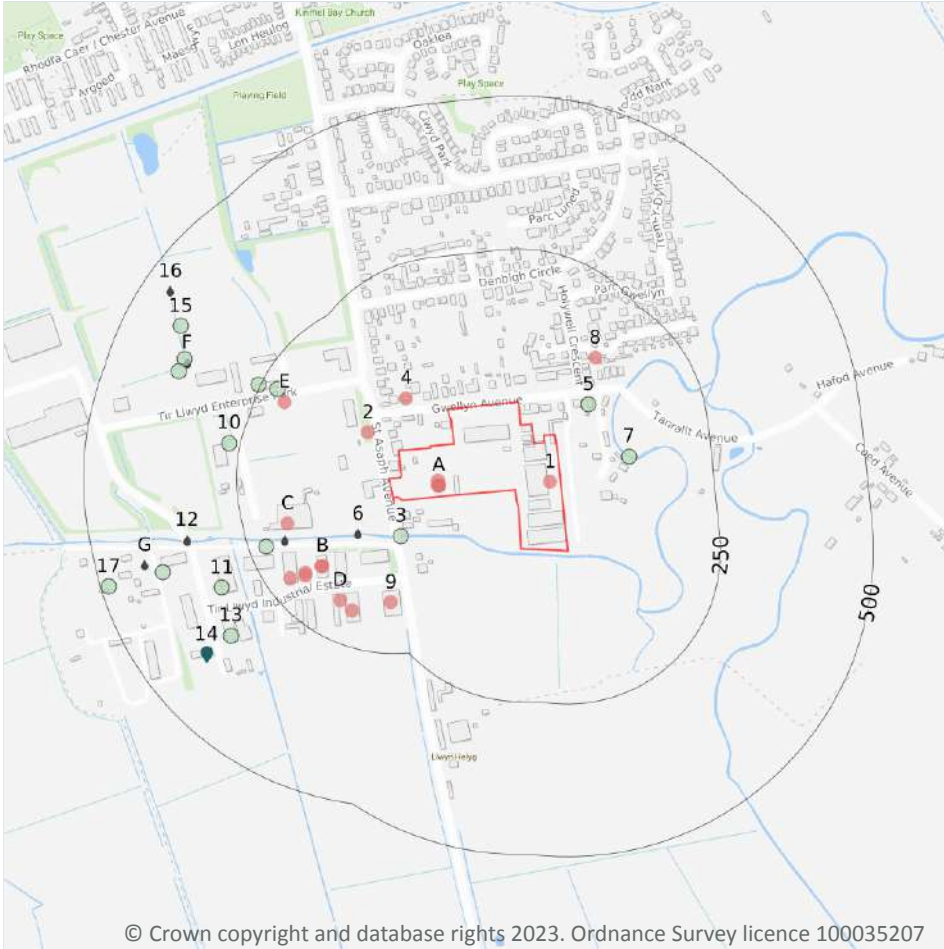


ID	Location	Site	Reference	Category	Sub-Category	Description
1	257m S	Allan and Smith Metal Recyclers, Fachell Farm, Morfa, Abergele, Conwy, LL229SL	NRW-WME036271	Storing waste exemption	Not on a farm	Storage of waste in a secure place
2	270m S	Arbworks UK Limited, Fachell Farm, Morfa, Abergele, Conwy, LL22 9SL	NRW-WME065239	Using waste exemption	Not on a farm	Burning of waste as a fuel in a small appliance
D	280m W	Pure Residential and Commercial Limited, K & C Group Construction, Plots 7, 9 and 11, Tir Llwyd Enterprise Park, Kinmel Bay, Y Rhyl, Conwy, LL185JZ	NRW-WME020004	Using waste exemption	Not on a farm	Use of waste in construction
D	280m W	K & C Builders, Enterprise House, Tir Llwyd Enterprise Park, Rhyl, Conwy, LL18 5JZ	NRW-WME001208	Using waste exemption	Waste Exemption - Non-Agricultural	Use of waste in construction
E	350m SW	Recycle Cymru Ltd, Unit 28a, Tir Llwyd Industrial Estate, Kinmel Bay, Rhyl, Conwy, LL18 5JA	NRW-WME070782	Storing waste exemption	Not on a farm	Storage of waste in a secure place
E	350m SW	Recycle Cymru Ltd, Unit 28a, Tir Llwyd Industrial Estate, Kinmel Bay, Rhyl, Conwy, LL18 5JA	NRW-WME070782	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
4	434m E	Woodlands, Tanrallt Avenue, Kinmel Bay, Rhyl, Denbighshire, LL18 5HS	NRW-WME068617	Using waste exemption	Waste Exemption - Agricultural and Non-Agricultural	Use of waste in construction

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



4 Current industrial land use



- 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

18

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 25**

ID	Location	Company	Address	Activity	Category
1	On site	Poultry Houses	Clwyd, LL18	Poultry Farming, Equipment and Supplies	Farming
A	On site	Tony Peake Caravan Sales	Unit 4, Kingsway, Kinmel Bay, Clwyd, LL18 5HB	Vehicle Hire and Rental	Hire Services



ID	Location	Company	Address	Activity	Category
A	On site	Caravan Traders	St. Asaph Avenue, Kinmel Bay, Rhyl, Clwyd, LL18 5TU	New Vehicles	Motoring
A	On site	C B R Recycling Ltd	Kingsway, St Asaph Avenue, Kinmel Bay, Rhyl, Clwyd, LL18 5HB	Recycling, Reclamation and Disposal	Recycling Services
A	On site	Blakoe Recovery Service	Kingsway, St Asaph Avenue, Kinmel Bay, Rhyl, Clwyd, LL18 5HB	Vehicle Breakdown and Recovery Services	Personal, Consumer and Other Services
2	58m W	Gas Governor	Clwyd, LL18	Gas Features	Infrastructure and Facilities
4	71m NW	P & W Broilers Ltd	1, Gwellyn Avenue, Kinmel Bay, Clwyd, LL18 5HR	Poultry Farming, Equipment and Supplies	Farming
8	142m NE	Electricity Sub Station	Clwyd, LL18	Electrical Features	Infrastructure and Facilities
B	158m SW	Castle-tec	Units 25 to 27, Tir Llwyd Industrial Estate, Kinmel Bay, Clwyd, LL18 5JA	Tools Including Machine Shops	Industrial Products
B	159m SW	Bordervent	Units 25 to 27, Tir Llwyd Industrial Estate, Kinmel Bay, Clwyd, LL18 5JA	Construction Completion Services	Construction Services
9	166m SW	Dayton Engineering Ltd	Tir Llwyd Industrial Estate, Kinmel Bay, Clwyd, LL18 5JA	Metalworkers Including Blacksmiths	Construction Services
C	178m W	Samco	Tir Llwyd Enterprise Park, Kinmel Bay, Clwyd, LL18 5JZ	Special Purpose Machinery and Equipment	Industrial Products
D	185m SW	Electricity Sub Station	Clwyd, LL18	Electrical Features	Infrastructure and Facilities
B	187m SW	Sewage Pumping Station	Clwyd, LL18	Waste Storage, Processing and Disposal	Infrastructure and Facilities
B	190m SW	Pumping Station	Clwyd, LL18	Water Pumping Stations	Industrial Features
D	192m SW	R G B Webster & Sons	Unit 6, Tir Llwyd Industrial Estate, Kinmel Bay, Clwyd, LL18 5JA	Fish, Meat and Poultry Products	Foodstuffs
E	203m W	Gas Valve Compound	Clwyd, LL18	Gas Features	Infrastructure and Facilities



ID	Location	Company	Address	Activity	Category
B	212m SW	Michael Foulkes Saab Specialist	Unit 28, Tir Llwyd Industrial Estate, Kinmel Bay, Clwyd, LL18 5JA	Vehicle Repair, Testing and Servicing	Repair and Servicing

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m **0**

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m **0**

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m **0**

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m **0**

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m **0**

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



This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m

0

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m

0

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m

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.

4.10 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.

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

Records within 500m

1

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 25**



ID	Location	Address	Details	
14	396m SW	GMC (Concrete) Ltd, Tir Llwyd, Kinmel Bay, Conwy, LL18 5JA	Process: Use of Bulk Cement Status: Current 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.

4.12 Radioactive Substance Authorisations

Records within 500m	0
----------------------------	----------

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m	6
----------------------------	----------

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 25**

ID	Location	Address	Details	
6	79m SW	ABERGELE KINMEL BAY ST.ASAPH AVE.OU, ABERGELE KINMEL BAY ST.ASAPH AVE, KINMEL BAY ST.ASAPH AVE.OUTFALL, ST.ASAPH AVE.OUTFALL NO.1	Effluent Type: UNSPECIFIED Permit Number: CM0092801 Permit Version: 1 Receiving Water: GELE	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 17/03/1982 Effective Date: 17/03/1982 Revocation Date: 17/06/1996
C	189m W	ABERGELE KINMEL BAY ST.ASAPH AVE.OU, ABERGELE KINMEL BAY ST.ASAPH AVE, KINMEL BAY ST.ASAPH AVE.OUTFALL, ST.ASAPH AVE.OUTFALL NO.2	Effluent Type: UNSPECIFIED Permit Number: CM0092802 Permit Version: 1 Receiving Water: GELE	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 17/03/1982 Effective Date: 17/03/1982 Revocation Date: 17/06/1996
12	344m W	ABERGELE KINMEL BAY ST.ASAPH AVE.OU, ABERGELE KINMEL BAY ST.ASAPH AVE, KINMEL BAY ST.ASAPH AVE.OUTFALL, ST.ASAPH AVE.OUTFALL NO.3	Effluent Type: UNSPECIFIED Permit Number: CM0092803 Permit Version: 1 Receiving Water: GELE	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 17/03/1982 Effective Date: 17/03/1982 Revocation Date: 17/06/1996
F	375m W	TIR LLWYD ENTERPRISE PARK KINMEL B, TIR LLWYD ENTERPRISE PARK, KINMEL BAY, RHYL, CONWY, LL18 5JZ	Effluent Type: - Permit Number: CG0319001 Permit Version: 0 Receiving Water: FFYNNON-Y-DDOL	Status: Effective Issue date: 28/08/1991 Effective Date: 28/08/1991 Revocation Date: -



ID	Location	Address	Details	
G	420m W	Kinmel Bay WwTW Storm Overflow, Quarry Line Path, Kinmel Bay, Conwy, LL18 5HB	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: CG0391301 Permit Version: 0 Receiving Water: Coastal Waters of Liverpool Bay	Status: Effective Issue date: 21/10/2021 Effective Date: 21/10/2021 Revocation Date: -
16	455m NW	A PS AT TIR LLWYD ENTERPRISE PARK, PUMPING STATION, TIR LLWYD ENTERPRISE PARK, TONWYN, CONWY	Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - NOT WATER COMPANY Permit Number: CG0402801 Permit Version: 0 Receiving Water: A TRIB OF THE FFYNNON Y DDOL	Status: Effective Issue date: 06/11/2002 Effective Date: 06/11/2002 Revocation Date: -

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m

0

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

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

4.15 Pollutant release to public sewer

Records within 500m

0

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m

0

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

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



4.17 List 2 Dangerous Substances

Records within 500m

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.

4.18 Pollution Incidents (EA/NRW)

Records within 500m

14

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 25**

ID	Location	Details	
3	58m SW	Incident Date: 12/07/2002 Incident Identification: 91078 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
5	74m NE	Incident Date: 17/05/2018 Incident Identification: 1802687 Pollutant: Specific Waste Material Pollutant Description: Household Waste	Water Impact: No Details Land Impact: Category 2 (Significant) Air Impact: No Details
7	115m E	Incident Date: 18/04/2013 Incident Identification: 1104036 Pollutant: - Pollutant Description: -	Water Impact: - Land Impact: - Air Impact: -
E	221m W	Incident Date: 18/02/2014 Incident Identification: 1209648 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
C	221m W	Incident Date: 06/02/2014 Incident Identification: 1202427 Pollutant: Organic Chemicals/Products Pollutant Description: Adhesives	Water Impact: - Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
E	253m W	Incident Date: 30/04/2013 Incident Identification: 1107807 Pollutant: General Biodegradable Materials and Wastes Pollutant Description: Other General Biodegradable Material or Waste	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)



ID	Location	Details	
10	268m W	Incident Date: 27/01/2015 Incident Identification: 1309500 Pollutant: Specific Waste Materials Pollutant Description: Vehicles and Vehicle Parts	Water Impact: - Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
11	315m SW	Incident Date: 07/08/2003 Incident Identification: 179665 Pollutant: Specific Waste Materials Pollutant Description: Household Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
13	345m SW	Incident Date: 23/07/2015 Incident Identification: 1357795 Pollutant: Inert Materials and Wastes Pollutant Description: Other Inert Material or Waste	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
F	381m W	Incident Date: 08/12/2001 Incident Identification: 47313 Pollutant: Oils and Fuel Pollutant Description: Unidentified Oil	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
F	382m W	Incident Date: 25/03/2014 Incident Identification: 1221063 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: - Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
G	396m W	Incident Date: 05/11/2013 Incident Identification: 1173680 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
15	410m NW	Incident Date: 23/01/2002 Incident Identification: 54356 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
17	487m W	Incident Date: 23/08/2002 Incident Identification: 102809 Pollutant: Sewage Materials Pollutant Description: Grey Water	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)

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

4.19 Pollution inventory substances

Records within 500m

0

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

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



4.20 Pollution inventory waste transfers

Records within 500m

0

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

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

4.21 Pollution inventory radioactive waste

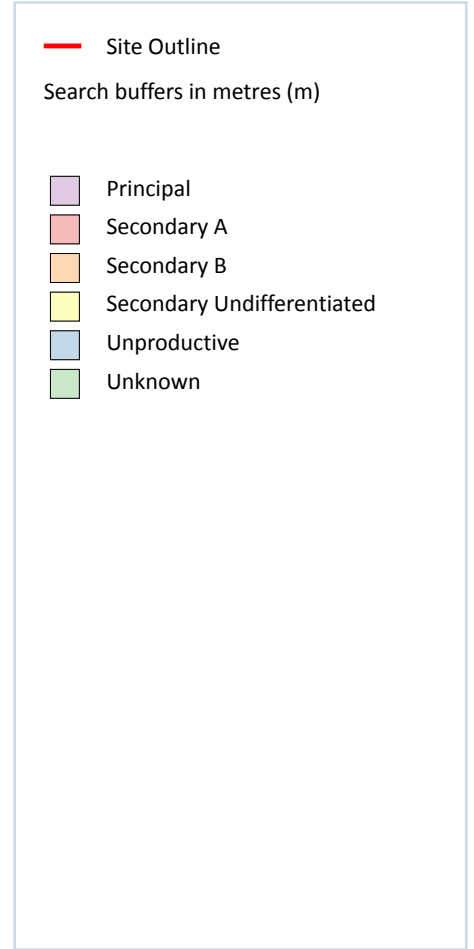
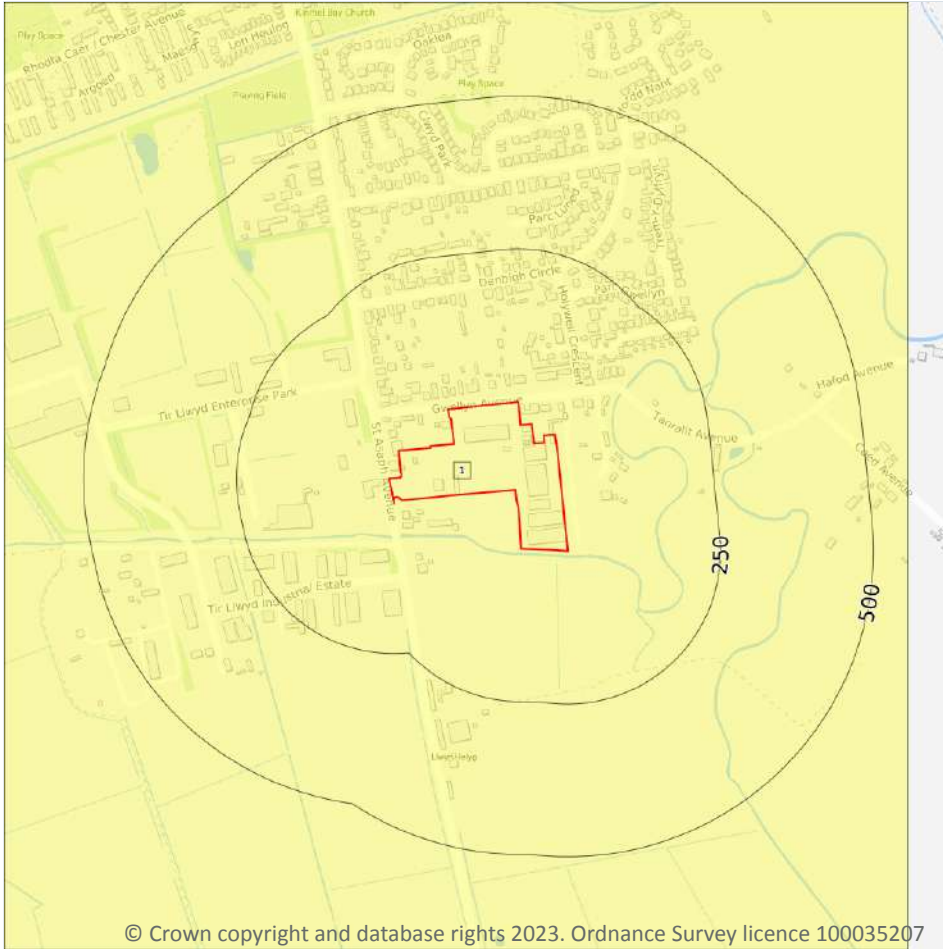
Records within 500m

0

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

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

5 Hydrogeology - Superficial aquifer



5.1 Superficial aquifer

Records within 500m

1

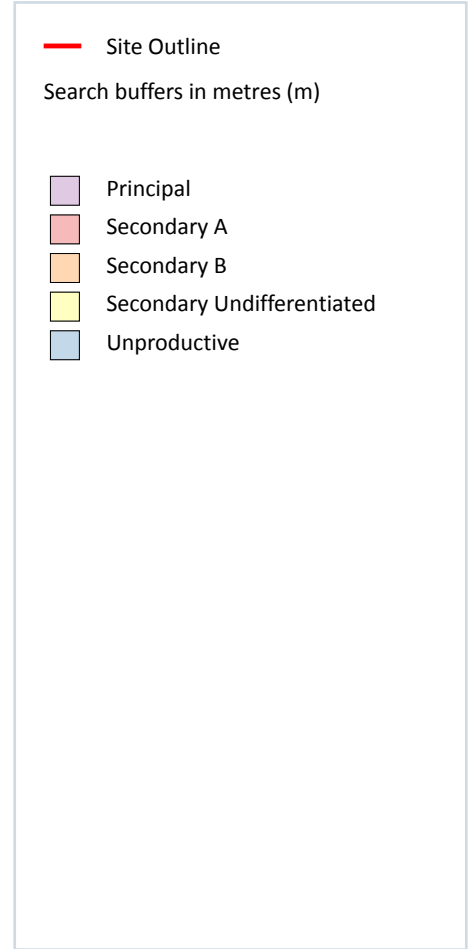
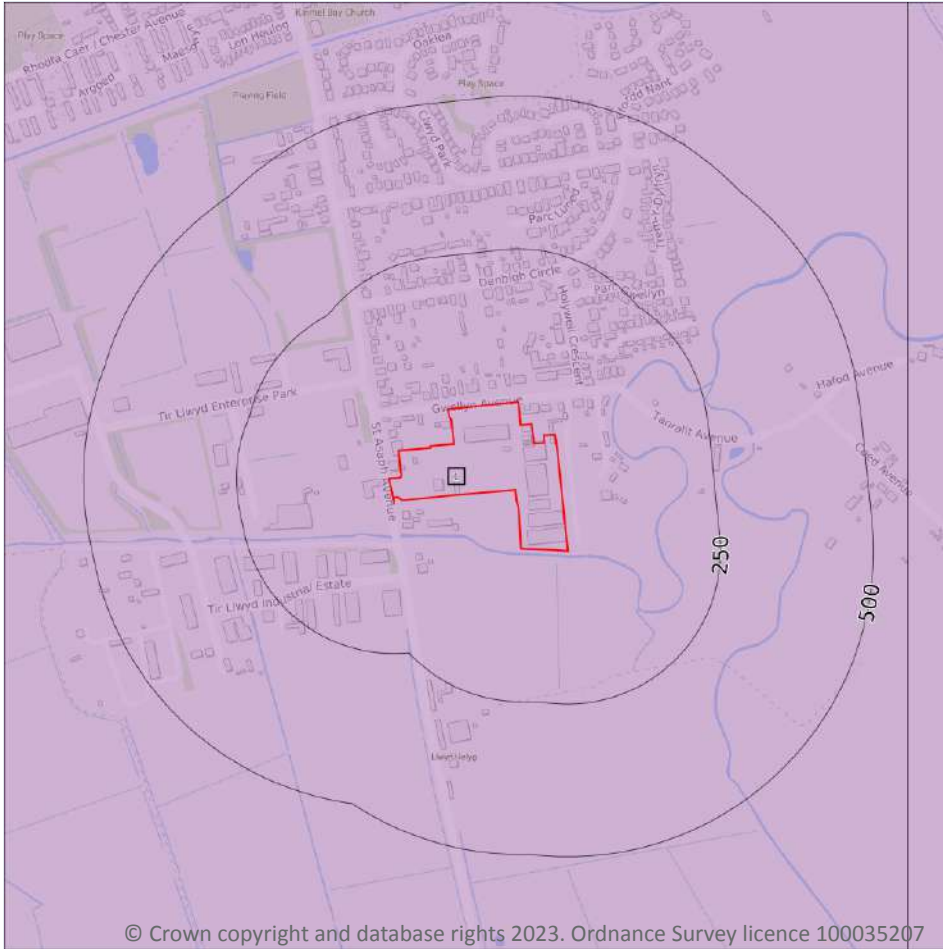
Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 34**

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

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

Bedrock aquifer



5.2 Bedrock aquifer

Records within 500m

1

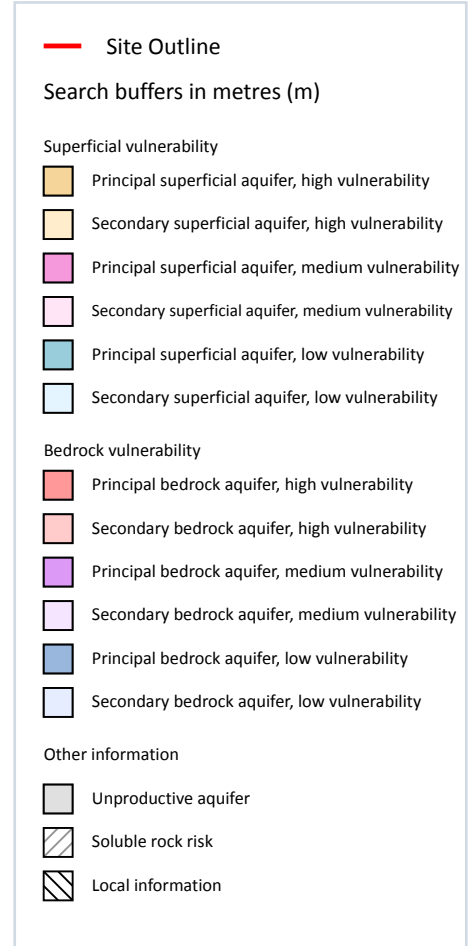
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 35**

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

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

Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

1

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

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

Features are displayed on the Groundwater vulnerability map on **page 36**

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: <300mm/year	Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: No Data	Vulnerability: Low Aquifer type: Principal Flow mechanism: Intergranular

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site

0

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

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

5.5 Groundwater vulnerability- local information

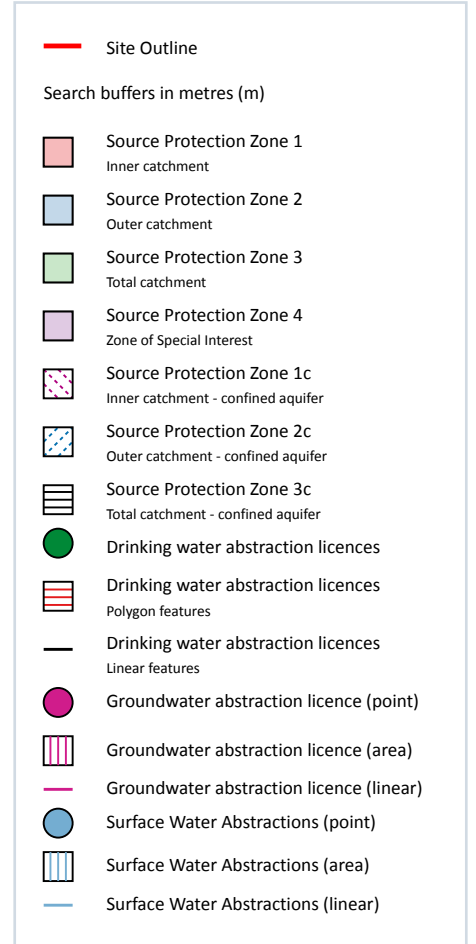
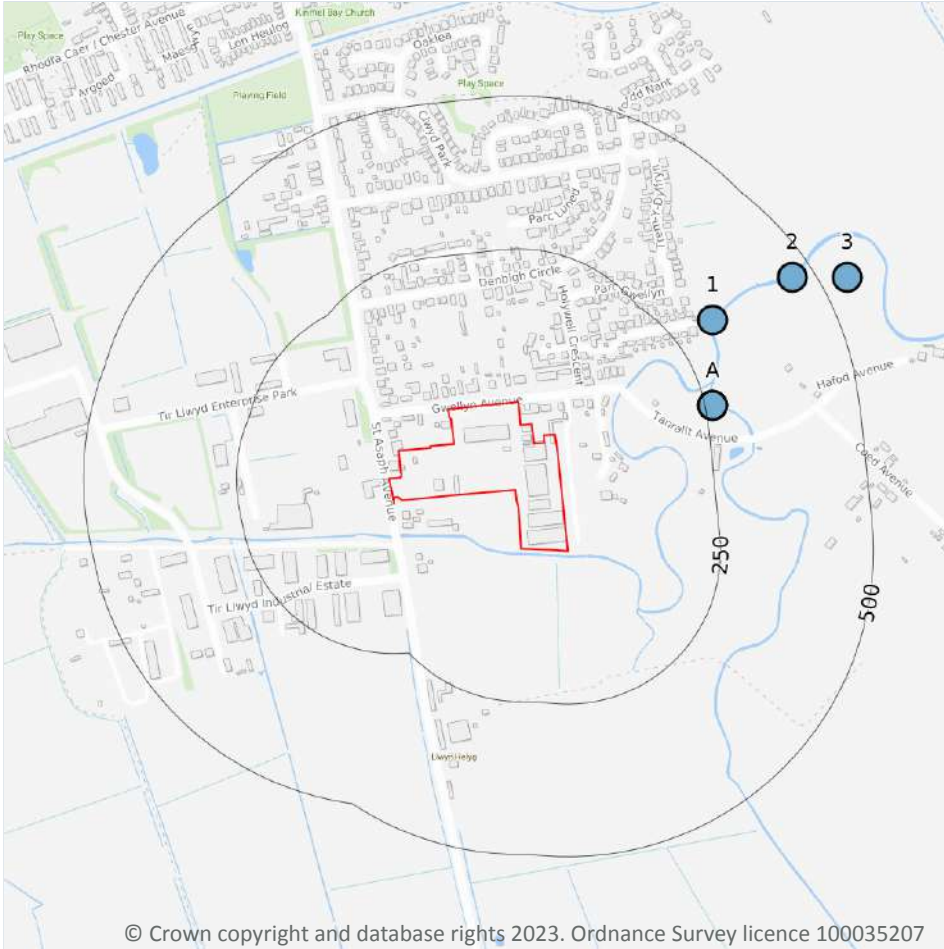
Records on site

0

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

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

Abstractions and Source Protection Zones



5.6 Groundwater abstractions

Records within 2000m

2

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	
-	1501m SE	Status: Historical Licence No: 24/66/7/0018 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: BOREHOLE Data Type: Point Name: Hughes Easting: 300680 Northing: 377800	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 24/02/1967 Expiry Date: - Issue No: 100 Version Start Date: 24/02/1967 Version End Date: -
-	1699m E	Status: Historical Licence No: 24/66/7/0012 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: BOREHOLE Data Type: Point Name: Owens Easting: 301110 Northing: 378320	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 29/03/1966 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	5
-----------------------------	----------

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	262m E	Status: Historical Licence No: 24/66/7/0036 Details: Spray Irrigation - Direct Direct Source: EAW Surface Water Point: SARN CUT Data Type: Point Name: Davies Easting: 299680 Northing: 378890	Annual Volume (m ³): 2273 Max Daily Volume (m ³): 81.828 Original Application No: - Original Start Date: 16/04/1971 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date: -

ID	Location	Details	
A	262m E	Status: Active Licence No: 24/66/7/0036 Details: Spray Irrigation - Direct - High Direct Source: - Point: - Data Type: Point Name: - Easting: 299680 Northing: 378890	Annual Volume (m ³): 2273 Max Daily Volume (m ³): 654.62 Original Application No: - Original Start Date: 01/04/2008 Expiry Date: - Issue No: - Version Start Date: - Version End Date: -
1	318m NE	Status: Historical Licence No: 24/66/7/0009 Details: Spray Irrigation - Direct Direct Source: EAW Surface Water Point: RIVER GELE POINT B Data Type: Point Name: Richardson Easting: 299680 Northing: 379030	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 29/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 29/03/1966 Version End Date: -
2	465m NE	Status: Historical Licence No: 24/66/7/0009 Details: Spray Irrigation - Direct Direct Source: EAW Surface Water Point: RIVER GELE POINT A Data Type: Point Name: Richardson Easting: 299810 Northing: 379100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 29/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 29/03/1966 Version End Date: -
3	542m NE	Status: Historical Licence No: 24/66/7/0009 Details: Spray Irrigation - Direct Direct Source: EAW Surface Water Point: RIVER GELE POINT C Data Type: Point Name: Richardson Easting: 299900 Northing: 379100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 29/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 29/03/1966 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)

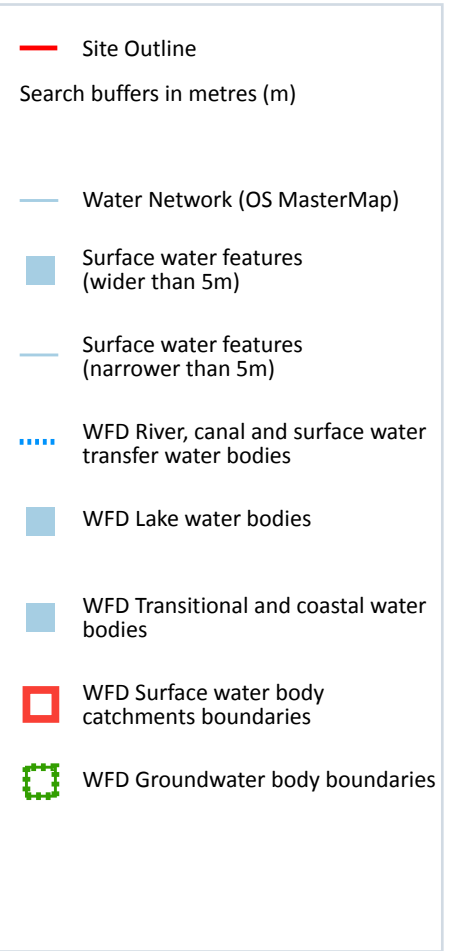
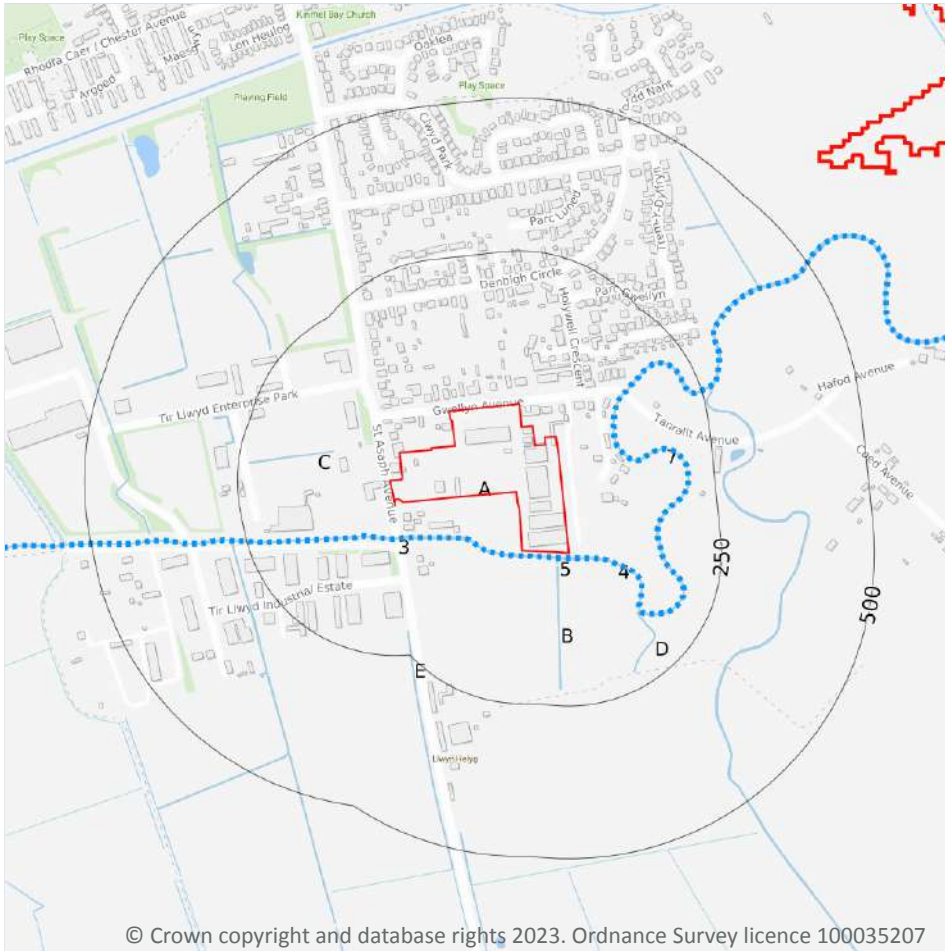
Records within 500m

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 2023. Ordnance Survey licence 100035207

6.1 Water Network (OS MasterMap)

Records within 250m

11

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 42**

ID	Location	Type of water feature	Ground level	Permanence	Name
3	8m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Afon Gele

ID	Location	Type of water feature	Ground level	Permanence	Name
4	8m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Afon Gele
5	9m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	22m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
7	94m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Afon Gele
C	104m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	149m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	155m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	157m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	210m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	232m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

7

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

Features are displayed on the Hydrology map on **page 42**



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 42**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	On site	River WB catchment	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 42**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
2	8m S	River	Gele	GB110066059980	Moderate	Good	Moderate	2016

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

6.5 WFD Groundwater bodies

Records on site

1

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

Features are displayed on the Hydrology map on **page 42**

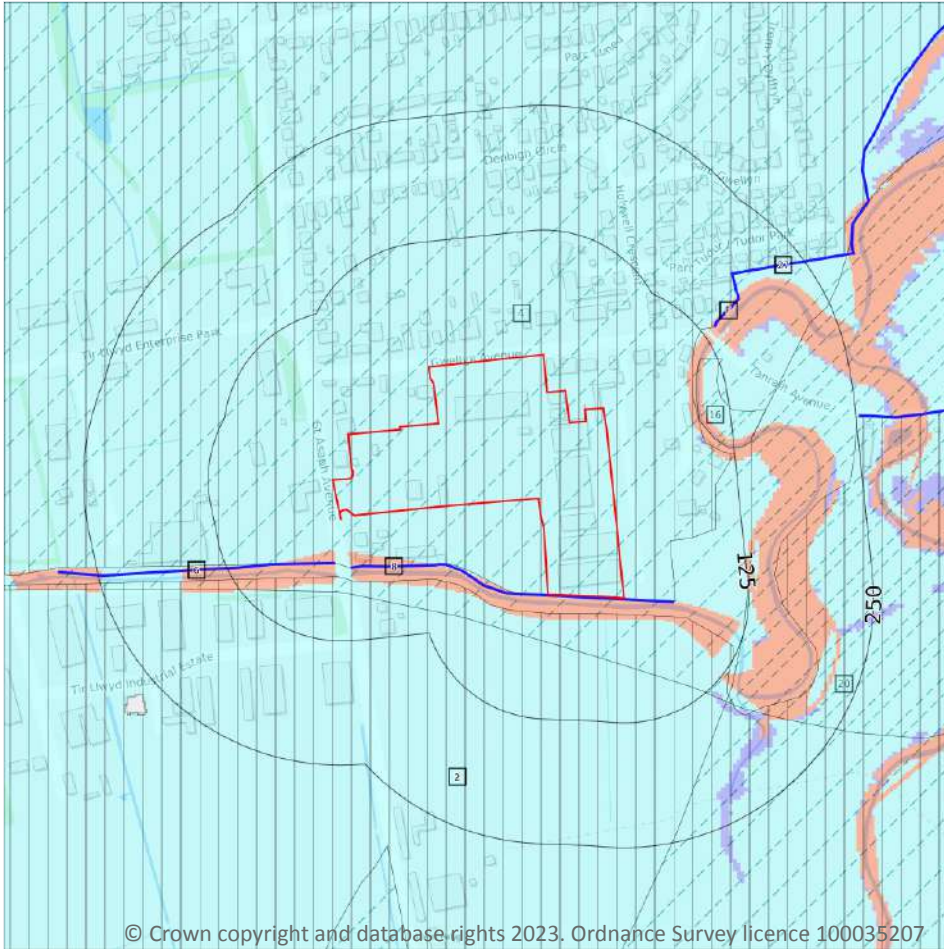


ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	On site	Clwyd Permo-Triassic Sandstone	GB41001G202100	Good	Good	Good	2017

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



7 River and coastal flooding



- 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

7

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).

Features are displayed on the River and coastal flooding map on **page 46**

Distance	Flood risk category
On site	Low
0 - 50m	High

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

7.2 Historical Flood Events

Records within 250m	3
----------------------------	----------

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 46**

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
1	On site	Pensarn, Towyn, Kinmel Bay Fe	1990-02-27 1990-03-02	Other	Operational failure/breach of defence	Tidal
16	93m E	Abergele / Rhuddlan Marshes 19	1977-02-11 1977-02-12	Main river	Overtopping of defences	Fluvial
20	123m SE	St.asaph To R.gele 1964 01	1964-01-01 1964-01-01	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	5
----------------------------	----------

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.

Features are displayed on the River and coastal flooding map on **page 46**

ID	Location	Update
B	1m S	08/11/2022
6	47m SW	08/11/2022



ID	Location	Update
8	51m SW	08/11/2022
F	138m NE	08/11/2022
27	177m NE	08/11/2022

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

7.4 Areas Benefiting from Flood Defences

Records within 250m

2

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.

Features are displayed on the River and coastal flooding map on **page 46**

ID	Location	
A	On site	Area benefiting from flood defences
2	16m SE	Area benefiting from flood defences

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

7.5 Flood Storage Areas

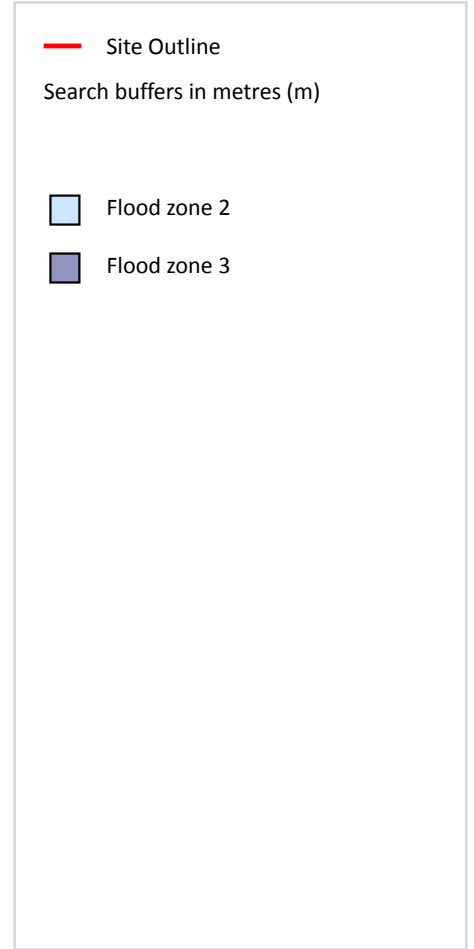
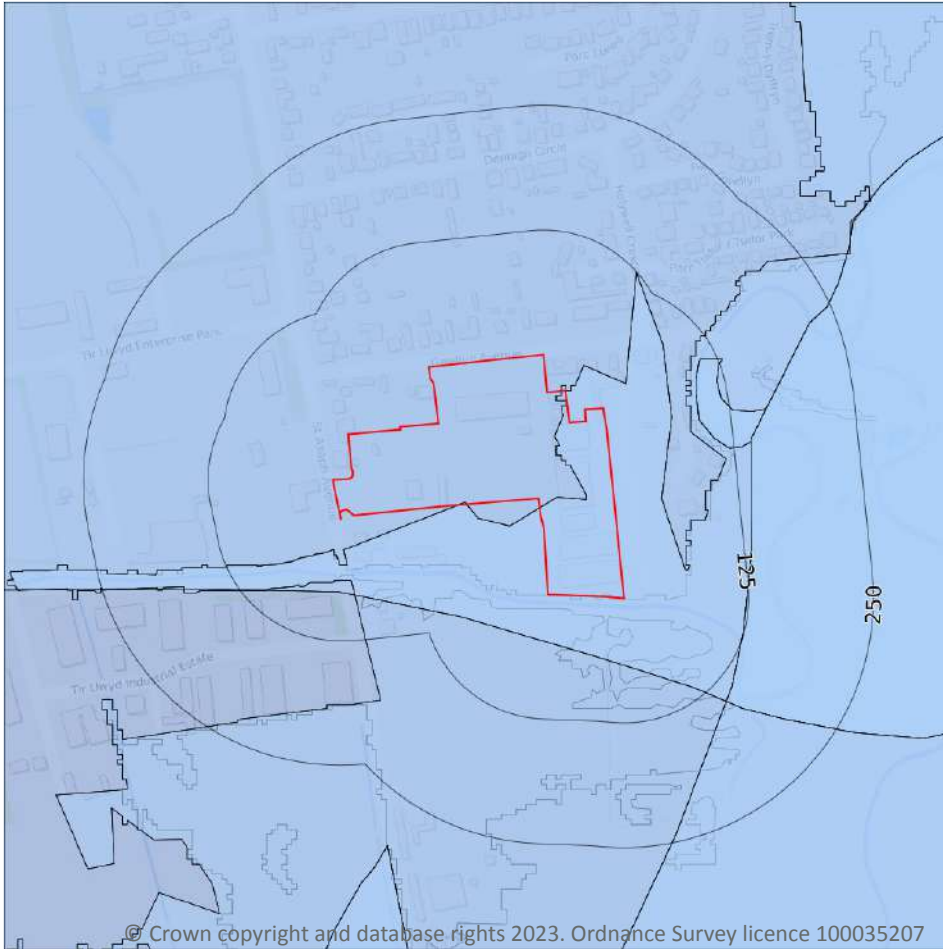
Records within 250m

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

1

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.

Features are displayed on the River and coastal flooding map on **page 46**

Location	Type
On site	Zone 2 - (Fluvial /Tidal Models)

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

7.7 Flood Zone 3

Records within 50m

1

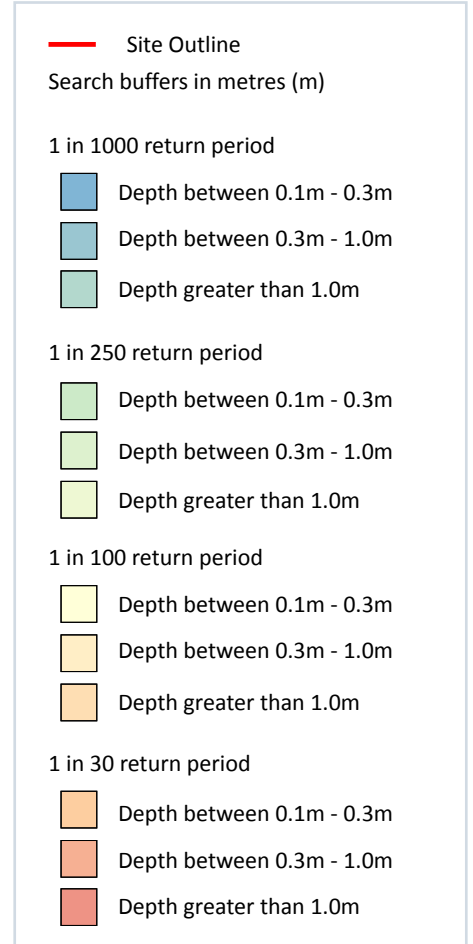
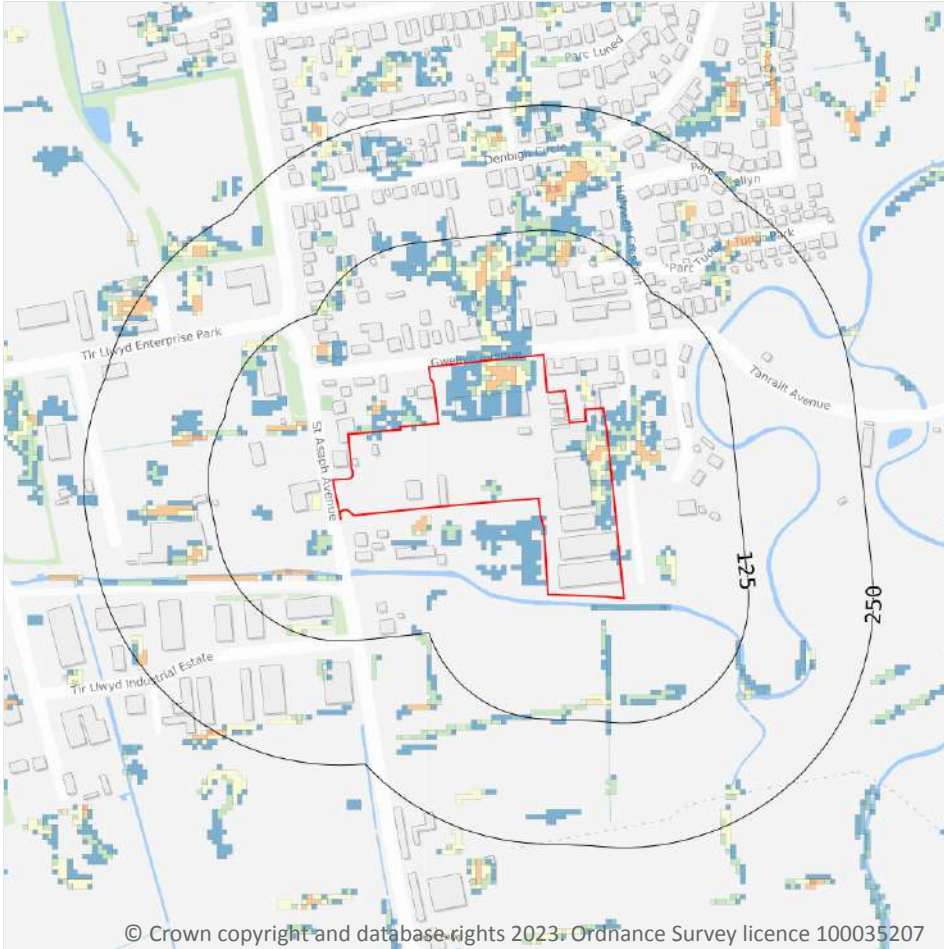
Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

Features are displayed on the River and coastal flooding map on **page 46**

Location	Type
On site	Zone 3 - (Fluvial /Tidal Models)

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

8 Surface water flooding



8.1 Surface water flooding

Highest risk on site

1 in 30 year, 0.1m - 0.3m

Highest risk within 50m

1 in 30 year, 0.1m - 0.3m

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 51**

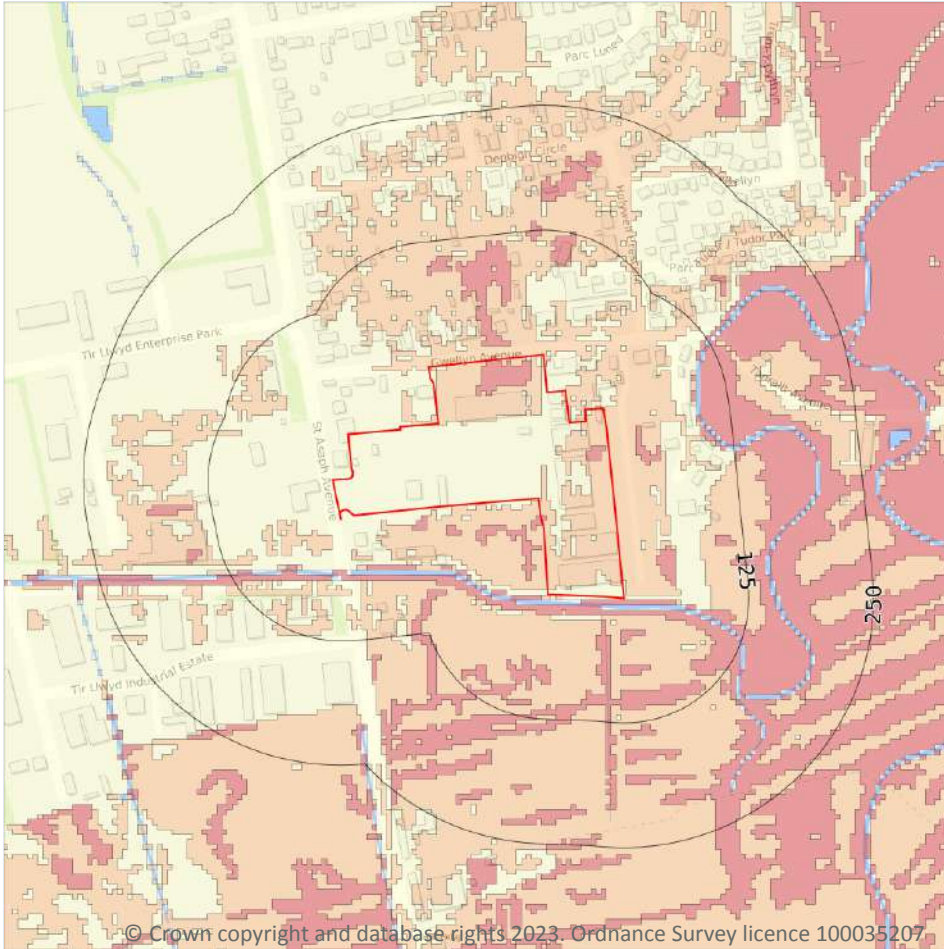
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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 0.1m and 0.3m
1 in 100 year	Between 0.1m and 0.3m
1 in 30 year	Between 0.1m and 0.3m

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



© Crown copyright and database rights 2023. Ordnance Survey licence 100035207

9.1 Groundwater flooding

Highest risk on site

High

Highest risk within 50m

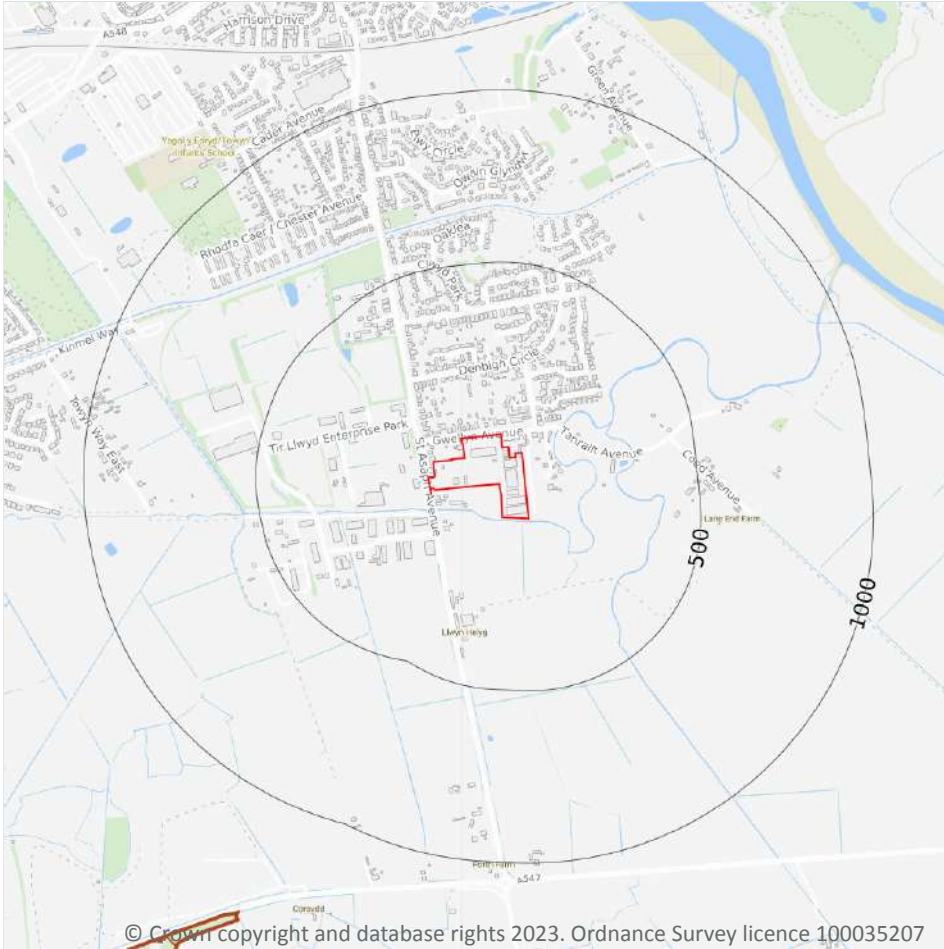
High

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 53**

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- + Local Nature Reserves (LNR)
- ▨ Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m

0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m

0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m

0

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m

0

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

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



10.6 Local Nature Reserves (LNR)

Records within 2000m

2

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.

Features are displayed on the Environmental designations map on **page 54**

ID	Location	Name	Data source
-	1657m NW	KINMEL DUNES	Natural Resources Wales
-	1755m N	KINMEL DUNES	Natural Resources Wales

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

10.7 Designated Ancient Woodland

Records within 2000m

4

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 54**

ID	Location	Name	Woodland Type
1	1349m SW	Unknown	Restored Ancient Woodland Site
-	1672m W	Unknown	Restored Ancient Woodland Site
-	1852m SE	Unknown	Restored Ancient Woodland Site
-	1949m SE	Unknown	Ancient Woodland Site of Unknown Category

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

1

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.

Location	Name	Type	NVZ ID	Status
1501m E	-	Surface Water	623	Existing

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

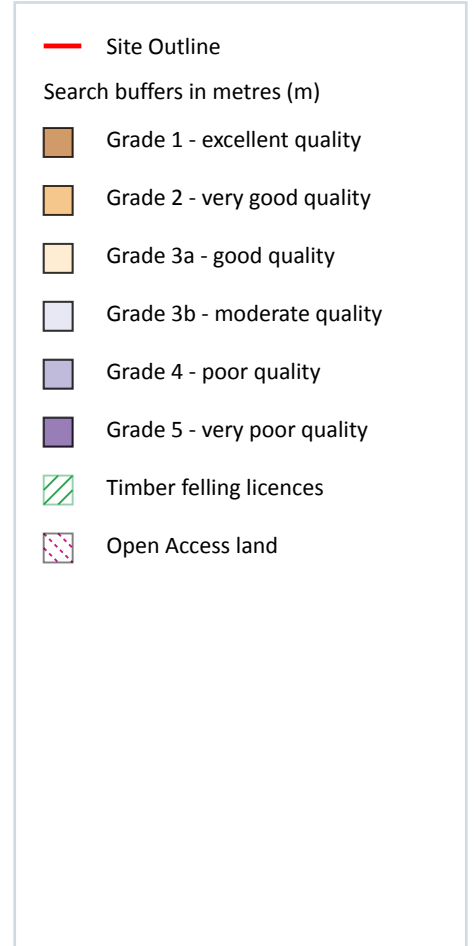
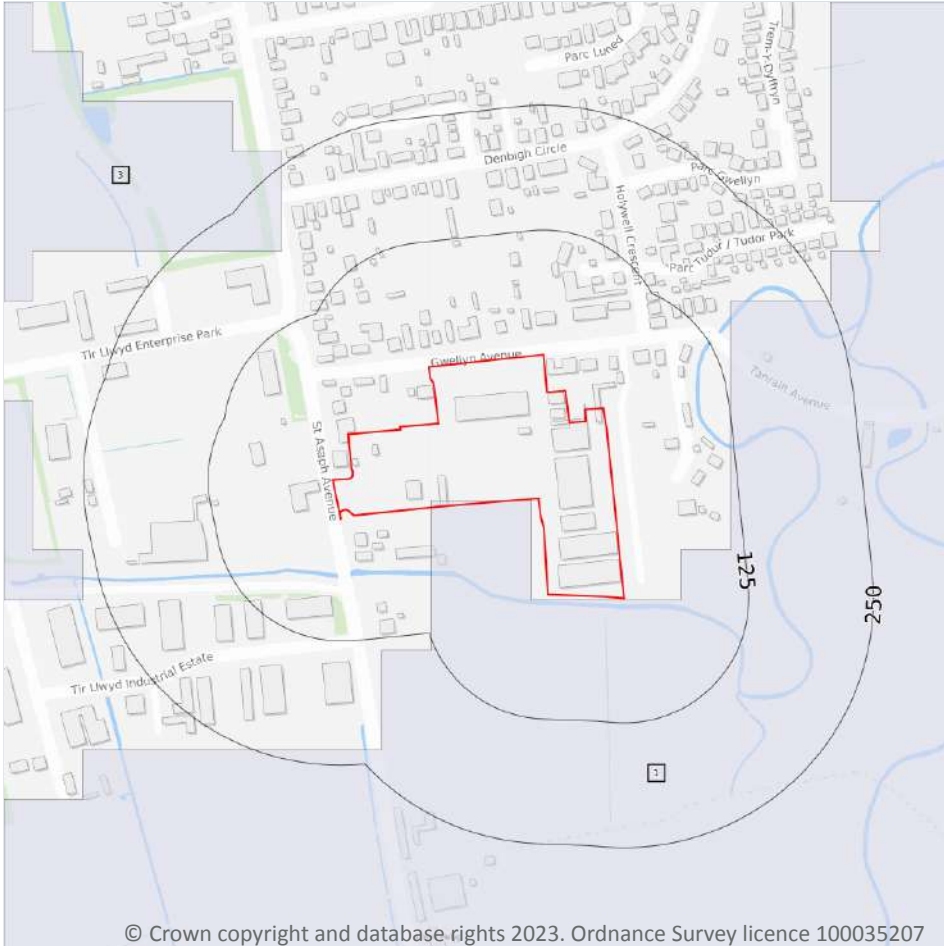
0

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



© Crown copyright and database rights 2023. Ordnance Survey licence 100035207

12.1 Agricultural Land Classification

Records within 250m

2

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

Features are displayed on the Agricultural designations map on **page 62**

ID	Location	Classification	Description
1	On site	Grade 3b	Moderate quality agricultural land
3	188m NW	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

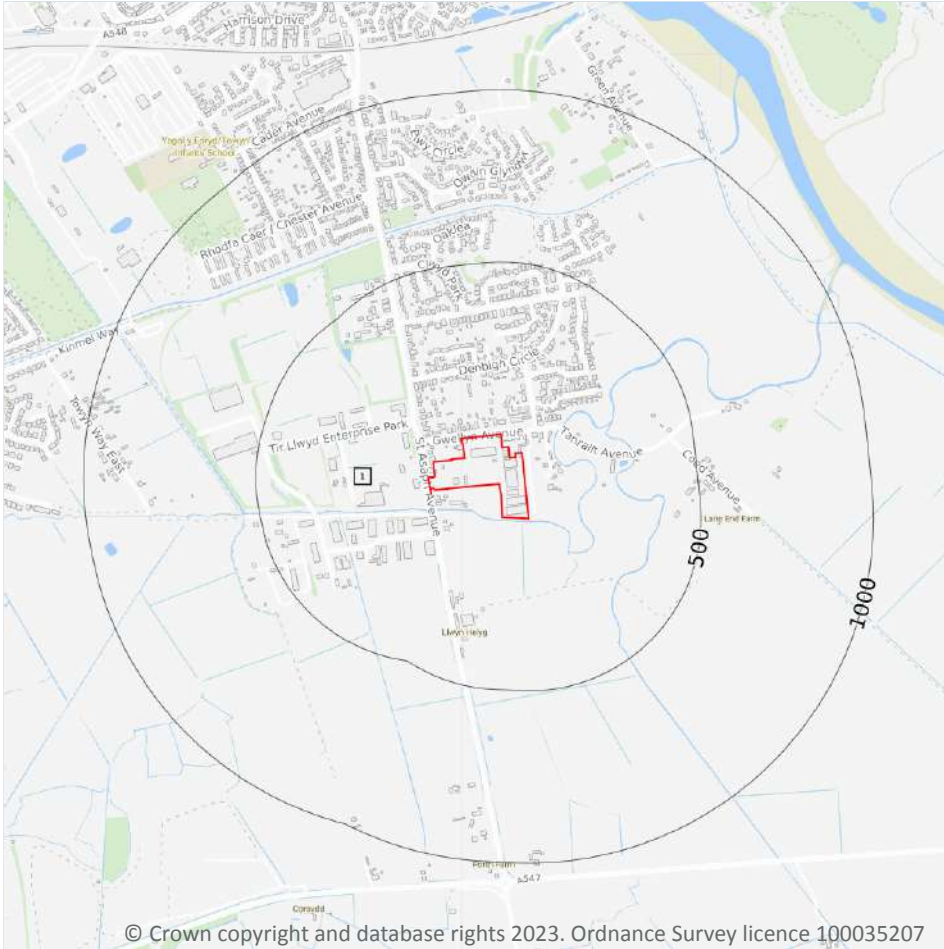
0

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



— Site Outline
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

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

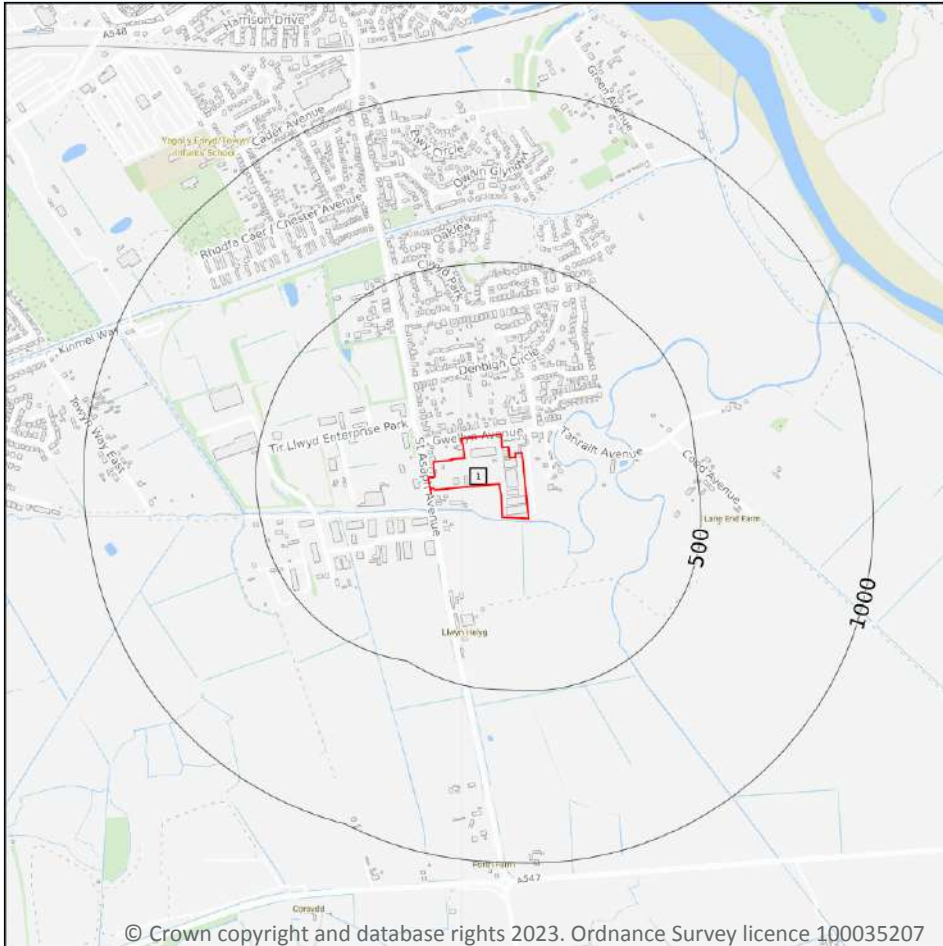
0

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

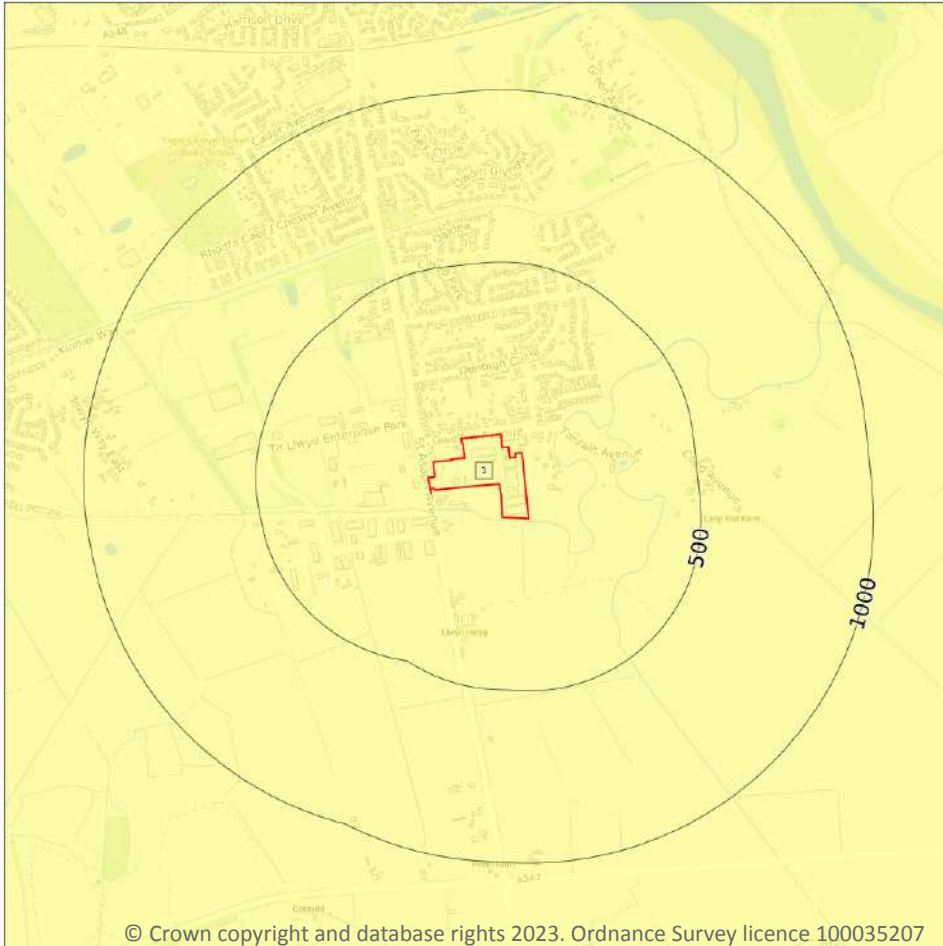
0

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



— 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

1

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	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	Intergranular	Moderate	Very 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.

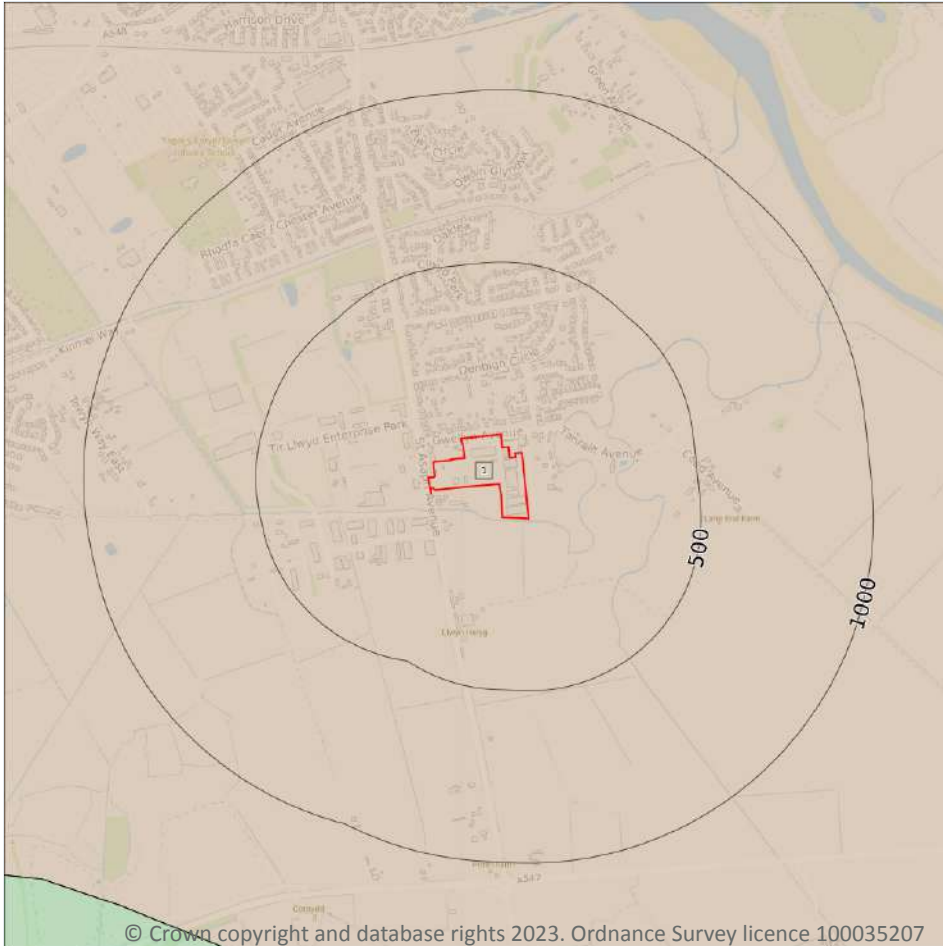
15.7 Landslip permeability (50k)

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



— 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

1

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	KNSF-SDST	KINNERTON SANDSTONE FORMATION - SANDSTONE	-

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m

1

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	Intergranular	High	High

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m

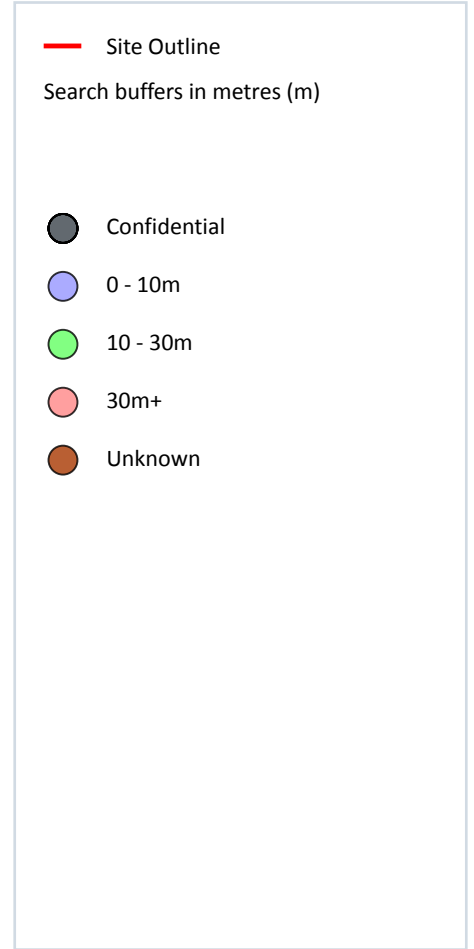
0

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.

This data is sourced from the British Geological Survey.



16 Boreholes



© Crown copyright and database rights 2023. Ordnance Survey licence 100035207

16.1 BGS Boreholes

Records within 250m

2

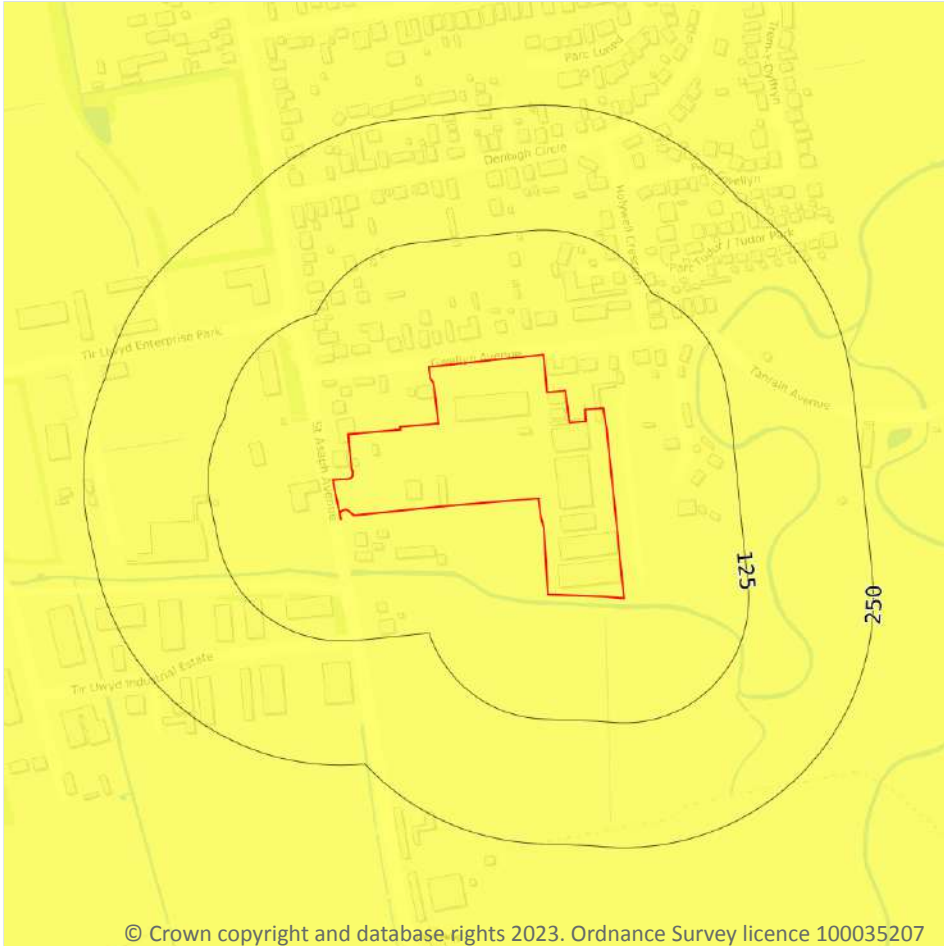
The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several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

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

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	139m SW	299080 378620	PLAS LLWYD IND DEV 1	12.3	N	140230
2	202m SW	298980 378640	PLAS LLWYD IND DEV 2	16.3	N	140231

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



17.1 Shrink swell clays

Records within 50m

1

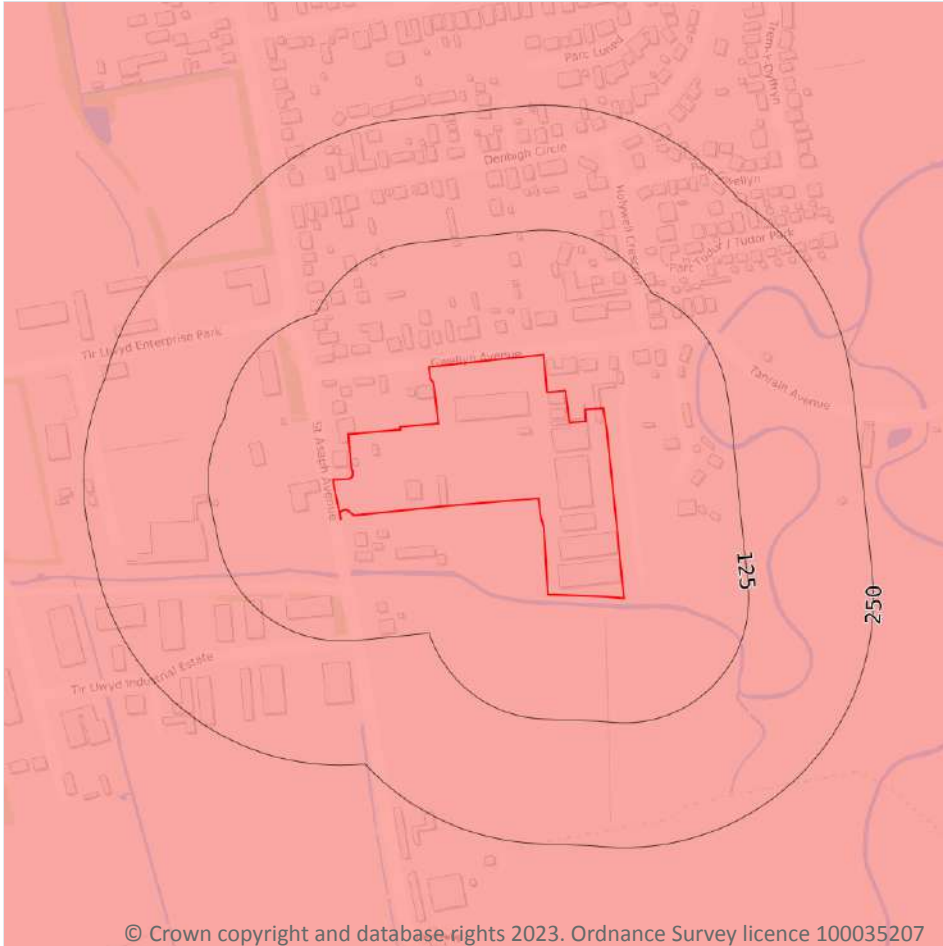
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 76**

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



17.2 Running sands

Records within 50m

1

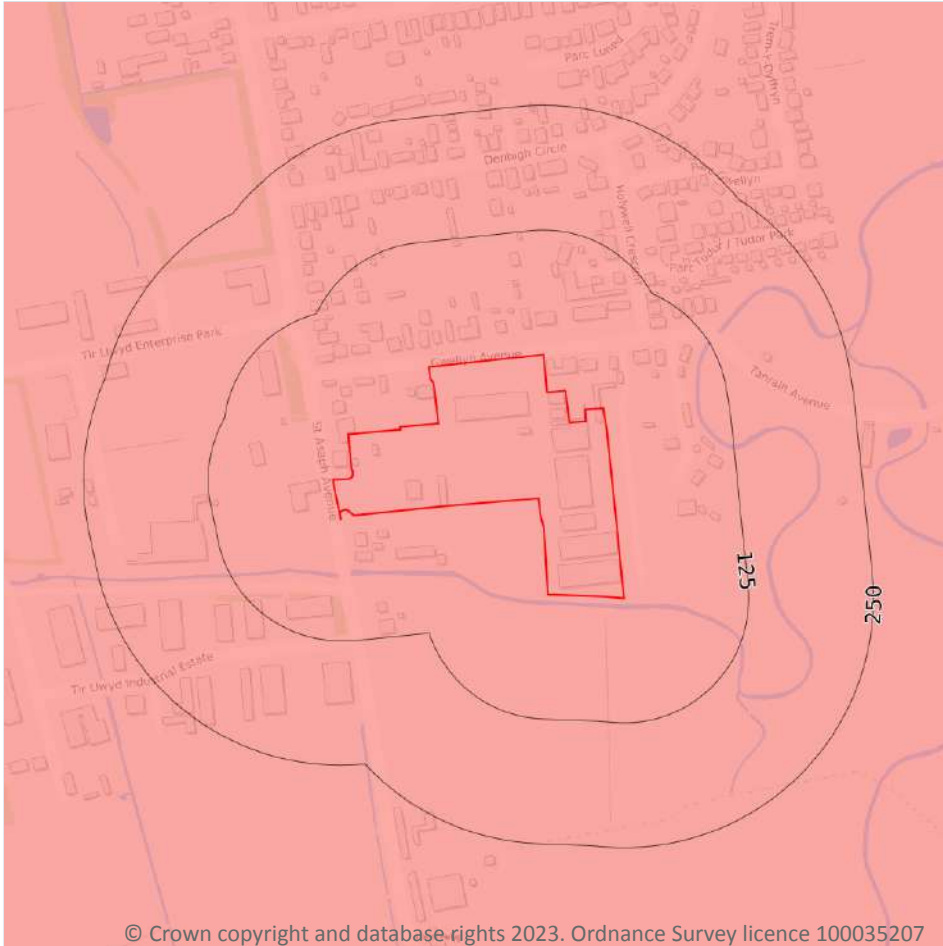
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 77**

Location	Hazard rating	Details
On site	Moderate	Running sand conditions are probably present. Constraints may apply to land uses involving excavation or the addition or removal of water.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



© Crown copyright and database rights 2023. Ordnance Survey licence 100035207

17.3 Compressible deposits

Records within 50m

1

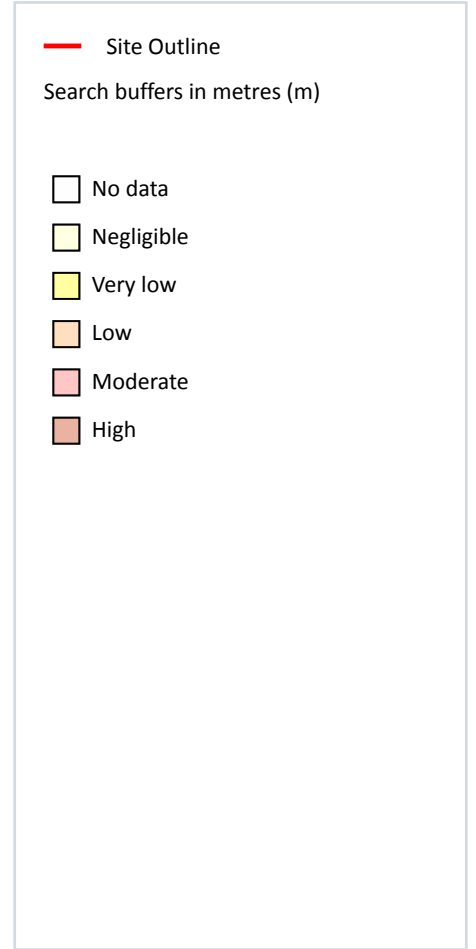
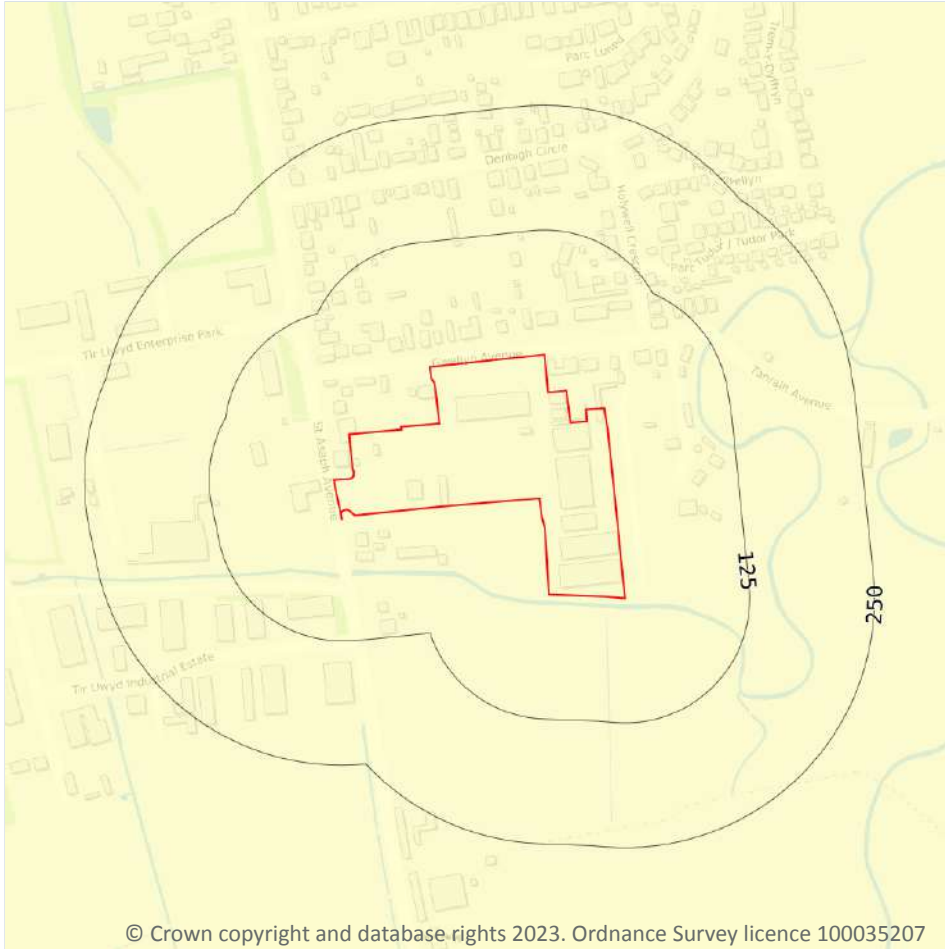
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 78**

Location	Hazard rating	Details
On site	Moderate	Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the site.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



17.4 Collapsible deposits

Records within 50m

1

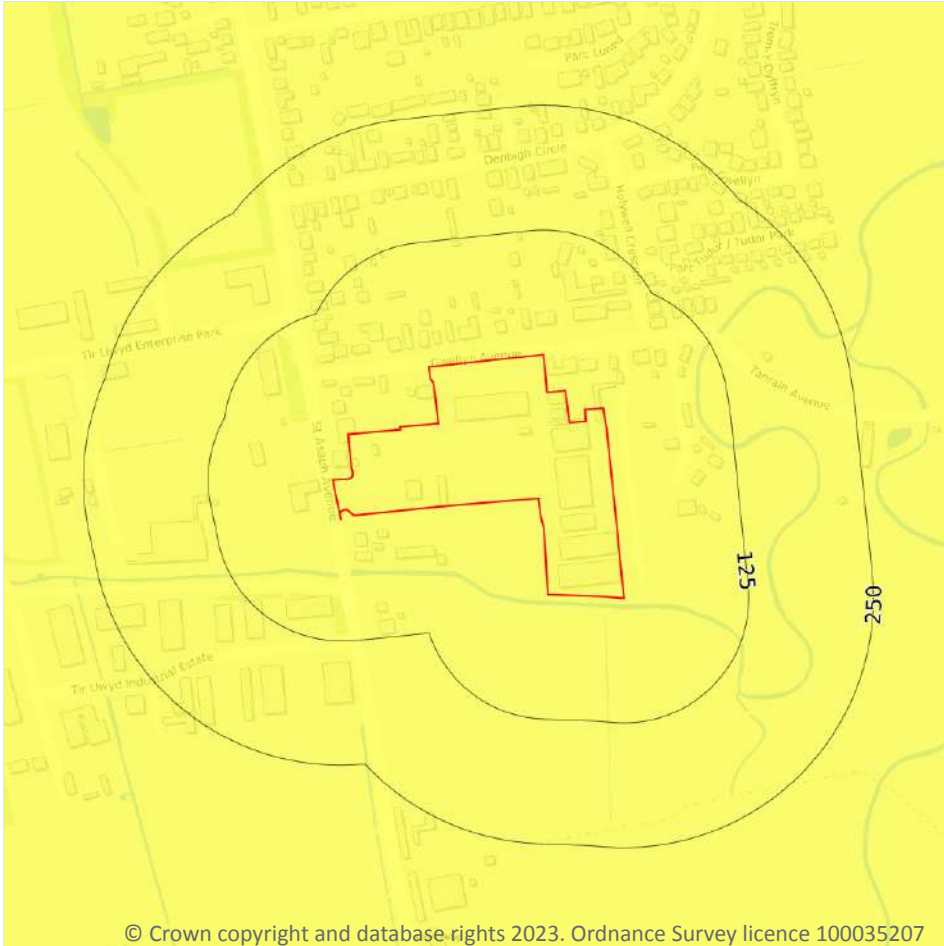
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

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

Location	Hazard rating	Details
On site	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



© Crown copyright and database rights 2023. Ordnance Survey licence 100035207

17.5 Landslides

Records within 50m

1

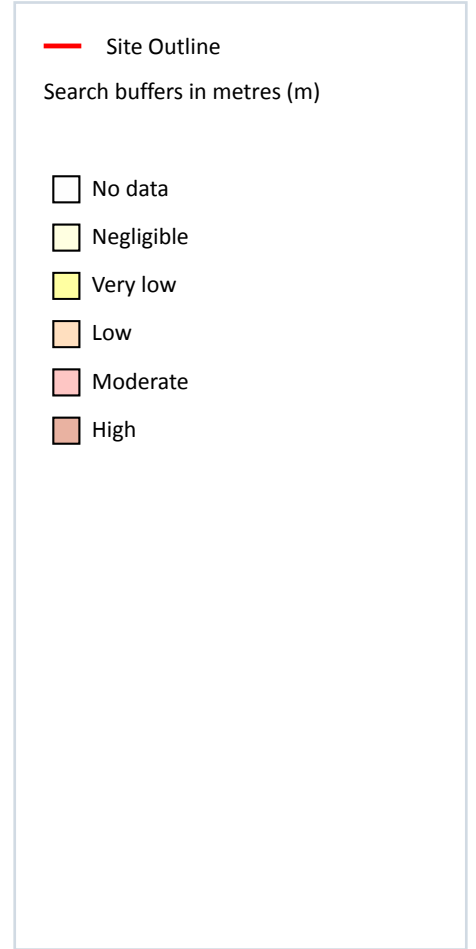
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 80**

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



17.6 Ground dissolution of soluble rocks

Records within 50m

1

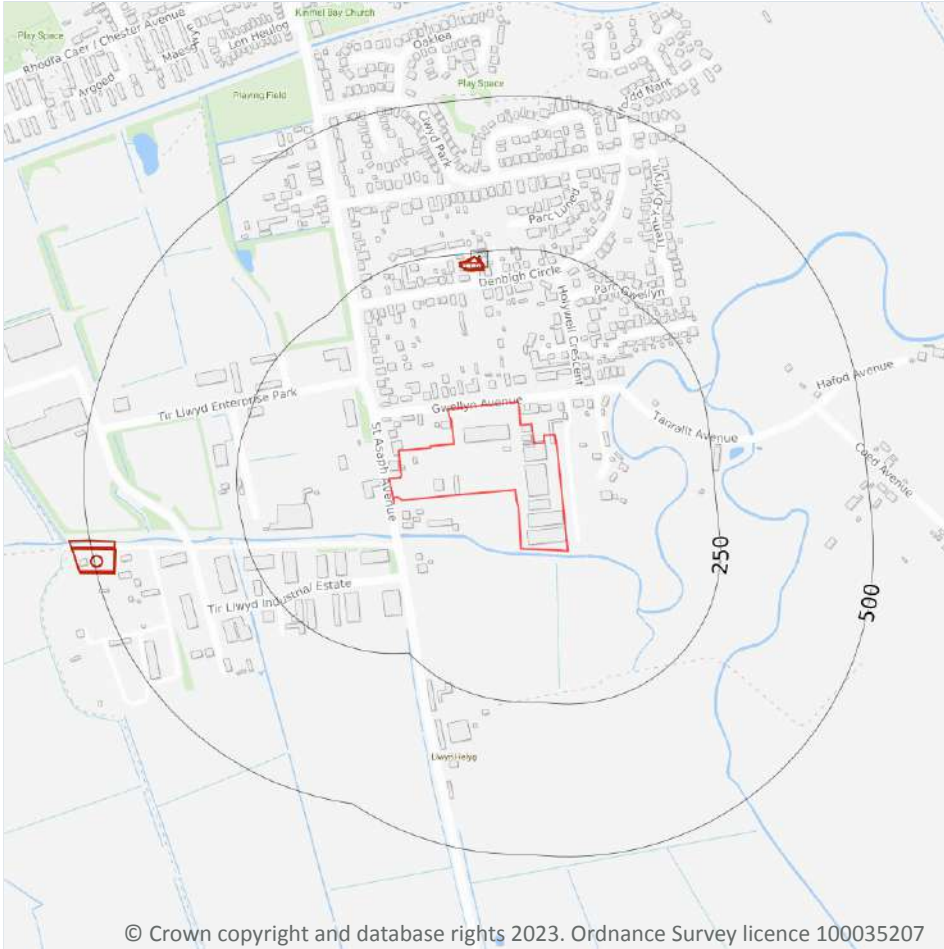
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 81**

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

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



18.1 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.

18.2 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.

18.3 Surface ground workings

Records within 250m

3

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 82**

ID	Location	Land Use	Year of mapping	Mapping scale
A	220m N	Pond	1938	1:10560
A	221m N	Pond	1964	1:10560
A	222m N	Pond	1949	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.4 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 data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

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

This data is sourced from the British Geological Survey.



18.6 Non-coal mining

Records within 1000m

0

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

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m

0

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

This data is sourced from Stantec UK Ltd.

18.8 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.

18.9 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.

18.10 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.



18.11 Gypsum areas

Records on site	0
-----------------	---

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0
-----------------	---

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

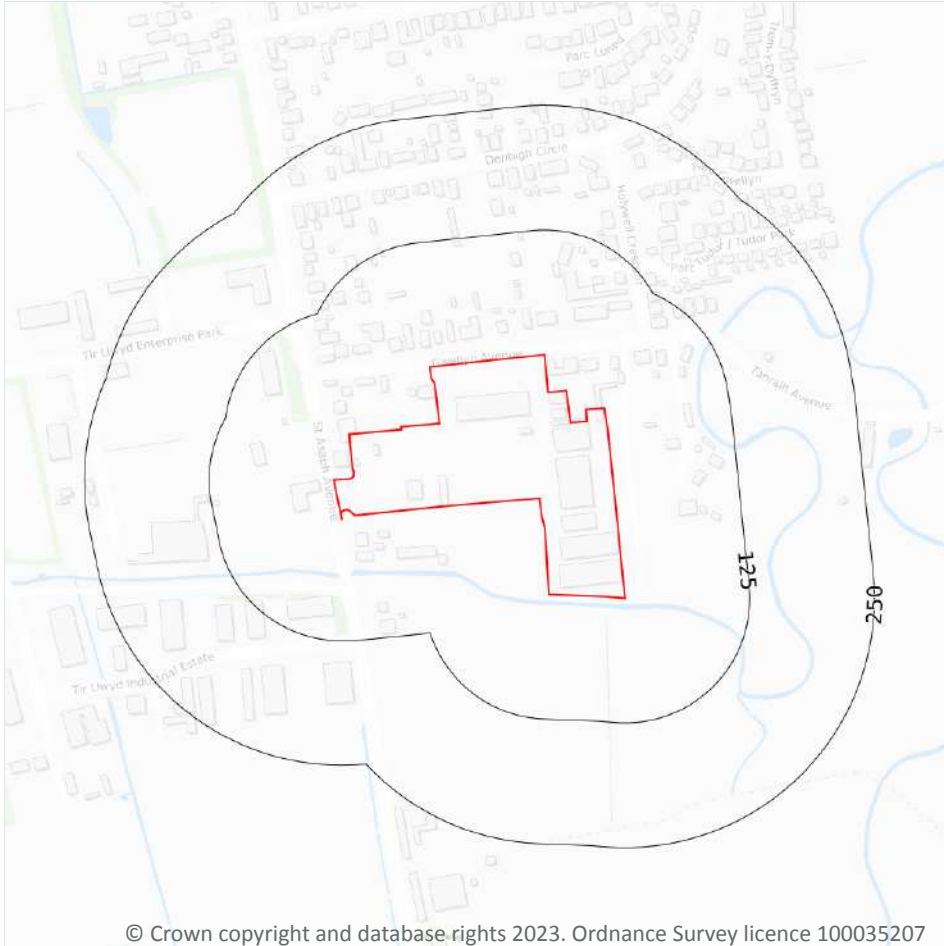
18.13 Clay mining

Records on site	0
-----------------	---

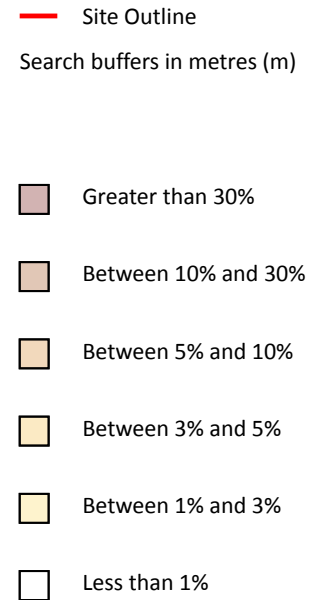
Generalised areas that may be affected by kaolin and ball clay extraction.

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

19 Radon



© Crown copyright and database rights 2023. Ordnance Survey licence 100035207



19.1 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 86**

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

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



20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m

1

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 km². 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 km²; 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

This data is sourced from the British Geological Survey.

20.2 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 km²).

This data is sourced from the British Geological Survey.

20.3 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 km².

This data is sourced from the British Geological Survey.



21 Railway infrastructure and projects

21.1 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.

21.2 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.

21.3 Railway tunnels

Records within 250m 0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 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.

21.5 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.

21.6 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.

21.7 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.

21.8 Crossrail 1

Records within 500m

0

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.

21.9 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.

21.10 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: <https://www.groundsure.com/terms-and-conditions-april-2023/>.



APPENDIX C

Preliminary Conceptual Model

POTENTIAL RECEPTOR	COMMENTS	Include in PCM
PROPERTY: Other		
On Site		
Crops	None intended on site	✘
Domestic Produce	May be grown in residential gardens	✓
Livestock	None anticipated on site	✘
Domestic Animals	May be owned by residents	✓
Game	None anticipated on site	✘
Off Site		
Crops	Possibly in fields surrounding site	✓
Domestic Produce	Possibly in houses in vicinity of the site	✓
Livestock	Possibly in fields surrounding site	✓
Domestic Animals	May belong to adjacent residents	✓
Game	Unlikely	✘
PROPERTY: Buildings		
On Site		
	Residential Properties, services, flora	✓
Off Site		
	Residential and Commercial Properties, services, flora	✓
HUMANS		
On Site		
Residents	Future Residents	✓
Construction workers	During ground excavations	✓
Employees	Landscape Gardeners	✓
Surface water users	No current surface water abstractions located on site	✘
Off Site		
Residents	Residents adjacent to the site	✓
Recreational users	Recreational walkers	✓
Groundwater users	No groundwater abstractions within 250 m.	✘
Controlled Waters		
On Site		
Surface Waters	There are no surface water features located on site.	✘
Groundwater	The underlying sandstone bedrock is classified as a principal aquifer and represents a significant receptor.	✓
Off Site		
Controlled Waters	The River Gele runs east-west some 8 m south of the site and a minor water feature is present some 9 m south-east of the site.	✓
Ecological Systems		
On/Off Site		
SSSIs, national nature reserves, SACs etc	None on site or located within 250 m of the site	✘

Table A: Potential Receptors to be Considered in the Preliminary Conceptual Model

Link	Source	Hazard	Transport Mechanism	Pathway	Medium of Exposure	Receptor	Risk Summary*
1	Contaminated soils	Direct contact /ingestion of soil or dust	Direct contact with contaminated soil	Dermal contact/ingestion of soil at surface	Soil	Humans (on-site/off-site), domestic pets	Low-Medium
2	Contaminated soils	Particulate inhalation	Wind blown particulates	Inhalation of particulates	Air	Humans (on-site/off-site), domestic pets	Low-Medium
3	Contaminated Soils	Impaired produce growth	Uptake of contaminants by homegrown produce resulting in loss	Uptake during growth	Vegetable produce	Property (domestic produce)	Low-Medium
4	Contaminated Soils	Ingestion of Contaminants	Uptake of contaminants by homegrown produce	Consumption of homegrown produce	Vegetable produce	Humans	Low-Medium
5	Contaminated Soils	Inhalation of Ground Gas	Degradation of contaminants generating ground gas through unsaturated zone to soil leading to inhalation	Inhalation of Gases	Air	Humans (on-site/off-site, domestic pets)	Low-Medium
6	Contaminated Soils	Vapour Inhalation	Volatilisation of organic compounds through unsaturated zone of soil leading to inhalation	Inhalation of Vapours	Air	Humans (on-site/off-site, domestic pets)	Low-Medium
7	Contaminated Soils	Damage to structure/services	Direct contact of contaminants with building structures/services	Direct contact	Soil/Water	Flora, services	Low-Medium
8	Contaminated Soils	Degradation of perched water quality	Dissolution or suspension of contaminants into perched waters	Dissolution or Suspension	Water	River Gele 8 m south, minor water feature 9 m south-east.	Low-Medium
9	Contaminated Soils	Pollution of underlying groundwater	Dissolution or suspension of contaminants into groundwaters (Bedrock Principal Aquifer)	Dissolution or Suspension	Water	Groundwaters	Low-Medium

Table B: Preliminary Conceptual Model

***Relative Risk Screening and Prioritisation for further Investigation & or Assessment**

High	Higher probability of occurrence and identification of primary sources of contamination with respect to most sensitive receptors.
Medium	Pollutant linkage generally dependent on the presence of other primary pollutant linkages and/or where pollutant linkage generally associated with less sensitive receptors.
Low	Lower probability of occurrence such as based on requirement for significant migration pathway or where pollutant linkage requires the presence of source contaminants at concentration likely to be much higher than other identified pollutant linkages.
















APPENDIX D

BGS Boreholes

RECORD OF BOREHOLE 1, TILAS LEWID, RHYLL

BORING: STARTED 26/1/82 SH 97 NE/15
 BORING: FINISHED 26/1/82
 HOLE SIZE 150mm dia to 12.3m

GROUND LEVEL 3.9m A.O.D. Co-ordinates 9908 E. 7862 N,

SAMPLE OR TEST			CHANGE OF STRATA		
DEPTH	TYPE	LEGEND	DEPTH	O.D. LEVEL	DESCRIPTION
			0.35	3.55	TURF and TOPSOIL
0.4 0.5-0.95	D1 U(4)1				Firm to stiff brown and grey silty CLAY with root traces.
1.0	D2				
1.7	D3				
1.9	D4		1.9	2.0	
2.0-2.45	U(4)2				Soft grey brown silty CLAY and grey clayey SILT with occasional shells
2.5	D5				
2.7	W1		2.7	1.2	Loose grey medium to fine SAND with occasional shells.
4.1 4.25-4.55	D6 S(8)				
			5.3	-1.4	
5.75-6.05	S(16)				Medium dense grey medium to fine SAND with occasional shells, thin seams of soft grey silty clay and peat traces.
6.45-7.75	S(23)				
8.65-8.95	S(4)				
9.2	D7		8.9	-5.0	Very soft grey silty CLAY with patches of decomposed vegetation merging into soft to firm light grey clayey sandy SILT
					
REMARKS	Groundwater entered the borehole at a depth of 2.7m and rose to stand at 2.0m after 15 minutes. On completion of boring water stood at 1.3m. After leaving the hole open for 24 hours water rose to 0.3m.				
KEY:	D - DISTURBED SAMPLE S () STANDARD PENETRATION TEST B - BULK DISTURBED SAMPLE C () CONE PENETRATION TEST W - WATER SAMPLE NO. OF BLOWS FOR 300 mm PENETRATION IN BRACKETS U - UNDISTURBED SAMPLE				

RECORD OF BOREHOLE 2, PLAS LLWYD, RHYLL

SORING: STARTED 28/1/82 SH 97 NE/16
 BORING: FINISHED 29/1/82
 HOLE SIZE 150mm dia to 16.3m

GROUND LEVEL 4.0m A.O.D.

Co-ordinates 9898E 7864N.

SAMPLE OR TEST		CHANGE OF STRATA			
DEPTH	TYPE	LEGEND	DEPTH	O.D. LEVEL	DESCRIPTION
0.3	D1		0.3	3.7	TURF and TOPSOIL
0.5-0.95	J(4)1				Stiff brown and grey mottled silty CLAY with root traces.
1.0	D2		1.0	3.0	
1.5	D3				Stiff becoming soft, brown and grey mottled silty CLAY
1.7-2.15	J(4)2		1.9	2.1	
2.2	D4				Soft grey very silty CLAY
3.0	D5				
6-4.05	J(4)3				
3.8	W1		3.8	0.2	
4.35-4.65	S(7)				Loose to medium dense grey medium to fine SAND with occasional shells and thin seams of soft grey silty clay.
5.8	B1				
5.95-6.25	S(15)				
7.2	B2				
7.35-7.65	S(7)				Interbedded soft grey silty CLAY and firm grey clayey SILT with traces of decomposed vegetation.
9.35-9.65	S(7)		9.2	-5.2	
9.8	D6				

Groundwater entered the borehole at a depth of 3.8m and rose to stand at 2.1m after 15 minutes.
 REMARKS Standing water level 5.30pm 28/1/82 - 5.7m.
 Standing water level 8.30am 29/1/82 - 4.4m
 Standing water level 8.30am 1/2/82 - 0.9m

KEY: D - DISTURBED SAMPLE S () STANDARD PENETRATION TEST
 A - BULK DISTURBED SAMPLE C () CONE PENETRATION TEST
 W - WATER SAMPLE NO. OF BLOWS FOR 300 mm
 U - UNDISTURBED SAMPLE PENETRATION IN BRACKETS

APPENDIX E

Site Photographs



P1: View western section of the site facing west towards 'Kingsway' road.



P2: Miscellaneous tools and tyres beside shipping containers in the western section of the site.



P3: A pile of made ground left from previous construction located near the centre of the site.



P4: Close-up view of the made ground containing visible anthropogenic fragments amongst soil.



P5: Drum of suspected oil/grease beside vehicle parts located near the centre of the site.



P6: Plastic tank located on the western boundary of the southern section of the site. Photo facing west.

Comments:

This appendix is for illustrative purposes only and is for use only in conjunction with associated reports relating to the project

Site: Land off Gwellyn Avenue, Kinmel Bay
Title: Appendix E – Site Photographs



Photographs 1 to 6

Project No: 23060	Created By: Adam Hope	Date: April 2023
-----------------------------	---------------------------------	----------------------------

Client: Rikki Proffitt



P7: Pile of coarse aggregate near the south-western corner of the southern section of the site.



P8: View of the southernmost poultry house (inactive) facing north-east.



P9: Inside view of the southernmost poultry house with hardstanding floor.



P10: Electrical unit within the entrance to the southernmost poultry house.



P11: View of the ceiling of the southernmost poultry house.



P12: Area of land between poultry houses thought to be underlain by gravel. Photo facing east.

Comments:

This appendix is for illustrative purposes only and is for use only in conjunction with associated reports relating to the project

Site: Land off Gwellyn Avenue, Kinmel Bay
Title: Appendix E – Site Photographs



Photographs 7 to 12

Project No: 23060	Created By: Adam Hope	Date: April 2023
-----------------------------	---------------------------------	----------------------------

Client: Rikki Proffitt



P13: Grassed area between two poultry houses facing east.



P14: A unit with suspected asbestos sheet roofing located in the east of the site.



P15: View inside the aforementioned unit showing the suspected asbestos roofing.



P16: View of the floor of the aforementioned unit.



P17: Manhole located in the north-east of the site.



P18: Electrics on the exterior of a poultry house in the east of the site. Photo facing north-east

Comments:



GEO-ENVIRONMENTAL CONSULTING ENGINEERS

Photographs 13 to 18

This appendix is for illustrative purposes only and is for use only in conjunction with associated reports relating to the project

Site: Land off Gwellyn Avenue, Kinmel Bay
Title: Appendix E – Site Photographs

Project No:
23060

Created By:
Adam Hope

Date:
April 2023

Client: Rikki Proffitt



P19: Gravel track between two poultry houses leading to a north-easterly section of the site.



P20: Stockpiled timber and piles of wood chips located some 20 m east of the centre of the site.



P21: View a small building and electrical pylons west of the poultry houses facing roughly north-west.



P22: Two silos and stockpiled straw bedding located east of the northernmost poultry house.



P23: A manhole and a unit with suspected asbestos sheet roofing in the north-east of the site. Photo facing north-east.



P24: Access Road off Gwellyn Avenue which borders an off-site residential dwelling in the north of the site.

Comments:



GEO-ENVIRONMENTAL CONSULTING ENGINEERS

Photographs 19 to 24

This appendix is for illustrative purposes only and is for use only in conjunction with associated reports relating to the project

Site: Land off Gwellyn Avenue, Kinmel Bay
Title: Appendix E – Site Photographs

Project No: 23060
Client: Rikki Proffitt

Created By: Adam Hope

Date: April 2023



P25: Grassed area in the north of the site which borders the northern site periphery. Photo facing west.



P26: Gravel track which borders the upper eastern site periphery. Photo facing north.



P27: Suspected Recycling works area located south of the northernmost poultry house. The area was inaccessible at the time of visit.



P28: An active garage located in the west of the site.



P29: Pile of coarse aggregate and several drums located in the north-west of the site.



P30: Access Road off St. Asaph Avenue in the west of the site.

Comments:



Photographs 25 to 30

This appendix is for illustrative purposes only and is for use only in conjunction with associated reports relating to the project

Site: Land off Gwellyn Avenue, Kinmel Bay

Title: Appendix E – Site Photographs

Project No: 23060

Created By: Adam Hope

Date: April 2023


Client: Rikki Proffitt

APPENDIX F

Drawings



LEGEND

 SITE LOCATION

REV	DESCRIPTION	DATE	BY



GEO-ENVIRONMENTAL CONSULTING ENGINEERS
 Suite One, No 3 Mitton Road Business Park,
 Mitton Road, Whalley, Lancashire, BB7 9YE
 Tel: 01254 377 622
 Email: mbuckley@bekenviro.co.uk
 Web: www.bekenviro.co.uk

CLIENT.
 MR R PROFFITT

JOB TITLE.
 LAND OFF GWELLYN AVENUE,
 KINMEL BAY


DRAWING TITLE.
 SITE LOCATION PLAN

SCALE © A3. N'TS	DRAWN BY. D.E.	APPROVED BY. M.B.	DATE. 10/05/23
---------------------	-------------------	----------------------	-------------------

DRAWING No. 23060-1	REV. -
------------------------	-----------



LEGEND

 SITE FOOTPRINT

REV	DESCRIPTION	DATE	BY



GEO-ENVIRONMENTAL CONSULTING ENGINEERS

Suite One, No 3 Mitton Road Business Park,
Mitton Road, Whalley, Lancashire, BB7 9YE
Tel: 01254 377 622
Email: mbuckley@bekenviro.co.uk
Web: www.bekenviro.co.uk

CLIENT.

MR R PROFFITT

JOB TITLE.

LAND OFF GWELLYN AVENUE,
KINMEL BAY

DRAWING TITLE.

SITE LAYOUT PLAN

SCALE @ A3. N'TS	DRAWN BY. D.E.	APPROVED BY. M.B.	DATE. 10/05/23
DRAWING No. 23060-2			REV. -