



Pennant Walters Ltd

GLANLLYNFI GARTH WIND FARM: NORTHERN ARRAY

Appendix 11A (Part 1) - Geoenvironmental
Preliminary Risk Assessment (PRA) - Northern
Array





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1	INTRODUCTION	7
1.1	BACKGROUND	7
1.2	DEVELOPMENT PLANS	7
1.3	ASSESSMENT AIMS AND OBJECTIVES	8
1.4	SCOPE OF WORKS	8
1.5	LEGISLATIVE CONTEXT	9
1.6	INFORMATION SOURCES	9
1.7	UNDERSTANDING RISK	10
1.8	COMMERCIAL LIMITATIONS	10
2	SITE INFORMATION AND ENVIRONMENTAL SETTING	11
2.1	INTRODUCTION	11
2.2	SITE DETAILS	11
2.3	REGULATORY DATABASE INFORMATION	14
2.4	LOCAL AUTHORITY ENVIRONMENTAL INFORMATION	15
2.5	MINING/ MINERAL EXTRACTION	16
2.6	MINING REMEDIATION AUTHORITY DATA	18
2.7	MINE GAS PRELIMINARY RISK SCREENING	19
2.8	RADON GAS	21
2.9	PLANNING HISTORY, PREVIOUS INVESTIGATIONS AND REMEDIATION	21
2.10	UNEXPLODED ORDNANCE (UXO)	21
2.11	SENSITIVE LAND USES	21
	ENVIRONMENTAL DESIGNATIONS	21
	VISUAL AND CULTURAL DESIGNATIONS	21
2.12	CLIMATE CHANGE	22
	SEA LEVEL RISE/ FLOOD RISK	22
	PROJECTED CHANGES TO GROUNDWATER LEVEL	22
3	SITE HISTORICAL DEVELOPMENT	23
3.1	INTRODUCTION	23

3.2	SITE HISTORICAL DEVELOPMENT	23
	SUMMARY OF THE SITE'S HISTORICAL DEVELOPMENT	26
4	INITIAL CONCEPTUAL SITE MODEL	27
4.1	INTRODUCTION	27
4.2	BACKGROUND TO THE INITIAL CSM	27
	POTENTIAL SOURCES OF CONTAMINATION	27
	POTENTIAL PATHWAYS	28
	POTENTIAL RECEPTORS	29
	EXCLUSIONS FROM THE RISK ASSESSMENT	29
	Redevelopment/ Construction Workers	29
	Invasive Species	30
	Unexploded Ordnance	30
	Aggressive Ground Conditions	30
4.3	INITIAL ENVIRONMENTAL RISK ASSESSMENT	30
5	PRELIMINARY GEOTECHNICAL CONSIDERATIONS	34
6	PRELIMINARY GEOTECHNICAL RISK REGISTER	36
7	CONCLUSIONS AND RECOMMENDATIONS	39
7.1	CONCLUSIONS	39
	Human Health	39
	Controlled Waters	39
	Infrastructure	39
	Geotechnical	40
7.2	RECOMMENDATIONS	40
8	REFERENCES	41

Table 1-1 – Sources of Information	9
Table 2-1 – Site and Surrounding Area Details	11
Table 2-2 – Site Environmental Setting	12

Table 2-3 – Summary of Regulatory Database Information	15
Table 2-4 - Summary of Mining and Mineral Extraction Information	16
Table 2-5 – Qualitative Mine Gas Risk Designation	19
Table 3-1 – Site Historical Development	23
Table 4-1 – Potential Sources of Contamination	27
Table 4-2 – Initial Environmental Risk Assessment	32
Table 6-1 – Geotechnical Risk Register Scoring System	37
Table 6-2 – Preliminary Geotechnical Risk Register	37

APPENDICES

ANNEX A

FIGURES

ANNEX B

GROUNDSURE REPORT

ANNEX C

COAL AUTHORITY REPORT

ANNEX D

ZETICA DESK STUDY AND RISK ASSESSMENT

ANNEX E

GENERAL LIMITATIONS

ANNEX F

RISK ASSESSMENT METHODOLOGY

ANNEX G

CIRIA RISK DEFINITIONS

1 INTRODUCTION

1.1 BACKGROUND

- 1.1.1. This Geo-environmental Preliminary Risk Assessment (PRA) Desk Study has been prepared by WSP UK Ltd ('WSP') on behalf of Pennant Walters Ltd ('the Applicant') who is submitting an application for a Development of National Significance (DNS) for the proposed Glanllynfi Garth Wind Farm ('the Proposed Development').
- 1.1.2. The Proposed Development will be located across two land parcels comprised of semi-improved grassland, marshy grassland and heathland, which are situated in the local authority area of Bridgend County Borough Council (BCBC). The nearest town is Maesteg, the outskirts of which are approximately 1 km west of the Northern Array and 1.5 km west of the Southern Array. The Proposed Development is located as follows:
- The Northern Array (Pwll-yr-lwrch) – at central grid coordinates 287102, 192887.
 - The Southern Array (Cynhordy) – at central grid coordinates 288988 189854.
- 1.1.3. This report relates only to the Northern Array (Pwll-yr-lwrch), herein referred to as 'the Site', a separate PRA has been prepared for the Southern Array (Cynhordy). The Site location is shown on **Figure 1 in Annex A**.

1.2 DEVELOPMENT PLANS

- 1.2.1. This PRA has been prepared to accompany the Environmental Statement (ES) for the Proposed Development. The Proposed Development on the Site comprises the following elements:
- Up to four three-bladed horizontal axis wind turbines, with an anticipated height to blade tip of 180 m. Wind turbine foundations will be required to ensure the stability of the wind turbine structures. Where rockhead, or suitable bearing strata is relatively shallow (<2 m), the wind turbine foundations will bear directly onto rock. Where rockhead or suitable bearing is between 2 and 5 m depth, the existing overburden will be excavated and replaced with suitable load bearing material, most likely to be imported stone. The foundation design will depend on the results from detailed ground investigation; it is currently expected that turbines will not require piled foundations. Should piling be necessary, the methodology will be discussed and agreed with the appropriate determining authority prior to construction.
 - Crane hardstanding (aka crane pads) adjacent to each wind turbine. The crane hardstanding will be left in place following construction to allow for the use of similar plant should major components need replacing during the operation and maintenance of the wind farm.
 - Internal access tracks comprised of newly formed stoned tracks. The track construction will be approximately (~) 5 m wide, ~0.6 m deep (dependent of ground conditions), with a ~2 m grass verge either side.
 - Power cables linking the wind turbines to the on-Site substation, laid in trenches underground, typically a trench 750 mm deep and 450 mm wide. The arrangement of the substation within each parcel would depend on National Grid Electricity Distribution (NGED)'s requirements. If required, a transformer would be provided within the substation compound which would comprise a stoned area of approximately 37.5 m x 35 m containing the transformer and associated equipment (isolators, circuit breakers). If a transformer is not

required, then all electrical equipment would be housed within the substation building. The substation buildings (approximately 14 m x 10 m) would be single storey buildings which will house metering, protection and control equipment, storage, and welfare facilities.

- The Proposed Development would include short sections of 66 kV overhead lines (via wooden pole) within the Site to connect the on-Site substation to the Grid Connection (off-Site).
- Stone materials for track building are expected to be imported from local quarries; no borrow pits are proposed on the Site.
- Temporary construction compound(s).

1.2.2. Prior to the main construction phase commencing, enabling works may be necessary, including:

- Geotechnical investigations: excavation of trial pits or boreholes,
- Upgrading of existing access point and tracks and construction of new access tracks and passing places inter-linking the turbine locations and substation; this will require import of suitable roadstone.
- Establishment of Site compounds.
- There may also be required upgrades to public roads, including road widening to allow abnormal loads to negotiate corners, protection of any below ground services and the temporary removal or resitting of infrastructure.

1.3 ASSESSMENT AIMS AND OBJECTIVES

1.3.1. The aim of this assessment is to support the ES and to inform the scope of the ground investigation and measures required for the detailed design and construction of the Project. To address the identified aim, the key objectives include:

- Developing an initial Conceptual Site Model (CSM) to assess the status of any potential contamination and identify any potentially significant contaminant linkages that require further consideration in line with current guidance including the Land Contamination Risk Management (LCRM) guidance published by the Environment Agency.
- Evaluate likely contaminated land exposure pathways and their potential significance to identified receptors.
- Identify potential geohazards and produce a geotechnical risk register.

1.4 SCOPE OF WORKS

1.4.1. To meet the aims and objectives identified in Section 1.3, the PRA includes the following scope of works:

- A targeted walkover of the Site (to be completed prior to the Final ES and the PRA updated, as required).
- Purchase and review of a Groundsure Insight report.
- Review of historical maps and plans to understand former land uses and potential contaminative activities on, and surrounding, the Site.
- Review of relevant regulatory databases.
- Review of information provided by relevant regulators: Natural Resources Wales (NRW) and BCBC.

- Review of relevant publicly available information relating to hydrological features, hydrogeology, neighbouring land use, ecologically sensitive uses and geology, to establish the environmental setting of the Site.
- Development of an initial CSM using the source-pathway-receptor contaminant linkage approach.
- Assessment of the environmental risks associated with the ground, groundwater and ground gas conditions at the Site, in the context of the proposed future use of the Site.
- Provide a Geotechnical Risk Register (GRR).

1.5 LEGISLATIVE CONTEXT

1.5.1. The assessment was undertaken in the legislative context of:

- Part 2A of The Environmental Protection Act 1990 (UK Government, 1990).
- Planning Policy Wales Edition 12 (Welsh Government, 2024).

1.5.2. This PRA has been produced in general accordance with the following industry and statutory guidance for land contamination assessment:

- Land Contamination Risk Management (LCRM) (Environment Agency (EA), 2025).
- Contaminated land statutory guidance (Department for Environment, Food & Rural Affairs, 2012).
- Guidance for the Safe Development of Housing on Land Affected by Contamination (National House Building Council (NHBC), EA, Chartered Institute of Environmental Health (CIEH), 2008).
- Development of Land Affected by Contamination: A Guide for Developers (NRW, 2023).
- Good Practice for Risk Assessment for Coal Mine Gas Emissions (CL:AIRE, October 2021).

1.6 INFORMATION SOURCES

1.6.1. The sources of information used to inform this report are detailed in **Table 1-1**.

Table 1-1 – Sources of Information

Source	Report
WSP	• Scoping Report – see Appendix 1A of the Environmental Statement (ES) • Chapter 4: Development Description of the ES.
Third Party	• Groundsure Enviro+Geo Insight Report, Ref: WSP-ED6-YPM-8S8-AWO, June 2026, referred to as the 'Groundsure report', included in Annex B • Groundsure Map Insight historic maps, Ref: WSP-TWM-EC5-OAJ-Q37, June 2026, included in Annex B • Consultants Coal Mining Report, included in Annex C • Zetica, 2026, Desk Study & Risk Assessment, Ref: P17427-26-R1, dated 05 June 2026, referred to as the 'Zetica report', included in Annex D
Public Information	• British Geological Survey (BGS) GeoIndex Onshore viewer, www.bgs.ac.uk/map-viewers/geoindex-onshore, accessed June 2026 • BGS Geology Viewer geologyviewer.bgs.ac.uk, accessed June 2026 • BGS 1:63,360 geological survey of Great Britain (England and Wales) Drift, Sheet 248 Pontypridd, 1975 • BGS 1:63,360 geological survey of Great Britain (England and Wales) Solid, Sheet 248 Pontypridd, 1963

Source	Report
	- LandIS Soilscares, www.landis.org.uk/soilscares, accessed June 2026 - Welsh Government. DataMap Wales, datamap.gov.wales/maps/new#, accessed June 2026 - Mining Remediation Authority, Map viewer, datamine-cauk.hub.arcgis.com, accessed June 2026 - Multi Agency Geographic Information for the Countryside (MAGIC) interactive map, www.magic.gov.uk, accessed June 2026 - NRW interactive map viewer, naturalresources.wales/evidence-anddata/maps/browse-map-of-data-about-the-natural-environment, accessed June 2026 - Flood Risk Assessment Wales Map, naturalresourceswales.gov.uk/flooding/check-your-flood-risk-on-amap-flood-risk-assessment-wales-map, accessed June 2026 - Welsh Government (2022) Peatlands of Wales Map, datamap.gov.wales/maps/peatlands-of-wales-maps, accessed June 2026 - Met Office (2018) UKCP18 Marine Climate Change, www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-infographic-headline-findings-marine.pdf, accessed June 2026 - Met Office (2018) UK Climate Projections 2018 (UKCP18) - Climate Central Inc (2021) Coastal Risk Screening Tool, coastal.climatecentral.org, accessed June 2026 - UK Centre for Ecology and Hydrology (2025) Hydroprojections, eFLaG: Groundwater recharge, hydroprojections.ceh.ac.uk/eflag/groundwater-recharge, accessed June 2026
Notes	The report contains British Geological Survey materials ©NERC 2026 and ©Natural Resources Wales database right.

1.7 UNDERSTANDING RISK

- 1.7.1. It is important to understand that any risks identified during a preliminary assessment, such as those presented in this document, are perceived risks based on the information reviewed. A more detailed assessment of the actual risks can only be assessed following further intrusive investigations.
- 1.7.2. The preliminary assessments presented herein are qualitative based on professional judgements following the review of available data and within the context of the existing/ proposed use. Those risk categories presented (very low, low, moderate/ low, moderate, high and very high) follow guidance presented in Guidance for the Safe Development of Housing on Land Affected by Contamination. The guidance states that the classification of risk should be based on an understanding of both the magnitude of probability (i.e. likelihood) of a risk occurring and the magnitude of the potential consequence (i.e., severity) of a risk.

1.8 COMMERCIAL LIMITATIONS

- 1.8.1. This report is addressed to and may be relied upon by the Applicant. The report may not be relied upon or transferred to any other parties without the express written authorisation of WSP. This report should be read in full. No responsibility will be accepted where this report is used, either in its entirety or in part by any other party.
- 1.8.2. Third party information used in the production of this report has been taken in good faith as being accurate. WSP cannot and will not accept any liability for errors and/or omissions in data provided by others and WSP cannot warrant the work of others.
- 1.8.3. General limitations of the assessment are included in **Annex E**.

2 SITE INFORMATION AND ENVIRONMENTAL SETTING

2.1 INTRODUCTION

2.1.1. This section is informed by information sources listed in Section 1.6. Key observations are presented in **Table 2-1** below.

2.2 SITE DETAILS

Table 2-1 – Site and Surrounding Area Details

Item	Details
Site Location	The Site is located in South Wales within the BCBC administrative area between the Garw Valley to the east and the Llynfi Valley to the west. The nearest settlement is Maesteg, the outskirts of which are ~1 km west of the Site. There are a number of smaller settlements, isolated properties and busy roads within 1 km of the Site. Access to the Site is via existing access tracks which serve the operational Pen y Cymoedd Wind Farm and Llynfi Afan Wind Farm, from the A4107/A4061.
National Grid Reference	287008, 192839
Site Description and Current Use	An upland plateaux landscape with numerous steep-sided valleys, comprised of semi-improved grassland, marshy grassland, and heathland. At the time of writing a Site walkover has not been undertaken. Following the walkover, this section will be updated with additional relevant information.
Area	Approximately 70.46 hectares (ha).
On-Site Activities	At the time of writing a Site walkover has not been completed. From 2026 satellite imagery the Site appears to be primarily pastoral field parcels.
Site Setting and Surrounding Land Uses	The northern and eastern boundaries border Dunraven Forest. The southern and western boundaries comprise pastoral field parcels.
Topography and Ground Cover	The Site elevation ranges from around 280 m Above Ordnance Datum (AOD) to 425 m AOD. The Site appears to form a plateau around the peak of Mynydd Pwll y Lwrch in the south-western corner of the Site.
Boundaries	At the time of writing a Site walkover has not been undertaken. From 2026 satellite imagery the Site appears to be primarily pastoral field parcels bounded by stone walls. The northern and eastern boundaries are generally marked by forested areas, with the southern and western marked by sharp topographical drops.
Drainage and Flooding	At the time of writing a Site walkover has not been undertaken. Following the walkover, this section will be updated with relevant information.
Embankments and Slopes	From 2026 satellite imagery, the site is generally bounded to the east and south by steep topographical changes. The Site gently slopes upward from the Site boundaries to the peak elevation in the north-east corner of the Site.

Item	Details
Trees and Vegetation	From 2026 satellite imagery the site appears to be primarily pastoral field parcels bounded by stone walls. Further information will be available following the Site walkover.
Foundations, Retaining Walls and Basements	At the time of writing a Site walkover has not been undertaken. Following the walkover, this section will be updated with relevant information.
Mining Features	Multiple mineshafts are recorded on Site and will require inspection during the walkover.
Visual Observations of Contamination or Ground Subsidence	At the time of writing a Site walkover has not been undertaken. Following the walkover, this section will be updated with relevant information. Multiple mineshafts are recorded on Site and will require inspection during the walkover.
Asbestos Containing Materials (ACM)	At the time of writing a Site walkover has not been undertaken. Following the walkover, this section will be updated with relevant information.

Table 2-2 – Site Environmental Setting

Item	Details
Geology	
Soils (including peat)	The LandIS Soilscales map indicates that the soil type within the Site predominantly comprises very acid loamy uplands soils with a wet peaty surface, a peaty texture and high carbon content (Soilscale 16). The Peatlands of Wales map shows no deep peat (defined by the Welsh Government as either >40cm thickness organic 'O' horizon material within the upper 80 cm, or >30 cm organic 'O' horizon material resting directly on bedrock) on-Site. No deep peat records are recorded within 250 m of the site boundary. The Peatland Evidence map was also consulted and shows one on-Site area of peat with a score of '1' in the north-west of the Site. A peatland evidence score defines the level of confidence in the presence of peat in any given grid cell, with a score of '1' showing there is one indicator to suggest peat might be present. In the surrounding area within 250 m of the Site, other areas with a peat evidence score of '1' are present around the Site, the largest being approximately 20 m north within an area of plantation woodland. This area is also shown as peat on the BGS GeolIndex viewer and within the Groundsure report, as outlined in the superficial deposits section below.
Artificial Ground/ Made Ground	None mapped on-Site, however there is potential for Made Ground to be present due to the legacy coal mining and other mineral extractions on-Site.
Superficial Deposits	None mapped on-Site. Localised deposit of Hill Peat located 8 m north of the Site and Devensian Till deposits are located 195 m north of the Site. Landslide deposits are noted in the north-west of the Site and off-Site to the south-west, south and south-east of the Site between 7 m and 432 m.

Item	Details
Bedrock	The bedrock geology on-Site comprises primarily the Llynfi Member Sandstone, defined as green-grey and blue-grey, feldspathic, micaceous lithic arenites (Pennant sandstones) with thin mudstone/ siltstone and seatearth interbeds and mainly thin coals. Around the south, west and north-western corner of the Site, bedrock is shown as the South Wales Upper Coal Measures Formation, described as grey, productive coal-bearing mudstones/ siltstones with seatearth and minor grey, quartz-rich sandstones, coals and ironstones. The South Wales Middle Coal Measures Formation lies outside the Upper Formation and encompasses the north-western tip of the Site. The Llynfi Member- Mudstone, siltstone and sandstone is also present in the north-east of the Site. Geological faults are shown running generally north-west to south-east through the Site, two in the south-west to central area, and one in the north-east corner, with another at the boundary in this area. An inferred coal seam is also shown around the south, west and north-western corner at the geological boundary between the Llynfi Member Sandstone and South Wales Upper Coal Measures Formation, as well as in the north-east area of the Site.
BGS Borehole Records	Two historical boreholes are located on-Site, with a further two located 118 m and 245 m south of the Site. The descriptions of the strata in these logs are not clear and both borehole logs appear to have been drilled upwards from within mineworkings underlying the Site.
Mining and Mineral Extraction	The Groundsure report includes 40 BritPit records within 500 m of the Site. Five of these features are located on-Site and have all ceased extraction. Two features are located in the north-west of the Site associated with deep coal workings. The other three features are within the south-west of the Site associated with sandstone extraction. The off-Site features range in distance from 28 m to 467 m from the Site and are predominantly located to the south-west, south, south-east, west and north-west of the Site. Numerous surface and underground workings are present on and off-Site, predominantly located to the west and north-west, with some present in the south-east. There are five non-coal mining records on-Site for iron ore (bedded). The Site is located within a coal mining area as defined by the Coal Authority (CA). As such, a Consultants Coal Mining Report (CCMR) has been obtained for the Site and is presented in Annex C. Further assessment of coal mining issues will be included in the WSP Coal Mining Risk Assessment (CMRA) for the Site.
Natural Ground Hazards	• Shrink swell clays – negligible to very low (on-Site). • Running sands – negligible (on-Site) and very low 22 m north of the Site. • Compressible deposits – negligible (on-Site) and high 22 m north of the Site. • Collapsible deposits – negligible to very low (on-Site) and negligible off-Site. • Landslides – very low to high (on-Site) and low to high off-Site. • Ground dissolution of soluble rocks – negligible (on-Site).
Hydrogeology	
Superficial Aquifer	None recorded on-Site. The peat and Devensian Till deposits north of the Site are recorded as unproductive and secondary undifferentiated aquifers, respectively.

Item	Details
Bedrock Aquifer	Bedrock beneath the Site and within the surrounding area is classified as a Secondary A aquifer.
Groundwater Vulnerability	Medium vulnerability with a productive bedrock aquifer and no superficial aquifer.
Groundwater Quality	The Site is within the Swansea Carboniferous Coal Measures groundwater body (GB41002G201000) with an overall rating of poor.
Groundwater Abstractions	No groundwater or potable abstractions on or within 2 km of the Site.
Source Protection Zones (SPZs)	None within 500 m of the Site.
Noethern report: The Site lies on top of a hill which further reduces the risk of the proposed development impacting, and being impacted by, flooding. Groundwater Flooding	The Groundsure report does not note any historical flood events. The Site and surrounding area are not within a Flood Zone 2 or 3 area. There is negligible risk from groundwater flooding. The Site lies on top of a hill which further reduces the risk of the proposed development impacting, and being impacted by, flooding.
Hydrology	
Surface Water	The Groundsure report details three on-ground surface and one underground watercourses within the north-east, north and north-west of the Site. Numerous additional water networks are present within 250 m of the Site. DataMapWales show surface water features flowing off-Site in all directions.
Surface Water Quality	The Site is within the 'Llynfi – headwaters to Lletty Brongu STW' water body catchment (GB110058026331), which is indicated to have chemical and ecological ratings of high and moderate, respectively.
Surface Water Abstractions	None recorded on-Site. One historic surface water abstraction relating to dust suppression is noted 931 m south-west of the Site.
Surface Water Flooding	Select areas of Site have a maximum surface water flooding risk of a 1 in 30-year rainfall event experiencing 0.3 m to 1.0 m of rainfall.

2.3 REGULATORY DATABASE INFORMATION

- 2.3.1. This section summarises information from the Groundsure report (**Annex B**). The search was undertaken for a 500 m buffer around the Site. Groundsure data was ordered prior to design freeze, which means that there is a slight deviation between the Site boundary as shown on **Figure 1 (Annex A)** and the boundary applied in the Groundsure report. This only affects southern and central portions of the Site access road and the discussion below relates to the Site boundary as shown on **Figure 1**.

Table 2-3 – Summary of Regulatory Database Information

Item	Location and Distance from the Site and Date(s)	Additional Comment
Historical Industrial Land Use	On-Site • Refuse heap (1897) • Unspecified heaps (1876, 1921, 1947) • Unspecified pits (1876) • Unspecified ground workings (1876, 1921-1947, 1965-1975) • Coal levels (1897, 1921, 1947) • Unspecified disused level (1975) • Trial level (1876, 1921, 1947) • Unspecified old levels (1897) • Cuttings (1921-1947) • Unspecified quarries (1897-1921, 1921-1947) • Colliery (1921-1947) There are approximately 536 (un-grouped) off-Site historical industrial land uses that include disused levels, pits, quarries (including disused), coal levels, unspecified heaps, trial levels, refuse heaps, old shafts, ground workings, tramway sidings, cuttings and a disused tip. Full details of the location and distance to the Site are included in the Groundsure report. An unspecified historical tank dated 1878 is present 462 m south-west of the Site.	The majority of the historical industrial land uses are located to the west of the Site and beyond, with some being noted in the south and south-east.
Current Industrial Land Use	Recent/ current potentially contaminative industrial sites located off-Site include the following: • Disused trial shafts (69 m west and 124 m north-west) • Disused quarries (159 m north-east and 194 m west) • Electricity poles (183 m north)	
Pollution Incidents	A category 2 incident relating to construction and demolition materials and waste is recorded from November 2021 479m north-west of Site. No details are available on the impact to water or air.	

- 2.3.2. No licensed industrial activities (Part 1(1)), licensed pollutant releases (Part A(2)/B) or licensed discharges to controlled water were recorded on-Site or within 500 m of the Site.
- 2.3.3. No historical or active landfill or waste sites are recorded on or within 500 m of the Site. Waste exemptions are in place between 443 m and 468 m west of the Site relating to agricultural activities.

2.4 LOCAL AUTHORITY ENVIRONMENTAL INFORMATION

- 2.4.1. A request for relevant environmental information and Petroleum Officer information has been made to BCBC. This is awaited at the time of writing.
- 2.4.2. BCBC was contacted to confirm whether any private water supplies are present in the study area. Their response is awaited at the time of writing.

2.5 MINING/ MINERAL EXTRACTION

2.5.1. This section summarises information from the Groundsure report (**Annex B**).

Table 2-4 - Summary of Mining and Mineral Extraction Information

Item (Search Radius)	Location and Distance from the Site and Date(s)	Additional Comment
BritPits Records (500 m)	On-Site - Two records attributed to Coegnant Colliery - deep coal workings - all ceased, wholly underground workings accessed by shaft, adit, drift or incline. - Two records attributed to Mynydd Bach – sandstone – ceased – surface mineral workings. - One record attributed to Pant y Ffald – sandstone – surface mineral working. Off-Site - Six records of sandstone extraction – all ceased. Closest is 35 m north of Site. 28 records of deep coal extraction – all ceased. Four records within 100 m of Site to the related to Coegnant Colliery, Myydd Bach or Pant y Ffald.	Historical coal mining activities and sandstone quarrying may have impacted the Site and may require further investigation. Potential risks resulting from mine gas generation are considered in Section 2.7. The off-Site sandstone quarries are not considered further as potential sources of ground gas generation. It is not considered likely that other less mobile contaminants would be able to migrate to the subject Site due to the variable topography and expected groundwater flow directions.
Surface Ground Workings (250 m)	On-Site 60 records on-Site. Groundsure have grouped the features as follows: 1: Refuse heap – 1897 2: Refuse heap – 1897 3: Refuse heap – 1897 4: Refuse heap – 1897 5: Unspecified heap – 1876 6: Unspecified pits – 1876 7: Unspecified ground workings – 1876 A: Trial levels/ unspecified disused level (4 records) – 1921-1975 B: Cuttings/ heap/ coal levels/ unspecified ground workings (13 records) – 1897-1975 C: Unspecified quarry (4 records) – 1897-1947 D: Unspecified quarry (5 records) – 1987-1975 E: Unspecified old quarries (7 records) – 1897-1947 F: Unspecified ground workings/ old levels/ ponds (7 records) – 1897-1965 G: Trial level/ unspecified heap (2 records) – 1876	The primary sources of potential contamination are Made Ground deposits associated with historical coal mining and quarrying activities undertaken on or near the Site.

Item (Search Radius)	Location and Distance from the Site and Date(s)	Additional Comment
	H: Colliery (2 records) – 1921-1947 I: Refuse heap/ unspecified heaps (2 records) – 1876-1897 J: Coal level (2 records) – 1921-1947 K: Unspecified heap/ pits/ ground workings (4 records) – 1876 Off-Site 226 entries are recorded within 250 m of the search boundary. Entries include unspecified levels, refuse heaps, unspecified old levels, trial levels, unspecified heaps, unspecified pits, unspecified ground workings, unspecified old quarry, unspecified disused levels, unspecified quarries, coal levels, old coal levels and ponds.	
Underground Workings (1 km)	On-Site Nine records on-Site. Groundsure have grouped the features as follows: 8: Air Shaft – 1876 A: Unspecified disused level/ trial Level (3 records) – 1921-1975 B: Old coal levels – 1897 F: Unspecified old levels – 1897 G: Trial level – 1876 H: Colliery (2 records) 1921-1947 Off-Site 262 entries are recorded within 1 km of the Site. 84 records are within 250 m of the Site and include: Unspecified disused levels, old coal levels, trial levels, unspecified old levels, trial shaft, unspecified disused shaft, old air shaft, air shafts, old trial shaft, disused trial shafts and old coal shafts. These records are predominantly associated with the workings west/ north-west of the Site, but 11 records are notably in other directions (south-east/ south-west).	
Non-Coal Mining (1 km)	Five records attributed to Class B iron ore mining are recorded on-Site. Groundsure note that difficult ground conditions are unlikely and are likely at a level where they need not be considered.	Areas of iron ore mining that intersect with areas of proposed development may require investigation to fully constrain any potential risks.
Mining Record Office Plans (500 m)	Groundsure record an on-Site ironstone mining office plan.	

Item (Search Radius)	Location and Distance from the Site and Date(s)	Additional Comment
Natural Cavities (500 m)	One record of a natural cavity in the form of gulls/fissures due to cambering is recorded on-Site.	

2.6 MINING REMEDIATION AUTHORITY DATA

- 2.6.1. The Groundsure report and the Mining Remediation Authority (MRA) Interactive Map indicated that the Site is located within a Coal Mining Reporting Area, and Development High Risk Areas are present within the Site boundary. These areas are primarily confined to downslope of the plateau of Mynydd Pwll-Yr-Lwrch, along the northern, western and southern boundaries and the locations of shafts on-Site. Based on the drawing titled Sketch Site Layout provided by the Applicant it appears that all four proposed locations may lie within or within close proximity to the Development High Risk Areas.
- 2.6.2. The following provides a preliminary review of a MRA Consultants Coal Mining Report (CCMR) obtained for the Site included in **Annex C**:
- The Site is directly underlain by recorded underground working in at least 16 seams of coal (related to the Gorllwyn, Pentre Rider, Upper Pentre, Lower Black Bank, Eighteen Inch, Two Foot Nine, Caerau, Upper Six Feet, Upper 6ft Rider, Bute, Lower Nine Foot Top Leaf, Lower Nine Foot, Lower 7ft Botton Leaf, Five Foot, Five Foot Gellideg and several unnamed seams) at depths ranging between 67 m and 600 m below ground level (bgl), last worked between 1855 and 1974.
 - In addition, the MRA CCMR records off-Site underground mining within 0.7x the depth of the workings, which the MRA consider the zone of likely physical influence. The same seams to those listed above are noted at depths ranging between 67 m bgl and 608 m bgl, last worked between 1855 and 1985.
 - One shallow spine roadway (less than 30 m bgl) is recorded within the search area boundary.
 - Nine adits are recorded within 100 m of the search boundary, of which five are recorded within the search boundary. All associated with proven coal outcrops. The remaining four adits are located outside the Site boundary; however, the mapping provided in the CCMR indicates that all are orientated towards the Site.
 - Twenty-one mine shafts are recorded within 100 m of the search boundary, of which thirteen are located on site.
 - Treatment details of all shafts and adits are unknown.
 - Nine abandoned mine plan catalogue references are identified within the CCMR as intersecting part or all of the Site boundary; however the MRA advises that additional abandonment plans than those referenced could affect the Site boundary.
 - There is no record of mine gas emissions requiring action within 500 m of the Site.
 - There are no probable unrecorded shallow workings.
 - Ten outcrops of coal seams are recorded within the search area, these seams relate to the Hafod, Lower Pinchin, Tormyndd and unnamed seams. With the exception of three out of four instances of the unnamed coal outcrops, all of the seams are noted to be workable.

- No record of opencast mines or Coal Authority managed tips are identified within 500 m of the Site boundary.
- Four geological faults are recorded in the MRA mapping provided with the report. They are all orientated west-north-west to east-south-east (one fault is more inclined to north-west to south-west. One of the faults within the southern area is easily identifiable at the surface, creating a ridge through the central southern section of Site. This feature is referred to in the BGS memoirs as 'Pant Y Ffad' dipping at 45 degrees with slickensides showing evidence of movement in a vertical plane.
- Three unsuccessful claims for damages were made in 2005. All three claims relate to fissures within the same field. The claims were rejected.

2.6.3. A detailed review of available abandonment plans and the preparation of a site-specific Coal Mining Risk Assessment (CMRA) will be required to determine the significance of these features and to assess the need for intrusive investigation and/ or remedial measures.

2.7 MINE GAS PRELIMINARY RISK SCREENING

- 2.7.1. Based on the information included above, there is potential for mine gas to be present on-Site.
- 2.7.2. Figure 13.1 of published CL:AIRE guidance 'Good Practice for the Risk Assessment for Mine Gas Emissions' (2021) presents a decision support tool to classify sites in accordance with five risk categories from no risk to high risk. In general, the decision support tool sorts sites into their relative risk categories based on the geological/ historical mining features.
- 2.7.3. **Table 2-5** provides a summary of the preliminary screening with respect to mine gas risks at the Site.

Table 2-5 – Qualitative Mine Gas Risk Designation

Stage	Item for Consideration	Yes/ No	Comments
Initial	Is the Site within a Coal Authority defined Coal Mining Reporting Area	Yes	Potential mine gas risk. Proceed with further assessment.
Are all of these statements true? (If 'Yes' – Negligible Risk)	Mine entries present >50 m from Site boundary	No	The CCMR indicates the presence of multiple shafts and adits are within the Site boundary. Proceed with further assessment.
	Workings present >150 m depth	No	The CCMR indicates shallow workings to be present below or in proximity to the Site, with 29 seams at depths above 150 m bgl. Proceed with further assessment.
	No faults or other potential pathways connecting surface to deeper unflooded workings	No	Faults are recorded as present on-Site in the CCMR. Proceed with further assessment.

Stage	Item for Consideration	Yes/ No	Comments
	Outside area of past or probable shallow workings on Coal Authority Viewer	Yes	The Site is not located within an area of probable shallow workings based on Coal Authority information. No further assessment of probable shallow workings required.
Are all of these statements true? (If 'Yes' – Low Risk)	Workings (only) between 30 m and 150 m but permanently flooded or covered by 10 m+ of low permeability superficial deposits	No	Shallow workings are recorded below the Site at a depth of 67 m bgl. 28 additional workings are present at depths between 74 m bgl and 150 m bgl. No superficial deposits mapped on-Site on BGS geological mapping. BGS hydrogeological mapping for the area around Maesteg does not appear to include groundwater levels or contours. Limited information is available on local groundwater levels. It is assumed a water table is present due to the presence of springs on adjacent hillsides recorded on historical mapping but no desk-based evidence is available to establish depth. At present, it cannot be determined if the workings are flooded. Proceed with further assessment.
	Mine entries present >50 m from Site boundary	No	See above text on mine entries. Proceed with further assessment.
Are any of these statements true? (If 'No' – Moderate Risk) (If 'Yes' – High Risk)	Mine entries on-Site or <20 m from Site boundary	Yes	See above text on mine entries. Proceed with further assessment.
	Workings below Site at <30 m depth and unflooded or variable water level (not permanently flooded)	Yes	See above text on workings and flooding status. Proceed with further assessment.
	Faults or other pathways connecting surface to deeper unflooded workings	Yes	See above text on faults and flooding of workings. Proceed with further assessment.
	Within area of past or probable shallow workings on Coal Authority viewer	No	No further assessment of probable shallow workings required.

- 2.7.4. Based on the above, the Site is considered to represent a High Risk in accordance with CL:AIRE guidance, principally based on the presence of recorded shallow workings, presence of mine entries, presence of faults, absence of superficial cover and uncertainties regarding flooding status.
- 2.7.5. A Detailed Mine Gas Risk Assessment (DMGRA) will be required to assess the likelihood of mine gas risks impacting the turbines, associated substations and cable routes.

2.8 RADON GAS

- 2.8.1. A radon map at 1:50,000 scale based on the Radon Potential dataset created jointly by the BGS and UK Health Security Agency (UKHSA) is included in the Groundsure report in **Annex B**. In general, the radon potential on the Site is less than 1% of properties affected by radon, however there is an area in the north-east of the Site that is between 1-3% of properties affected. An area on the north-western boundary of the Site is between 10-30%, where basic radon protection measures are recommended by the UKHSA.

2.9 PLANNING HISTORY, PREVIOUS INVESTIGATIONS AND REMEDIATION

- 2.9.1. A search was made on the BCBC Planning Portal for applications related to “Pwll-yr-lwrch” as no map-based search function is available and the Site holds no address. The search returned no associated applications.

2.10 UNEXPLODED ORDNANCE (UXO)

- 2.10.1. Based on the Zetica report, the Site is at a low risk from unexploded ordnance. The report is included in **Annex D**. A historic Spitfire crash was identified approximately 2 km south of the Site. No further UXO assessment was deemed necessary.

2.11 SENSITIVE LAND USES

ENVIRONMENTAL DESIGNATIONS

- 2.11.1. The Groundsure report states the Cwm Du woodlands located 1582 m south of the Site is a site of special scientific interest (SSSI).
- 2.11.2. Seventeen records of designated ancient woodland are recorded between 425 m and 1.9 km of the Site. A forest park named Afan Argoed is located 1.5 km west of the Site.
- 2.11.3. There are no conserved wetlands, special areas of conservation (SAC), special protection areas (SPA), national nature reserves (NNR), local nature reserves (LNR), biosphere reserves, forest parks, marine conservation zones, green belt areas, proposed Ramsar sites, possible special areas of conservation (pSAC), potential special protection areas (pSPA), nitrate sensitive areas or nitrate vulnerable zones within 2 km of the Site.
- 2.11.4. Additional information regarding ecological features on-Site and in the surrounding area are included in **Chapter 8: Biodiversity** and **Chapter 9: Ornithology** of the ES.

VISUAL AND CULTURAL DESIGNATIONS

- 2.11.5. There are no world heritage sites, areas of outstanding natural beauty, national parks, listed buildings, conservation areas, registered parks and gardens, recorded within 250 m of the Site.
- 2.11.6. Additional information regarding these features on-Site and in the surrounding area are included in **Chapter 7: Historic Environment** of the ES.

2.12 CLIMATE CHANGE

SEA LEVEL RISE/ FLOOD RISK

- 2.12.1. The Site is currently located approximately 12.5 km from the Bristol Channel and is at an elevation of between 280 m AOD and 425 m AOD. Under UKCP18 sea level rise projections for the nearest city, Cardiff, show a sea level rise in a high emissions scenario of 1.13 m by 2100 relative to 1981 – 2000 sea level. The Coastal Risk Screening Tool confirms that the Site is not at risk of flooding as a result of sea level rise.
- 2.12.2. As detailed in Section 2.2, select areas on-Site are at risk from surface water flooding. Note that climate change may result in changes to the frequency of extreme weather events and associated flooding.

PROJECTED CHANGES TO GROUNDWATER LEVEL

- 2.12.3. The Site is located within the Swansea Carboniferous Coal Measures groundwater body (GB41002G201000), as defined by the Water Framework Directive (WFD), with an overall rating of poor. The eFLaG project far-future (2050-2079) projections for groundwater recharge within this catchment report a median 0.6 mm per day increase for the winter months for this groundwater body. In the other seasons lower groundwater recharge is indicated in the median and maximum scenarios. This indicates potential future increases in groundwater level, at least during winter, relative to the current baseline.

3 SITE HISTORICAL DEVELOPMENT

3.1 INTRODUCTION

- 3.1.1. A summary of the Site's historical development is presented below in **Table 3-1**. This is based on historical Ordnance Survey (OS) mapping in the Groundsure report (See **Annex B**), supplemented by publicly available aerial imagery on Google Earth Pro.
- 3.1.2. Groundsure data was ordered prior to design freeze, which means that there is a slight deviation between the Site boundary as shown on **Figure 1 (Annex A)** and the boundary applied in the Groundsure report. This only affects southern and central portions of the Site access road and the discussion below relates to the Site boundary as shown on Figure 1.

3.2 SITE HISTORICAL DEVELOPMENT

Table 3-1 – Site Historical Development

Map and Year	On-Site	Off-Site (within 500 m)
Published: 1876 (1:10,560)	The Site is set on top of 'Mynydd-bâch' (meaning 'little mountain') and 'Pant y Ffald' in the southern region. The Site is comprised mainly of rough pasture vegetation with areas of possible shingle/ gravel in the north-west and south of the Site. A small building/ structure is present in the south of the Site. A footpath runs within the eastern boundary of the Site. Surface water features are noted within the north and east. In the north-west of the Site a 'trial level' and associated pits and paths/ roads are present, presumably related to the coal mining activities in the area. Two potential pits are located in the south-west of the Site.	To the west of Site, there are multiple air shafts, trial shafts, 'trial levels' and the Victoria level (coal), and pits (ranging between 50 and 475 m from the Site) connected via paths/ roads. A well is located to the north-west (approximately 450 m) in Bryn-llefrith. Numerous surface water features are noted in the surrounding area, with springs located approximately 330 m west and 270 m east of the Site. A possible pond/ lake linked to a river/ stream is present approximately 280 m south-west of the Site. In the south, further pits, a coal level and an engine house are present, connected by paths/ roads. Buildings are located in Tor-cerig (approximately 175 m) and Blaen-cwm-du (approximately 375 m).
Published: 1877-1878 (1:2,500)	An old coal level is now present in the north-west of the Site. The small building/ structure present in the south of the Site is confirmed as an old sheepfold. Quarries are present in the west, centre-west and south-west of the Site.	Pits located approximately 160 m west and 50 m east of the Site are labelled as old quarry and quarry respectively.

Map and Year	On-Site	Off-Site (within 500 m)
Published: 1897 (1:10,560)	In the north-west of the Site there is no longer a 'trial level', but the area is labelled with an old tramway and old coal levels, as well as old quarries in the centre-west of Site.	The connecting paths/ roads to the west of the Site are confirmed as old tramways. The Victoria level to the west (approximately 300 m) is now disused. The pit present approximately 30 m north of the Site is labelled as an old quarry. To the south-east of the Site old coal shafts, coal levels and quarries are present. Two old tramways and footpaths link the coal mining features in the south and south-east. Features associated with coal mining surround the Site except to the north-east which remains rough pasture vegetation with a footpath. The pond/ lake present approximately 280 m south-west of the Site is labelled as a reservoir.
Published: 1899 (1:2,500)	No significant change noted.	No significant change noted.
Published: 1918-1919 (1:2,500)	No significant change noted.	The quarry approximately 50 m east of the Site has expanded in size, extending to the north-east.
Published: 1921 (1:10,560)	No significant change noted.	To the south and east of Site, old sheepfolds are present in various locations (ranging from 50 m to 250 m from the Site) as well as a sheepfold approximately 300 m south-east. A spring is recorded 470 m south-west of the Site.
Published: 1947 (1:10,560)	No significant change noted.	The quarry approximately 50 m east of the Site is labelled as disused. Springs are present approximately 450 m south-east and 470 m south-west of the Site.

Map and Year	On-Site	Off-Site (within 500 m)
Published: 1962 (1:2,500)	The gravel/ shingle areas in the south of the Site are more defined. The quarries present in the west and south-west of the Site are no longer labelled as such, however pits are still shown as being present. The old tramway in the north-west of the Site is labelled as dismantled and the trial level is labelled as disused. A stream is now noted in the north-west of the Site.	The old tramways to the north-west and south-east of the Site are shown as being dismantled. The features associated with coal mining (i.e. trial shafts and levels) to the north-west and west of the Site are noted as being disused. Electricity posts/ pylons are present adjacent to the north-western boundary. Pylons are also present approximately 60 m to 100 m south-west of the Site running in a south-east to north-west direction before orientating south to north along the southern boundary of the Site. Woodland is present surrounding the south-eastern, eastern, north-eastern and northern boundaries of the Site.
Published: 1965 (1:10,560)	No significant change noted.	The woodland area to the north and east of the Site is labelled as Dunraven Forest. Two disused trail shafts are present approximately 170 m and 250 m north of the Site. Many of the labels for the old coal mining features have been removed from the map. The rest of the old tramway to the north-west and south-east of the Site is confirmed as dismantled. The river to the east of the Site is named as Nant Cwm-du.
Published: 1973 (1:2,500 – partial map)	No significant change noted.	A disused tip is present approximately 170 m north-west of the Site
Published: 1975 (1:10,000)	No significant change noted.	Three additional areas are labelled as disused tips; approximately 450 m west and 350 m and 460 m south of the Site.
Published: 1993 (1:2,500)	No significant change noted.	No significant change noted.
Published: 2001, 2010, 2015 and 2025 (1:10,000)	The 2001 map shows three surface water features (rivers or streams) present in the north-west of the Site. However, only one feature remains from 2010 onwards.	No significant change noted.

Map and Year	On-Site	Off-Site (within 500 m)
	Further rivers/ streams are located in the north and north-east of the Site.	

SUMMARY OF THE SITE'S HISTORICAL DEVELOPMENT

- 3.2.1. The majority of the Site has remained rough pasture vegetation likely for livestock grazing as evidenced by the present of a sheepfold on-Site. The north-west corner of the Site has been subject to coal mining activities, with pits, coal levels and a tramway being present.
- 3.2.2. Areas to the north-west, west, south-west, south and south-east of the Site have been subject to mining activities, as evidenced by the presence of shafts, quarries and tramway routes, all of which become disused over time.

4 INITIAL CONCEPTUAL SITE MODEL

4.1 INTRODUCTION

- 4.1.1. The Conceptual Site Model (CSM) is based upon the environmental conditions of the Site as described in the previous sections. The methods used in this assessment followed a risk-based approach with the potential environmental risk assessed qualitatively using the ‘source-pathway-receptor’ contaminant linkages concept introduced in relevant guidance documents, principally the UK LCRM Guidance (Environment Agency, 2025) on the practical implementation of the Environmental Protection Act 1990 and planning policy for developments on land affected by contamination (Welsh Government, 2024).
- 4.1.2. Environmental risk can be defined as the combination of the consequence of a harmful effect and the probability of its occurrence. For the purposes of the assessment, the risk assessment methodology is presented as **Annex F** and risk definitions following CIRIA 552 to be used, are presented in **Annex G**. The existence of a contaminant linkage is primarily dependant on site usage and environmental conditions.
- 4.1.3. The environmental risk assessment has been carried out identifying and evaluating the significance of the following:
- Potential sources of contamination: these include any current or historical activities of concern, located either on or in the vicinity of the Site.
 - Potential pathways: these are the routes or mechanisms by which contaminants of concern (CoC) may migrate from the source to the receptor.
 - Potential receptors: these could include current or future land users, controlled waters (groundwater or surface water) or property (e.g., built infrastructure or grazing livestock) at the Site that could be harmed by CoC.
- 4.1.4. It should be noted the initial CSM has been developed prior to a site walkover being completed at the Site. The CSM and subsequent initial environmental risk assessment will be updated following the walkover.

4.2 BACKGROUND TO THE INITIAL CSM

POTENTIAL SOURCES OF CONTAMINATION

- 4.2.1. **Table 4-1** provides a summary of the potential sources of contamination that may be present at the Site, as well as the likely distribution of such sources.

Table 4-1 – Potential Sources of Contamination

Potential Source	Potential Contaminants of Concern	Likely/ Anticipated Distribution on Site
On-Site		
Farming activities (current (to be confirmed during Site walkover) and historical)	Asbestos, herbicides/ pesticides, fertilisers and agricultural chemicals	Site-wide

Potential Source	Potential Contaminants of Concern	Likely/ Anticipated Distribution on Site
Made Ground associated with potentially infilled quarries, pits and ground workings	Asbestos, heavy metals, inorganics, polycyclic aromatic hydrocarbons (PAH), total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs) and ground gases (e.g. carbon dioxide, methane, volatiles)	Localised in the north-west, west and south-west of the Site where coal mining activities have occurred
Dismantled tramway – railway land associated with coal mining works	PAH, heavy metals, asbestos and herbicides/ pesticides	North-western spur of Site boundary
Made Ground associated with residual coal mining waste (refuse heaps)	pH (acidic), heavy metals, sulphates, PAH and ground gases (e.g. carbon dioxide, methane, volatiles)	Localised in the north-west of the Site
Mine gas	Carbon dioxide, methane, hydrogen sulphide and carbon monoxide	Site-wide coal seams and quarries/ mine entries on-Site
Off-Site		
Agricultural/ pastoral use (current and historical)	Herbicides/ pesticides, fertilisers, petroleum hydrocarbons, PAH and asbestos (ad hoc waste disposal)	Across the area surrounding the Site
Contaminated groundwater associated with potentially infilled quarries, pits, ground workings, dismantled tramway and residual coal mining waste (refuse heaps and tips)	Heavy metals, inorganics, PAH, TPH, VOCs, SVOCs, PCBs, pH (acidic) and sulphates	Across the area surrounding the Site
Mine gas	Carbon dioxide, methane, hydrogen sulphide and carbon monoxide	Coal seams and mine entries in proximity to the Site

POTENTIAL PATHWAYS

4.2.2. In the context of the Proposed Development the following potential exposure or migration pathways associated with the identified potential sources have been identified:

4.2.3. Pathways to human health receptors:

- Dermal/ direct contact with soils and groundwater.
- Ingestion of dusts/ soil particles.
- Inhalation of dusts and fibres.
- Inhalation of hazardous ground gases/ vapours.

4.2.4. Pathways to controlled waters receptors:

- Leaching of contaminants through the unsaturated zone and subsequent impact to groundwater within the underlying aquifers.
- Lateral migration of contaminants within groundwater and subsequent impact of surface water receptors.

4.2.5. Pathways applicable to Site infrastructure:

- Direct contact with contaminants (e.g., sulphates) in the soil and groundwater with below ground structures (buried concrete).
- Accumulation of hazardous gases within below ground structures in the future development (explosive risk).

4.2.6. Pathways applicable to Site plant life:

- Direct contact with contaminants within soils and shallow groundwater.

POTENTIAL RECEPTORS

4.2.7. In the context of the Proposed Development of the Site, the following potential receptors were identified:

4.2.8. Human health:

- Future Site users (wind turbine maintenance workers, the public, agricultural workers).
- Adjacent site users (the public, residents, agricultural workers).

4.2.9. Controlled waters:

- Groundwater – Secondary A bedrock aquifer across the Site and within the surrounding area.
- Surface waters – three surface watercourses located on-Site and additional rivers/ streams located within the surrounding area.

4.2.10. Services and built environment:

- Future infrastructure (proposed wind turbines and associated underground connective cables, crane pads and storage areas, proposed substation)

4.2.11. Flora:

- Plant life in landscaped areas.

4.2.12. Note that no new landscaped areas are proposed however it is expected that localised reinstatement of vegetation will be required.

EXCLUSIONS FROM THE RISK ASSESSMENT

4.2.13. This section explains exclusions from the environmental risk assessment.

Redevelopment/ Construction Workers

4.2.14. The CSM does not consider risks to construction/ Site maintenance workers on the basis that risks to these workers would be dealt with under the Health and Safety at Work Act (1974) and regulations made under the Act. Site-specific contamination data obtained from all site investigations should be included in the pre-construction information (this is a requirement of the Construction

Design and Management Regulations 2015) for the proposed works, to enable any contractors to address potential risks from contamination, as necessary, in their risk assessments and method statements. Moreover, as the exact details of the methods to be adopted are not currently known, it is not considered appropriate to provide a wide ranging and speculative risk assessment for redevelopment workers. Personal protective equipment (PPE) should always be the last line of defence, with methods selected that avoid or minimise risks to Site workers.

Invasive Species

- 4.2.15. Invasive species (including but not limited to Japanese Knotweed and Giant Hogweed) are not considered within the risk assessment for contamination.

Unexploded Ordnance

- 4.2.16. Unexploded ordnance (UXO) risks are not assessed in the environmental risk assessment, however a UXO Desk Study and Risk Assessment has been commissioned for the Site and is included in **Annex D**. This found no records of the Site having been bombed in World Wars I or II and no records of military activity on the Site. A historic Spitfire crash was identified approximately 2 km south of the Site. No further UXO assessment was deemed necessary.

Aggressive Ground Conditions

- 4.2.17. Constraints including sulphate and ammonia attack of concrete are considered in Sections 5 and 6 of this report.

4.3 INITIAL ENVIRONMENTAL RISK ASSESSMENT

- 4.3.1. For land contamination risk to be realised, a 'contaminant linkage' must exist. A contaminant linkage requires the presence of a:
- source of contamination.
 - receptor capable of being harmed.
 - pathway capable of exposing a receptor to the contaminant.
- 4.3.2. An initial risk assessment has been undertaken for these potential contaminant linkages to identify potentially unacceptable risks on a qualitative basis. Risk is therefore based on a consideration of both:
- The likelihood of an event (probability – considers both the presence of the hazard and receptor and the integrity of the pathway).
 - The severity of the potential consequence (considers both the potential severity of the hazard and the sensitivity of the receptor).
- 4.3.3. Further information on the risk assessment methodology used is given in **Annex F**. The method of dealing with identified risks and the level of significance of those risks will be a function of Site use. The risk assessment is based on the future proposed land use and assumes no control measures to manage the risk (e.g., source removal or capping) have been incorporated in the development.
- 4.3.4. The CSM identifies the potential contamination sources, receptors, and the exposure pathways by which they may be linked. A source-pathway-receptor linkage (SPRL) is present if a viable pathway exists between a potential source and an identified receptor.
- 4.3.5. The CSM includes potential risks which may exist to the Site during the construction and maintenance. However, it is assumed that mitigation procedures during construction would be

implemented in accordance with the Outline Construction Environmental Management Plan which forms Appendix 4A to the ES.

- 4.3.6. An explanation of the initial CSM and the risk characterisation process is presented in **Annex F**. The risk assessment of the potential contaminant linkages identified in the initial CSM is provided in **Table 4-2**.

Table 4-2 – Initial Environmental Risk Assessment

SPRL	Potential Source	Contaminants	Pathway	Receptor	Likelihood	Hazard (Severity)	Initial Risk Rating	Comments
On-Site								
SPRL1	Farming activities (current and historical)	Asbestos, herbicides/ pesticides, fertilisers and agricultural chemicals	Direct contact, inhalation, ingestion	Future Site users	Unlikely	Mild	Very Low	Any impact is likely to be highly localised /diffuse and is unlikely to be disturbed during routine Site activities.
SPRL2	Farming activities (current and historical)	Asbestos, herbicides/ pesticides, fertilisers and agricultural chemicals	Direct contact	Future infrastructure	Unlikely	Medium	Low	Agricultural chemicals do not normally adversely affect building structures.
SPRL3	Farming activities (current and historical)	Asbestos, herbicides/ pesticides, fertilisers and agricultural chemicals	Leaching, migration	Groundwater	Low	Mild	Low	Depth to groundwater unknown however anticipated to be at depth.
SPRL4	Farming activities (current and historical)	Asbestos, herbicides/ pesticides, fertilisers and agricultural chemicals	Leaching, migration	Surface water	Likely	Mild	Moderate/ Low	Potential for runoff and groundwater baseflow to affect watercourses. Contamination anticipated to be localised/ limited although unknown composition of Made Ground. Surface water courses present on Site and within close proximity off-Site.
SPRL5	Made Ground associated with potentially infilled quarries, pits and ground workings	Asbestos, heavy metals, inorganics, PAH, TPH, VOCs, SVOCs, PCBs and ground gases (e.g. carbon dioxide, methane, volatiles)	Direct contact, inhalation, ingestion	Future Site users	Unlikely	Medium	Low	Any impact is likely to be localised/ diffuse and fill material is unlikely to be disturbed during routine Site activities. Limited exposure potential for visitors to Site. Site workers and wind farm workers to use appropriate PPE for ground conditions encountered.
SPRL6	Made Ground associated with potentially infilled quarries, pits and ground workings	Ground gases (e.g. carbon dioxide, methane, volatiles)	Accumulation of hazardous gases	Future infrastructure	Low	Medium	Moderate/ Low	Limited confined space in Proposed Development.
SPRL7	Made Ground associated with potentially infilled quarries, pits and ground workings	Heavy metals, inorganics, PAH, TPH, VOCs, SVOCs and PCBs	Leaching, migration	Groundwater	Low	Medium	Moderate/ Low	Contamination anticipated to be localised/ limited although unknown composition of Made Ground. Depth to groundwater unknown however anticipated to be at depth.
SPRL8	Made Ground associated with potentially infilled quarries, pits and ground workings	Heavy metals, inorganics, PAH, TPH, VOCs, SVOCs and PCBs	Leaching, migration	Surface water	Likely	Mild	Moderate/ Low	Potential for runoff and groundwater baseflow to affect watercourses. Contamination anticipated to be localised/ limited although unknown composition of Made Ground. Surface water courses present on Site and within close proximity off-Site.
SPRL 9	Dismantled tramway – railway land associated with coal mining works	PAH, heavy metals, asbestos and herbicides/ pesticides	Direct contact, inhalation, ingestion	Future Site users	Unlikely	Medium	Low	The dismantled tramway appears to be confined to the north-western spur of the Site boundary. As such, it is unlikely to intersect with proposed turbines or infrastructure. Impact from the tramway is likely to be localised and limited potential exists for any contaminants to impact potential visitors to the Site.
SPRL10	Made Ground associated with residual coal mining waste (refuse heaps)	pH (acidic), heavy metals, sulphates and PAH	Direct contact, inhalation, ingestion	Future Site users	Unlikely	Medium	Low	Any impact is likely to be localised/ diffuse and fill material is unlikely to be disturbed during routine Site activities. Limited exposure potential for visitors to Site. Site workers and wind farm workers to use appropriate PPE for ground conditions encountered.

SPRL	Potential Source	Contaminants	Pathway	Receptor	Likelihood	Hazard (Severity)	Initial Risk Rating	Comments
SPRL11	Made Ground associated with residual coal mining waste (refuse heaps)	Ground gases (e.g. carbon dioxide, methane, volatiles)	Inhalation of hazardous gases	Future Site users	Unlikely	Medium	Low	Any impact is likely to be localised/ diffuse and fill material is unlikely to be disturbed during routine Site activities. Limited exposure potential for visitors to Site. Site workers and wind farm workers to use appropriate PPE for ground conditions encountered.
SPRL12	Made Ground associated with residual coal mining waste (refuse heaps)	pH (acidic), heavy metals, sulphates, PAHs	Accumulation of hazardous gases	Future infrastructure	Low	Medium	Moderate/ Low	Limited confined space in Proposed Development.
SPRL13	Made Ground associated with residual coal mining waste (refuse heaps)	pH (acidic), heavy metals, sulphates and PAH	Leaching, migration	Groundwater	Low	Medium	Moderate/ Low	Contamination anticipated to be localised/ limited although unknown composition of Made Ground. Depth to groundwater unknown however anticipated to be at depth.
SPRL14	Made Ground associated with residual coal mining waste (refuse heaps)	pH (acidic), heavy metals, sulphates and PAH	Leaching, migration	Surface water	Likely	Mild	Moderate/ Low	Potential for runoff and groundwater baseflow to affect watercourses. Contamination anticipated to be localised/ limited although unknown composition of Made Ground. Surface water courses present on Site and within close proximity off-Site.
SPRL15	Mine gas	Carbon dioxide, methane, hydrogen sulphide and carbon monoxide	Advection, migration via mineworkings, fractured bedrock, service conduits	Future Site users in substation/ enclosed structures	Likely	Severe	High	Further assessment required via a Detailed Mine Gas Risk Assessment in line with CL:AIRE 2021 guidance.
Off-Site								
SPRL16	Agricultural/ pastoral use (current and historical)	Herbicides/ pesticides, fertilisers, petroleum hydrocarbons and PAH	Migration of contaminants in groundwater	Groundwater and surface water	Low	Mild	Low	Potential for runoff and groundwater baseflow to affect watercourses. Depth to groundwater unknown however anticipated to be at depth.
SPRL17	Contaminated groundwater associated with potentially infilled quarries, pits, ground workings dismantled tramway and residual coal mining waste (refuse heaps and tips)	Heavy metals, inorganics, PAH, TPH, VOCs, SVOCs, PCBs, pH (acidic) and sulphates	Migration of contaminants in groundwater	Groundwater and surface water	Low	Mild	Low	Potential for runoff and groundwater baseflow to affect watercourses. Depth to groundwater unknown however anticipated to be at depth.
SPRL18	Mine gas	Carbon dioxide, methane, hydrogen sulphide and carbon monoxide	Advection, migration via mineworkings, fractured bedrock, service conduits	Future Site users in substation/ enclosed structures	Likely	Severe	High	Further assessment required via a Detailed Mine Gas Risk Assessment in line with CL:AIRE 2021 guidance.

5 PRELIMINARY GEOTECHNICAL CONSIDERATIONS

5.1.1. Following a review of the information presented in Sections 2 to 4, preliminary geotechnical constraints that may have an impact on the Proposed Development have been identified. A summary of these constraints is provided below:

- **Legacy mining features:** preliminary findings indicate extensive historic underground coal mining beneath the Site and surrounding area. Recorded mine entries are present within and adjacent to the Site, along with a shallow spine roadway (<30m below ground level (bgl)) recorded within the Site boundary, and historical workings beneath the Site, the shallowest quoted at approximately **67 m bgl**. These features may present geotechnical constraints to the Proposed Development and should be further assessed through a review of mine abandonment plans and any mitigation measures identified in the Coal Mining Risk Assessment.
- **Ground gas:** the Site is located within an area of historical coal mining and contains recorded mine entries, shallow spine roadway and historic mine workings. Whilst no recorded mine gas incidents are identified within 500 m of the Site, the absence of recorded incidents does not preclude the presence of ground gases. Historical coal workings and mine entries may provide pathways for the migration of gases, including methane and carbon dioxide. It is likely that ground investigation comprising ground gas monitoring will be required to assess potential risks to construction activities and any permanent infrastructure.
- **Unknown ground conditions:** limited historical ground investigation information is currently available for the Site. Historical boreholes are understood to be present; however, these were drilled upwards from the Lower Nine Foot (Bute) Seam and do not extend to ground level. As such, the depth to bedrock, groundwater conditions, engineering properties of the soils and rock, extent of weathering, presence of mining-related disturbance, ground gas regime, contamination status and geotechnical design parameters remain uncertain. These uncertainties may influence the design, construction methodology and programme for the Proposed Development. A phased ground investigation should therefore be undertaken to characterise the ground conditions and inform the detailed design.
- **Geological faults:** geological faults have been recorded beneath and in the vicinity of the Site. A linear feature, in the approximate position of the mapped fault, is visible on LiDAR imagery of the Site. Similarly, linear features which might be fissures, gulls or backscars are apparent on the Site, particularly along the southern and western boundaries. These features may have influenced the geometry and depth of historic coal workings and could represent potential pathways for groundwater movement. Faults should be considered in the interpretation of ground conditions and mining-related hazards. Furthermore, geological faults may locally influence the propagation of mining-induced ground movement and, in some circumstances, may be associated with the development of mining-related instability at the surface. Records indicate historical claims for features described as fissures which may be indicative of gulls potentially linked to activation, or reactivation, due to coal extraction. Other gulls or fissures may be present below the surface and masked from observation by soils or vegetation.

- **Soil chemistry:** the underlying geology is known to contain iron sulphide (pyrite) minerals. Testing should be undertaken to assess the aggressivity of soils and groundwater towards buried concrete and metallic infrastructure and to determine any implications for underground cables and other buried assets.
- **Landslide/ mass movement:** the Site is generally classified as having a very low susceptibility to landsliding. However, areas underlain by shallow coal seams, together with much of the northern, western and southern Site boundaries and the proposed overhead line corridor, are classified as having a moderate to high susceptibility. Furthermore, five areas of mass movement have been mapped by the BGS on slopes immediately downslope of the Site, indicating that local geological and topographical conditions are conducive to slope instability. Proposed infrastructure should, where practicable, avoid these areas. A programme of ground investigation should be undertaken to confirm ground conditions and inform a detailed slope stability assessment. The findings should be used to determine whether mitigation measures are required to ensure the long-term stability of the Proposed Development.
- **Obstructions (shallow bedrock):** no superficial deposits are mapped beneath the Site and bedrock is anticipated to be at, or close to, the ground surface across much of the Site. Consequently, there is a risk that excavations for foundations, cable trenches and other buried infrastructure may encounter shallow bedrock. This may increase excavation difficulty, programme duration and construction costs, and should be confirmed through ground investigation.
- **Potential for shallow groundwater:** shallow groundwater may be encountered within weathered and fractured bedrock horizons, particularly following periods of prolonged rainfall. Groundwater ingress may affect the stability of excavations and increase construction complexity during installation of foundations and buried infrastructure. In areas affected by historic mining, groundwater may also influence the condition of infilled workings and other mining-related features. Groundwater conditions should therefore be assessed as part of the ground investigation programme.

6 PRELIMINARY GEOTECHNICAL RISK REGISTER

- 6.1.1. A preliminary geotechnical review of the Site has been carried out using the information available from this report. This section highlights the potential geotechnical risks associated with the Northern Array of the Proposed Development. As the Proposed Development progresses, and as more information is obtained pertaining to geotechnical properties, design and construction sequences, this register should be updated. This Risk Register does not account for all project risks and only accounts for expected geotechnical risks identified at the date of this report.
- 6.1.2. **Table 6-2** provides a risk register classification and Geotechnical Risk Register for the Site which has been prepared based on the available information. The scoring system used in this register is presented in **Table 6-1**.

Table 6-1 – Geotechnical Risk Register Scoring System

Probability (P)		Impact/Consequence (I)		Risk P x I = R		Impact/Consequence				
						1	2	3	4	5
Very Likely	5	Very High	5	Probability	1	1	2	3	4	5
Probable	4	High	4		2	2	4	6	8	10
Likely	3	Medium	3		3	3	6	9	12	15
Unlikely	2	Low	2		4	4	8	12	16	20
Negligible	1	Very Low	1		5	5	10	15	20	25

Table 6-2 – Preliminary Geotechnical Risk Register

Item	Hazard	Cause	Consequence	P	I	R	Design Control Measure	P	I	R
1	Collapsible ground	Legacy mine working, mine entries (shafts, adits, and bell pits) and spine roadway beneath the Site. Poor quality backfill	Ground collapse, settlement and differential movement resulting in damage to infrastructure, construction delays, increased costs and potential health and safety risks.	4	5	20	Review mine abandonment plans to identify recorded depth of workings and locations of mining features. Complete Site-specific Coal Mining Risk Assessment including a mitigation strategy of all findings.	2	5	10
2	Ground gas/ contaminated ground	Historical coal mining activity and natural contamination associated with Coal Measures strata	Harmful ground gases may accumulate within excavations or migrate through mining-related pathways. Contaminated soils and groundwater may pose risks to construction workers, buried infrastructure and the wider environment.	4	5	20	Undertake a geoenvironmental ground investigation, complete a contamination and ground gas risk assessment, and implement any identified remediation or gas protection measures.	2	5	10
3	Landslide/ mass movement	Steep topography, weak or weathered rock, shallow coal seams, geological discontinuities and reactivation of historic mass movement deposits	Slope instability results in ground movement, damage to infrastructure, loss of access, construction delays and elevated health and safety risks.	4	5	20	Review available LiDAR data to identify and assess the extent of any historic or active mass movement features within and adjacent to the Site. Undertake a detailed Site walkover to verify and characterise observed features. Complete a targeted ground investigation and detailed slope stability assessment to establish ground conditions and assess the potential for slope instability. Site infrastructure should, where practicable, be located outside areas of moderate to high landslide susceptibility and mapped mass movement deposits. Appropriate drainage measures, earthworks design, stand-off distances and slope stabilisation measures should be incorporated into the design where required.	1	4	4
4	Unknown ground conditions	Limited ground investigation	Inappropriate design assumptions, unforeseen ground conditions, variability in ground conditions, unexpected superficial deposits, weaker ground, increased construction costs, programme delays and requirements for redesign.	3	4	12	Undertake a targeted ground investigation to characterise the subsurface conditions and develop a geotechnical ground model. Use the findings to inform the detailed design of the Proposed Development.	1	4	4

5	Aggressive ground conditions	Presence of pyrite-bearing Coal Measures strata and sulphate-bearing soils and groundwater	Sulphate attack on buried concrete and corrosion of buried infrastructure resulting in reduced service life, increased maintenance requirements and potential structural damage.	4	4	12	Undertake ground investigation works and test soil/ rock and groundwater samples. Implement all recommendations of BRE Special Digest 1 ¹ .	1	4	4
6	Gulls and fissures in the underlying bedrock geology are recorded on the Site	Glacial/ periglacial slope processes	Fractures within underlying bedrock. Unsuitable founding stratum. Structural instability Requirement to reposition structures. Alternative foundation arrangements.	5	5	25	Undertake a detailed Site walkover to verify and characterise observed features. Undertake ground investigation. Review Lidar and aerial stereophotography. Assess risk and design accordingly. Foundation base inspections by an experienced geologist/ geotechnical engineer.	3	5	15
7	Geological faults	Presence of mapped geological faults beneath and in the vicinity of the Site	Variation in rockhead depth, localised zones of weakened or fractured rock, preferential groundwater pathways and interaction with historic mine workings.	4	3	12	Review geological and mining records and undertake targeted ground investigation to confirm the location and characteristics of faults and associated ground conditions. Incorporate faulting into the geotechnical ground model and detailed design of Site infrastructure.	1	3	3
8	Obstructions	Shallow bedrock	Increase in excavation difficulty, requirement for rock breaking or alternative excavation techniques. Impact on programme duration and costs.	3	3	9	Undertake a targeted ground investigation to determine bedrock depth and rockhead variability. Use the findings to optimise the layout and inform foundation, trench and excavation design.	2	3	6
9	Shallow groundwater	Groundwater levels are currently unknown due to the absence of Site-specific ground investigation data. Groundwater may be encountered within weathered bedrock, fractures, faults or localised superficial deposits	Groundwater ingress into excavations, reduced excavation stability, increased construction complexity, requirements for temporary dewatering, and impacts on the design of foundations and buried infrastructure.	3	3	9	Undertake a ground investigation including groundwater monitoring to establish groundwater levels and seasonal variability. Detailed design should account for anticipated groundwater conditions and incorporate appropriate drainage and construction measures where necessary.	1	3	3

¹ BRE (2005) Concrete in aggressive ground (SD 1). Available at: <https://bregroup.com/store/bookshop/concrete-in-aggressive-ground-sd-1>.

7 CONCLUSIONS AND RECOMMENDATIONS

7.1 CONCLUSIONS

- 7.1.1. An initial land contamination risk assessment has been undertaken for the Site based on the available desk-based information, including historical mapping, environmental database information, publicly available environmental data, mining information and the initial Conceptual Site Model (CSM).
- 7.1.2. The Site has predominantly remained as rough pasture or marshy grassland, likely associated with agricultural grazing, throughout the period reviewed. However, historical mapping and regulatory information indicate that localised areas of the Site, particularly in the north-west, west and south-west, have been affected by historical coal mining, quarrying, ground workings, pits, coal levels, dismantled tramways and associated spoil or refuse heaps. Similar historical mining and quarrying features are also present in the surrounding area, particularly to the north-west, west, south-west, south and south-east of the Site.
- 7.1.3. The key potential on-Site sources of contamination identified comprise:
- Current and historical farming activities.
 - Made Ground associated with potentially infilled quarries, pits, ground workings and dismantled tramways.
 - Made Ground associated with residual coal mining waste, including refuse heaps.
 - Mine gas associated with worked coal seams, mine entries and former workings.
- 7.1.4. Potential off-Site sources comprise contaminated groundwater associated with infilled quarries, pits, ground workings, dismantled tramways and residual coal mining waste (refuse heaps) within the surrounding area and mine gas.

Human Health

- 7.1.5. Risks to human health from current and historical farming activities, Made Ground and residual coal mining waste have generally been assessed as very low to low. This reflects the anticipated localised or diffuse nature of potential contamination, limited exposure potential during routine operation of the wind farm, and the expectation that ground disturbance by routine future Site users would be limited.

Controlled Waters

- 7.1.6. Risks to controlled waters have generally been assessed as low or moderate to low. The Site is underlain by a Secondary A bedrock aquifer and contains surface watercourses, with additional watercourses present in the surrounding area. Although leaching and migration pathways may be present, potential contamination is expected to be localised and limited. The depth to groundwater is currently unknown however is anticipated to be at depth.

Infrastructure

- 7.1.7. Risks to future infrastructure have generally been assessed as low in relation to agricultural chemicals, and moderate/low in relation to Made Ground and residual coal mining waste given that the Proposed Development will introduce limited enclosed spaces where gas could accumulate, although these will be used infrequently. The risk level reflects the severity of consequence of a

contaminant linkage being realised and can be lowered through further investigation including gas monitoring and a Detailed Mine Gas Risk Assessment in line with CL:AIRE 2021 'Good Practice for Risk Assessment for Coal Mine Gas Emissions.' A standalone Coal Mining Risk Assessment (CMRA) is also to be undertaken.

- 7.1.8. The CSM does not consider risks to construction/ Site maintenance workers on the basis that risks to workers would be dealt with under the Health and Safety at Work Act (1974) and regulations made under the Act. Site-specific contamination data obtained through subsequent assessments of the Site should be included in the health and safety file for the proposed works, to enable any contractors to address as necessary in their risk assessments and method statements.

Geotechnical

- 7.1.9. Based on the current level of understanding of the ground conditions, the geotechnical risk associated with the proposed development is considered to be moderate. There is potential for historical coal mining features to influence the Site and the Proposed Development. Ground investigation is required to determine the engineering properties of the underlying material and groundwater conditions to determine an appropriate foundation type, earthworks strategy as well as any other geotechnical requirements for the Proposed Development.

7.2 RECOMMENDATIONS

- 7.2.1. The desk-based assessment has identified potential contamination constraints associated with the proposed future wind farm use of the Site. No ground investigation data is currently available for the Site.
- 7.2.2. The potential land contamination constraints can be mitigated through targeted ground investigation to include gas monitoring where buildings/ enclosed spaces are to be constructed. The investigation could also be used to confirm the presence/ absence of contamination in shallow soils in areas where development is proposed, method statements including procedures for encountering unexpected contamination, Environmental Management Plans, and health and safety plans for the works. The findings of these investigations and soil testing should inform the detailed design of the Proposed Development and the design of any required remedial measures. It is recommended that this report and all previous reports be thoroughly consulted and incorporated where required into the package of information for the Site for any groundworks.
- 7.2.3. A programme of intrusive investigation works with associated testing and monitoring for gas and groundwater should be undertaken at the proposed turbine and substation locations.
- 7.2.4. A Detailed Mine Gas Risk Assessment in line with CL:AIRE 2021 guidance should be prepared for the site, as the Site has been preliminarily assessed as a High Risk zone.
- 7.2.5. The geotechnical assessment has been based on the initial findings of the Mining Remediation Authority (MRA), with a detailed Site-specific CMRA to be completed at a later stage. The CMRA will include a comprehensive review of available information, including an assessment of mine abandonment plans and other relevant mining records for the area. Detailed geotechnical conclusions and recommendations will be presented within the completed CMRA.

8 REFERENCES

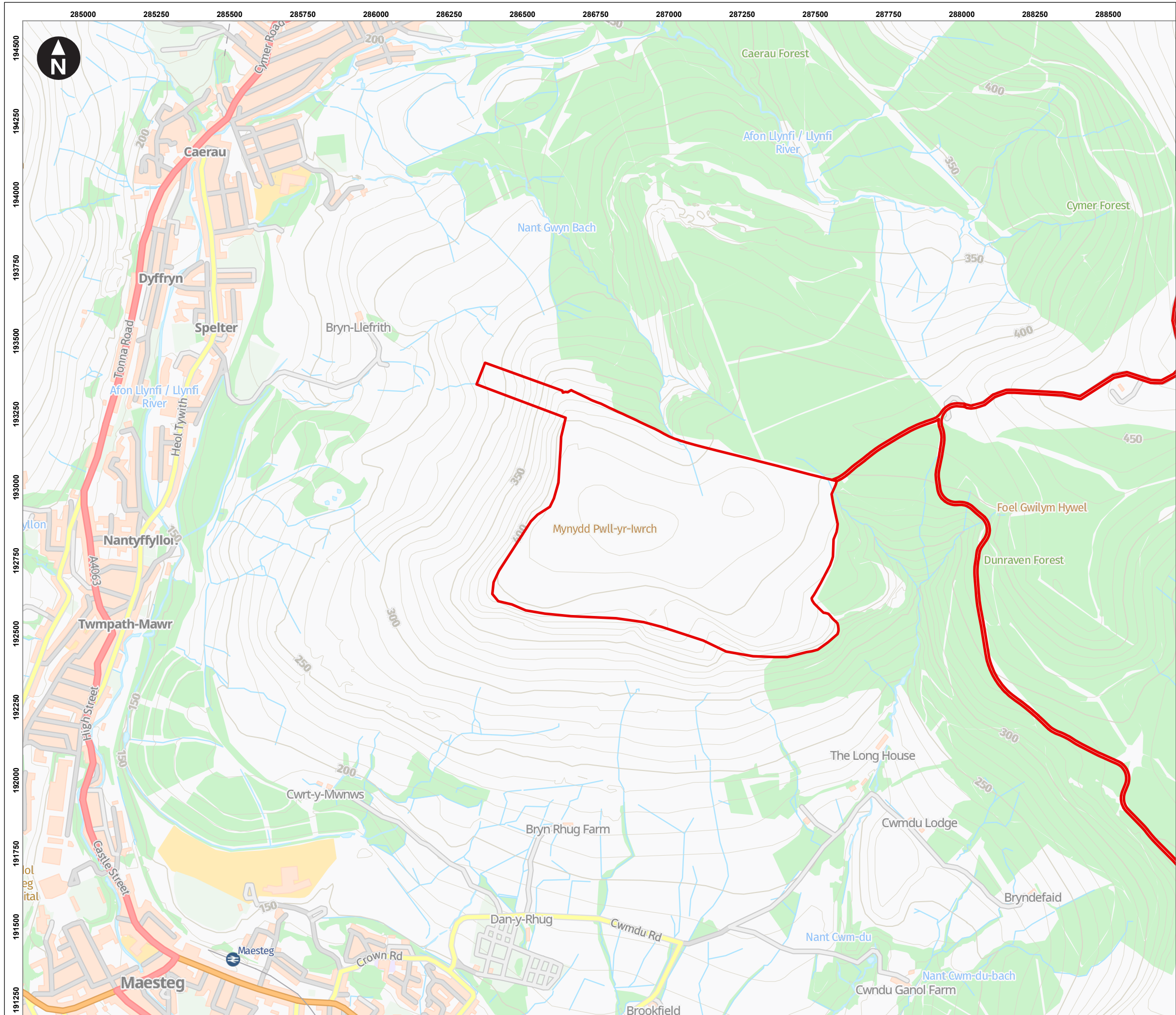
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Annex A

FIGURES

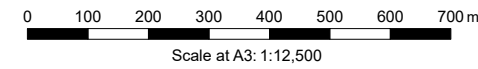


\\corp.pbwan.net\Global\GB\Projects\UK0044xxx\UK0044022.9334 - Glanllynfi Garth wind farm - EIA and Planning\03 WIP\Drawings\ArcPro\APRX\UK0044022.9334-WSPE-FG-OW-00003_P01.1.aprxOriginator: UKBLB775



Key

 Glanllynfi Garth Wind Farm boundary



Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community. Contains OS data © Crown Copyright and database right 2026. Contains data from OS Zoomstack

Client

PENNANT
WALTERS

Glanllynfi Garth Wind Farm
Preliminary Risk Assessment

Figure 1
Site location plan: Northern array

July 2026



Annex B

GROUNDSURE REPORT



Pwll y Lwrch - Northern Array

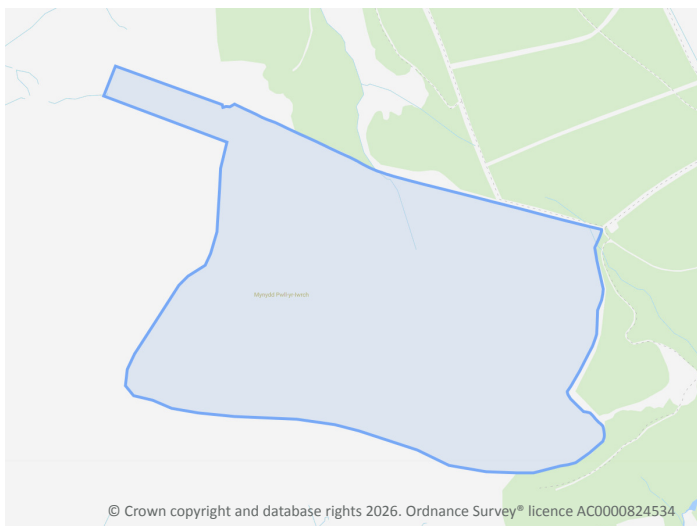
Order Details

Date: 18/06/2026
Your ref: P125019UK001
Our Ref: WSP-ED6-YPM-8S8-AWO

Site Details

Location: 287008 192839
Area: 70.46 ha
Authority: [Pen-y-bont ar Ogwr - Bridgend County Borough Council](#) ↗

Site plan



Quick Links

Summary of findings [p. 2](#) >
OS MasterMap site plan N/A: >10ha
Aerial image [p. 9](#) >

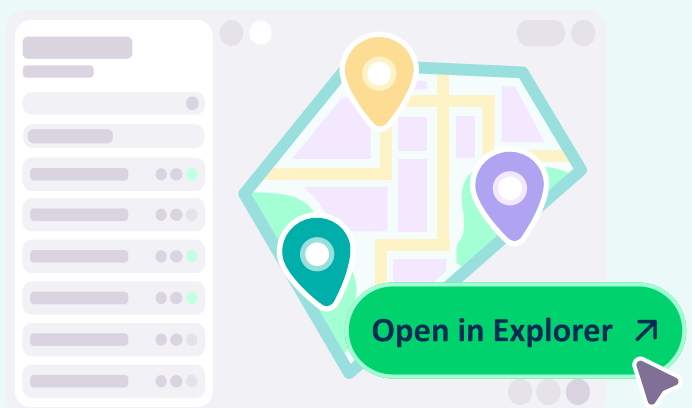
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Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
14 >	1.1 >	Historical industrial land uses >	46	26	175	210	-
31 >	1.2 >	Historical tanks >	0	0	0	1	-
31	1.3	Historical energy features	0	0	0	0	-
32	1.4	Historical petrol stations	0	0	0	0	-
32	1.5	Historical garages	0	0	0	0	-
32	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
33 >	2.1 >	Historical industrial land uses >	59	37	224	275	-
55 >	2.2 >	Historical tanks >	0	0	0	1	-
55	2.3	Historical energy features	0	0	0	0	-
55	2.4	Historical petrol stations	0	0	0	0	-
56	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
57	3.1	Active or recent landfill	0	0	0	0	-
57	3.2	Historical landfill (BGS records)	0	0	0	0	-
58	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
58	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
58	3.5	Historical waste sites	0	0	0	0	-
58	3.6	Licensed waste sites	0	0	0	0	-
58 >	3.7 >	Waste exemptions >	0	0	0	36	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
62 >	4.1 >	Recent industrial land uses >	0	0	5	-	-
63	4.2	National Geographic Database (NGD) - Current or recent tanks	0	0	0	-	-
63	4.3	Current or recent petrol stations	0	0	0	0	-
63	4.4	Electricity cables	0	0	0	0	-
63	4.5	Gas pipelines	0	0	0	0	-



64	4.6	Sites determined as Contaminated Land	0	0	0	0	-
64	4.7	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
64	4.8	Regulated explosive sites	0	0	0	0	-
64	4.9	Hazardous substance storage/usage	0	0	0	0	-
64	4.10	Historical licensed industrial activities (IPC)	0	0	0	0	-
65	4.11	Licensed industrial activities (Part A(1))	0	0	0	0	-
65	4.12	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
65	4.13	Radioactive Substance Authorisations	0	0	0	0	-
65	4.14	Licensed Discharges to controlled waters	0	0	0	0	-
65	4.15	Pollutant release to surface waters (Red List)	0	0	0	0	-
66	4.16	Pollutant release to public sewer	0	0	0	0	-
66	4.17	List 1 Dangerous Substances	0	0	0	0	-
66	4.18	List 2 Dangerous Substances	0	0	0	0	-
66 >	4.19 >	<u>Pollution Incidents (EA/NRW) ></u>	0	0	0	1	-
67	4.20	Pollution inventory substances	0	0	0	0	-
67	4.21	Pollution inventory waste transfers	0	0	0	0	-
67	4.22	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	<u>Hydrogeology ></u>	On site	0-50m	50-250m	250-500m	500-2000m
68 >	5.1 >	<u>Superficial aquifer ></u>	Identified (within 500m)				
69 >	5.2 >	<u>Bedrock aquifer ></u>	Identified (within 500m)				
70 >	5.3 >	<u>Groundwater vulnerability ></u>	Identified (within 50m)				
71	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
72	5.5	Groundwater vulnerability- local information	None (within 0m)				
73	5.6	Groundwater abstractions	0	0	0	0	0
74 >	5.7 >	<u>Surface water abstractions ></u>	0	0	0	0	2
74	5.8	Potable abstractions	0	0	0	0	0
75	5.9	Source Protection Zones	0	0	0	0	-
75	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	<u>Hydrology ></u>	On site	0-50m	50-250m	250-500m	500-2000m



76 >	6.1 >	Water Network (OS NGD) >	4	3	29	-	-
79 >	6.2 >	Surface water features >	1	2	22	-	-
80 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
80 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
80 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
82	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
82	7.2	Historical Flood Events	0	0	0	-	-
82	7.3	Flood Defences	0	0	0	-	-
83	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
83	7.5	Flood Storage Areas	0	0	0	-	-
84	7.6	Flood Zone 2	None (within 50m)				
84	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
85 >	8.1 >	Surface water flooding >	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding >					
87 >	9.1 >	Groundwater flooding >	Negligible (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
88 >	10.1 >	Sites of Special Scientific Interest (SSSI) >	0	0	0	0	1
89	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
89	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
89	10.4	Special Protection Areas (SPA)	0	0	0	0	0
89	10.5	National Nature Reserves (NNR)	0	0	0	0	0
90	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
90 >	10.7 >	Designated Ancient Woodland >	0	0	0	1	16
91	10.8	Biosphere Reserves	0	0	0	0	0
91 >	10.9 >	Forest Parks >	0	0	0	0	1
91	10.10	Marine Conservation Zones	0	0	0	0	0
92	10.11	Green Belt	0	0	0	0	0



92	10.12	Proposed Ramsar sites	0	0	0	0	0
92	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
92	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
92	10.15	Nitrate Sensitive Areas	0	0	0	0	0
93	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
94	10.17	SSSI Impact Risk Zones	0	-	-	-	-
94	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
95	11.1	World Heritage Sites	0	0	0	-	-
95	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
95	11.3	National Parks	0	0	0	-	-
95	11.4	Listed Buildings	0	0	0	-	-
96	11.5	Conservation Areas	0	0	0	-	-
96	11.6	Scheduled Ancient Monuments	0	0	0	-	-
96	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
97 >	12.1 >	Agricultural Land Classification >	Grade 4 (within 250m)				
98 >	12.2 >	Open Access Land >	2	0	0	-	-
99	12.3	Tree Felling Licences	0	0	0	-	-
99	12.4	Environmental Stewardship Schemes	0	0	0	-	-
99	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
100	13.1	Priority Habitat Inventory	0	0	0	-	-
100	13.2	Habitat Networks	0	0	0	-	-
100	13.3	Open Mosaic Habitat	0	0	0	-	-
100	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
101 >	14.1 >	10k Availability >	Identified (within 500m)				
102	14.2	Artificial and made ground (10k)	0	0	0	0	-



103 >	14.3 >	Superficial geology (10k) >	0	1	1	0	-
104 >	14.4 >	Landslip (10k) >	1	3	2	1	-
105 >	14.5 >	Bedrock geology (10k) >	11	5	7	13	-
107 >	14.6 >	Bedrock faults and other linear features (10k) >	14	9	22	31	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
111 >	15.1 >	50k Availability >	Identified (within 500m)				
112	15.2	Artificial and made ground (50k)	0	0	0	0	-
112	15.3	Artificial ground permeability (50k)	0	0	-	-	-
113 >	15.4 >	Superficial geology (50k) >	0	1	1	0	-
114 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
114 >	15.6 >	Landslip (50k) >	2	1	2	0	-
114 >	15.7 >	Landslip permeability (50k) >	Identified (within 50m)				
116 >	15.8 >	Bedrock geology (50k) >	13	2	3	9	-
118 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
118 >	15.10 >	Bedrock faults and other linear features (50k) >	13	5	7	13	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
121 >	16.1 >	BGS Boreholes >	2	0	2	-	-
Page	Section	Natural ground subsidence >					
123 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
124 >	17.2 >	Running sands >	Very low (within 50m)				
126 >	17.3 >	Compressible deposits >	High (within 50m)				
127 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
129 >	17.5 >	Landslides >	High (within 50m)				
131 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
133 >	18.1 >	BritPits >	5	4	14	17	-
147 >	18.2 >	Surface ground workings >	60	36	190	-	-
157 >	18.3 >	Underground workings >	9	13	71	61	117
167	18.4	Underground mining extents	0	0	0	0	-



167	18.5	Historical Mineral Planning Areas	0	0	0	0	-
168 >	18.6 >	Non-coal mining >	5	0	0	0	0
169	18.7	JPB mining areas	None (within 0m)				
169	18.8	The Coal Authority non-coal mining	0	0	0	0	-
169	18.9	Researched mining	0	0	0	0	-
169 >	18.10 >	Mining record office plans >	1	0	0	0	-
170	18.11	BGS mine plans	0	0	0	0	-
170 >	18.12 >	Coal mining >	Identified (within 0m)				
170	18.13	Brine areas	None (within 0m)				
170	18.14	Gypsum areas	None (within 0m)				
170	18.15	Tin mining	None (within 0m)				
171	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes >	On site	0-50m	50-250m	250-500m	500-2000m
172 >	19.1 >	Natural cavities >	1	0	0	0	-
173	19.2	Mining cavities	0	0	0	0	0
173	19.3	Reported recent incidents	0	0	0	0	-
173	19.4	Historical incidents	0	0	0	0	-
Page	Section	Radon >					
174 >	20.1 >	Radon >	Between 10% and 30% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
176 >	21.1 >	BGS Estimated Background Soil Chemistry >	42	14	-	-	-
179	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
179	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects >	On site	0-50m	50-250m	250-500m	500-2000m
180	22.1	Underground railways (London)	0	0	0	-	-
180	22.2	Underground railways (Non-London)	0	0	0	-	-
181	22.3	Railway tunnels	0	0	0	-	-
181 >	22.4 >	Historical railway and tunnel features >	0	0	5	-	-
181	22.5	Royal Mail tunnels	0	0	0	-	-



182	22.6	Historical railways	0	0	0	-	-
182	22.7	Railways	0	0	0	-	-
182	22.8	Crossrail 2	0	0	0	0	-
182	22.9	HS2	0	0	0	0	-



Recent aerial photograph



Capture Date: 21/05/2023

Site Area: 70.46ha



Contact us with any questions at:

info@groundsure.com

01273 257 755

Date: 18 June 2026

Recent site history - 2020 aerial photograph



Capture Date: 14/04/2020

Site Area: 70.46ha



Contact us with any questions at:

info@groundsure.com

01273 257 755

Date: 18 June 2026

Recent site history - 2017 aerial photograph



Capture Date: 26/05/2017

Site Area: 70.46ha



Contact us with any questions at:

info@groundsure.com

01273 257 755

Date: 18 June 2026

Recent site history - 2012 aerial photograph



Capture Date: 26/05/2012

Site Area: 70.46ha



Contact us with any questions at:

info@groundsure.com

01273 257 755

Date: 18 June 2026

Recent site history - 2000 aerial photograph



Capture Date: 18/06/2000

Site Area: 70.46ha



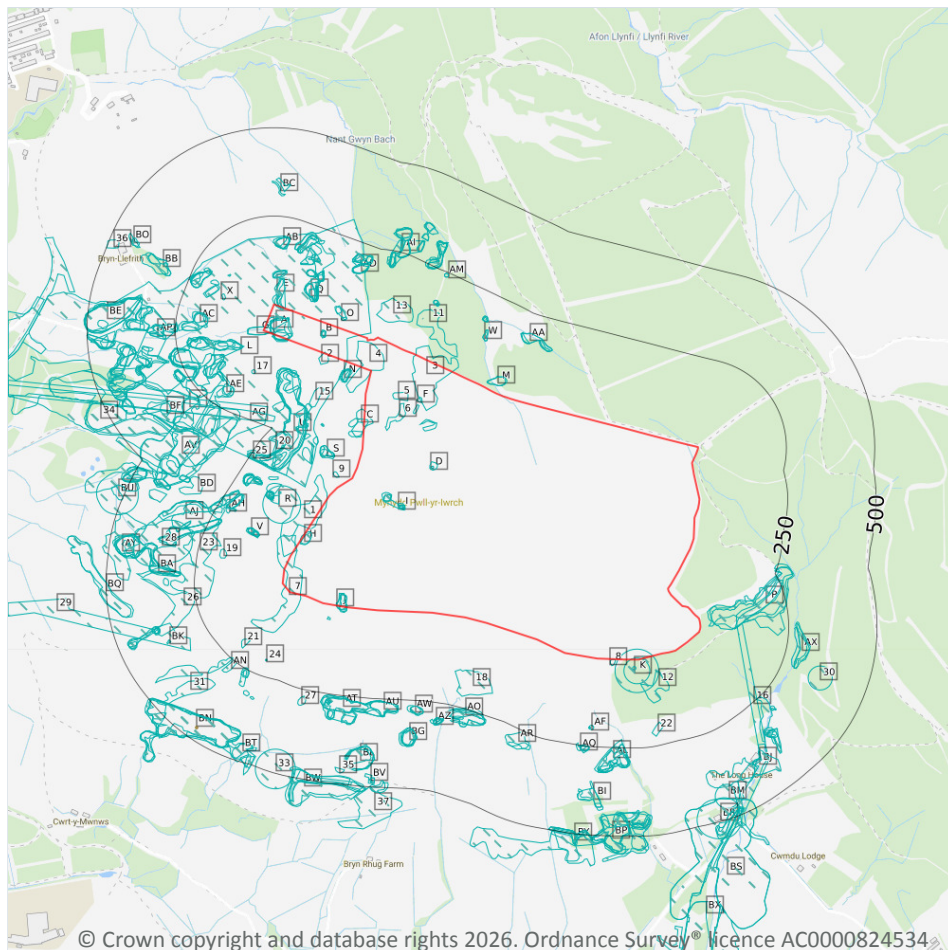
Contact us with any questions at:

info@groundsure.com ↗

01273 257 755

Date: 18 June 2026

1 Past land use



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

1.1 Historical industrial land uses

Records within 500m

457

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	Refuse Heap	1897	335083



ID	Location	Land use	Dates present	Group ID
2	On site	Refuse Heap	1897	335087
3	On site	Refuse Heap	1897	335109
4	On site	Refuse Heap	1897	335110
5	On site	Unspecified Heap	1876	339760
6	On site	Unspecified Pits	1876	345273
7	On site	Unspecified Ground Workings	1876	346675
A	On site	Old Coal Levels	1897	332592
A	On site	Unspecified Heap	1947	339674
A	On site	Unspecified Heap	1947	339675
A	On site	Unspecified Heaps	1921	351956
A	On site	Unspecified Ground Workings	1965 - 1975	367964
A	On site	Unspecified Heaps	1921	370494
A	On site	Unspecified Ground Workings	1965 - 1975	384566
B	On site	Unspecified Disused Level	1975	334659
B	On site	Trial Level	1947	369202
B	On site	Trial Level	1921	369800
C	On site	Refuse Heap	1897	335129
C	On site	Unspecified Heaps	1876	338493
D	On site	Trial Level	1876	335958
D	On site	Unspecified Heap	1876	339855
E	On site	Unspecified Old Levels	1897	336064
E	On site	Unspecified Ground Workings	1921 - 1947	356502
E	On site	Unspecified Ground Workings	1965	368062
E	On site	Unspecified Ground Workings	1921	372253
F	On site	Unspecified Heap	1876	339761
F	On site	Unspecified Pit	1876	343140
F	On site	Unspecified Pit	1876	343141
F	On site	Unspecified Ground Workings	1876	345793



ID	Location	Land use	Dates present	Group ID
G	On site	Cuttings	1921 - 1947	353136
G	On site	Cuttings	1921	354754
H	On site	Unspecified Quarry	1921 - 1947	361771
H	On site	Unspecified Quarry	1897 - 1921	366945
I	On site	Unspecified Old Quarries	1921	362187
I	On site	Unspecified Old Quarries	1947	365399
I	On site	Unspecified Old Quarries	1947	370104
I	On site	Unspecified Old Quarries	1921	377116
I	On site	Unspecified Old Quarries	1897 - 1921	380053
I	On site	Unspecified Old Quarries	1897	387857
J	On site	Unspecified Quarry	1897	362517
J	On site	Unspecified Ground Workings	1965 - 1975	364514
J	On site	Unspecified Quarry	1947	367729
J	On site	Unspecified Quarry	1921	370652
K	On site	Coal Level	1947	376545
K	On site	Coal Level	1921	388671
L	On site	Colliery	1921 - 1947	387028
8	1m S	Unspecified Disused Level	1975	334748
C	1m W	Unspecified Pit	1876	343139
M	14m NE	Unspecified Old Quarry	1897 - 1947	362186
M	15m NE	Unspecified Old Quarry	1921	366067
N	16m S	Old Coal Level	1921	366959
N	17m S	Old Coal Level	1897 - 1921	356992
N	17m S	Unspecified Disused Level	1975	334660
N	19m S	Old Coal Level	1947	369611
K	20m S	Coal Level	1921	387415
9	23m NW	Unspecified Heap	1876	339673
O	24m N	Old Coal Levels	1897	332597



ID	Location	Land use	Dates present	Group ID
P	24m E	Unspecified Disused Quarry	1975	356046
P	26m E	Unspecified Quarry	1897 - 1921	366197
O	27m N	Old Coal Level	1921 - 1947	387553
P	35m E	Unspecified Disused Quarry	1921 - 1947	386928
10	35m S	Trial Level	1876	335959
O	36m N	Unspecified Heap	1975	339700
11	42m NE	Refuse Heap	1897	335108
12	44m S	Refuse Heap	1897	335099
Q	44m N	Unspecified Pit	1965	343027
Q	44m N	Unspecified Disused Levels	1975	349926
Q	45m N	Unspecified Old Levels	1897	377375
R	46m NW	Old Trial Shaft	1921	373778
Q	48m N	Unspecified Old Level	1921	369413
Q	48m N	Unspecified Old Level	1947	384984
Q	50m N	Unspecified Ground Workings	1921	388197
13	51m NE	Refuse Heap	1897	335107
S	70m W	Trial Shaft	1921	382137
S	72m W	Trial Shaft	1921	356067
L	72m SW	Old Coal Levels	1921	379496
S	74m W	Trial Shaft	1947	353085
S	74m W	Trial Shaft	1897	361448
L	74m SW	Old Coal Levels	1947	377241
T	74m N	Unspecified Heap	1921	390470
U	75m S	Unspecified Old Quarries	1897 - 1921	366346
T	76m N	Unspecified Ground Workings	1947	345706
T	76m N	Unspecified Heap	1921	378711
U	76m S	Unspecified Ground Workings	1965	380795
L	77m SW	Old Coal Levels	1921	377743



ID	Location	Land use	Dates present	Group ID
14	77m SW	Unspecified Disused Level	1975	334666
U	77m S	Unspecified Disused Quarry	1975	333811
U	79m S	Unspecified Old Quarries	1947	386462
U	84m S	Unspecified Ground Workings	1921	356676
15	93m S	Refuse Heap	1897	335086
P	98m E	Tramway Sidings	1921	373623
S	100m NW	Unspecified Ground Workings	1876	345703
S	101m NW	Unspecified Heap	1876	340564
16	104m E	Tramway Sidings	1921	389828
S	104m NW	Unspecified Disused Shaft	1975	335741
V	105m NW	Unspecified Ground Workings	1947	346671
Q	106m N	Unspecified Old Level	1921	384754
Q	106m N	Unspecified Old Level	1921	384995
V	106m NW	Unspecified Heap	1921	378513
Q	107m N	Unspecified Disused Levels	1975	349934
V	107m NW	Unspecified Pit	1921	388240
R	108m NW	Unspecified Heap	1876	374466
L	109m W	Unspecified Old Levels	1897	336065
V	109m NW	Unspecified Disused Level	1975	334661
Q	110m N	Unspecified Heap	1921	385839
S	113m W	Old Air Shaft	1921	335789
17	114m S	Old Air Shaft	1921	335812
S	116m W	Old Air Shaft	1921 - 1947	380587
R	119m NW	Trial Level	1876	336002
W	119m NE	Unspecified Pit	1897	343087
W	119m NE	Unspecified Ground Workings	1947	345741
V	123m NW	Unspecified Heap	1897	376316
V	123m NW	Unspecified Heap	1921	376584



ID	Location	Land use	Dates present	Group ID
S	126m W	Unspecified Pit	1876	344167
R	128m NW	Unspecified Heap	1921	353832
R	129m NW	Trial Shaft	1897	341625
R	129m NW	Old Trial Shaft	1947	350427
R	130m NW	Unspecified Heap	1921	370934
R	130m NW	Unspecified Heap	1876	352815
R	132m NW	Old Trial Shaft	1921	357682
L	132m SW	Unspecified Disused Level	1975	334662
L	132m SW	Unspecified Pit	1965	357126
Q	132m N	Unspecified Old Levels	1921 - 1947	386115
R	133m NW	Disused Trial Shaft	1965 - 1975	390758
Q	133m N	Unspecified Old Levels	1921	387531
X	134m W	Unspecified Ground Workings	1947	345705
L	136m SW	Old Air Shaft	1921 - 1947	386840
18	139m S	Refuse Heap	1897	335098
L	140m SW	Unspecified Pit	1921	376977
Y	141m SW	Unspecified Old Quarries	1921 - 1947	385407
R	147m NW	Unspecified Pit	1876	343020
X	148m NW	Old Coal Level	1921	329348
S	149m W	Unspecified Heap	1876	340563
U	149m S	Unspecified Ground Workings	1876	362303
Z	150m NE	Old Trial Shaft	1921	376711
Q	152m N	Unspecified Disused Levels	1975	349936
Z	152m NE	Disused Trial Shaft	1965	345115
Z	153m NE	Old Trial Shaft	1897 - 1947	362745
Z	154m NE	Unspecified Disused Shafts	1975	334230
AA	157m N	Unspecified Ground Workings	1947	352717
AA	157m N	Unspecified Ground Workings	1897	364290



ID	Location	Land use	Dates present	Group ID
AA	158m N	Unspecified Ground Workings	1975	388696
AB	159m N	Unspecified Heap	1921	372479
AB	159m N	Unspecified Old Levels	1947	358859
AB	159m N	Unspecified Old Levels	1897	384414
AC	159m W	Unspecified Old Level	1897	334545
AC	160m W	Refuse Heaps	1921	381052
L	160m W	Unspecified Disused Levels	1975	349925
X	160m W	Cuttings	1921	363152
AB	160m N	Unspecified Heap	1921	354016
AD	160m N	Unspecified Pit	1921	389458
L	160m W	Unspecified Heap	1965	339703
X	160m W	Cuttings	1921 - 1947	355106
AC	161m W	Refuse Heap	1921 - 1947	357120
AD	161m N	Unspecified Old Levels	1897	336078
Q	161m N	Unspecified Heap	1921	378439
AD	162m N	Unspecified Pit	1947	360511
AD	164m N	Unspecified Pit	1921	378858
AA	164m N	Unspecified Ground Workings	1975	354681
AB	165m N	Unspecified Heap	1965 - 1975	377032
X	166m W	Unspecified Pits	1947	345270
Q	166m N	Unspecified Disused Tip	1975	332191
19	167m W	Unspecified Pit	1876	344171
AC	167m W	Unspecified Heap	1965 - 1975	363608
Q	167m N	Unspecified Ground Workings	1965	345712
U	168m S	Unspecified Heap	1876	339688
W	169m NE	Unspecified Pit	1897	363773
W	169m NE	Unspecified Pit	1921	386535
W	170m NE	Unspecified Ground Workings	1947	345740



ID	Location	Land use	Dates present	Group ID
20	170m NW	Unspecified Ground Workings	1876	385658
R	177m NW	Old Coal Level	1921	382785
21	178m SW	Unspecified Heap	1876	339690
R	178m NW	Old Coal Level	1947	385748
R	180m NW	Old Coal Level	1921	369194
AE	181m SW	Unspecified Pit	1965 - 1975	350893
R	182m NW	Old Coal Levels	1897	332635
AE	183m SW	Unspecified Pits	1921	345269
AC	184m W	Unspecified Ground Workings	1965 - 1975	375122
22	186m S	Unspecified Disused Level	1975	334749
R	186m NW	Unspecified Disused Level	1975	334714
AF	190m S	Unspecified Disused Shaft	1965 - 1975	382541
AD	190m N	Unspecified Heaps	1921	357373
23	191m W	Unspecified Ground Workings	1876	386537
AD	192m N	Unspecified Heap	1947	339698
AD	194m N	Unspecified Heaps	1921	386108
AF	195m S	Old Coal Shaft	1897	342506
X	197m NW	Old Coal Level	1921	388533
AG	198m S	Railway Sidings	1921 - 1947	363503
X	198m NW	Old Coal Level	1947	359757
X	198m NW	Unspecified Heap	1921	362113
AH	199m NW	Unspecified Pit	1876	378959
AH	199m NW	Unspecified Pit	1947	384882
AD	200m N	Unspecified Heap	1947	339812
24	201m S	Trial Shaft	1876	341605
AI	202m N	Unspecified Pit	1921	353782
AH	202m NW	Unspecified Pit	1921	364142
AI	202m N	Unspecified Old Level	1947	385290



ID	Location	Land use	Dates present	Group ID
AJ	202m NW	Old Coal Levels	1897	332590
AI	203m N	Unspecified Old Level	1921	369342
X	203m NW	Unspecified Disused Level	1975	334658
L	204m SW	Old Coal Levels	1947	355280
AI	205m N	Unspecified Old Level	1897	387221
Q	206m N	Unspecified Disused Levels	1975	349937
R	207m NW	Unspecified Heap	1921	339684
L	208m SW	Unspecified Ground Workings	1965	345713
L	208m SW	Unspecified Disused Levels	1975	349935
AI	208m N	Unspecified Disused Level	1975	334670
R	215m NW	Unspecified Ground Workings	1975	346668
AG	217m S	Railway Sidings	1965	385857
AJ	217m NW	Unspecified Old Level	1947	353444
X	218m NW	Old Coal Levels	1897	332591
AJ	218m NW	Unspecified Old Level	1921	389560
AK	219m NW	Unspecified Ground Workings	1921	352424
AH	219m NW	Unspecified Ground Workings	1947	367106
AJ	219m NW	Old Coal Level	1921	329349
X	220m W	Unspecified Heap	1965 - 1975	368141
AL	226m S	Unspecified Disused Tip	1975	332193
AH	230m NW	Unspecified Heap	1876	339777
25	233m NW	Unspecified Heap	1921	339685
AM	236m NE	Unspecified Disused Shafts	1975	334229
AM	236m NE	Disused Trial Shaft	1965	345114
AG	236m S	Unspecified Disused Tip	1975	332190
AI	237m N	Unspecified Pit	1921	379357
AL	238m S	Old Coal Levels	1921	350235
AM	238m NE	Unspecified Old Level	1897 - 1921	359803



ID	Location	Land use	Dates present	Group ID
AN	239m SW	Unspecified Pit	1876	343116
AL	240m S	Old Coal Levels	1921 - 1947	360077
AM	240m NE	Unspecified Ground Workings	1947	345776
AK	241m NW	Unspecified Ground Workings	1947	367578
AO	241m S	Unspecified Pit	1897	384495
AM	241m NE	Unspecified Pit	1965 - 1975	376641
AG	242m W	Unspecified Heaps	1921	377764
AM	242m NE	Unspecified Pit	1921	374471
AP	244m W	Old Coal Levels	1947	390569
AP	244m W	Old Coal Levels	1921	388991
AQ	245m S	Old Coal Levels	1897	332655
AN	246m SW	Unspecified Heaps	1876	338488
AL	247m S	Old Coal Levels	1897	354410
AN	247m SW	Unspecified Disused Level	1975	334715
AR	248m SW	Unspecified Ground Workings	1897	370602
AQ	248m S	Unspecified Heap	1921	360411
Y	248m SW	Unspecified Pit	1921	343019
AO	249m S	Unspecified Disused Quarry	1975	333809
AO	249m S	Unspecified Pit	1965	380869
Y	249m SW	Unspecified Old Quarries	1897	373158
AQ	249m S	Unspecified Pit	1947	344548
AN	250m SW	Old Coal Level	1921 - 1947	352875
AS	250m SE	Refuse Heap	1947	335097
AQ	251m S	Unspecified Heap	1921	359268
AO	251m S	Unspecified Old Quarry	1921 - 1947	387905
AT	253m S	Unspecified Pits	1965	355846
AT	253m S	Unspecified Pit	1975	384193
26	253m W	Unspecified Ground Workings	1876	345702



ID	Location	Land use	Dates present	Group ID
AN	254m SW	Old Coal Levels	1897	332636
AT	254m S	Unspecified Pits	1897 - 1921	353174
AO	256m S	Unspecified Old Quarries	1921	347280
AI	256m N	Unspecified Heaps	1921	387920
AT	256m S	Unspecified Ground Workings	1947	345794
AU	256m S	Unspecified Pit	1947	363917
AT	258m S	Old Coal Level	1921	372091
AU	258m S	Unspecified Pit	1921	357790
L	259m SW	Unspecified Pit	1921	385105
L	260m SW	Unspecified Pit	1921	359854
L	262m SW	Trial Level	1897	335948
AV	263m S	Refuse Heap	1965	335084
AT	264m S	Disused Air Shaft	1965 - 1975	370853
AL	265m S	Unspecified Ground Workings	1965	347014
AW	265m S	Unspecified Pit	1897	384743
AW	266m S	Unspecified Pit	1921	351598
AW	266m S	Unspecified Pit	1921 - 1947	386593
AX	266m E	Unspecified Old Quarry	1897	389132
AT	267m S	Old Air Shaft	1897	335788
AG	268m SW	Unspecified Ground Workings	1965	388754
27	268m S	Unspecified Quarry	1876	330055
AT	269m S	Old Air Shaft	1921	350302
AX	269m E	Unspecified Old Quarry	1921	373247
28	270m W	Unspecified Disused Levels	1975	384317
AI	270m NE	Unspecified Pit	1921	388739
AI	271m NE	Unspecified Pit	1947	377761
AX	272m E	Unspecified Old Quarry	1947	373542
AT	274m S	Old Air Shaft	1921	357470



ID	Location	Land use	Dates present	Group ID
AR	278m SW	Unspecified Ground Workings	1921 - 1947	390417
AG	282m W	Unspecified Ground Workings	1947	370886
AP	283m W	Unspecified Heap	1965	339701
AP	284m W	Unspecified Disused Levels	1975	349933
AG	286m W	Unspecified Ground Workings	1921	375437
AI	288m N	Unspecified Heap	1921	339811
AM	290m NE	Unspecified Heap	1921	371853
AY	290m W	Old Coal Level	1947	388884
AY	291m W	Old Coal Level	1921	373719
AY	291m W	Old Coal Level	1921	383339
AZ	291m S	Unspecified Ground Workings	1897	371337
AZ	292m S	Unspecified Ground Workings	1947	354798
AZ	292m S	Unspecified Heap	1921	386857
BA	292m W	Old Coal Level	1921	378361
AS	293m SE	Unspecified Disused Shaft	1965 - 1975	386678
AM	295m NE	Unspecified Heap	1921	353991
AZ	295m S	Unspecified Heap	1921	387614
AT	296m S	Unspecified Heap	1921	339850
AS	298m SE	Old Coal Shaft	1897 - 1947	384551
BB	303m W	Unspecified Old Quarries	1921	367764
AT	303m S	Unspecified Heap	1921	339849
BB	304m W	Unspecified Old Quarries	1921 - 1947	354127
AN	304m SW	Unspecified Heap	1876	340572
29	305m SW	Railway Sidings	1876	361639
AS	306m SE	Old Coal Shaft	1921	342507
AI	308m NE	Unspecified Pit	1947	343121
BC	308m N	Unspecified Ground Workings	1876	345960
AI	309m NE	Unspecified Heaps	1921	350405



ID	Location	Land use	Dates present	Group ID
BD	310m NW	Unspecified Heaps	1876	338600
BB	312m W	Unspecified Old Quarries	1897	372365
Y	314m SW	Old Air Shaft	1921	357584
AN	314m S	Unspecified Pit	1876	343117
Y	317m SW	Old Air Shaft	1921	356643
AG	317m W	Old Coal Levels	1921	351386
BE	319m W	Old Coal Levels	1897	382011
BA	320m W	Unspecified Pit	1876	343023
BC	320m N	Unspecified Pit	1876	343301
BE	322m W	Old Coal Levels	1921	387915
BE	322m W	Unspecified Ground Workings	1947	345704
BA	323m W	Unspecified Pit	1876	343022
BF	324m SW	Unspecified Pits	1921	345268
BG	327m S	Unspecified Heap	1965 - 1975	372226
BG	329m S	Old Coal Levels	1897	332606
AI	330m NE	Unspecified Heap	1897 - 1921	390534
AS	330m SE	Unspecified Heap	1965 - 1975	381301
BG	331m S	Unspecified Ground Workings	1947	346567
BG	332m S	Unspecified Heap	1921	360896
AG	332m W	Cuttings	1921 - 1947	373603
30	332m E	Old Coal Level	1897	329462
BG	332m S	Unspecified Heap	1921	388001
31	334m SW	Unspecified Ground Workings	1876	351051
AG	334m W	Unspecified Disused Levels	1975	349932
AI	335m NE	Unspecified Pit	1947	343122
AS	336m SE	Old Coal Level	1897	329460
AG	336m W	Trial Levels	1897	341830
BE	338m W	Unspecified Disused Tips	1975	334951



ID	Location	Land use	Dates present	Group ID
32	338m SW	Unspecified Heap	1876	340573
BF	339m SW	Unspecified Pit	1897	343025
AS	341m SE	Old Coal Levels	1947	390720
AS	341m SE	Old Coal Levels	1921	365666
AS	344m SE	Old Coal Levels	1921	386757
BH	346m SW	Unspecified Disused Level	1897	390541
BI	348m S	Unspecified Ground Workings	1947	347011
AV	348m SW	Unspecified Old Quarries	1921	350656
BE	350m W	Unspecified Heap	1965	339702
BJ	353m SE	Tramway Sidings	1921	389503
BD	354m NW	Unspecified Pit	1921	344170
BJ	354m S	Unspecified Quarry	1876	331564
BD	355m NW	Unspecified Disused Level	1921 - 1947	367395
BK	357m SW	Coal Level	1876	347741
BE	357m W	Unspecified Heap	1921	372586
BE	358m W	Unspecified Heap	1921	359574
BE	359m W	Unspecified Heap	1947	363099
BE	360m W	Unspecified Heap	1965	355526
AG	362m W	Refuse Heap	1921	335085
AG	363m W	Unspecified Ground Workings	1965	368497
AG	363m W	Unspecified Ground Workings	1975	375375
BI	367m S	Unspecified Heap	1921	385766
AG	367m W	Unspecified Heap	1947	373660
AG	368m W	Unspecified Heap	1921	363988
BK	371m W	Unspecified Disused Level	1965 - 1975	390671
BK	372m W	Old Coal Level	1947	367706
BK	372m W	Old Coal Level	1921	361403
BK	373m W	Old Coal Level	1921	373626



ID	Location	Land use	Dates present	Group ID
BK	373m W	Old Coal Levels	1897	332589
BL	381m S	Unspecified Heap	1921	374652
AG	382m W	Unspecified Heaps	1965	360649
BJ	382m SE	Coal Level	1897	347873
BL	387m S	Unspecified Disused Level	1975	334672
BL	387m S	Unspecified Heap	1965	356004
BH	388m NW	Unspecified Disused Level	1921	366313
BL	389m S	Old Coal Levels	1897	332607
BH	390m NW	Unspecified Disused Level	1947	351138
BH	390m NW	Unspecified Pits	1921	345267
BH	391m NW	Unspecified Heap	1876	339776
BH	391m NW	Old Coal Levels	1947	369057
BH	391m NW	Old Coal Levels	1921	375553
AY	396m W	Old Coal Level	1921	391420
BL	397m S	Old Coal Level	1921 - 1947	363325
BM	404m S	Old Coal Level	1947	329461
BM	408m SE	Railway Sidings	1876	361635
AY	409m W	Unspecified Ground Workings	1876	346674
BI	409m S	Unspecified Heap	1947	351251
BN	411m SW	Unspecified Ground Workings	1975	379129
BN	411m SW	Unspecified Old Quarries	1947	351754
BO	412m NW	Unspecified Old Quarries	1897	378209
BN	412m SW	Unspecified Ground Workings	1921	386872
BN	414m SW	Unspecified Old Quarries	1897	390592
BN	415m SW	Unspecified Heaps	1921	338601
BO	417m NW	Unspecified Old Quarries	1947	363171
BE	420m W	Old Coal Levels	1897	332587
BE	421m W	Unspecified Heap	1965	378295



ID	Location	Land use	Dates present	Group ID
AG	424m SW	Unspecified Heap	1921	370653
BE	425m W	Unspecified Ground Workings	1947	345707
BE	425m W	Unspecified Heaps	1921	372451
AG	426m SW	Unspecified Heap	1921	382432
BP	427m S	Unspecified Old Level	1947	367142
AG	429m SW	Unspecified Pit	1921	344168
BQ	429m W	Unspecified Ground Workings	1921 - 1947	367060
AY	429m W	Unspecified Heap	1965 - 1975	361443
BP	431m S	Unspecified Ground Workings	1897	368591
BP	432m S	Unspecified Old Level	1914	362696
33	432m S	Unspecified Disused Level	1975	334702
BP	434m S	Unspecified Old Level	1921	357199
BR	435m S	Unspecified Old Level	1897 - 1914	389416
BP	436m S	Unspecified Ground Workings	1947 - 1965	390360
BQ	436m W	Old Coal Levels	1897	332588
BP	436m S	Unspecified Disused Levels	1975	349928
BS	437m S	Disused Colliery	1921	383381
BS	437m S	Disused Colliery	1897 - 1914	383931
BE	440m W	Unspecified Heap	1876	368078
BE	441m W	Unspecified Quarry	1876	330054
BP	441m S	Unspecified Ground Workings	1965	374470
BK	442m W	Unspecified Heap	1921	391030
AY	442m W	Trial Level	1876	335947
BK	445m W	Unspecified Heap	1921	381025
BT	449m S	Unspecified Ground Workings	1921	380558
BP	449m S	Unspecified Ground Workings	1975	378134
34	451m SW	Refuse Heap	1947	335082
35	454m S	Unspecified Heap	1876	339802



ID	Location	Land use	Dates present	Group ID
BP	454m S	Old Coal Level	1921	329459
BU	457m NW	Unspecified Disused Levels	1975	349956
BP	460m S	Unspecified Old Level	1947	351346
BV	463m S	Engine House	1897 - 1921	381434
BU	465m NW	Old Coal Levels	1921	380123
BU	466m NW	Unspecified Heaps	1876	359173
BU	467m NW	Unspecified Heaps	1921	385492
36	469m W	Unspecified Quarry	1876	330084
BW	469m S	Unspecified Disused Tip	1975	332184
BP	470m S	Old Coal Level	1897 - 1914	371879
BU	472m NW	Old Coal Levels	1947	367564
BW	474m S	Unspecified Pit	1921	373529
BT	474m S	Unspecified Pit	1921	387931
BV	474m S	Old Engine House	1921 - 1947	388627
BR	475m S	Unspecified Ground Workings	1947	345415
BW	475m S	Cuttings	1897	332917
BW	475m S	Unspecified Ground Workings	1947	383024
BT	475m SW	Unspecified Heap	1921	339686
BX	478m S	Railway Sidings	1947	385897
37	481m S	Unspecified Disused Tips	1975	334955
BR	481m S	Old Coal Level	1921	329458
BX	481m S	Railway Sidings	1914	350420
BX	481m S	Railway Sidings	1921	374892
BR	483m S	Unspecified Heap	1965 - 1975	382066
BV	486m S	Refuse Heap	1921 - 1947	375892
BY	487m S	Unspecified Ground Workings	1914	383206
BY	487m S	Unspecified Ground Workings	1947	385743
38	488m S	Unspecified Ground Workings	1897	357695



ID	Location	Land use	Dates present	Group ID
BY	489m S	Unspecified Pits	1921	345379
BU	490m NW	Unspecified Heap	1965 - 1975	387912
BY	491m S	Unspecified Ground Workings	1975	378523
BY	491m S	Unspecified Ground Workings	1965	361493
BP	495m S	Unspecified Heap	1975	339743
BW	497m S	Unspecified Heap	1921	357885
BU	498m NW	Old Coal Levels	1921 - 1947	369455
BP	498m S	Unspecified Disused Tip	1975	332248

This data is sourced from Ordnance Survey® / Groundsure.

1.2 Historical tanks

Records within 500m

1

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
BN	462m SW	Unspecified Tank	1878	39510

This data is sourced from Ordnance Survey® / Groundsure.

1.3 Historical energy features

Records within 500m

0

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'.

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

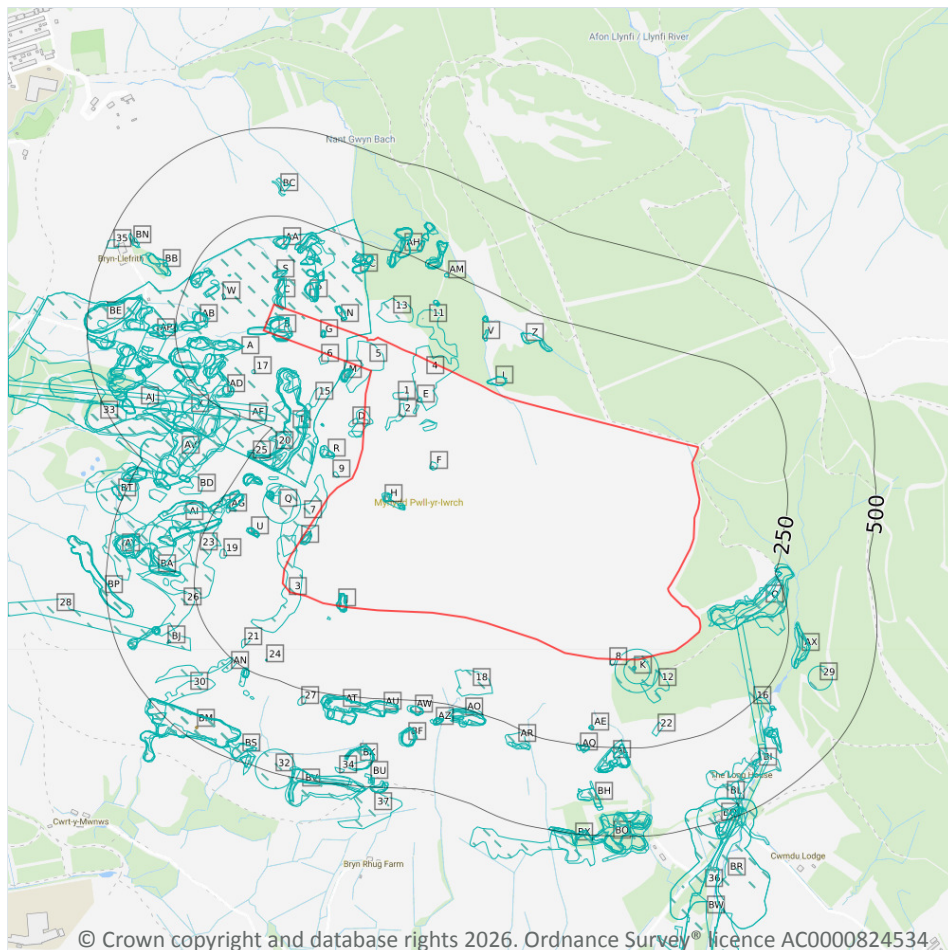
Records within 500m**0**

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



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

2.1 Historical industrial land uses

Records within 500m

595

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 33](#) >

ID	Location	Land Use	Date	Group ID
1	On site	Unspecified Heap	1876	339760
2	On site	Unspecified Pits	1876	345273
3	On site	Unspecified Ground Workings	1876	346675



ID	Location	Land Use	Date	Group ID
4	On site	Refuse Heap	1897	335109
5	On site	Refuse Heap	1897	335110
6	On site	Refuse Heap	1897	335087
7	On site	Refuse Heap	1897	335083
A	On site	Colliery	1921	387028
A	On site	Colliery	1947	387028
B	On site	Unspecified Heaps	1921	351956
B	On site	Unspecified Heap	1947	339674
B	On site	Unspecified Heap	1947	339675
B	On site	Old Coal Levels	1897	332592
B	On site	Cuttings	1921	353136
B	On site	Unspecified Ground Workings	1975	367964
B	On site	Unspecified Ground Workings	1975	384566
B	On site	Unspecified Ground Workings	1965	367964
B	On site	Unspecified Ground Workings	1965	384566
B	On site	Unspecified Heaps	1921	370494
B	On site	Cuttings	1947	353136
B	On site	Cuttings	1921	354754
B	On site	Unspecified Heaps	1921	370494
C	On site	Unspecified Ground Workings	1921	356502
C	On site	Unspecified Ground Workings	1947	356502
C	On site	Unspecified Old Levels	1897	336064
C	On site	Unspecified Ground Workings	1965	368062
C	On site	Unspecified Ground Workings	1921	372253
C	On site	Unspecified Ground Workings	1921	372253
D	On site	Unspecified Heaps	1876	338493
D	On site	Refuse Heap	1897	335129
E	On site	Unspecified Heap	1876	339761



ID	Location	Land Use	Date	Group ID
E	On site	Unspecified Pit	1876	343140
E	On site	Unspecified Ground Workings	1876	345793
E	On site	Unspecified Pit	1876	343141
F	On site	Unspecified Heap	1876	339855
F	On site	Trial Level	1876	335958
G	On site	Trial Level	1921	369800
G	On site	Unspecified Disused Level	1975	334659
G	On site	Trial Level	1921	369800
G	On site	Trial Level	1947	369202
H	On site	Unspecified Old Quarries	1921	377116
H	On site	Unspecified Old Quarries	1921	380053
H	On site	Unspecified Old Quarries	1921	362187
H	On site	Unspecified Old Quarries	1947	370104
H	On site	Unspecified Old Quarries	1947	365399
H	On site	Unspecified Old Quarries	1897	380053
H	On site	Unspecified Old Quarries	1897	387857
I	On site	Unspecified Quarry	1921	361771
I	On site	Unspecified Quarry	1947	361771
I	On site	Unspecified Quarry	1897	366945
I	On site	Unspecified Quarry	1921	366945
J	On site	Unspecified Quarry	1921	370652
J	On site	Unspecified Ground Workings	1975	364514
J	On site	Unspecified Ground Workings	1965	364514
J	On site	Unspecified Quarry	1947	367729
J	On site	Unspecified Quarry	1897	362517
J	On site	Unspecified Quarry	1921	370652
K	On site	Coal Level	1921	388671
K	On site	Coal Level	1947	376545



ID	Location	Land Use	Date	Group ID
8	1m S	Unspecified Disused Level	1975	334748
D	1m W	Unspecified Pit	1876	343139
L	14m NE	Unspecified Old Quarry	1921	362186
L	14m NE	Unspecified Old Quarry	1947	362186
L	14m NE	Unspecified Old Quarry	1897	362186
L	15m NE	Unspecified Old Quarry	1921	366067
M	16m S	Old Coal Level	1921	366959
M	16m S	Old Coal Level	1921	366959
M	17m S	Old Coal Level	1921	356992
M	17m S	Unspecified Disused Level	1975	334660
M	18m S	Old Coal Level	1897	356992
M	19m S	Old Coal Level	1947	369611
K	20m S	Coal Level	1921	387415
K	20m S	Coal Level	1921	387415
9	23m NW	Unspecified Heap	1876	339673
N	24m N	Old Coal Levels	1897	332597
O	24m E	Unspecified Disused Quarry	1975	356046
O	26m E	Unspecified Quarry	1897	366197
N	27m N	Old Coal Level	1921	387553
N	27m N	Old Coal Level	1921	387553
N	28m N	Old Coal Level	1921	387553
N	28m N	Old Coal Level	1947	387553
O	33m E	Unspecified Quarry	1921	366197
O	35m E	Unspecified Disused Quarry	1921	386928
O	35m E	Unspecified Disused Quarry	1947	386928
10	35m S	Trial Level	1876	335959
N	36m N	Unspecified Heap	1975	339700
11	42m NE	Refuse Heap	1897	335108



ID	Location	Land Use	Date	Group ID
12	44m S	Refuse Heap	1897	335099
P	44m N	Unspecified Disused Levels	1975	349926
P	44m N	Unspecified Pit	1965	343027
P	45m N	Unspecified Old Levels	1897	377375
Q	46m NW	Old Trial Shaft	1921	373778
P	48m N	Unspecified Old Level	1921	369413
P	48m N	Unspecified Old Level	1947	384984
P	50m N	Unspecified Ground Workings	1921	388197
P	50m N	Unspecified Ground Workings	1921	388197
13	51m NE	Refuse Heap	1897	335107
R	70m W	Trial Shaft	1921	382137
R	70m W	Trial Shaft	1921	382137
R	72m W	Trial Shaft	1921	356067
A	72m SW	Old Coal Levels	1921	379496
A	72m SW	Old Coal Levels	1921	379496
R	74m W	Trial Shaft	1947	353085
R	74m W	Trial Shaft	1897	361448
A	74m SW	Old Coal Levels	1947	377241
S	74m N	Unspecified Heap	1921	390470
T	75m S	Unspecified Old Quarries	1897	366346
S	76m N	Unspecified Ground Workings	1947	345706
T	76m S	Unspecified Old Quarries	1921	366346
S	76m N	Unspecified Heap	1921	378711
S	76m N	Unspecified Heap	1921	378711
T	76m S	Unspecified Ground Workings	1965	380795
A	77m SW	Old Coal Levels	1921	377743
14	77m SW	Unspecified Disused Level	1975	334666
T	77m S	Unspecified Disused Quarry	1975	333811



ID	Location	Land Use	Date	Group ID
T	79m S	Unspecified Old Quarries	1947	386462
T	84m S	Unspecified Ground Workings	1921	356676
15	93m S	Refuse Heap	1897	335086
O	98m E	Tramway Sidings	1921	373623
R	100m NW	Unspecified Ground Workings	1876	345703
R	101m NW	Unspecified Heap	1876	340564
16	104m E	Tramway Sidings	1921	389828
R	104m NW	Unspecified Disused Shaft	1975	335741
U	105m NW	Unspecified Ground Workings	1947	346671
P	106m N	Unspecified Old Level	1921	384995
P	106m N	Unspecified Old Level	1921	384754
U	106m NW	Unspecified Heap	1921	378513
P	107m N	Unspecified Disused Levels	1975	349934
U	107m NW	Unspecified Pit	1921	388240
U	107m NW	Unspecified Pit	1921	388240
Q	108m NW	Unspecified Heap	1876	374466
A	109m W	Unspecified Old Levels	1897	336065
U	109m NW	Unspecified Disused Level	1975	334661
P	110m N	Unspecified Heap	1921	385839
P	110m N	Unspecified Heap	1921	385839
R	113m W	Old Air Shaft	1921	335789
17	114m S	Old Air Shaft	1921	335812
R	116m W	Old Air Shaft	1921	380587
R	116m W	Old Air Shaft	1947	380587
Q	119m NW	Trial Level	1876	336002
V	119m NE	Unspecified Ground Workings	1947	345741
V	119m NE	Unspecified Pit	1897	343087
U	123m NW	Unspecified Heap	1897	376316



ID	Location	Land Use	Date	Group ID
U	123m NW	Unspecified Heap	1921	376584
U	123m NW	Unspecified Heap	1921	376584
R	126m W	Unspecified Pit	1876	344167
Q	128m NW	Unspecified Heap	1921	353832
Q	129m NW	Trial Shaft	1897	341625
Q	129m NW	Old Trial Shaft	1947	350427
Q	130m NW	Unspecified Heap	1921	370934
Q	130m NW	Unspecified Heap	1921	370934
Q	130m NW	Unspecified Heap	1876	352815
Q	132m NW	Old Trial Shaft	1921	357682
Q	132m NW	Old Trial Shaft	1921	357682
A	132m SW	Unspecified Disused Level	1975	334662
A	132m SW	Unspecified Pit	1965	357126
P	132m N	Unspecified Old Levels	1921	386115
P	132m N	Unspecified Old Levels	1947	386115
Q	133m NW	Disused Trial Shaft	1975	390758
Q	133m NW	Disused Trial Shaft	1965	390758
P	133m N	Unspecified Old Levels	1921	387531
P	133m N	Unspecified Old Levels	1921	387531
W	134m W	Unspecified Ground Workings	1947	345705
A	136m SW	Old Air Shaft	1947	386840
A	138m SW	Old Air Shaft	1921	386840
18	139m S	Refuse Heap	1897	335098
A	140m SW	Unspecified Pit	1921	376977
X	141m SW	Unspecified Old Quarries	1947	385407
X	142m SW	Unspecified Old Quarries	1921	385407
Q	147m NW	Unspecified Pit	1876	343020
W	148m NW	Old Coal Level	1921	329348



ID	Location	Land Use	Date	Group ID
R	149m W	Unspecified Heap	1876	340563
T	149m S	Unspecified Ground Workings	1876	362303
Y	150m NE	Old Trial Shaft	1921	376711
P	152m N	Unspecified Disused Levels	1975	349936
Y	152m NE	Disused Trial Shaft	1965	345115
Y	153m NE	Old Trial Shaft	1921	362745
Y	153m NE	Old Trial Shaft	1921	362745
Y	153m NE	Old Trial Shaft	1947	362745
Y	153m NE	Old Trial Shaft	1897	362745
Y	154m NE	Unspecified Disused Shafts	1975	334230
Z	157m N	Unspecified Ground Workings	1947	352717
Z	157m N	Unspecified Ground Workings	1897	364290
Z	158m N	Unspecified Ground Workings	1975	388696
AA	159m N	Unspecified Heap	1921	372479
AA	159m N	Unspecified Old Levels	1947	358859
AA	159m N	Unspecified Old Levels	1897	384414
AB	159m W	Unspecified Old Level	1897	334545
AB	160m W	Refuse Heaps	1921	381052
AB	160m W	Refuse Heaps	1921	381052
A	160m W	Unspecified Disused Levels	1975	349925
W	160m W	Cuttings	1921	363152
AA	160m N	Unspecified Heap	1921	354016
AA	160m N	Unspecified Heap	1921	354016
AC	160m N	Unspecified Pit	1921	389458
A	160m W	Unspecified Heap	1965	339703
W	160m W	Cuttings	1921	355106
W	160m W	Cuttings	1947	355106
AB	161m W	Refuse Heap	1921	357120



ID	Location	Land Use	Date	Group ID
AB	161m W	Refuse Heap	1947	357120
AC	161m N	Unspecified Old Levels	1897	336078
P	161m N	Unspecified Heap	1921	378439
P	161m N	Unspecified Heap	1921	378439
AC	162m N	Unspecified Pit	1947	360511
AC	164m N	Unspecified Pit	1921	378858
AC	164m N	Unspecified Pit	1921	378858
Z	164m N	Unspecified Ground Workings	1975	354681
AA	165m N	Unspecified Heap	1975	377032
AA	165m N	Unspecified Heap	1965	377032
W	166m W	Unspecified Pits	1947	345270
P	166m N	Unspecified Disused Tip	1975	332191
19	167m W	Unspecified Pit	1876	344171
AB	167m W	Unspecified Heap	1975	363608
AB	167m W	Unspecified Heap	1965	363608
P	167m N	Unspecified Ground Workings	1965	345712
T	168m S	Unspecified Heap	1876	339688
V	169m NE	Unspecified Pit	1897	363773
V	169m NE	Unspecified Pit	1921	386535
V	169m NE	Unspecified Pit	1921	386535
V	170m NE	Unspecified Ground Workings	1947	345740
20	170m NW	Unspecified Ground Workings	1876	385658
Q	177m NW	Old Coal Level	1921	382785
21	178m SW	Unspecified Heap	1876	339690
Q	178m NW	Old Coal Level	1947	385748
Q	180m NW	Old Coal Level	1921	369194
Q	180m NW	Old Coal Level	1921	369194
AD	181m SW	Unspecified Pit	1965	350893



ID	Location	Land Use	Date	Group ID
Q	182m NW	Old Coal Levels	1897	332635
AD	182m SW	Unspecified Pit	1975	350893
AD	183m SW	Unspecified Pits	1921	345269
AB	184m W	Unspecified Ground Workings	1975	375122
22	186m S	Unspecified Disused Level	1975	334749
Q	186m NW	Unspecified Disused Level	1975	334714
AE	190m S	Unspecified Disused Shaft	1975	382541
AE	190m S	Unspecified Disused Shaft	1965	382541
AC	190m N	Unspecified Heaps	1921	357373
AB	190m W	Unspecified Ground Workings	1965	375122
23	191m W	Unspecified Ground Workings	1876	386537
AC	192m N	Unspecified Heap	1947	339698
AC	194m N	Unspecified Heaps	1921	386108
AC	194m N	Unspecified Heaps	1921	386108
AE	195m S	Old Coal Shaft	1897	342506
W	197m NW	Old Coal Level	1921	388533
W	197m NW	Old Coal Level	1921	388533
AF	198m S	Railway Sidings	1947	363503
W	198m NW	Unspecified Heap	1921	362113
W	198m NW	Old Coal Level	1947	359757
AG	199m NW	Unspecified Pit	1876	378959
AG	199m NW	Unspecified Pit	1947	384882
AC	200m N	Unspecified Heap	1947	339812
24	201m S	Trial Shaft	1876	341605
AH	202m N	Unspecified Pit	1921	353782
AG	202m NW	Unspecified Pit	1921	364142
AG	202m NW	Unspecified Pit	1921	364142
AH	202m N	Unspecified Old Level	1947	385290



ID	Location	Land Use	Date	Group ID
AI	202m NW	Old Coal Levels	1897	332590
AH	203m N	Unspecified Old Level	1921	369342
AH	203m N	Unspecified Old Level	1921	369342
W	203m NW	Unspecified Disused Level	1975	334658
A	204m SW	Old Coal Levels	1947	355280
AH	205m N	Unspecified Old Level	1897	387221
P	206m N	Unspecified Disused Levels	1975	349937
Q	207m NW	Unspecified Heap	1921	339684
A	208m SW	Unspecified Disused Levels	1975	349935
A	208m SW	Unspecified Ground Workings	1965	345713
AH	208m N	Unspecified Disused Level	1975	334670
Q	215m NW	Unspecified Ground Workings	1975	346668
AJ	217m S	Railway Sidings	1965	385857
AI	217m NW	Unspecified Old Level	1947	353444
W	218m NW	Old Coal Levels	1897	332591
AI	218m NW	Unspecified Old Level	1921	389560
AI	218m NW	Unspecified Old Level	1921	389560
AK	219m NW	Unspecified Ground Workings	1921	352424
AK	219m NW	Unspecified Ground Workings	1921	352424
AG	219m NW	Unspecified Ground Workings	1947	367106
AI	219m NW	Old Coal Level	1921	329349
W	220m W	Unspecified Heap	1975	368141
W	220m W	Unspecified Heap	1965	368141
AL	226m S	Unspecified Disused Tip	1975	332193
AG	230m NW	Unspecified Heap	1876	339777
25	233m NW	Unspecified Heap	1921	339685
AM	236m NE	Disused Trial Shaft	1965	345114
AM	236m NE	Unspecified Disused Shafts	1975	334229



ID	Location	Land Use	Date	Group ID
AJ	236m S	Unspecified Disused Tip	1975	332190
AH	237m N	Unspecified Pit	1921	379357
AH	237m N	Unspecified Pit	1921	379357
AL	238m S	Old Coal Levels	1921	350235
AL	238m S	Old Coal Levels	1921	350235
AM	238m NE	Unspecified Old Level	1897	359803
AN	239m SW	Unspecified Pit	1876	343116
AM	240m NE	Unspecified Old Level	1921	359803
AL	240m S	Old Coal Levels	1921	360077
AL	240m S	Old Coal Levels	1947	360077
AM	240m NE	Unspecified Ground Workings	1947	345776
AK	241m NW	Unspecified Ground Workings	1947	367578
AO	241m S	Unspecified Pit	1897	384495
AM	241m NE	Unspecified Pit	1975	376641
AM	241m NE	Unspecified Pit	1965	376641
AJ	242m W	Unspecified Heaps	1921	377764
AM	242m NE	Unspecified Pit	1921	374471
AM	242m NE	Unspecified Pit	1921	374471
AP	244m W	Old Coal Levels	1947	390569
AP	244m W	Old Coal Levels	1921	388991
AP	244m W	Old Coal Levels	1921	388991
AQ	245m S	Old Coal Levels	1897	332655
AN	246m SW	Unspecified Heaps	1876	338488
AL	247m S	Old Coal Levels	1897	354410
AN	247m SW	Unspecified Disused Level	1975	334715
AR	248m SW	Unspecified Ground Workings	1897	370602
AQ	248m S	Unspecified Heap	1921	360411
AQ	248m S	Unspecified Heap	1921	360411



ID	Location	Land Use	Date	Group ID
X	248m SW	Unspecified Pit	1921	343019
AO	249m S	Unspecified Disused Quarry	1975	333809
AO	249m S	Unspecified Pit	1965	380869
X	249m SW	Unspecified Old Quarries	1897	373158
AQ	249m S	Unspecified Pit	1947	344548
AN	250m SW	Old Coal Level	1921	352875
AN	250m SW	Old Coal Level	1921	352875
AN	250m SW	Old Coal Level	1921	352875
AN	250m SW	Old Coal Level	1947	352875
AS	250m SE	Refuse Heap	1947	335097
AQ	251m S	Unspecified Heap	1921	359268
AO	251m S	Unspecified Old Quarry	1947	387905
AO	252m S	Unspecified Old Quarry	1921	387905
AT	253m S	Unspecified Pit	1975	384193
AT	253m S	Unspecified Pits	1965	355846
26	253m W	Unspecified Ground Workings	1876	345702
AN	254m SW	Old Coal Levels	1897	332636
AT	254m S	Unspecified Pits	1897	353174
AO	256m S	Unspecified Old Quarries	1921	347280
AH	256m N	Unspecified Heaps	1921	387920
AH	256m N	Unspecified Heaps	1921	387920
AT	256m S	Unspecified Ground Workings	1947	345794
AU	256m S	Unspecified Pit	1947	363917
AT	258m S	Old Coal Level	1921	372091
AT	258m S	Old Coal Level	1921	372091
AU	258m S	Unspecified Pit	1921	357790
AU	258m S	Unspecified Pit	1921	357790
AT	259m S	Unspecified Pits	1921	353174



ID	Location	Land Use	Date	Group ID
A	259m SW	Unspecified Pit	1921	385105
A	259m SW	Unspecified Pit	1921	385105
A	260m SW	Unspecified Pit	1921	359854
A	262m SW	Trial Level	1897	335948
AV	263m S	Refuse Heap	1965	335084
AT	264m S	Disused Air Shaft	1975	370853
AT	264m S	Disused Air Shaft	1965	370853
AL	265m S	Unspecified Ground Workings	1965	347014
AW	265m S	Unspecified Pit	1897	384743
AW	266m S	Unspecified Pit	1921	351598
AW	266m S	Unspecified Pit	1921	351598
AW	266m S	Unspecified Pit	1921	386593
AW	266m S	Unspecified Pit	1947	386593
AX	266m E	Unspecified Old Quarry	1897	389132
AT	267m S	Old Air Shaft	1897	335788
AJ	268m SW	Unspecified Ground Workings	1965	388754
27	268m S	Unspecified Quarry	1876	330055
AT	269m S	Old Air Shaft	1921	350302
AX	269m E	Unspecified Old Quarry	1921	373247
AI	270m W	Unspecified Disused Levels	1975	384317
AH	270m NE	Unspecified Pit	1921	388739
AH	270m NE	Unspecified Pit	1921	388739
AH	271m NE	Unspecified Pit	1947	377761
AX	272m E	Unspecified Old Quarry	1921	373247
AX	272m E	Unspecified Old Quarry	1947	373542
AT	274m S	Old Air Shaft	1921	357470
AR	278m SW	Unspecified Ground Workings	1947	390417
AR	282m S	Unspecified Ground Workings	1921	390417



ID	Location	Land Use	Date	Group ID
AJ	282m W	Unspecified Ground Workings	1947	370886
AP	283m W	Unspecified Heap	1965	339701
AP	284m W	Unspecified Disused Levels	1975	349933
AJ	286m W	Unspecified Ground Workings	1921	375437
AJ	286m W	Unspecified Ground Workings	1921	375437
AH	288m N	Unspecified Heap	1921	339811
AM	290m NE	Unspecified Heap	1921	371853
AY	290m W	Old Coal Level	1947	388884
AY	291m W	Old Coal Level	1921	383339
AY	291m W	Old Coal Level	1921	373719
AZ	291m S	Unspecified Ground Workings	1897	371337
AZ	292m S	Unspecified Ground Workings	1947	354798
AZ	292m S	Unspecified Heap	1921	386857
AZ	292m S	Unspecified Heap	1921	386857
BA	292m W	Old Coal Level	1921	378361
AS	293m SE	Unspecified Disused Shaft	1975	386678
AS	293m SE	Unspecified Disused Shaft	1965	386678
AM	295m NE	Unspecified Heap	1921	353991
AM	295m NE	Unspecified Heap	1921	353991
AZ	295m S	Unspecified Heap	1921	387614
AT	296m S	Unspecified Heap	1921	339850
AS	298m SE	Old Coal Shaft	1947	384551
AS	298m SE	Old Coal Shaft	1897	384551
AS	298m SE	Old Coal Shaft	1921	384551
BB	303m W	Unspecified Old Quarries	1921	367764
AT	303m S	Unspecified Heap	1921	339849
BB	304m W	Unspecified Old Quarries	1921	354127
BB	304m W	Unspecified Old Quarries	1947	354127



ID	Location	Land Use	Date	Group ID
AN	304m SW	Unspecified Heap	1876	340572
28	305m SW	Railway Sidings	1876	361639
AS	306m SE	Old Coal Shaft	1921	342507
AH	308m NE	Unspecified Pit	1947	343121
BC	308m N	Unspecified Ground Workings	1876	345960
AH	309m NE	Unspecified Heaps	1921	350405
AH	309m NE	Unspecified Heaps	1921	350405
BD	310m NW	Unspecified Heaps	1876	338600
BB	312m W	Unspecified Old Quarries	1897	372365
X	314m SW	Old Air Shaft	1921	357584
AN	314m S	Unspecified Pit	1876	343117
X	317m SW	Old Air Shaft	1921	356643
AJ	317m W	Old Coal Levels	1921	351386
AJ	317m W	Old Coal Levels	1921	351386
AY	318m W	Unspecified Disused Levels	1975	384317
BE	319m W	Old Coal Levels	1897	382011
BA	320m W	Unspecified Pit	1876	343023
BC	320m N	Unspecified Pit	1876	343301
BE	322m W	Old Coal Levels	1921	387915
BE	322m W	Old Coal Levels	1921	387915
BE	322m W	Unspecified Ground Workings	1947	345704
BA	323m W	Unspecified Pit	1876	343022
AF	324m SW	Unspecified Pits	1921	345268
BF	327m S	Unspecified Heap	1975	372226
BF	327m S	Unspecified Heap	1965	372226
BF	329m S	Old Coal Levels	1897	332606
AH	330m NE	Unspecified Heap	1897	390534
AS	330m SE	Unspecified Heap	1975	381301



ID	Location	Land Use	Date	Group ID
AS	330m SE	Unspecified Heap	1965	381301
BF	331m S	Unspecified Ground Workings	1947	346567
BF	332m S	Unspecified Heap	1921	360896
BF	332m S	Unspecified Heap	1921	360896
AJ	332m W	Cuttings	1921	373603
29	332m E	Old Coal Level	1897	329462
BF	332m S	Unspecified Heap	1921	388001
AH	333m NE	Unspecified Heap	1921	390534
30	334m SW	Unspecified Ground Workings	1876	351051
AJ	334m W	Unspecified Disused Levels	1975	349932
AH	335m NE	Unspecified Pit	1947	343122
AJ	336m W	Cuttings	1947	373603
AS	336m SE	Old Coal Level	1897	329460
AJ	336m W	Trial Levels	1897	341830
BE	338m W	Unspecified Disused Tips	1975	334951
31	338m SW	Unspecified Heap	1876	340573
AF	339m SW	Unspecified Pit	1897	343025
AS	341m SE	Old Coal Levels	1947	390720
AS	341m SE	Old Coal Levels	1921	365666
AS	341m SE	Old Coal Levels	1921	365666
AS	344m SE	Old Coal Levels	1921	386757
BG	346m SW	Unspecified Disused Level	1897	390541
BH	348m S	Unspecified Ground Workings	1947	347011
AV	348m SW	Unspecified Old Quarries	1921	350656
BE	350m W	Unspecified Heap	1965	339702
BI	353m SE	Tramway Sidings	1921	389503
BD	354m NW	Unspecified Pit	1921	344170
BI	354m S	Unspecified Quarry	1876	331564



ID	Location	Land Use	Date	Group ID
BD	355m NW	Unspecified Disused Level	1947	367395
BD	356m NW	Unspecified Disused Level	1921	367395
BD	356m NW	Unspecified Disused Level	1921	367395
BJ	357m SW	Coal Level	1876	347741
BE	357m W	Unspecified Heap	1921	372586
BE	358m W	Unspecified Heap	1921	359574
BE	358m W	Unspecified Heap	1921	359574
BE	359m W	Unspecified Heap	1947	363099
BE	360m W	Unspecified Heap	1965	355526
AJ	362m W	Refuse Heap	1921	335085
AJ	363m W	Unspecified Ground Workings	1965	368497
AJ	363m W	Unspecified Ground Workings	1975	375375
BH	367m S	Unspecified Heap	1921	385766
BH	367m S	Unspecified Heap	1921	385766
AJ	367m W	Unspecified Heap	1947	373660
AJ	368m W	Unspecified Heap	1921	363988
AJ	368m W	Unspecified Heap	1921	363988
BJ	371m W	Unspecified Disused Level	1975	390671
BJ	371m W	Unspecified Disused Level	1965	390671
BJ	372m W	Old Coal Level	1947	367706
BJ	372m W	Old Coal Level	1921	361403
BJ	372m W	Old Coal Level	1921	361403
BJ	373m W	Old Coal Level	1921	373626
BJ	373m W	Old Coal Levels	1897	332589
BK	381m S	Unspecified Heap	1921	374652
BK	381m S	Unspecified Heap	1921	374652
AJ	382m W	Unspecified Heaps	1965	360649
BI	382m SE	Coal Level	1897	347873



ID	Location	Land Use	Date	Group ID
BK	387m S	Unspecified Disused Level	1975	334672
BK	387m S	Unspecified Heap	1965	356004
BG	388m NW	Unspecified Disused Level	1921	366313
BK	389m S	Old Coal Levels	1897	332607
BG	390m NW	Unspecified Disused Level	1947	351138
BG	390m NW	Unspecified Pits	1921	345267
BG	391m NW	Unspecified Heap	1876	339776
BG	391m NW	Old Coal Levels	1947	369057
BG	391m NW	Old Coal Levels	1921	375553
BG	391m NW	Old Coal Levels	1921	375553
AY	396m W	Old Coal Level	1921	391420
BK	397m S	Old Coal Level	1947	363325
BK	397m S	Old Coal Level	1921	363325
BL	404m S	Old Coal Level	1947	329461
BL	408m SE	Railway Sidings	1876	361635
AY	409m W	Unspecified Ground Workings	1876	346674
BH	409m S	Unspecified Heap	1947	351251
BM	411m SW	Unspecified Ground Workings	1975	379129
BM	411m SW	Unspecified Old Quarries	1947	351754
BN	412m NW	Unspecified Old Quarries	1897	378209
BM	412m SW	Unspecified Ground Workings	1921	386872
BM	412m SW	Unspecified Ground Workings	1921	386872
BM	414m SW	Unspecified Old Quarries	1897	390592
BM	415m SW	Unspecified Heaps	1921	338601
BN	417m NW	Unspecified Old Quarries	1947	363171
BE	420m W	Old Coal Levels	1897	332587
BE	421m W	Unspecified Heap	1965	378295
AJ	424m SW	Unspecified Heap	1921	370653



ID	Location	Land Use	Date	Group ID
BE	425m W	Unspecified Ground Workings	1947	345707
BE	425m W	Unspecified Heaps	1921	372451
BE	425m W	Unspecified Heaps	1921	372451
AJ	426m SW	Unspecified Heap	1921	382432
AJ	426m SW	Unspecified Heap	1921	382432
BO	427m S	Unspecified Old Level	1947	367142
AJ	429m SW	Unspecified Pit	1921	344168
BP	429m W	Unspecified Ground Workings	1921	367060
BP	429m W	Unspecified Ground Workings	1921	367060
AY	429m W	Unspecified Heap	1965	361443
AY	429m W	Unspecified Heap	1975	361443
BO	431m S	Unspecified Ground Workings	1897	368591
BO	432m S	Unspecified Old Level	1914	362696
32	432m S	Unspecified Disused Level	1975	334702
BO	434m S	Unspecified Old Level	1921	357199
BQ	435m S	Unspecified Old Level	1897	389416
BO	436m S	Unspecified Ground Workings	1965	390360
BP	436m W	Unspecified Ground Workings	1921	367060
BP	436m W	Unspecified Ground Workings	1947	367060
BP	436m W	Old Coal Levels	1897	332588
BO	436m S	Unspecified Disused Levels	1975	349928
BR	437m S	Disused Colliery	1914	383931
BR	437m S	Disused Colliery	1921	383381
BE	440m W	Unspecified Heap	1876	368078
BE	441m W	Unspecified Quarry	1876	330054
BO	441m S	Unspecified Ground Workings	1965	374470
BJ	442m W	Unspecified Heap	1921	391030
BJ	442m W	Unspecified Heap	1921	391030



ID	Location	Land Use	Date	Group ID
AY	442m W	Trial Level	1876	335947
BJ	445m W	Unspecified Heap	1921	381025
BS	449m S	Unspecified Ground Workings	1921	380558
BS	449m S	Unspecified Ground Workings	1921	380558
BO	449m S	Unspecified Ground Workings	1975	378134
33	451m SW	Refuse Heap	1947	335082
34	454m S	Unspecified Heap	1876	339802
BO	454m S	Old Coal Level	1921	329459
BT	457m NW	Unspecified Disused Levels	1975	349956
BO	460m S	Unspecified Old Level	1947	351346
BU	463m S	Engine House	1897	381434
BT	465m NW	Old Coal Levels	1921	380123
BT	465m NW	Old Coal Levels	1921	380123
BT	466m NW	Unspecified Heaps	1876	359173
BT	467m NW	Unspecified Heaps	1921	385492
35	469m W	Unspecified Quarry	1876	330084
BV	469m S	Unspecified Disused Tip	1975	332184
BO	470m S	Old Coal Level	1914	371879
36	471m S	Disused Colliery	1897	383931
BT	472m NW	Old Coal Levels	1947	367564
BV	474m S	Unspecified Pit	1921	373529
BV	474m S	Unspecified Pit	1921	373529
BS	474m S	Unspecified Pit	1921	387931
BS	474m S	Unspecified Pit	1921	387931
BU	474m S	Old Engine House	1947	388627
BU	474m S	Engine House	1921	381434
BQ	475m S	Unspecified Old Level	1914	389416
BQ	475m S	Unspecified Ground Workings	1947	345415



ID	Location	Land Use	Date	Group ID
BV	475m S	Unspecified Ground Workings	1947	383024
BV	475m S	Cuttings	1897	332917
BO	475m S	Unspecified Ground Workings	1947	390360
BS	475m SW	Unspecified Heap	1921	339686
BW	478m S	Railway Sidings	1947	385897
BU	478m S	Old Engine House	1921	388627
37	481m S	Unspecified Disused Tips	1975	334955
BQ	481m S	Old Coal Level	1921	329458
BW	481m S	Railway Sidings	1914	350420
BW	481m S	Railway Sidings	1921	374892
BQ	483m S	Unspecified Heap	1975	382066
BQ	483m S	Unspecified Heap	1965	382066
BU	486m S	Refuse Heap	1921	375892
BU	486m S	Refuse Heap	1921	375892
BU	486m S	Refuse Heap	1921	375892
BU	486m S	Refuse Heap	1947	375892
BX	487m S	Unspecified Ground Workings	1914	383206
BX	487m S	Unspecified Ground Workings	1947	385743
38	488m S	Unspecified Ground Workings	1897	357695
BX	489m S	Unspecified Pits	1921	345379
BT	490m NW	Unspecified Heap	1975	387912
BT	490m NW	Unspecified Heap	1965	387912
BX	491m S	Unspecified Ground Workings	1975	378523
BX	491m S	Unspecified Ground Workings	1965	361493
BO	495m S	Unspecified Heap	1975	339743
BV	497m S	Unspecified Heap	1921	357885
BT	498m NW	Old Coal Levels	1921	369455
BT	498m NW	Old Coal Levels	1947	369455



ID	Location	Land Use	Date	Group ID
BO	498m S	Unspecified Disused Tip	1975	332248
BO	499m S	Old Coal Level	1897	371879
BT	500m NW	Old Coal Levels	1921	369455
BT	500m NW	Old Coal Levels	1921	369455

This data is sourced from Ordnance Survey® / Groundsure.

2.2 Historical tanks

Records within 500m	1
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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 33 >](#)

ID	Location	Land Use	Date	Group ID
BM	462m SW	Unspecified Tank	1878	39510

This data is sourced from Ordnance Survey® / Groundsure.

2.3 Historical energy features

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

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'.

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

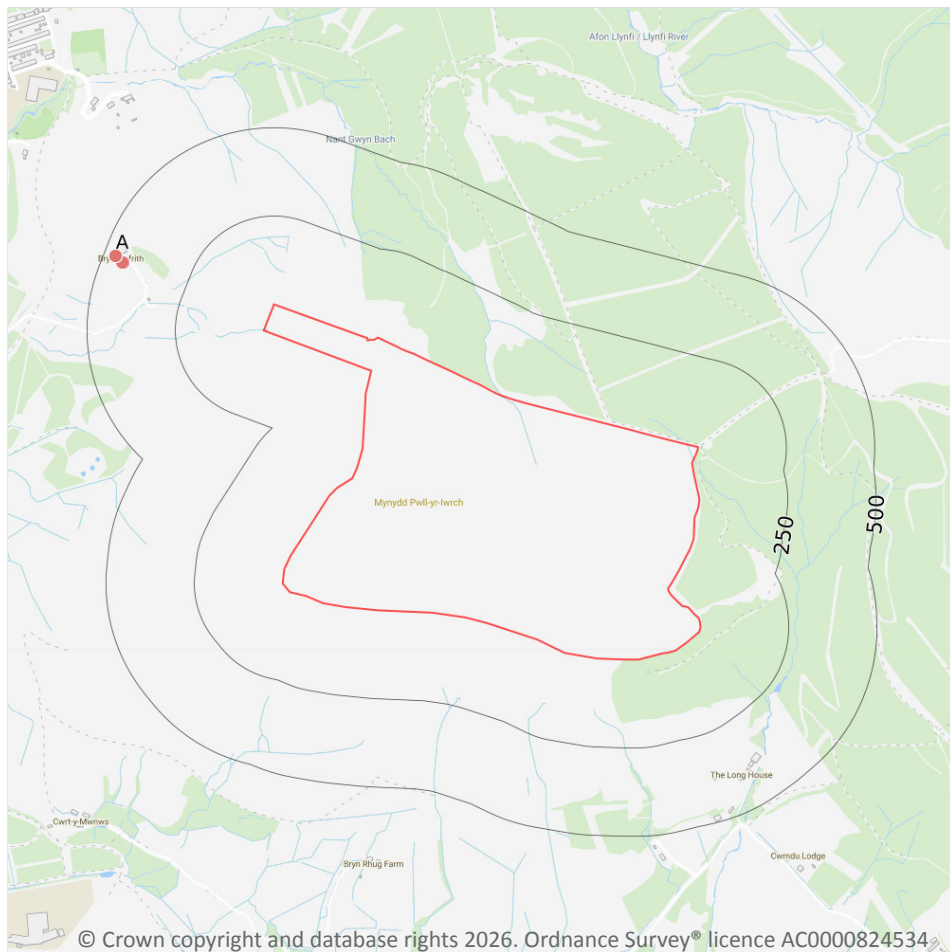
0

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



- Site Outline
- Search buffers in metres (m)
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

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

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

3.2 Historical landfill (BGS records)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



3.3 Historical landfill (LA/mapping records)

Records within 500m**0**

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m**0**

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

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

3.5 Historical waste sites

Records within 500m**0**

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

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

3.6 Licensed waste sites

Records within 500m**0**

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

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

3.7 Waste exemptions

Records within 500m**36**

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 57](#) >

ID	Location	Site	Reference	Category	Sub-Category	Description
A	443m W	Land Adj Brynlllefraith Farm, Caeru, Maseteg, Bc Bc, Cf340tn	NRW-WME015242	Storing waste exemption	On a farm	Storage of waste in a secure place
A	443m W	Land Adj Brynlllefraith Farm, Caeru, Maseteg, Bc Bc, Cf340tn	NRW-WME015242	Using waste exemption	On a farm	Use of waste for a specified purpose
A	443m W	Land Adj Brynlllefraith Farm, Caeru, Maseteg, Bc Bc, Cf340tn	NRW-WME015242	Using waste exemption	On a farm	Incorporation of ash into soil
A	443m W	Land Adj Brynlllefraith Farm, Caeru, Maseteg, Bc Bc, Cf340tn	NRW-WME015242	Disposing of waste exemption	On a farm	Deposit of waste from dredging of inland waters
A	443m W	Land Adj Brynlllefraith Farm, Caeru, Maseteg, Bc Bc, Cf340tn	NRW-WME015242	Treating waste exemption	On a farm	Cleaning, washing, spraying or coating relevant waste
A	443m W	Land Adj Brynlllefraith Farm, Caeru, Maseteg, Bc Bc, Cf340tn	NRW-WME015242	Treating waste exemption	On a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
A	443m W	Land Adj Brynlllefraith Farm, Caeru, Maseteg, Bc Bc, Cf340tn	NRW-WME015242	Using waste exemption	On a farm	Spreading of plant matter to confer benefit
A	443m W	Land Adj Brynlllefraith Farm, Caeru, Maseteg, Bc Bc, Cf340tn	NRW-WME015242	Treating waste exemption	On a farm	Aerobic composting and associated prior treatment
A	443m W	Land Adj Brynlllefraith Farm, Caeru, Maseteg, Bc Bc, Cf340tn	NRW-WME015242	Using waste exemption	On a farm	Use of baled end-of-life tyres in construction
A	443m W	Land Adj Brynlllefraith Farm, Caeru, Maseteg, Bc Bc, Cf340tn	NRW-WME015242	Using waste exemption	On a farm	Use of waste in construction
A	443m W	Land Adj Brynlllefraith Farm, Caeru, Maseteg, Bc Bc, Cf340tn	NRW-WME015242	Using waste exemption	On a farm	Spreading waste on agricultural land to confer benefit
A	443m W	Land Adj Brynlllefraith Farm, Caeru, Maseteg, Bc Bc, Cf340tn	NRW-WME015242	Treating waste exemption	On a farm	Screening and blending of waste
A	443m W	Land Adj Brynlllefraith Farm, Caeru, Maseteg, Bc Bc, Cf340tn	NRW-WME015242	Treating waste exemption	On a farm	Recovery of scrap metal



ID	Location	Site	Reference	Category	Sub-Cat egory	Description
A	443m W	Land Adj Brynlllefraith Farm, Caeru, Maseteg, Bc Bc, Cf340tn	NRW-WME015242	Using waste exemption	On a farm	Use of mulch
A	443m W	Land Adj Brynlllefraith Farm, Caeru, Maseteg, Bc Bc, Cf340tn	NRW-WME015242	Disposing of waste exemption	On a farm	Burning waste in the open
A	444m W	Bryn Llefrith Hill, Caerau, Maesteg, Pen-Y-Bont Ar Ogwr, Cf34 0tn	NRW-WME068048	Using waste exemption	On a farm	Use of waste in construction
A	468m W	Bryn Llefrith Farm, Caerau, Maesteg, Maesteg, Pen-Y-Bont Ar Ogwr, Cf34 0tn	NRW-WME083068	Using waste exemption	On a farm	Use of waste for a specified purpose
A	468m W	Bryn Llefrith Farm, Caerau, Maesteg, Maesteg, Pen-Y-Bont Ar Ogwr, Cf34 0tn	NRW-WME083068	Treating waste exemption	On a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
A	468m W	Bryn Llefrith Farm, Caerau, Maesteg, Maesteg, Pen-Y-Bont Ar Ogwr, Cf34 0tn	NRW-WME083068	Treating waste exemption	On a farm	Cleaning, washing, spraying or coating relevant waste
A	468m W	Bryn Llefrith Farm, Caerau, Maesteg, Maesteg, Pen-Y-Bont Ar Ogwr, Cf34 0tn	NRW-WME083068	Disposing of waste exemption	On a farm	Deposit of waste from dredging of inland waters
A	468m W	Bryn Llefrith Farm, Caerau, Maesteg, Maesteg, Pen-Y-Bont Ar Ogwr, Cf34 0tn	NRW-WME083068	Storing waste exemption	On a farm	Storage of waste in secure containers
A	468m W	Bryn Llefrith Farm, Caerau, Maesteg, Maesteg, Pen-Y-Bont Ar Ogwr, Cf34 0tn	NRW-WME083068	Using waste exemption	On a farm	Use of waste in construction
A	468m W	Bryn Llefrith Farm, Caerau, Maesteg, Maesteg, Pen-Y-Bont Ar Ogwr, Cf34 0tn	NRW-WME083068	Storing waste exemption	On a farm	Storage of waste in a secure place
A	468m W	Bryn Llefrith Farm, Caerau, Maesteg, Maesteg, Pen-Y-Bont Ar Ogwr, Cf34 0tn	NRW-WME083068	Treating waste exemption	On a farm	Aerobic composting and associated prior treatment
A	468m W	Bryn Llefrith Farm, Caerau, Maesteg, Maesteg, Pen-Y-Bont Ar Ogwr, Cf34 0tn	NRW-WME049533	Storing waste exemption	On a farm	Storage of waste in secure containers
A	468m W	Bryn Llefrith Farm, Caerau, Maesteg, Maesteg, Pen-Y-Bont Ar Ogwr, Cf34 0tn	NRW-WME049533	Treating waste exemption	On a farm	Aerobic composting and associated prior treatment

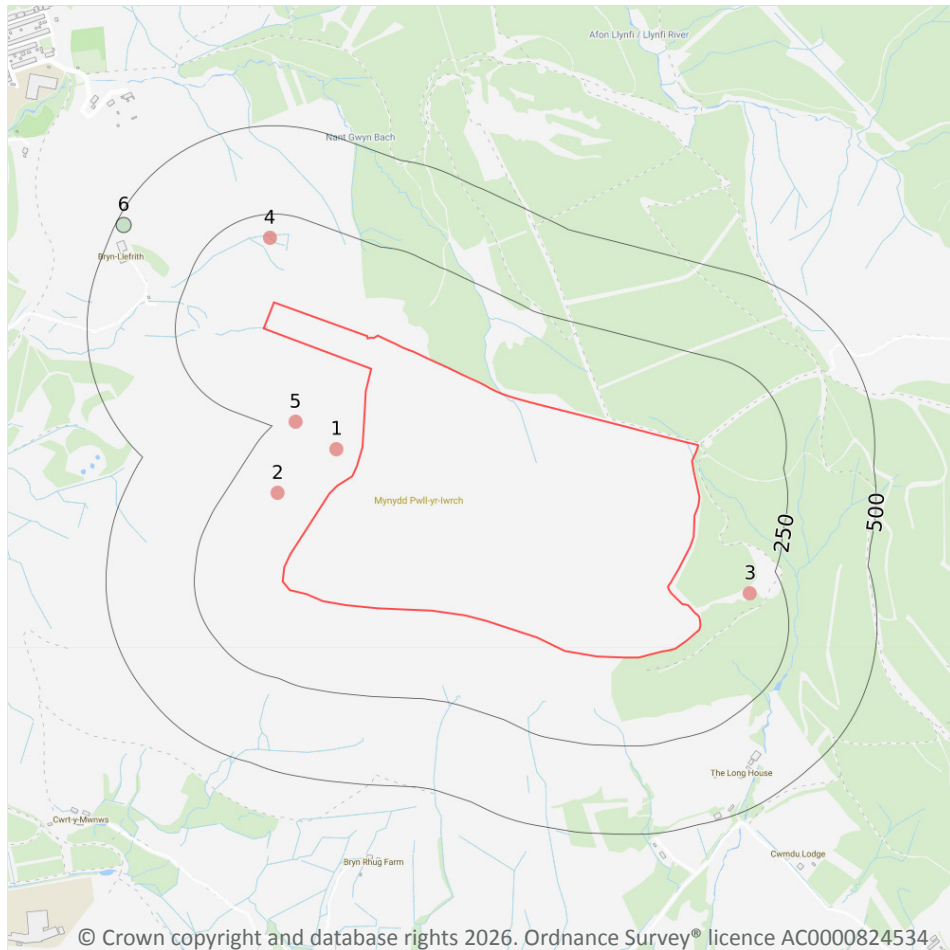


ID	Location	Site	Reference	Category	Sub-Category	Description
A	468m W	Bryn Llefrith Farm, Caerau, Maesteg, Maesteg, Pen-Y-Bont Ar Ogwr, Cf34 0tn	NRW-WME049533	Treating waste exemption	On a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
A	468m W	Bryn Llefrith Farm, Caerau, Maesteg, Maesteg, Pen-Y-Bont Ar Ogwr, Cf34 0tn	NRW-WME049533	Storing waste exemption	On a farm	Storage of waste in a secure place
A	468m W	Bryn Llefrith Farm, Caerau, Maesteg, Maesteg, Pen-Y-Bont Ar Ogwr, Cf34 0tn	NRW-WME049533	Treating waste exemption	On a farm	Cleaning, washing, spraying or coating relevant waste
A	468m W	Bryn Llefrith Farm, Caerau, Maesteg, Maesteg, Pen-Y-Bont Ar Ogwr, Cf34 0tn	NRW-WME049533	Disposing of waste exemption	On a farm	Deposit of waste from dredging of inland waters
A	468m W	Bryn Llefrith Farm, Caerau, Maesteg, Maesteg, Pen-Y-Bont Ar Ogwr, Cf34 0tn	NRW-WME049533	Using waste exemption	On a farm	Use of waste for a specified purpose
A	468m W	Bryn Llefrith Farm, Caerau, Maesteg, Maesteg, Pen-Y-Bont Ar Ogwr, Cf34 0tn	NRW-WME049533	Using waste exemption	On a farm	Use of waste in construction
A	468m W	Bryn Llefrith Farm, Caerau, Maesteg, Maesteg, Pen-Y-Bont Ar Ogwr, Cf34 0tn	NRW-WME083068	Disposing of waste exemption	On a farm	Burning waste in the open
A	468m W	Bryn Llefrith Farm, Caerau, Maesteg, Maesteg, Pen-Y-Bont Ar Ogwr, Cf34 0tn	NRW-WME083068	Using waste exemption	On a farm	Spreading waste on agricultural land to confer benefit
A	468m W	Bryn Llefrith Farm, Caerau, Maesteg, Maesteg, Pen-Y-Bont Ar Ogwr, Cf34 0tn	NRW-WME049533	Using waste exemption	On a farm	Spreading waste on agricultural land to confer benefit
A	468m W	Bryn Llefrith Farm, Caerau, Maesteg, Maesteg, Pen-Y-Bont Ar Ogwr, Cf34 0tn	NRW-WME049533	Disposing of waste exemption	On a farm	Burning waste in the open

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
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m

5

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 62](#) >

ID	Location	Company	Address	Activity	Category
1	69m W	Trial Shaft (Disused)	Mid Glamorgan, CF34	Unspecified Quarries Or Mines	Extractive Industries
2	124m NW	Trial Shaft (Disused)	Mid Glamorgan, CF34	Unspecified Quarries Or Mines	Extractive Industries
3	159m NE	Quarry (Disused)	Mid Glamorgan, CF34	Unspecified Quarries Or Mines	Extractive Industries



ID	Location	Company	Address	Activity	Category
4	183m N	Electricity Poles	Mid Glamorgan, CF34	Electrical Features	Infrastructure and Facilities
5	194m W	Quarry (Disused)	Mid Glamorgan, CF34	Unspecified Quarries Or Mines	Extractive Industries

This data is sourced from Ordnance Survey®.

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

Records within 250m **0**

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

This data is sourced from Ordnance Survey®.

4.3 Current or recent petrol stations

Records within 500m **0**

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.4 Electricity cables

Records within 500m **0**

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.5 Gas pipelines

Records within 500m **0**

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.6 Sites determined as Contaminated Land

Records within 500m**0**

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

This data is sourced from Local Authority records.

4.7 Control of Major Accident Hazards (COMAH)

Records within 500m**0**

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

This data is sourced from the Health and Safety Executive.

4.8 Regulated explosive sites

Records within 500m**0**

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

This data is sourced from the Health and Safety Executive.

4.9 Hazardous substance storage/usage

Records within 500m**0**

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

This data is sourced from Local Authority records.

4.10 Historical licensed industrial activities (IPC)

Records within 500m**0**

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

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



4.11 Licensed industrial activities (Part A(1))

Records within 500m**0**

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

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

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

Records within 500m**0**

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.

This data is sourced from Local Authority records.

4.13 Radioactive Substance Authorisations

Records within 500m**0**

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

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

4.14 Licensed Discharges to controlled waters

Records within 500m**0**

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

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

4.15 Pollutant release to surface waters (Red List)

Records within 500m**0**

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

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



4.16 Pollutant release to public sewer

Records within 500m**0**

Discharges of Special Category Effluents to the public sewer.

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

4.17 List 1 Dangerous Substances

Records within 500m**0**

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

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

4.18 List 2 Dangerous Substances

Records within 500m**0**

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

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

4.19 Pollution Incidents (EA/NRW)

Records within 500m**1**

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 62 >](#)

ID	Location	Details	
6	479m NW	Incident Date: 08/11/2021 Incident Identification: 2109262 Pollutant: Inert Materials and Waste Pollutant Description: Construction and Demolition Materials and Wastes	Water Impact: No Details Land Impact: Category 2 (Significant) Air Impact: No Details

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



4.20 Pollution inventory substances

Records within 500m

0

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

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

4.21 Pollution inventory waste transfers

Records within 500m

0

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

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

4.22 Pollution inventory radioactive waste

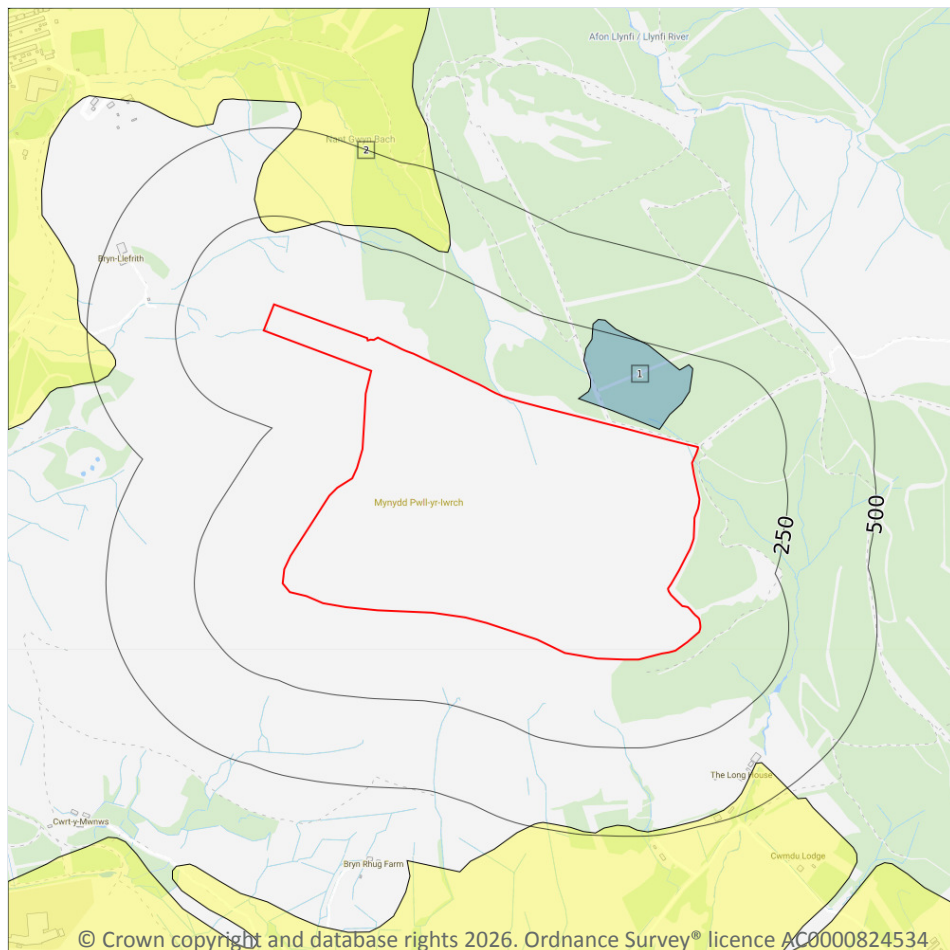
Records within 500m

0

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

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

5 Hydrogeology - Superficial aquifer



- Site Outline**
- Search buffers in metres (m)**
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive
 - Unknown

5.1 Superficial aquifer

Records within 500m

2

Aquifer status of groundwater held within superficial geology.

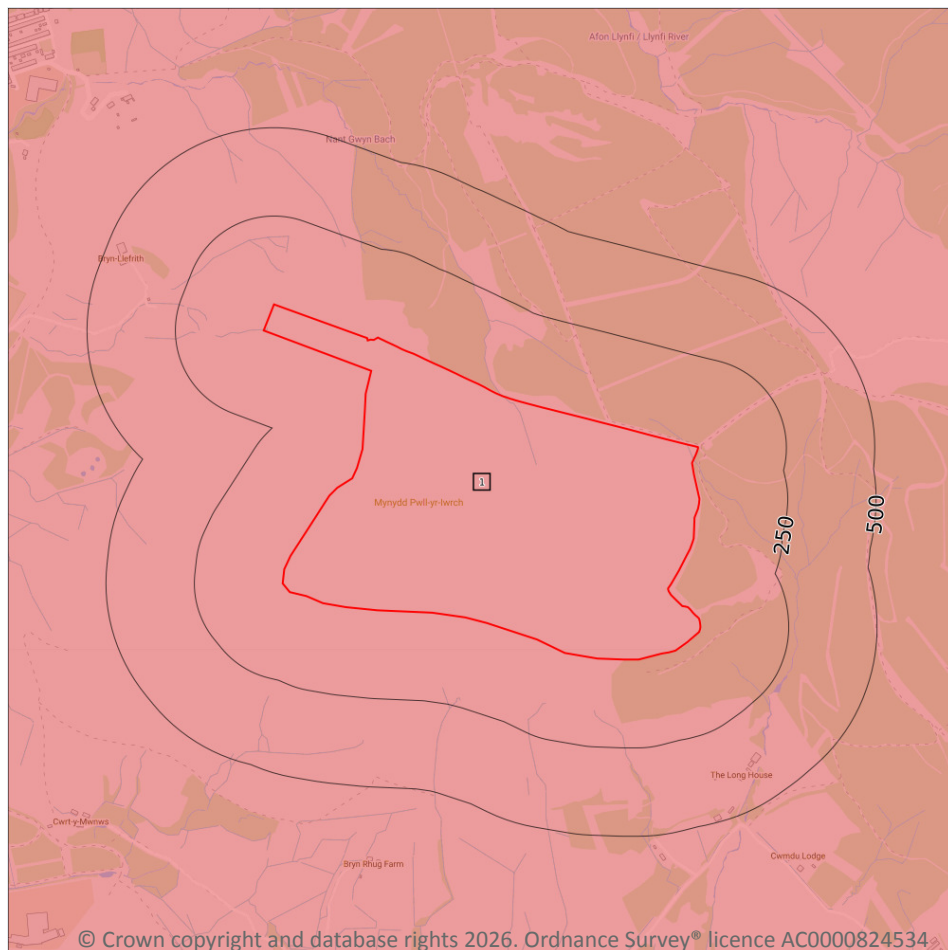
Features are displayed on the Hydrogeology map on [page 68 >](#)

ID	Location	Designation	Description
1	22m N	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
2	204m N	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

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



Bedrock aquifer



- Site Outline
- Search buffers in metres (m)
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive

5.2 Bedrock aquifer

Records within 500m

1

Aquifer status of groundwater held within bedrock geology.

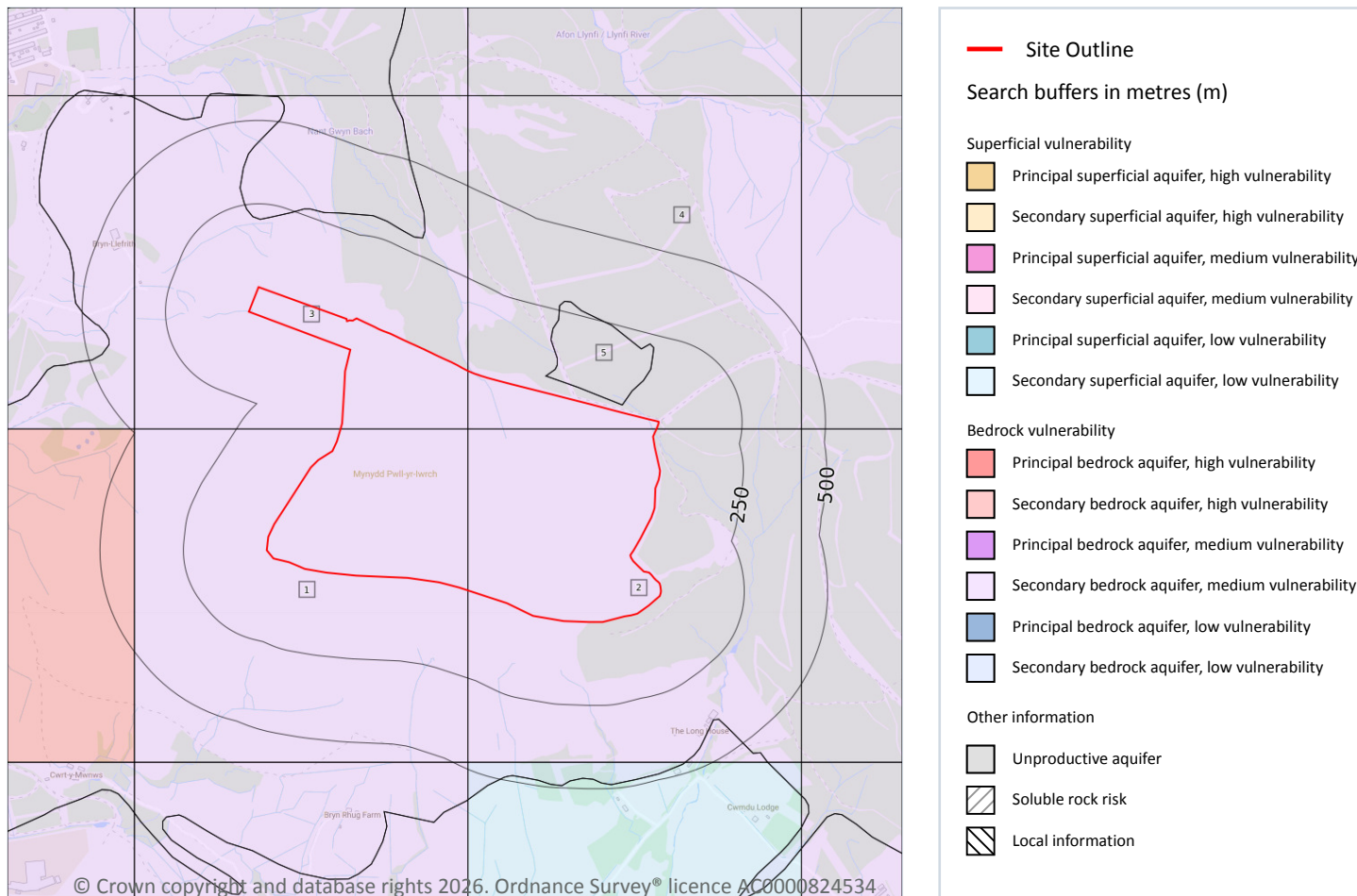
Features are displayed on the Bedrock aquifer map on [page 69](#) >

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

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

5

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 70](#) >



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
2	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
3	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: Medium	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
4	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
5	22m N	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site

0

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

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



5.5 Groundwater vulnerability- local information

Records on site

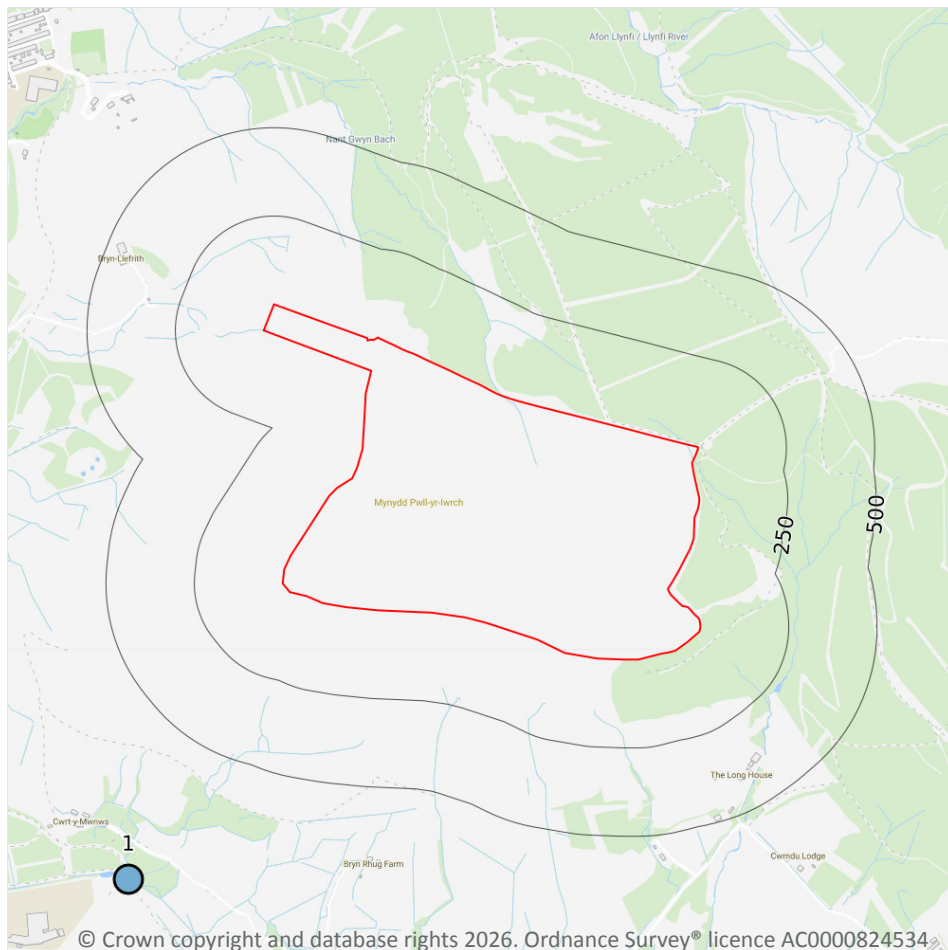
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This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment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

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



Abstractions and Source Protection Zones



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

5.6 Groundwater abstractions

Records within 2000m

0

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.

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



5.7 Surface water abstractions

Records within 2000m

2

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 73](#) >

ID	Location	Details	
1	931m SW	Status: Historical Licence No: 21/58/41/0029 Details: Dust suppression Direct Source: EAW Surface Water Point: UN-NAMED TRIB. OF AFON LLYNFI Data Type: Point Name: Edmund Nuttall Limited Easting: 285960 Northing: 191800	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: 31/12/2004 Issue No: 1 Version Start Date: 01/04/2004 Version End Date: -
-	1206m W	Status: Historical Licence No: 21/58/41/0029 Details: Dust suppression Direct Source: EAW Surface Water Point: AFON LLYNFI AT FORMER WASHERY, MAESTEG Data Type: Point Name: Edmund Nuttall Limited Easting: 285200 Northing: 192490	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: 31/12/2004 Issue No: 1 Version Start Date: 01/04/2004 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

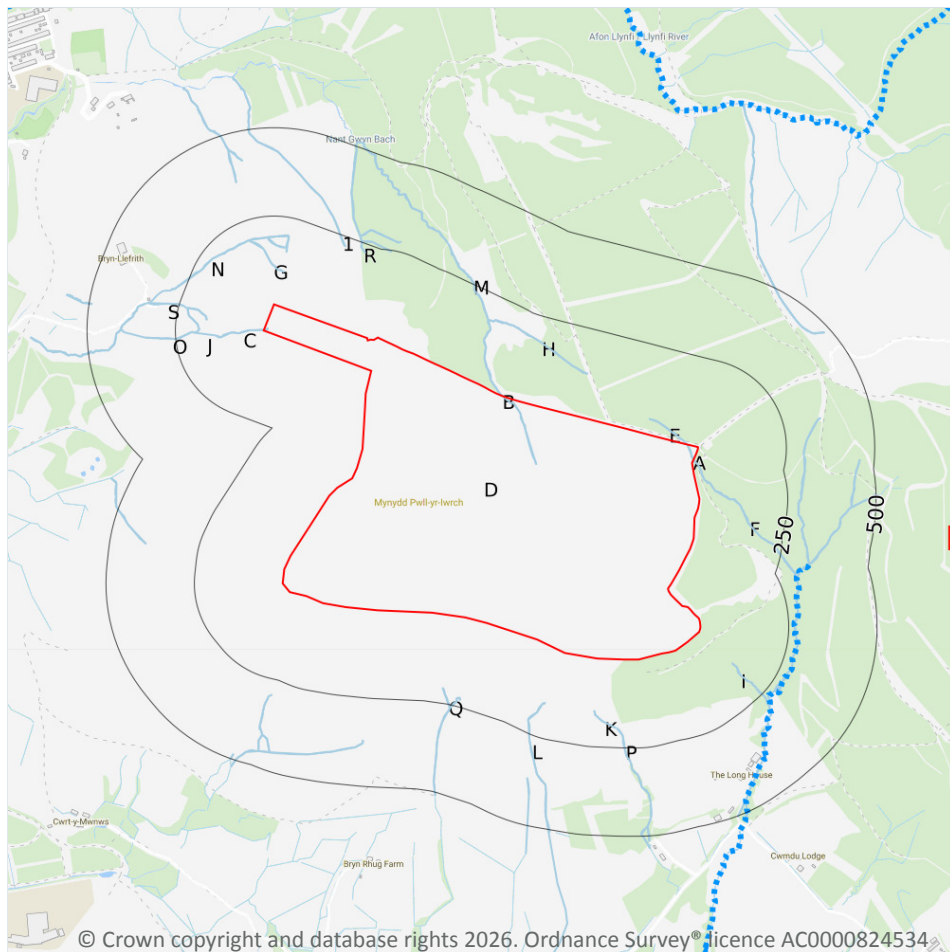
0

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



- Site Outline
- Search buffers in metres (m)
- Water Network (OS NGD)
- Surface water features (wider than 5m)
- Surface water features (narrower than 5m)
- ⋯ WFD River, canal and surface water transfer water bodies
- WFD Lake water bodies
- WFD Transitional and coastal water bodies
- WFD Surface water body catchments boundaries
- WFD Groundwater body boundaries

6.1 Water Network (OS NGD)

Records within 250m

36

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 76 >](#)

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



ID	Location	Type of water feature	Ground level	Permanence	Name
A	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
B	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Nant Gwyn Bach
C	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	9m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	16m E	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
F	17m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
G	95m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
H	123m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
I	128m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
J	137m W	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
K	147m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
G	152m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
L	152m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-



ID	Location	Type of water feature	Ground level	Permanence	Name
G	156m N	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
G	160m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
G	163m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
J	164m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
M	177m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Nant Gwyn Bach
J	182m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
J	182m W	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
G	190m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
N	194m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
K	194m S	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
O	195m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
P	196m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
I	199m SE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-



ID	Location	Type of water feature	Ground level	Permanence	Name
I	203m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
Q	206m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
1	222m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
R	224m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
Q	225m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
J	225m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
J	228m W	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
S	236m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
R	246m N	Drain. A manmade watercourse for the removal of excess water from an area.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey®.

6.2 Surface water features

Records within 250m

25

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

Features are displayed on the Hydrology map on [page 76 >](#)

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 76 >](#)

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
D	On site	River	Llynfi - headwaters to Lletty Brongu STW	GB110058026331	Ogmore	Tawe to Cadoxton

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 76 >](#)

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
3	266m SE	River	Llynfi - headwaters to Lletty Brongu STW	GB110058026331	Moderate	High	Moderate	2024

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

6.5 WFD Groundwater bodies

Records on site

1

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

Features are displayed on the Hydrology map on [page 76 >](#)



ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
D	On site	Swansea Carboniferous Coal Measures	GB41002G201000	Poor			2021

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



7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m

0

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

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

7.2 Historical Flood Events

Records within 250m

0

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

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

7.3 Flood Defences

Records within 250m

0

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

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



7.4 Areas Benefiting from Flood Defences

Records within 250m

0

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

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

7.5 Flood Storage Areas

Records within 250m

0

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

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

River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m

0

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

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

7.7 Flood Zone 3

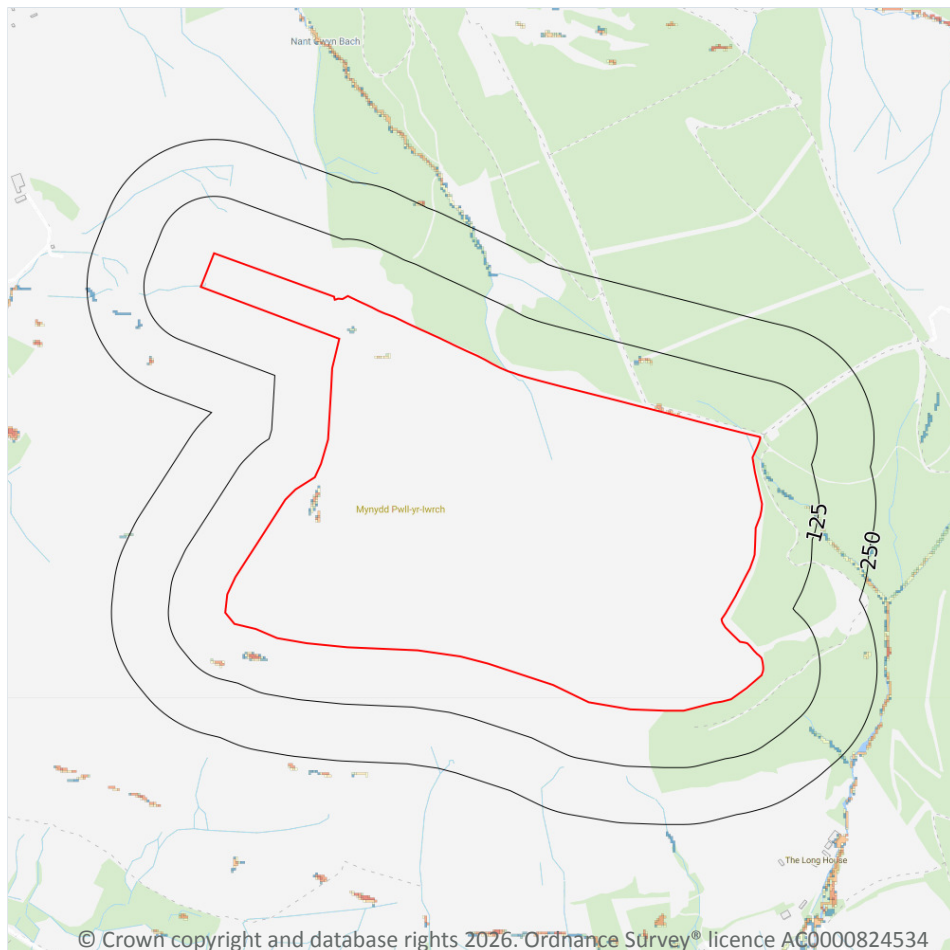
Records within 50m

0

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

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

8 Surface water flooding



— Site Outline

Search buffers in metres (m)

1 in 1000 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site

1 in 30 year, 0.3m - 1.0m

Highest risk within 50m

1 in 30 year, 0.3m - 1.0m

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

Features are displayed on the Surface water flooding map on [page 85](#) >

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

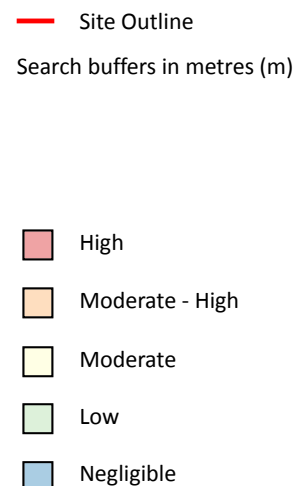
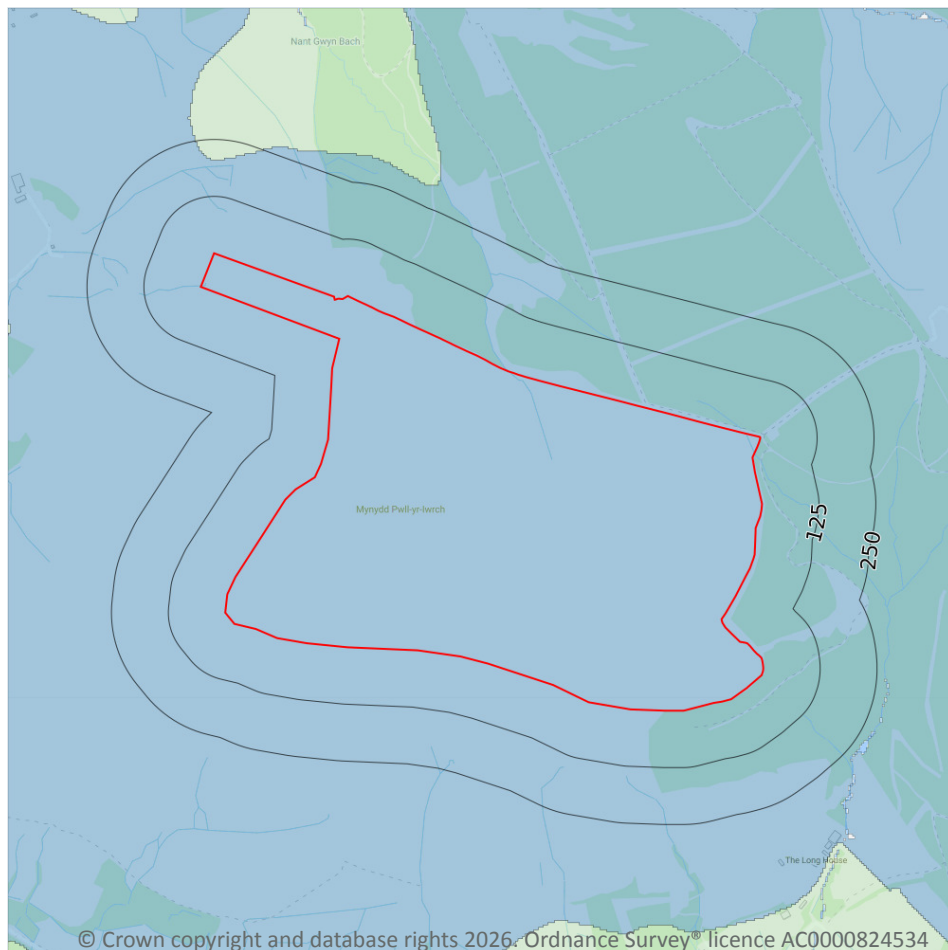
The table below shows the maximum flood depths for a range of return periods for the site.

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

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



9.1 Groundwater flooding

Highest risk on site

Negligible

Highest risk within 50m

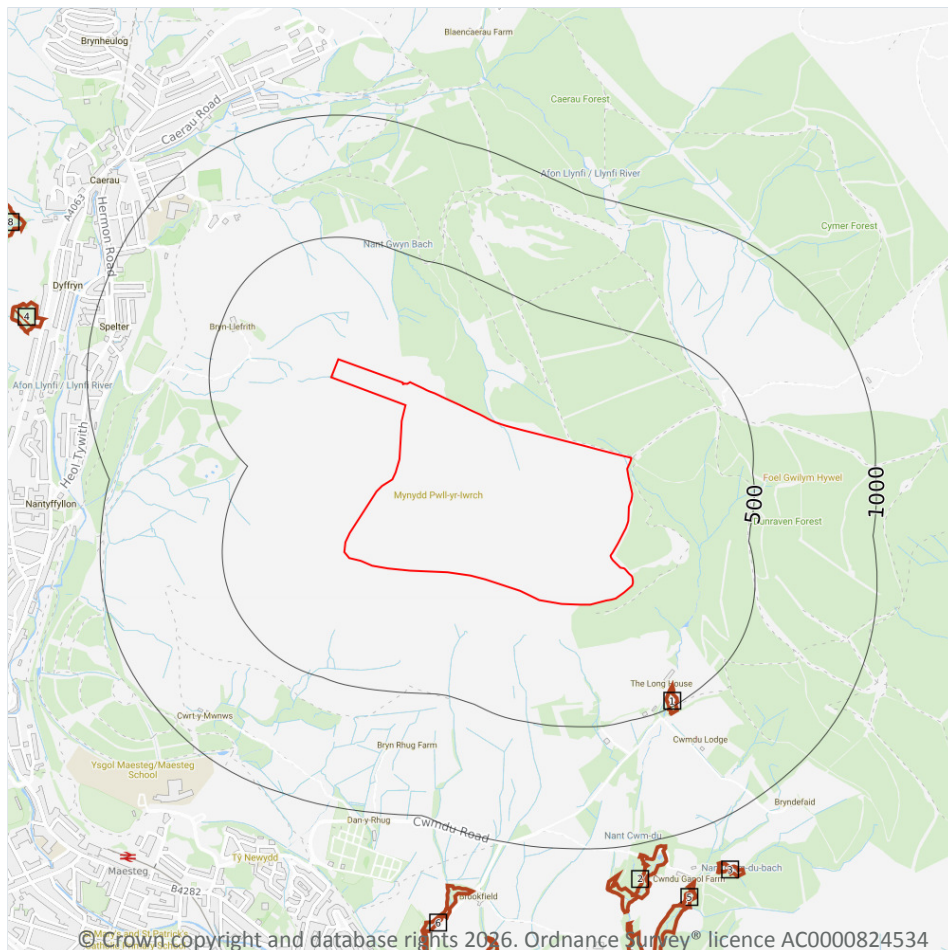
Negligible

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 87](#) >

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
-  Sites of Special Scientific Interest (SSSI)
-  Designated Ancient Woodland
-  Forest Parks

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

1

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

Features are displayed on the Environmental designations map on [page 88 >](#)

ID	Location	Name	Data source
-	1582m S	Cwm Du Woodlands	Natural Resources Wales

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m

0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m

0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m

0

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m

0

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

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



10.6 Local Nature Reserves (LNR)

Records within 2000m

0

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

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

10.7 Designated Ancient Woodland

Records within 2000m

17

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 88](#) >

ID	Location	Name	Woodland Type
1	425m SE	Unknown	Ancient Semi Natural Woodland
2	1028m S	Unknown	Ancient Semi Natural Woodland
3	1164m S	Unknown	Ancient Semi Natural Woodland
4	1202m W	Unknown	Restored Ancient Woodland Site
5	1205m S	Unknown	Plantation on Ancient Woodland Site
6	1220m S	Unknown	Ancient Semi Natural Woodland
A	1280m S	Unknown	Ancient Semi Natural Woodland
7	1398m S	Unknown	Ancient Semi Natural Woodland
8	1401m NW	Unknown	Ancient Semi Natural Woodland
A	1475m S	Unknown	Plantation on Ancient Woodland Site
-	1592m S	Unknown	Ancient Semi Natural Woodland
-	1801m S	Unknown	Ancient Semi Natural Woodland
-	1826m S	Unknown	Ancient Semi Natural Woodland
-	1832m S	Unknown	Ancient Semi Natural Woodland
-	1940m S	Unknown	Ancient Semi Natural Woodland
-	1944m S	Unknown	Ancient Semi Natural Woodland



ID	Location	Name	Woodland Type
-	1966m S	Unknown	Ancient Semi Natural Woodland

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

10.8 Biosphere Reserves

Records within 2000m

0

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

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

10.9 Forest Parks

Records within 2000m

1

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

Features are displayed on the Environmental designations map on [page 88 >](#)

ID	Location	Name
-	1558m W	Afan Argoed

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m

0

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

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



10.11 Green Belt

Records within 2000m

0

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

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

10.12 Proposed Ramsar sites

Records within 2000m

0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m

0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was



closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m

0

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

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



SSSI Impact Zones and Units

10.17 SSSI Impact Risk Zones

Records on site

0

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

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m

0

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

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



11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m

0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

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

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

11.3 National Parks

Records within 250m

0

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

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

11.4 Listed Buildings

Records within 250m

0

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



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

11.5 Conservation Areas

Records within 250m

0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m

0

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

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

11.7 Registered Parks and Gardens

Records within 250m

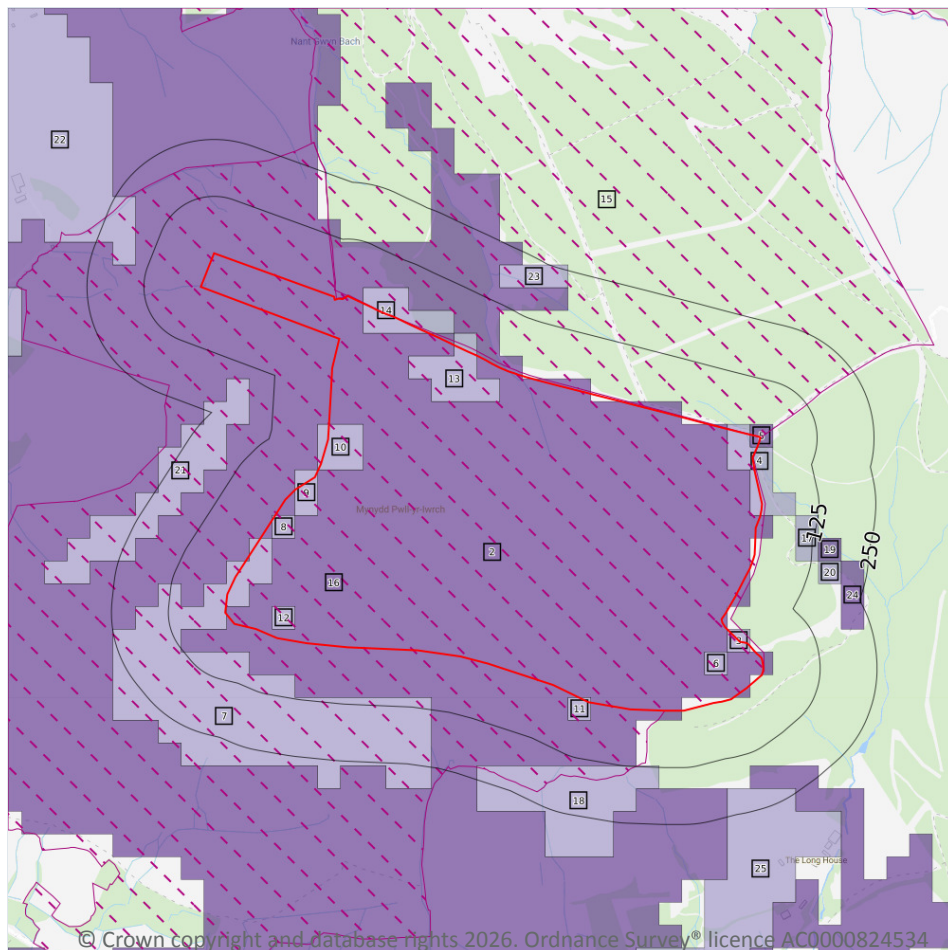
0

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

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



12 Agricultural designations



- Site Outline
- Search buffers in metres (m)
- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Timber felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m

22

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 97](#) >

ID	Location	Classification	Description
2	On site	Grade 5	Very poor quality agricultural land
3	On site	Grade 4	Poor quality agricultural land
4	On site	Grade 4	Poor quality agricultural land



ID	Location	Classification	Description
5	On site	Grade 5	Very poor quality agricultural land
6	On site	Grade 4	Poor quality agricultural land
7	On site	Grade 4	Poor quality agricultural land
8	On site	Grade 4	Poor quality agricultural land
9	On site	Grade 4	Poor quality agricultural land
10	On site	Grade 4	Poor quality agricultural land
11	On site	Grade 4	Poor quality agricultural land
12	On site	Grade 4	Poor quality agricultural land
13	On site	Grade 4	Poor quality agricultural land
14	On site	Grade 4	Poor quality agricultural land
17	76m E	Grade 4	Poor quality agricultural land
18	121m S	Grade 4	Poor quality agricultural land
19	137m E	Grade 5	Very poor quality agricultural land
20	141m E	Grade 4	Poor quality agricultural land
21	144m NW	Grade 4	Poor quality agricultural land
22	151m W	Grade 4	Poor quality agricultural land
23	157m NE	Grade 4	Poor quality agricultural land
24	186m E	Grade 5	Very poor quality agricultural land
25	189m S	Grade 4	Poor quality agricultural land

This data is sourced from Natural Resources Wales.

12.2 Open Access Land

Records within 250m

2

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.

Features are displayed on the Agricultural designations map on [page 97](#) >



ID	Location	Name	Classification	Other relevant legislation
15	On site	-	NRW Public Forest 2014	-
16	On site	-	Open Access Open Country	-

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

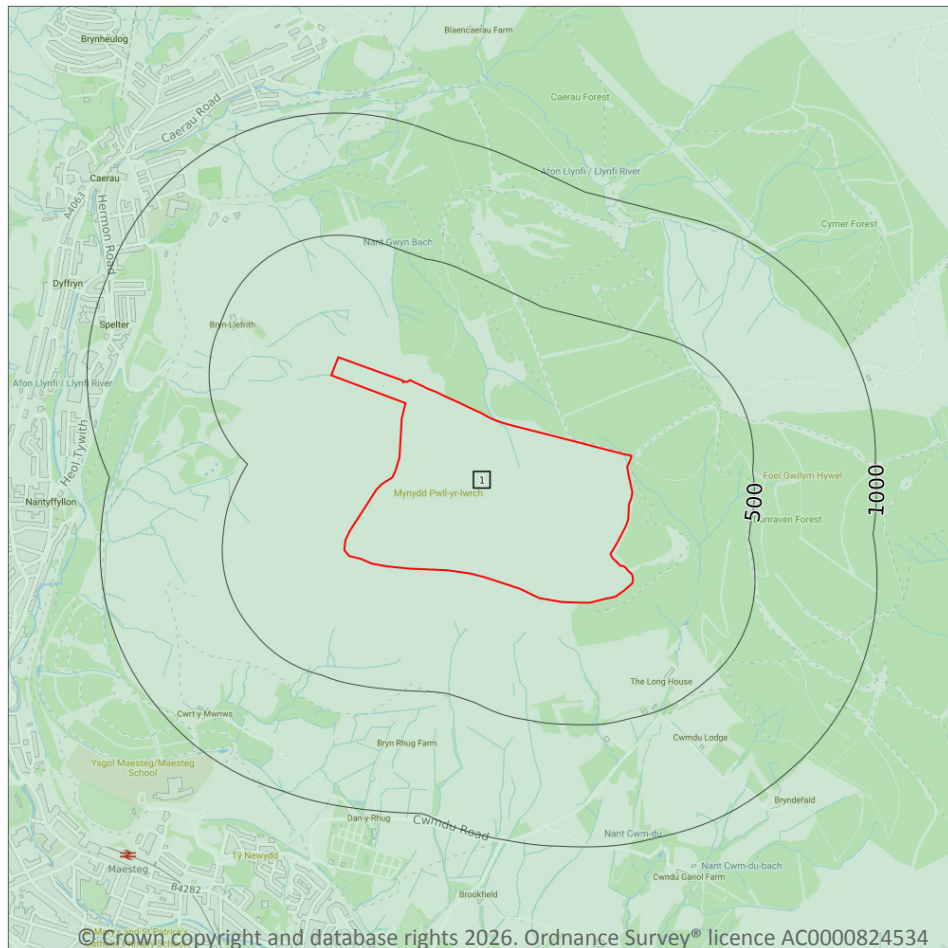
Records within 250m**0**

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 101](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	Full	SS89SE

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

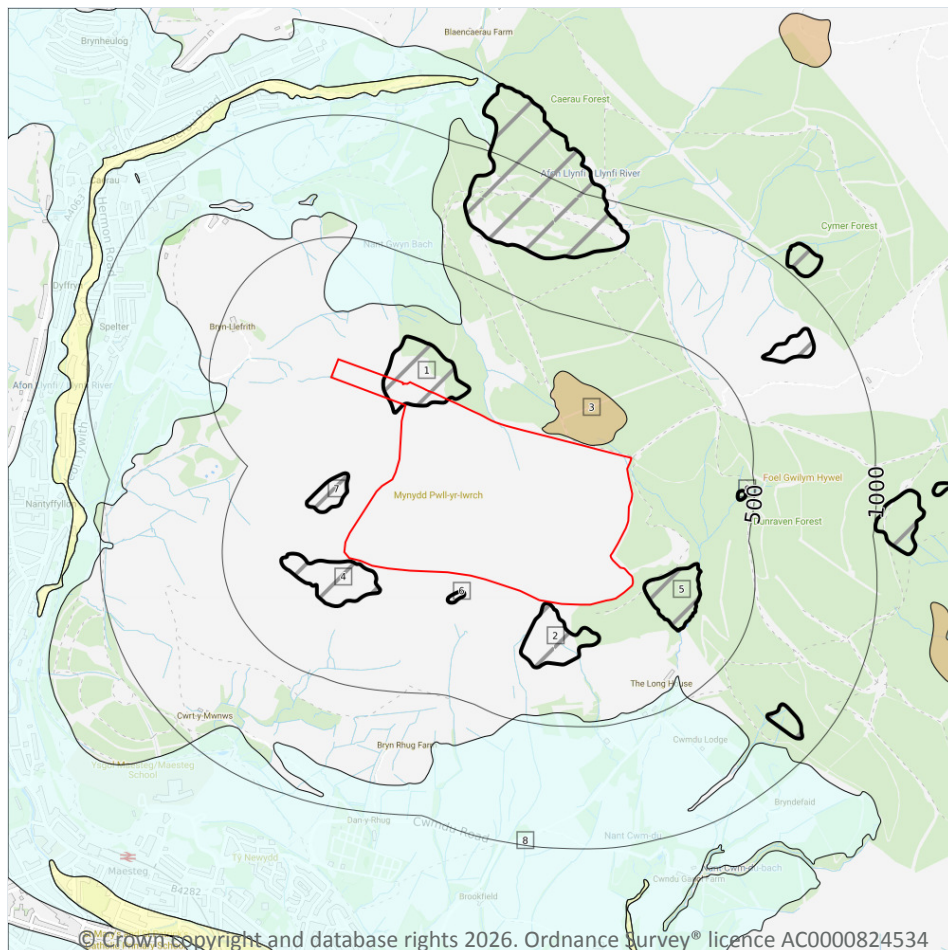
0

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



Site Outline

Search buffers in metres (m)

Landslip (10k)

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

14.3 Superficial geology (10k)

Records within 500m

2

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

Features are displayed on the Geology 1:10,000 scale - Superficial map on [page 103](#) >

ID	Location	LEX Code	Description	Rock description
3	8m N	HLPT-P	Hill Peat-Peat	Peat
8	195m N	TILLD-DMTN	Till, Devensian-Diamicton	Diamicton

This data is sourced from the British Geological Survey.



14.4 Landslip (10k)

Records within 500m

7

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.

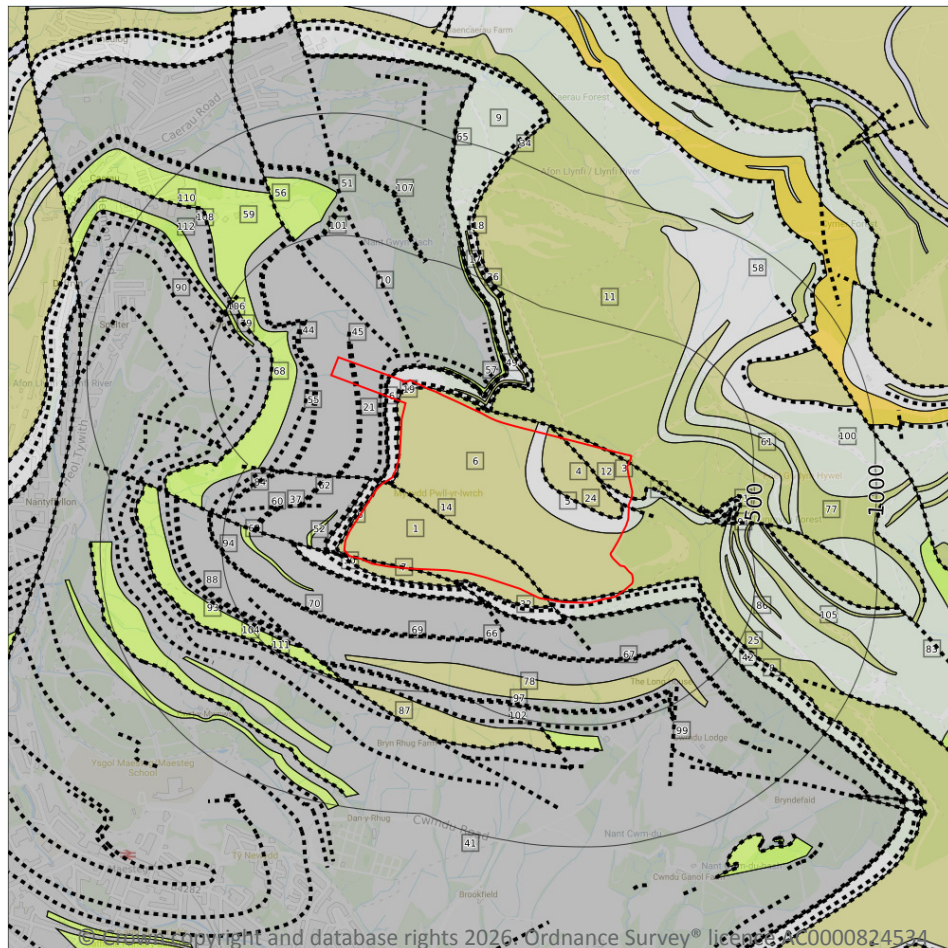
Features are displayed on the Geology 1:10,000 scale - Superficial map on [page 103](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	SLIP-UNKNOWN	Landslide deposits	Unknown/unclassified entry
2	7m S	SLIP-UNKNOWN	Landslide deposits	Unknown/unclassified entry
4	12m S	SLIP-UNKNOWN	Landslide deposits	Unknown/unclassified entry
5	49m E	SLIP-UNKNOWN	Landslide deposits	Unknown/unclassified entry
6	68m S	SLIP-UNKNOWN	Landslide deposits	Unknown/unclassified entry
7	97m NW	SLIP-UNKNOWN	Landslide deposits	Unknown/unclassified entry
9	432m E	SLIP-UNKNOWN	Landslide deposits	Unknown/unclassified entry

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

..... Bedrock faults and other linear features (10k)

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

14.5 Bedrock geology (10k)

Records within 500m

36

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

Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 105](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	LLFB-SDST	Llynfi Member-Sandstone	Westphalian
2	On site	LLFB-MDSS	Llynfi Member-Mudstone, Siltstone And Sandstone	Westphalian
3	On site	LLFB-SDST	Llynfi Member-Sandstone	Westphalian
4	On site	LLFB-SDST	Llynfi Member-Sandstone	Westphalian



ID	Location	LEX Code	Description	Rock age
5	On site	LLFB-MDSS	Llynfi Member-Mudstone, Siltstone And Sandstone	Westphalian
6	On site	LLFB-SDST	Llynfi Member-Sandstone	Westphalian
7	On site	LLFB-SDST	Llynfi Member-Sandstone	Westphalian
8	On site	LLFB-MDSS	Llynfi Member-Mudstone, Siltstone And Sandstone	Westphalian
9	On site	LLFB-MDSS	Llynfi Member-Mudstone, Siltstone And Sandstone	Westphalian
10	On site	SWMCM-MDSS	South Wales Middle Coal Measures Formation-Mudstone, Siltstone And Sandstone	Westphalian
11	On site	LLFB-SDST	Llynfi Member-Sandstone	Westphalian
26	On site	LLFB-MDSS	Llynfi Member-Mudstone, Siltstone And Sandstone	Westphalian
30	19m SW	LLFB-MDSS	Llynfi Member-Mudstone, Siltstone And Sandstone	Westphalian
32	22m S	LLFB-MDSS	Llynfi Member-Mudstone, Siltstone And Sandstone	Westphalian
36	39m NE	LLFB-SDST	Llynfi Member-Sandstone	Westphalian
37	44m NW	SWMCM-MDSS	South Wales Middle Coal Measures Formation-Mudstone, Siltstone And Sandstone	Westphalian
41	56m S	SWMCM-MDSS	South Wales Middle Coal Measures Formation-Mudstone, Siltstone And Sandstone	Westphalian
49	78m NE	SWMCM-SDST	South Wales Middle Coal Measures Formation-Sandstone	Westphalian
52	86m NW	SWMCM-SDST	South Wales Middle Coal Measures Formation-Sandstone	Westphalian
58	140m NE	LLFB-MDSS	Llynfi Member-Mudstone, Siltstone And Sandstone	Westphalian
59	141m W	SWMCM-SDST	South Wales Middle Coal Measures Formation-Sandstone	Westphalian
61	180m NE	LLFB-SDST	Llynfi Member-Sandstone	Westphalian
63	203m SW	SWMCM-SDST	South Wales Middle Coal Measures Formation-Sandstone	Westphalian
71	285m E	LLFB-MDSS	Llynfi Member-Mudstone, Siltstone And Sandstone	Westphalian
77	324m NE	LLFB-SDST	Llynfi Member-Sandstone	Westphalian
78	330m S	LLFB-SDST	Llynfi Member-Sandstone	Westphalian
79	342m W	SWMCM-SDST	South Wales Middle Coal Measures Formation-Sandstone	Westphalian



ID	Location	LEX Code	Description	Rock age
80	352m E	SWMCM-MDSS	South Wales Middle Coal Measures Formation-Mudstone, Siltstone And Sandstone	Westphalian
83	363m E	LLFB-MDSS	Llynfi Member-Mudstone, Siltstone And Sandstone	Westphalian
86	386m E	LLFB-SDST	Llynfi Member-Sandstone	Westphalian
91	416m E	LLFB-SDST	Llynfi Member-Sandstone	Westphalian
93	419m SW	SWMCM-SDST	South Wales Middle Coal Measures Formation-Sandstone	Westphalian
100	451m NE	LLFB-MDSS	Llynfi Member-Mudstone, Siltstone And Sandstone	Westphalian
105	482m E	LLFB-SDST	Llynfi Member-Sandstone	Westphalian
108	488m NW	SWMCM-MDSS	South Wales Middle Coal Measures Formation-Mudstone, Siltstone And Sandstone	Westphalian
112	496m NW	SWMCM-SDST	South Wales Middle Coal Measures Formation-Sandstone	Westphalian

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

76

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

Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 105 >](#)

ID	Location	Category	Description
12	On site	FAULT	Fault, inferred, displacement unknown
13	On site	FAULT	Fault, inferred, displacement unknown
14	On site	FAULT	Fault, inferred, displacement unknown
15	On site	FAULT	Fault, inferred, displacement unknown
16	On site	ROCK	Coal seam, inferred
17	On site	FOSSIL_HORIZON	Marine band
18	On site	ROCK	Coal seam, inferred
19	On site	ROCK	Coal seam, inferred



ID	Location	Category	Description
20	On site	ROCK	Coal seam, inferred
21	On site	FOSSIL_HORIZON	Marine band
22	On site	ROCK	Coal seam, observed
23	On site	ROCK	Coal seam, inferred
24	On site	ROCK	Coal seam, inferred
25	On site	ROCK	Coal seam, inferred
27	On site	ROCK	Coal seam, inferred
28	7m S	ROCK	Coal seam, inferred
29	13m NW	ROCK	Coal seam, inferred
31	19m SW	ROCK	Coal seam, inferred
33	22m S	ROCK	Coal seam, inferred
34	24m NE	ROCK	Coal seam, inferred
35	34m S	ROCK	Coal seam, inferred
38	44m NW	FOSSIL_HORIZON	Marine band
39	46m SW	ROCK	Coal seam, inferred
40	51m NW	ROCK	Coal seam, inferred
42	56m S	FOSSIL_HORIZON	Marine band
43	62m S	ROCK	Coal seam, inferred
44	64m W	FOSSIL_HORIZON	Marine band
45	66m N	ROCK	Coal seam, inferred
46	70m NE	ROCK	Coal seam, observed
47	72m W	ROCK	Coal seam, inferred
48	76m S	FOSSIL_HORIZON	Marine band
50	80m S	ROCK	Coal seam, inferred
51	83m NE	FAULT	Fault, inferred, displacement unknown
53	88m S	FOSSIL_HORIZON	Marine band
54	94m S	ROCK	Coal seam, inferred
55	100m W	ROCK	Coal seam, inferred



ID	Location	Category	Description
56	103m N	FAULT	Fault, inferred, displacement unknown
57	109m N	ROCK	Coal seam, inferred
60	154m NW	FAULT	Fault, inferred, displacement unknown
62	196m NW	FOSSIL_HORIZON	Marine band
64	204m NW	ROCK	Coal seam, inferred
65	209m NE	ROCK	Coal seam, inferred
66	213m S	FOSSIL_HORIZON	Marine band
67	220m S	ROCK	Coal seam, inferred
68	245m W	ROCK	Coal seam, inferred
69	268m S	ROCK	Coal seam, observed
70	275m SW	ROCK	Coal seam, inferred
72	285m E	ROCK	Coal seam, inferred
73	295m NW	FOSSIL_HORIZON	Marine band
74	299m E	ROCK	Coal seam, inferred
75	300m W	ROCK	Coal seam, inferred
76	308m NW	ROCK	Coal seam, inferred
81	352m E	FOSSIL_HORIZON	Marine band
82	358m E	ROCK	Coal seam, observed
84	367m NW	FOSSIL_HORIZON	Marine band
85	381m NW	ROCK	Coal seam, inferred
87	407m SW	FAULT	Fault, inferred, displacement unknown
88	407m SW	FOSSIL_HORIZON	Marine band
89	408m SW	ROCK	Coal seam, inferred
90	410m W	ROCK	Coal seam, inferred
92	417m SW	ROCK	Coal seam, inferred
94	424m W	ROCK	Coal seam, observed
95	425m NW	ROCK	Coal seam, inferred
96	431m S	FOSSIL_HORIZON	Marine band

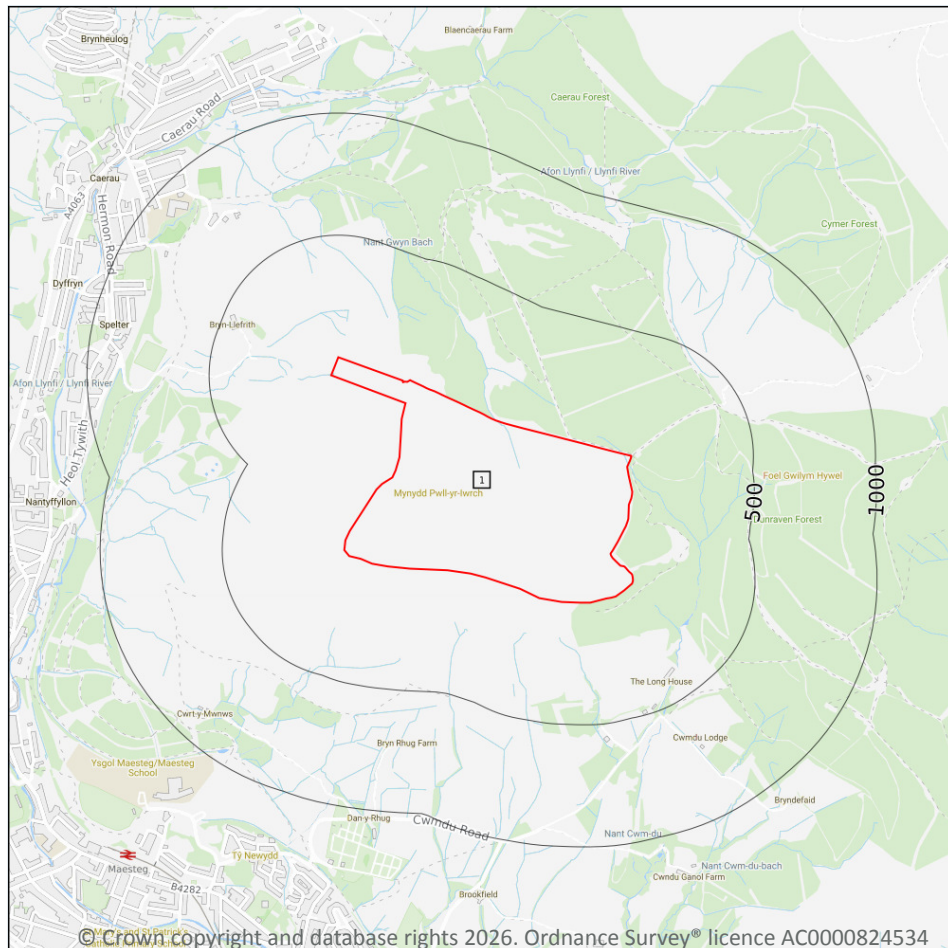


ID	Location	Category	Description
97	438m S	ROCK	Coal seam, inferred
98	439m W	ROCK	Coal seam, inferred
99	446m SE	FAULT	Fault, inferred, displacement unknown
101	463m N	FOSSIL_HORIZON	Marine band
102	470m SE	ROCK	Coal seam, inferred
103	470m N	ROCK	Coal seam, inferred
104	477m SW	ROCK	Coal seam, inferred
106	483m NW	FAULT	Fault, inferred, displacement unknown
107	485m N	ROCK	Coal seam, inferred
109	491m N	FOSSIL_HORIZON	Marine band
110	491m NW	ROCK	Coal seam, inferred
111	496m SW	ROCK	Coal seam, inferred

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline

Search buffers in metres (m)

□ Geological map tile

15.1 50k Availability

Records within 500m

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 111](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	Full	EW248_pontypridd_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

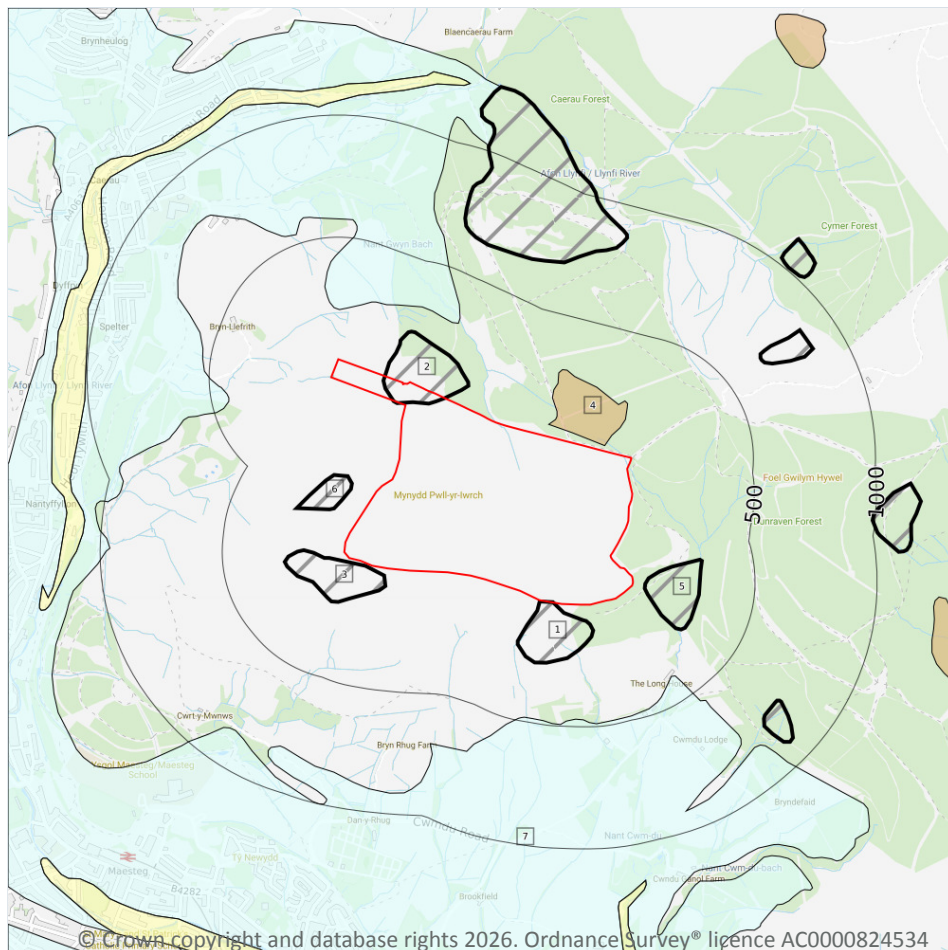
0

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

2

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on [page 113](#) >

ID	Location	LEX Code	Description	Rock description
4	22m N	PEAT-P	Peat	Peat
7	204m N	TILLD-DMTN	Till, Devensian	Diamicton

This data is sourced from the British Geological Survey.



15.5 Superficial permeability (50k)

Records within 50m

1

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

Location	Flow type	Maximum permeability	Minimum permeability
22m N	Mixed	Low	Very Low

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m

5

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.

Features are displayed on the Geology 1:50,000 scale - Superficial map on [page 113 >](#)

ID	Location	LEX Code	Description	Rock description
1	On site	SLIP-UNKNOWN	Landslide deposits	Unknown/unclassified entry
2	On site	SLIP-UNKNOWN	Landslide deposits	Unknown/unclassified entry
3	11m SW	SLIP-UNKNOWN	Landslide deposits	Unknown/unclassified entry
5	51m E	SLIP-UNKNOWN	Landslide deposits	Unknown/unclassified entry
6	93m NW	SLIP-UNKNOWN	Landslide deposits	Unknown/unclassified entry

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

Records within 50m

2

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

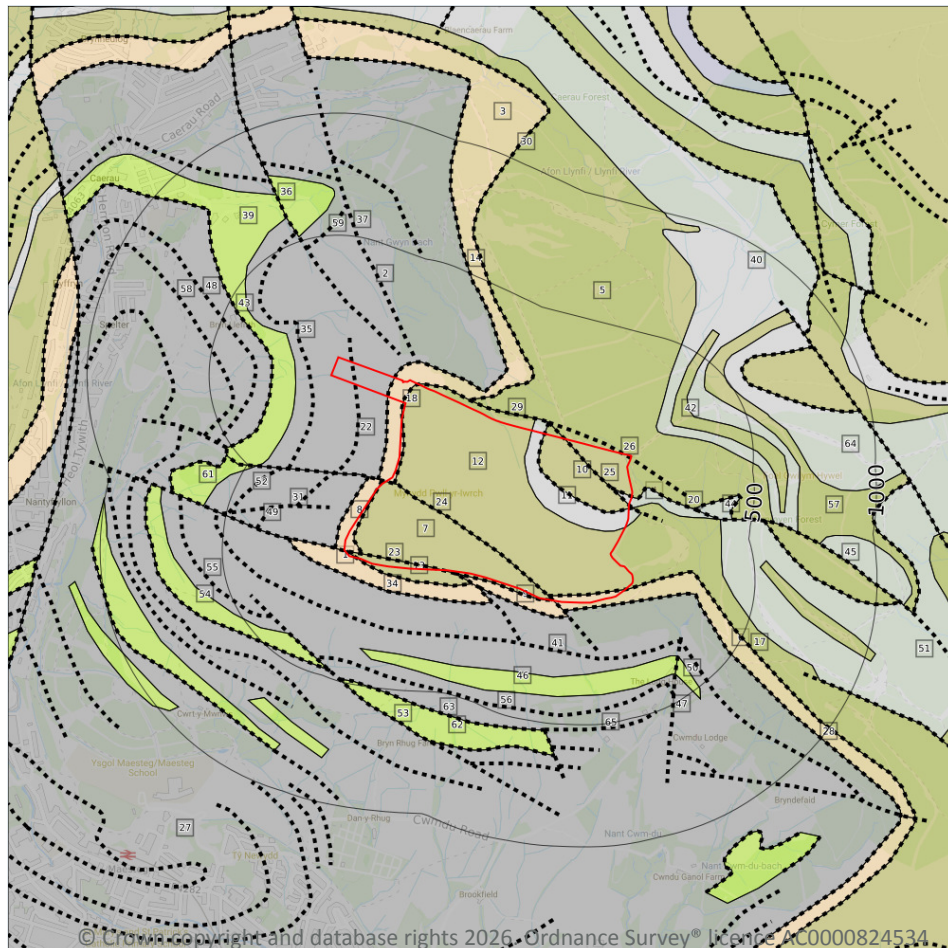
Flow type	Maximum permeability	Minimum permeability
Mixed	Very High	Low
Mixed	Very High	Low



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

27

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 116](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	SWUCM-MDSS	South Wales Upper Coal Measures Formation-Mudstone, siltstone and sandstone	Westphalian
2	On site	SWMCM-MDSS	South Wales Middle Coal Measures Formation-Mudstone, siltstone and sandstone	Westphalian



ID	Location	LEX Code	Description	Rock age
3	On site	SWUCM-MDSS	South Wales Upper Coal Measures Formation-Mudstone, siltstone and sandstone	Westphalian
4	On site	LLFB-MDSS	Llynfi Member-Mudstone, siltstone and sandstone	Westphalian
5	On site	LLFB-SDST	Llynfi Member-Sandstone	Westphalian
6	On site	SWUCM-MDSS	South Wales Upper Coal Measures Formation-Mudstone, siltstone and sandstone	Westphalian
7	On site	LLFB-SDST	Llynfi Member-Sandstone	Westphalian
8	On site	SWUCM-MDSS	South Wales Upper Coal Measures Formation-Mudstone, siltstone and sandstone	Westphalian
9	On site	SWUCM-MDSS	South Wales Upper Coal Measures Formation-Mudstone, siltstone and sandstone	Westphalian
10	On site	LLFB-SDST	Llynfi Member-Sandstone	Westphalian
11	On site	LLFB-MDSS	Llynfi Member-Mudstone, siltstone and sandstone	Westphalian
12	On site	LLFB-SDST	Llynfi Member-Sandstone	Westphalian
13	On site	LLFB-SDST	Llynfi Member-Sandstone	Westphalian
27	20m S	SWMCM-MDSS	South Wales Middle Coal Measures Formation-Mudstone, siltstone and sandstone	Westphalian
31	35m W	SWMCM-MDSS	South Wales Middle Coal Measures Formation-Mudstone, siltstone and sandstone	Westphalian
39	147m W	SWMCM-SDST	South Wales Middle Coal Measures Formation-Sandstone	Westphalian
40	148m NE	LLFB-MDSS	Llynfi Member-Mudstone, siltstone and sandstone	Westphalian
42	213m NE	LLFB-SDST	Llynfi Member-Sandstone	Westphalian
44	269m E	LLFB-MDSS	Llynfi Member-Mudstone, siltstone and sandstone	Westphalian
46	288m S	SWMCM-SDST	South Wales Middle Coal Measures Formation-Sandstone	Westphalian
50	347m SE	SWMCM-SDST	South Wales Middle Coal Measures Formation-Sandstone	Westphalian
51	368m E	LLFB-MDSS	Llynfi Member-Mudstone, siltstone and sandstone	Westphalian
54	401m SW	SWMCM-SDST	South Wales Middle Coal Measures Formation-Sandstone	Westphalian
57	407m NE	LLFB-SDST	Llynfi Member-Sandstone	Westphalian



ID	Location	LEX Code	Description	Rock age
61	466m NW	SWMCM-SDST	South Wales Middle Coal Measures Formation-Sandstone	Westphalian
62	487m S	SWMCM-SDST	South Wales Middle Coal Measures Formation-Sandstone	Westphalian
64	496m NE	LLFB-MDSS	Llynfi Member-Mudstone, siltstone and sandstone	Westphalian

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m

5

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

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

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m

38

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 116 >](#)

ID	Location	Category	Description
14	On site	FOSSIL_HORIZON	Marine band
15	On site	ROCK	Coal seam, inferred
16	On site	ROCK	Coal seam, inferred



ID	Location	Category	Description
17	On site	ROCK	Coal seam, inferred
18	On site	ROCK	Coal seam, inferred
19	On site	ROCK	Coal seam, inferred
20	On site	ROCK	Coal seam, inferred
21	On site	ROCK	Coal seam, inferred
22	On site	ROCK	Coal seam, inferred
23	On site	FAULT	Fault, inferred, displacement unknown
24	On site	FAULT	Fault, inferred, displacement unknown
25	On site	FAULT	Fault, inferred, displacement unknown
26	On site	FAULT	Fault, inferred, displacement unknown
28	20m S	FOSSIL_HORIZON	Marine band
29	28m NE	FAULT	Fault, inferred, displacement unknown
30	28m NE	ROCK	Coal seam, inferred
32	35m W	FOSSIL_HORIZON	Marine band
33	46m S	FOSSIL_HORIZON	Marine band
34	77m SW	FOSSIL_HORIZON	Marine band
35	87m W	ROCK	Coal seam, inferred
36	96m N	FAULT	Fault, inferred, displacement unknown
37	101m N	FAULT	Fault, inferred, displacement unknown
38	122m NW	FAULT	Fault, inferred, displacement unknown
41	197m S	ROCK	Coal seam, inferred
43	242m W	ROCK	Coal seam, inferred
45	269m E	FAULT	Fault, inferred, displacement unknown
47	298m SE	FAULT	Fault, inferred, displacement unknown
48	308m W	ROCK	Coal seam, inferred
49	335m NW	ROCK	Coal seam, inferred
52	374m NW	ROCK	Coal seam, inferred
53	399m SW	FAULT	Fault, inferred, displacement unknown

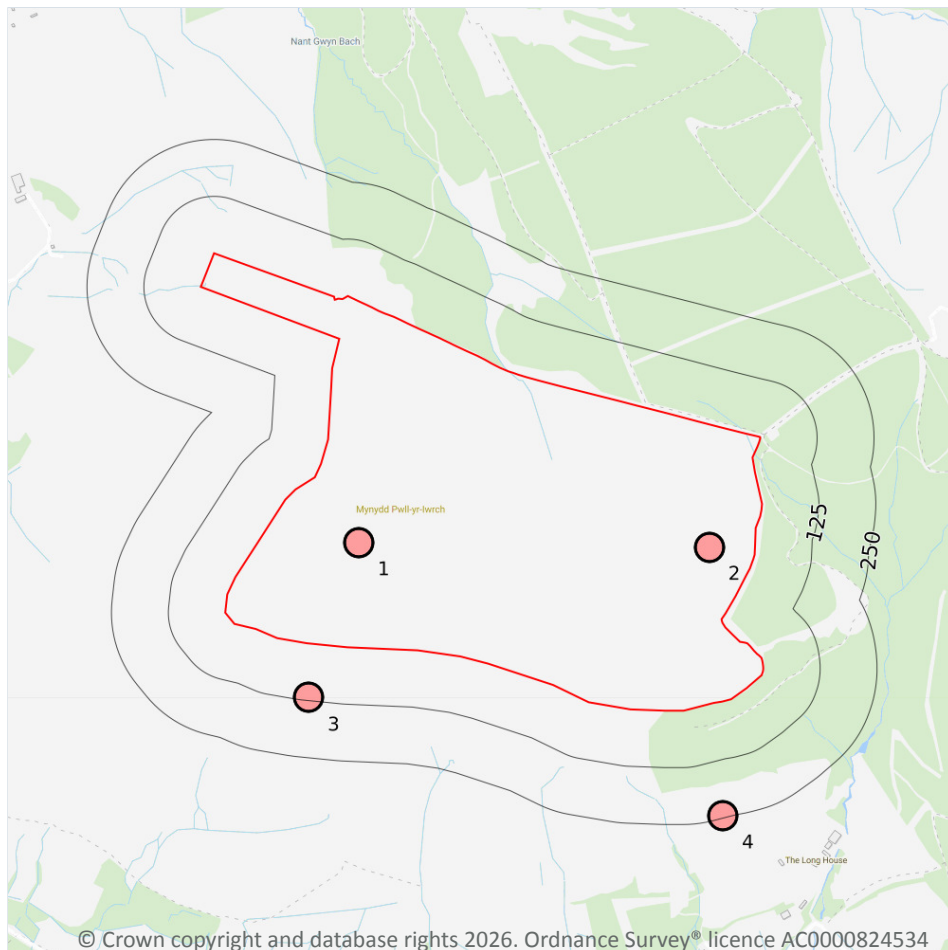


ID	Location	Category	Description
55	402m SW	ROCK	Coal seam, inferred
56	405m SE	ROCK	Coal seam, inferred
58	410m W	ROCK	Coal seam, inferred
59	464m N	ROCK	Coal seam, inferred
60	465m S	ROCK	Coal seam, inferred
63	487m S	ROCK	Coal seam, inferred
65	500m S	ROCK	Coal seam, inferred

This data is sourced from the British Geological Survey.



16 Boreholes



— Site Outline
Search buffers in metres (m)

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

16.1 BGS Boreholes

Records within 250m

4

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 121](#) >

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	On site	286690 192790	ST. JOHN'S COLLIERY, 12	83.52	N	373213 ↗
2	On site	287460 192780	ST. JOHN'S COLLIERY, 13	85.34	N	373214 ↗
3	118m S	286580 192450	ST. JOHN'S COLLIERY, 11	39.62	N	373212 ↗

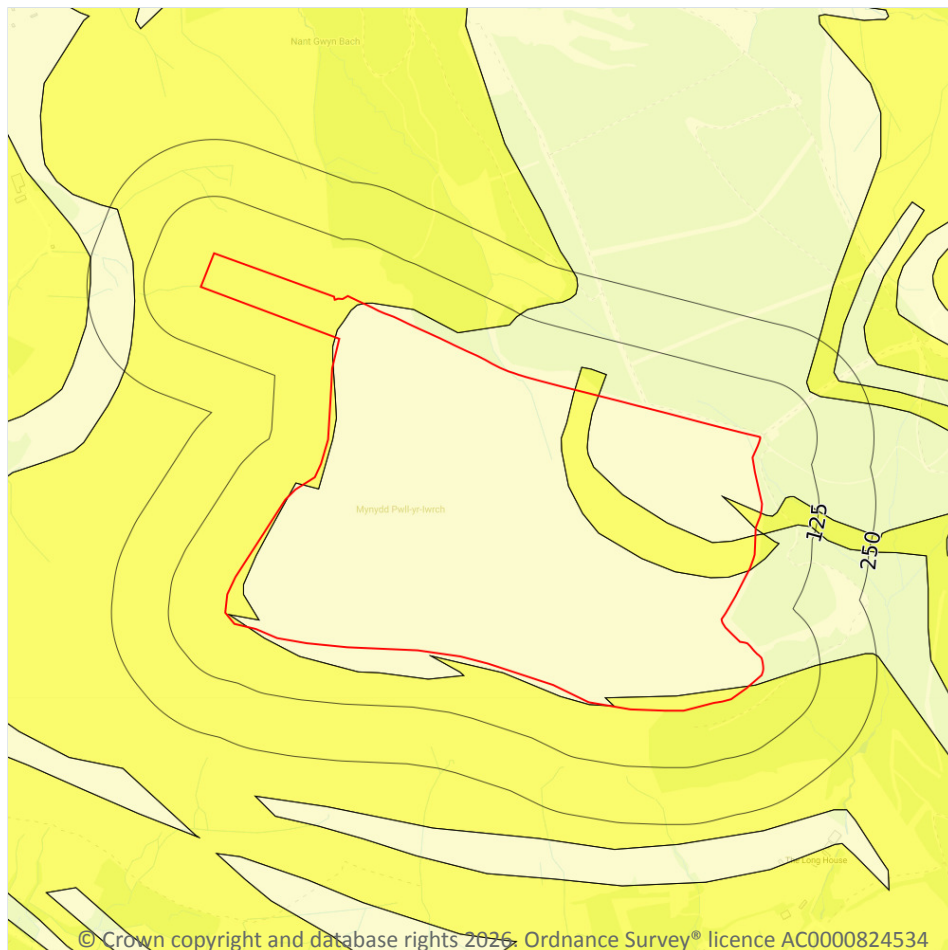


ID	Location	Grid reference	Name	Length	Confidential	Web link
4	245m S	287490 192190	ST. JOHN'S COLLIERY, 10	51.82	N	373211 ↗

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



- Site Outline**
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.1 Shrink swell clays

Records within 50m

2

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).

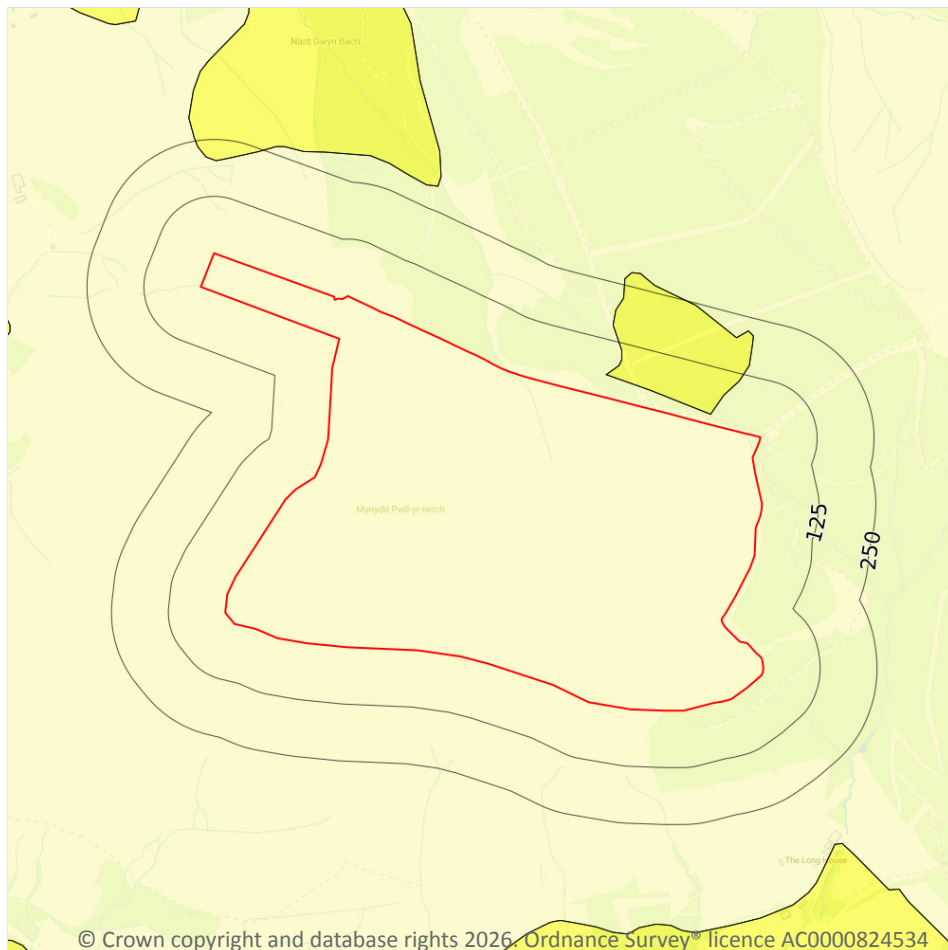
Features are displayed on the Natural ground subsidence - Shrink swell clays map on [page 123](#) >

Location	Hazard rating	Details
On site	Negligible	Ground conditions predominantly non-plastic.
On site	Very low	Ground conditions predominantly low plasticity.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.2 Running sands

Records within 50m

2

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

Features are displayed on the Natural ground subsidence - Running sands map on [page 124 >](#)

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

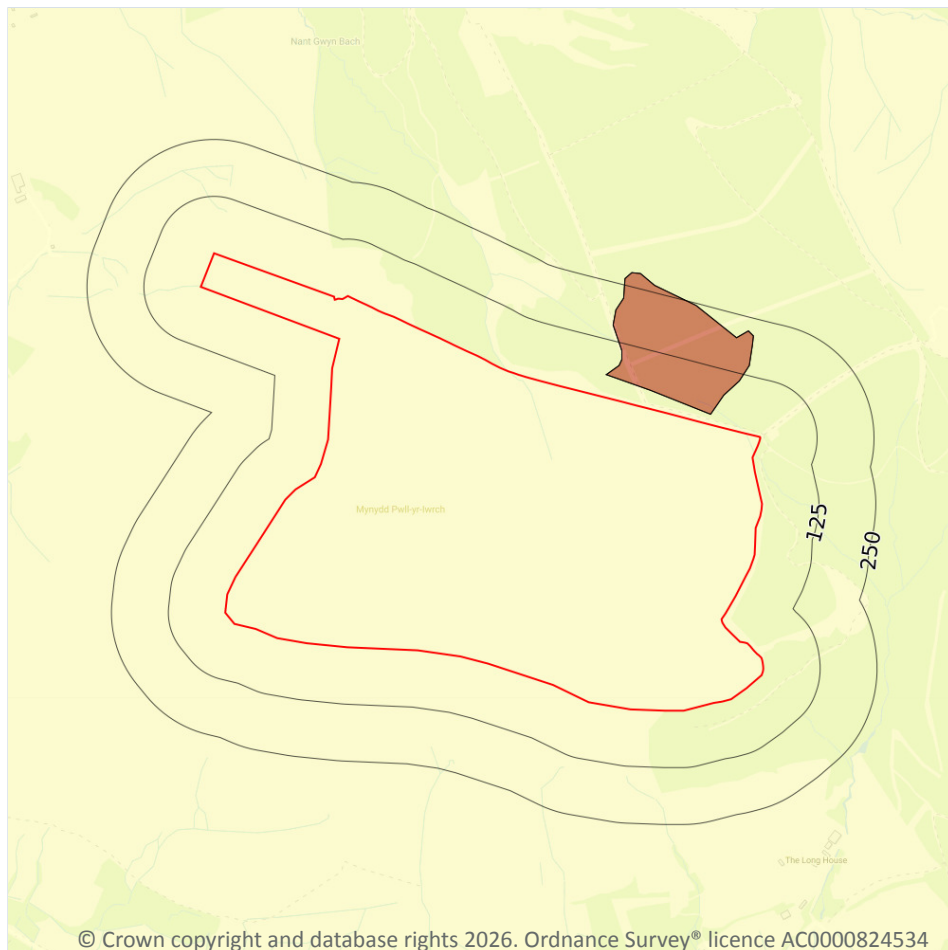


Location	Hazard rating	Details
22m N	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.3 Compressible deposits

Records within 50m

2

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.

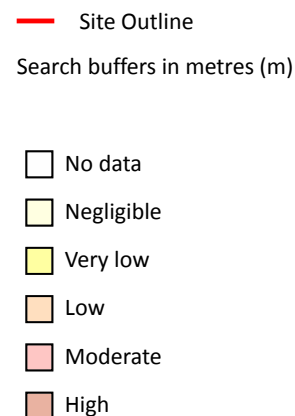
Features are displayed on the Natural ground subsidence - Compressible deposits map on [page 126 >](#)

Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.
22m N	High	Highly compressible strata present. Significant constraint on land use depending on thickness.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



17.4 Collapsible deposits

Records within 50m

4

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 127 >](#)

Location	Hazard rating	Details
On site	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.
On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.
11m SW	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.



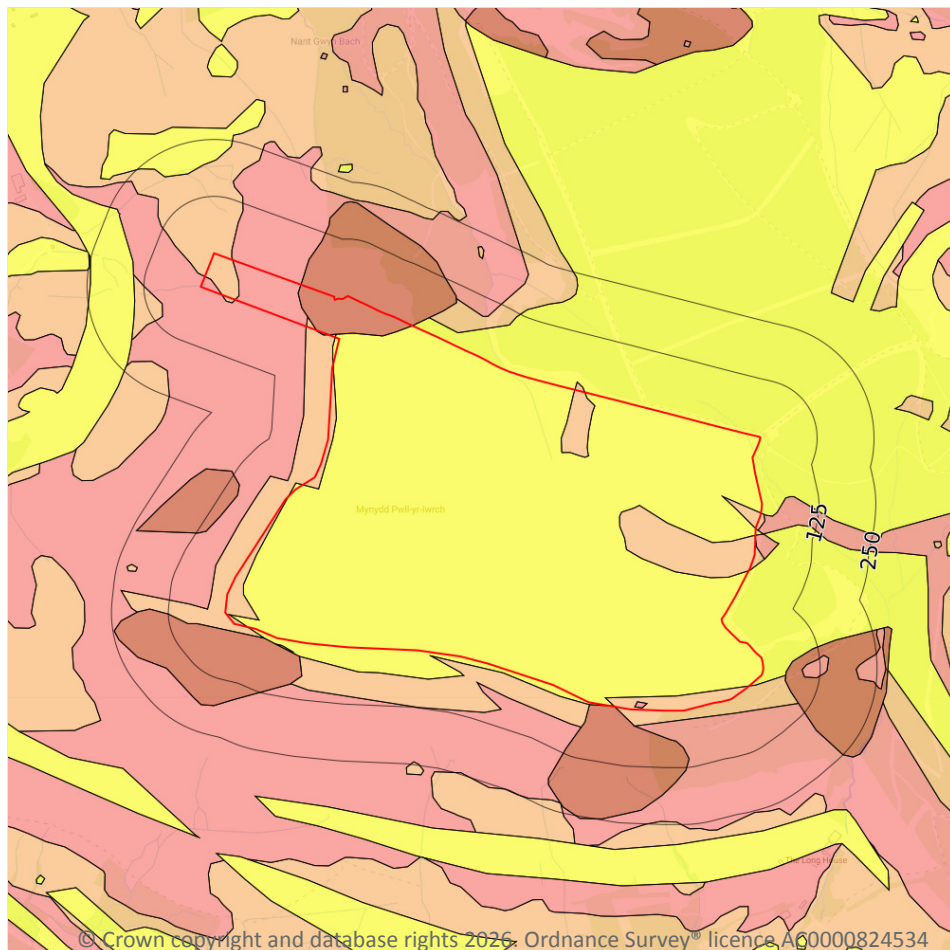
Location	Hazard rating	Details
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22m N	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.
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This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.5 Landslides

Records within 50m

9

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 129](#) >

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.

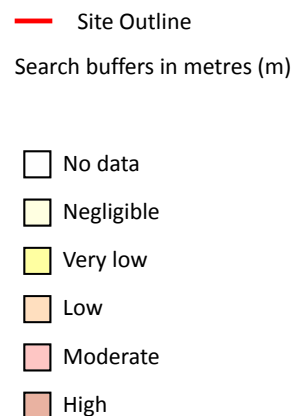
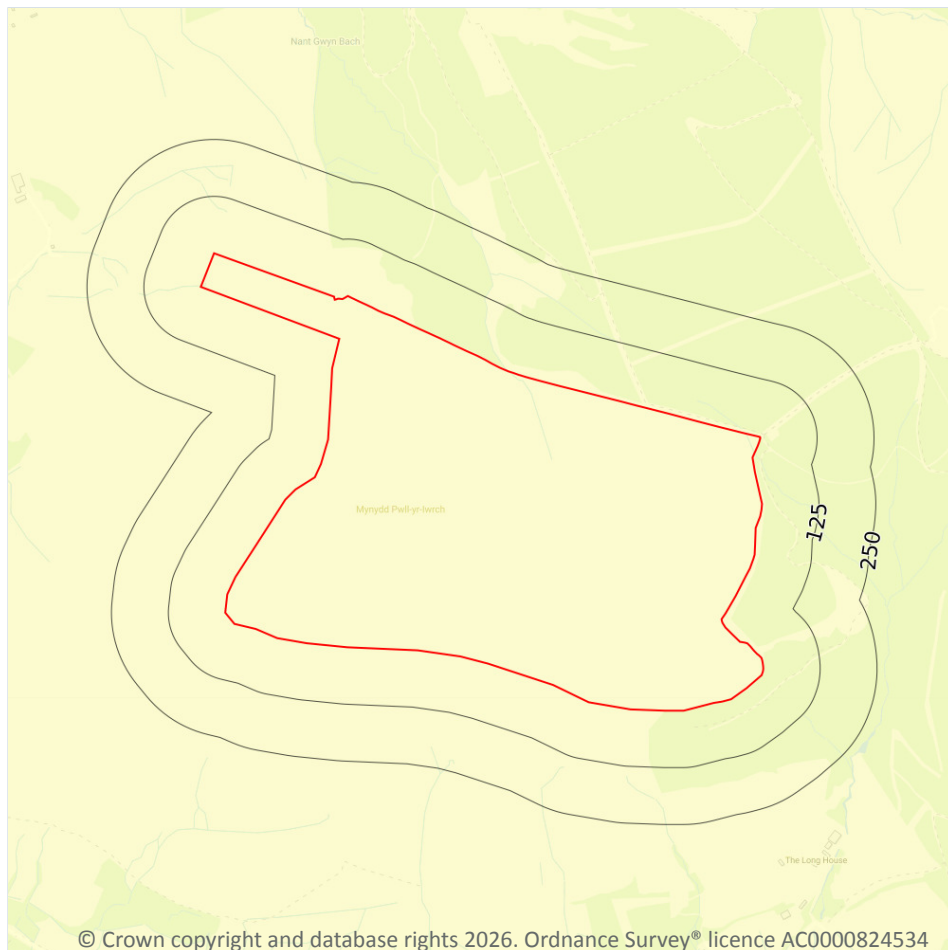


Location	Hazard rating	Details
On site	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.
On site	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider specifically the stability of the site.
On site	High	Slope instability problems almost certainly present and may be active. Significant constraint on land use.
5m S	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.
6m E	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider specifically the stability of the site.
11m SW	High	Slope instability problems almost certainly present and may be active. Significant constraint on land use.
13m S	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.
20m S	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider specifically the stability of the site.

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 131](#) >

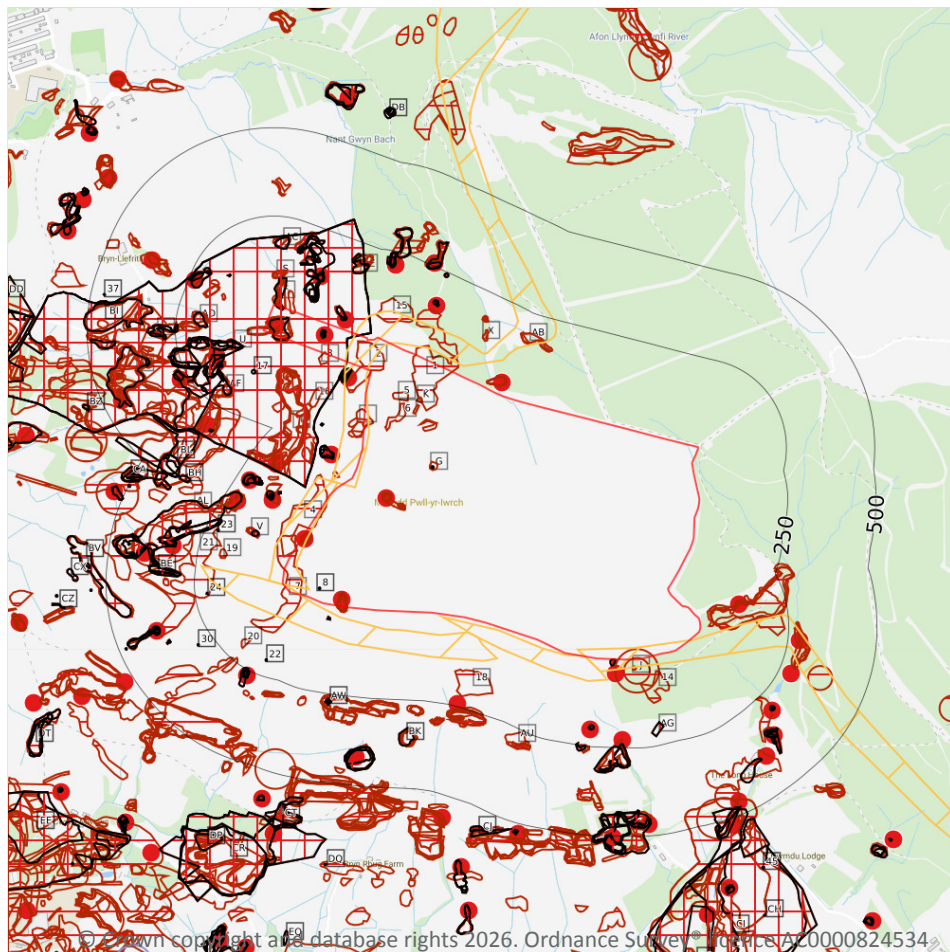
Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.



This data is sourced from the British Geological Survey.



18 Mining and ground workings



- Site Outline
- Search buffers in metres (m)
- BritPits
- Surface ground workings
- Underground workings
- Underground mining extents
- Historical mineral planning areas
- TCA non-coal mining
- Non Coal Mining
 - Sporadic underground mining of restricted extent possible
 - Localised small scale underground mining possible
 - Small scale mining possible
 - Underground mining known or likely within or in close proximity
 - Underground mining known within or in very close proximity

18.1 BritPits

Records within 500m

40

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.

Features are displayed on the Mining and ground workings map on [page 133](#) >

ID	Location	Details	Description
A	On site	Name: Coegnant Colliery Address: Caerau, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
B	On site	Name: Coegnant Colliery Address: Nantyffllon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
C	On site	Name: Mynydd Bach Address: Nantyffllon, MAESTEG, Glamorgan Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Delf, Delph, Gravel Pit, Sand Pit, Sand and Gravel Pit, Clay Pit, Pit, Opencast Coal Site or Surface Mine. It may be mapped as Worked Ground or Worked and Made Ground on BGS mapping. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.



ID	Location	Details	Description
D	On site	Name: Pant y Ffald Address: Nantyffllon, MAESTEG, Glamorgan Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Delf, Delph, Gravel Pit, Sand Pit, Sand and Gravel Pit, Clay Pit, Pit, Opencast Coal Site or Surface Mine. It may be mapped as Worked Ground or Worked and Made Ground on BGS mapping. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
E	On site	Name: Mynydd Bach Address: Nantyffllon, MAESTEG, Glamorgan Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Delf, Delph, Gravel Pit, Sand Pit, Sand and Gravel Pit, Clay Pit, Pit, Opencast Coal Site or Surface Mine. It may be mapped as Worked Ground or Worked and Made Ground on BGS mapping. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
O	28m N	Name: Coegnant Colliery Address: Nantyffllon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
M	35m NE	Name: Mynydd Bach Address: Nantyffllon, MAESTEG, Glamorgan Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Delf, Delph, Gravel Pit, Sand Pit, Sand and Gravel Pit, Clay Pit, Pit, Opencast Coal Site or Surface Mine. It may be mapped as Worked Ground or Worked and Made Ground on BGS mapping. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.



ID	Location	Details	Description
L	40m S	Name: Pant y Fflad Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
N	41m S	Name: Coegnant Colliery Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
R	82m W	Name: Coegnant Colliery Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.



ID	Location	Details	Description
Q	120m N	Name: Coegnant Colliery Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
P	120m E	Name: Pant y Ffald Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Delf, Delph, Gravel Pit, Sand Pit, Sand and Gravel Pit, Clay Pit, Pit, Opencast Coal Site or Surface Mine. It may be mapped as Worked Ground or Worked and Made Ground on BGS mapping. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
W	129m NW	Name: Mynydd Bach Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.



ID	Location	Details	Description
H	151m SW	Name: Coegnant Colliery Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
AA	151m NE	Name: Mynydd Bach Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
W	175m NW	Name: Mynydd Bach Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Delf, Delph, Gravel Pit, Sand Pit, Sand and Gravel Pit, Clay Pit, Pit, Opencast Coal Site or Surface Mine. It may be mapped as Worked Ground or Worked and Made Ground on BGS mapping. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.



ID	Location	Details	Description
AH	202m S	Name: Tor-cerryg Address: Nantffyllon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
AI	209m NW	Name: Mynydd Bach Address: Nantffyllon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
AJ	212m N	Name: Coegnant Colliery Address: Caerau, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.



ID	Location	Details	Description
W	214m NW	Name: Victoria Level Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
25	228m S	Name: Tor-cerryg Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
Y	234m W	Name: Coegnant Colliery Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.



ID	Location	Details	Description
AQ	242m S	Name: Pant y Fflad Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
AN	259m NE	Name: Coegnant Colliery Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
AP	264m SW	Name: Pant y Fflad Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.



ID	Location	Details	Description
H	274m SW	Name: Coegnant Colliery Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
BA	283m E	Name: Pant y Ffald Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Delf, Delph, Gravel Pit, Sand Pit, Sand and Gravel Pit, Clay Pit, Pit, Opencast Coal Site or Surface Mine. It may be mapped as Worked Ground or Worked and Made Ground on BGS mapping. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
29	286m SE	Name: Pant y Ffald Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.



ID	Location	Details	Description
AV	303m SE	Name: Pant y Ffald Address: Nanttyffllon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
Z	310m SW	Name: Mynydd Bach Address: Nanttyffllon, MAESTEG, Glamorgan Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Delf, Delph, Gravel Pit, Sand Pit, Sand and Gravel Pit, Clay Pit, Pit, Opencast Coal Site or Surface Mine. It may be mapped as Worked Ground or Worked and Made Ground on BGS mapping. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
AK	323m W	Name: Pant y Ffald Address: Nanttyffllon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.



ID	Location	Details	Description
AV	360m SE	Name: Pant y Ffald Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
BF	367m W	Name: Bryn-llefrith Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Delf, Delph, Gravel Pit, Sand Pit, Sand and Gravel Pit, Clay Pit, Pit, Opencast Coal Site or Surface Mine. It may be mapped as Worked Ground or Worked and Made Ground on BGS mapping. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
BO	381m W	Name: Pant y Fflad Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.



ID	Location	Details	Description
34	391m SE	Name: Pant y Ffald Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
BC	397m W	Name: Pant y Ffald Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
BP	419m S	Name: Pant y Ffald Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.



ID	Location	Details	Description
AO	448m SW	Name: Coegnant Colliery Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
BQ	463m SE	Name: Blaen-Cwmdil Address: Nanttyfflon, MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
BU	467m S	Name: Bryn-y-rhyg Address: MAESTEG, Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed 'Quarry' or 'Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.

This data is sourced from the British Geological Survey.



18.2 Surface ground workings

Records within 250m

286

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

Features are displayed on the Mining and ground workings map on [page 133](#) >

ID	Location	Land Use	Year of mapping	Mapping scale
1	On site	Refuse Heap	1897	1:10560
2	On site	Refuse Heap	1897	1:10560
3	On site	Refuse Heap	1897	1:10560
4	On site	Refuse Heap	1897	1:10560
5	On site	Unspecified Heap	1876	1:10560
6	On site	Unspecified Pits	1876	1:10560
7	On site	Unspecified Ground Workings	1876	1:10560
A	On site	Trial Level	1921	1:10560
A	On site	Trial Level	1947	1:10560
A	On site	Trial Level	1921	1:10560
A	On site	Unspecified Disused Level	1975	1:10000
B	On site	Cuttings	1921	1:10560
B	On site	Unspecified Heap	1947	1:10560
B	On site	Unspecified Heap	1947	1:10560
B	On site	Old Coal Levels	1897	1:10560
B	On site	Cuttings	1947	1:10560
B	On site	Unspecified Heaps	1921	1:10560
B	On site	Cuttings	1921	1:10560
B	On site	Unspecified Heaps	1921	1:10560
B	On site	Unspecified Heaps	1921	1:10560
B	On site	Unspecified Ground Workings	1975	1:10000
B	On site	Unspecified Ground Workings	1975	1:10000
B	On site	Unspecified Ground Workings	1965	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
B	On site	Unspecified Ground Workings	1965	1:10560
C	On site	Unspecified Quarry	1921	1:10560
C	On site	Unspecified Quarry	1947	1:10560
C	On site	Unspecified Quarry	1897	1:10560
C	On site	Unspecified Quarry	1921	1:10560
D	On site	Unspecified Quarry	1921	1:10560
D	On site	Unspecified Quarry	1947	1:10560
D	On site	Unspecified Quarry	1897	1:10560
D	On site	Unspecified Quarry	1921	1:10560
D	On site	Unspecified Ground Workings	1975	1:10000
D	On site	Unspecified Ground Workings	1965	1:10560
E	On site	Unspecified Old Quarries	1921	1:10560
E	On site	Unspecified Old Quarries	1947	1:10560
E	On site	Unspecified Old Quarries	1947	1:10560
E	On site	Unspecified Old Quarries	1897	1:10560
E	On site	Unspecified Old Quarries	1897	1:10560
E	On site	Unspecified Old Quarries	1921	1:10560
E	On site	Unspecified Old Quarries	1921	1:10560
F	On site	Unspecified Ground Workings	1947	1:10560
F	On site	Unspecified Old Levels	1897	1:10560
F	On site	Ponds	1947	1:10560
F	On site	Unspecified Ground Workings	1921	1:10560
F	On site	Unspecified Ground Workings	1921	1:10560
F	On site	Unspecified Ground Workings	1921	1:10560
F	On site	Unspecified Ground Workings	1965	1:10560
G	On site	Trial Level	1876	1:10560
G	On site	Unspecified Heap	1876	1:10560
H	On site	Colliery	1947	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
H	On site	Colliery	1921	1:10560
I	On site	Refuse Heap	1897	1:10560
I	On site	Unspecified Heaps	1876	1:10560
J	On site	Coal Level	1947	1:10560
J	On site	Coal Level	1921	1:10560
K	On site	Unspecified Heap	1876	1:10560
K	On site	Unspecified Pit	1876	1:10560
K	On site	Unspecified Ground Workings	1876	1:10560
K	On site	Unspecified Pit	1876	1:10560
L	1m S	Unspecified Disused Level	1975	1:10000
I	1m W	Unspecified Pit	1876	1:10560
M	14m NE	Unspecified Old Quarry	1921	1:10560
M	14m NE	Unspecified Old Quarry	1947	1:10560
M	14m NE	Unspecified Old Quarry	1897	1:10560
M	15m NE	Unspecified Old Quarry	1921	1:10560
N	16m S	Old Coal Level	1921	1:10560
N	16m S	Old Coal Level	1921	1:10560
N	17m S	Old Coal Level	1921	1:10560
N	17m S	Unspecified Disused Level	1975	1:10000
N	18m S	Old Coal Level	1897	1:10560
N	19m S	Old Coal Level	1947	1:10560
J	20m S	Coal Level	1921	1:10560
J	20m S	Coal Level	1921	1:10560
12	23m NW	Unspecified Heap	1876	1:10560
O	24m N	Old Coal Levels	1897	1:10560
P	24m E	Unspecified Disused Quarry	1975	1:10000
P	26m E	Unspecified Quarry	1897	1:10560
O	27m N	Old Coal Level	1921	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
O	27m N	Old Coal Level	1921	1:10560
O	28m N	Old Coal Level	1947	1:10560
O	28m N	Old Coal Level	1921	1:10560
P	33m E	Unspecified Quarry	1921	1:10560
P	35m E	Unspecified Disused Quarry	1921	1:10560
P	35m E	Unspecified Disused Quarry	1947	1:10560
D	35m S	Trial Level	1876	1:10560
O	36m N	Unspecified Heap	1975	1:10000
13	42m NE	Refuse Heap	1897	1:10560
14	44m S	Refuse Heap	1897	1:10560
Q	44m N	Unspecified Disused Levels	1975	1:10000
Q	44m N	Unspecified Pit	1965	1:10560
Q	45m N	Unspecified Old Levels	1897	1:10560
Q	48m N	Unspecified Old Level	1947	1:10560
Q	48m N	Unspecified Old Level	1921	1:10560
Q	50m N	Unspecified Ground Workings	1921	1:10560
Q	50m N	Unspecified Ground Workings	1921	1:10560
15	51m NE	Refuse Heap	1897	1:10560
H	72m SW	Old Coal Levels	1921	1:10560
H	72m SW	Old Coal Levels	1921	1:10560
H	74m SW	Old Coal Levels	1947	1:10560
S	74m N	Unspecified Heap	1921	1:10560
T	75m S	Unspecified Old Quarries	1897	1:10560
S	76m N	Unspecified Ground Workings	1947	1:10560
T	76m S	Unspecified Old Quarries	1921	1:10560
S	76m N	Unspecified Heap	1921	1:10560
S	76m N	Unspecified Heap	1921	1:10560
T	76m S	Unspecified Ground Workings	1965	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
H	77m SW	Old Coal Levels	1921	1:10560
U	77m SW	Unspecified Disused Level	1975	1:10000
T	77m S	Unspecified Disused Quarry	1975	1:10000
T	79m S	Unspecified Old Quarries	1947	1:10560
T	84m S	Unspecified Ground Workings	1921	1:10560
16	93m S	Refuse Heap	1897	1:10560
R	100m NW	Unspecified Ground Workings	1876	1:10560
R	101m NW	Unspecified Heap	1876	1:10560
V	105m NW	Unspecified Ground Workings	1947	1:10560
Q	106m N	Unspecified Old Level	1921	1:10560
Q	106m N	Unspecified Old Level	1921	1:10560
V	106m NW	Unspecified Heap	1921	1:10560
Q	107m N	Unspecified Disused Levels	1975	1:10000
V	107m NW	Unspecified Pit	1921	1:10560
V	107m NW	Unspecified Pit	1921	1:10560
W	108m NW	Unspecified Heap	1876	1:10560
H	109m W	Unspecified Old Levels	1897	1:10560
V	109m NW	Unspecified Disused Level	1975	1:10000
Q	110m N	Unspecified Heap	1921	1:10560
Q	110m N	Unspecified Heap	1921	1:10560
W	119m NW	Trial Level	1876	1:10560
X	119m NE	Unspecified Ground Workings	1947	1:10560
X	119m NE	Unspecified Pit	1897	1:10560
V	123m NW	Unspecified Heap	1897	1:10560
V	123m NW	Unspecified Heap	1921	1:10560
V	123m NW	Unspecified Heap	1921	1:10560
W	124m NW	Pond	1876	1:10560
R	126m W	Unspecified Pit	1876	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
W	128m NW	Unspecified Heap	1921	1:10560
W	130m NW	Unspecified Heap	1921	1:10560
W	130m NW	Unspecified Heap	1921	1:10560
W	130m NW	Unspecified Heap	1876	1:10560
H	132m SW	Unspecified Disused Level	1975	1:10000
H	132m SW	Unspecified Pit	1965	1:10560
Q	132m N	Unspecified Old Levels	1947	1:10560
Q	132m N	Unspecified Old Levels	1921	1:10560
Q	133m N	Unspecified Old Levels	1921	1:10560
Q	133m N	Unspecified Old Levels	1921	1:10560
Y	134m W	Unspecified Ground Workings	1947	1:10560
18	139m S	Refuse Heap	1897	1:10560
H	140m SW	Unspecified Pit	1921	1:10560
Z	141m SW	Unspecified Old Quarries	1947	1:10560
Z	142m SW	Unspecified Old Quarries	1921	1:10560
W	147m NW	Unspecified Pit	1876	1:10560
Y	148m NW	Old Coal Level	1921	1:10560
R	149m W	Unspecified Heap	1876	1:10560
T	149m S	Unspecified Ground Workings	1876	1:10560
Q	152m N	Unspecified Disused Levels	1975	1:10000
AB	157m N	Unspecified Ground Workings	1947	1:10560
AB	157m N	Unspecified Ground Workings	1897	1:10560
AB	158m N	Unspecified Ground Workings	1975	1:10000
AC	159m N	Unspecified Heap	1921	1:10560
AC	159m N	Unspecified Old Levels	1947	1:10560
AC	159m N	Unspecified Old Levels	1897	1:10560
AD	159m W	Unspecified Old Level	1897	1:10560
AD	160m W	Refuse Heaps	1921	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
AD	160m W	Refuse Heaps	1921	1:10560
H	160m W	Unspecified Disused Levels	1975	1:10000
Y	160m W	Cuttings	1921	1:10560
AC	160m N	Unspecified Heap	1921	1:10560
AC	160m N	Unspecified Heap	1921	1:10560
AE	160m N	Unspecified Pit	1921	1:10560
H	160m W	Unspecified Heap	1965	1:10560
Y	160m W	Cuttings	1921	1:10560
Y	160m W	Cuttings	1947	1:10560
AD	161m W	Refuse Heap	1947	1:10560
AD	161m W	Refuse Heap	1921	1:10560
AE	161m N	Unspecified Old Levels	1897	1:10560
Q	161m N	Unspecified Heap	1921	1:10560
Q	161m N	Unspecified Heap	1921	1:10560
AE	162m N	Unspecified Pit	1947	1:10560
AE	164m N	Unspecified Pit	1921	1:10560
AE	164m N	Unspecified Pit	1921	1:10560
AB	164m N	Unspecified Ground Workings	1975	1:10000
AC	165m N	Unspecified Heap	1975	1:10000
AC	165m N	Unspecified Heap	1965	1:10560
Y	166m W	Unspecified Pits	1947	1:10560
Q	166m N	Unspecified Disused Tip	1975	1:10000
19	167m W	Unspecified Pit	1876	1:10560
AD	167m W	Unspecified Heap	1975	1:10000
AD	167m W	Unspecified Heap	1965	1:10560
Q	167m N	Unspecified Ground Workings	1965	1:10560
T	168m S	Unspecified Heap	1876	1:10560
X	169m NE	Unspecified Pit	1897	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
X	169m NE	Unspecified Pit	1921	1:10560
X	169m NE	Unspecified Pit	1921	1:10560
X	170m NE	Unspecified Ground Workings	1947	1:10560
W	170m NW	Unspecified Ground Workings	1876	1:10560
W	177m NW	Old Coal Level	1921	1:10560
20	178m SW	Unspecified Heap	1876	1:10560
W	178m NW	Old Coal Level	1947	1:10560
W	180m NW	Old Coal Level	1921	1:10560
W	180m NW	Old Coal Level	1921	1:10560
AF	181m SW	Unspecified Pit	1965	1:10560
W	182m NW	Old Coal Levels	1897	1:10560
AF	182m SW	Unspecified Pit	1975	1:10000
AF	183m SW	Unspecified Pits	1921	1:10560
AD	184m W	Unspecified Ground Workings	1975	1:10000
W	186m NW	Unspecified Disused Level	1975	1:10000
AG	186m S	Unspecified Disused Level	1975	1:10000
AE	190m N	Unspecified Heaps	1921	1:10560
AD	190m W	Unspecified Ground Workings	1965	1:10560
21	191m W	Unspecified Ground Workings	1876	1:10560
AE	192m N	Unspecified Heap	1947	1:10560
AE	194m N	Unspecified Heaps	1921	1:10560
AE	194m N	Unspecified Heaps	1921	1:10560
Y	197m NW	Old Coal Level	1921	1:10560
Y	197m NW	Old Coal Level	1921	1:10560
Y	198m NW	Old Coal Level	1947	1:10560
Y	198m NW	Unspecified Heap	1921	1:10560
AI	199m NW	Unspecified Pit	1876	1:10560
AI	199m NW	Unspecified Pit	1947	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
AE	200m N	Unspecified Heap	1947	1:10560
AJ	202m N	Unspecified Pit	1921	1:10560
AI	202m NW	Unspecified Pit	1921	1:10560
AI	202m NW	Unspecified Pit	1921	1:10560
AJ	202m N	Unspecified Old Level	1947	1:10560
AK	202m NW	Old Coal Levels	1897	1:10560
AJ	203m N	Unspecified Old Level	1921	1:10560
AJ	203m N	Unspecified Old Level	1921	1:10560
Y	203m NW	Unspecified Disused Level	1975	1:10000
H	204m SW	Old Coal Levels	1947	1:10560
AJ	205m N	Unspecified Old Level	1897	1:10560
Q	206m N	Unspecified Disused Levels	1975	1:10000
W	207m NW	Unspecified Heap	1921	1:10560
H	208m SW	Unspecified Disused Levels	1975	1:10000
H	208m SW	Unspecified Ground Workings	1965	1:10560
AJ	208m N	Unspecified Disused Level	1975	1:10000
W	215m NW	Unspecified Ground Workings	1975	1:10000
AK	217m NW	Unspecified Old Level	1947	1:10560
Y	218m NW	Old Coal Levels	1897	1:10560
AK	218m NW	Unspecified Old Level	1921	1:10560
AK	218m NW	Unspecified Old Level	1921	1:10560
AL	219m NW	Unspecified Ground Workings	1921	1:10560
AL	219m NW	Unspecified Ground Workings	1921	1:10560
AI	219m NW	Unspecified Ground Workings	1947	1:10560
AK	219m NW	Old Coal Level	1921	1:10560
Y	220m W	Unspecified Heap	1975	1:10000
Y	220m W	Unspecified Heap	1965	1:10560
AM	226m S	Unspecified Disused Tip	1975	1:10000



ID	Location	Land Use	Year of mapping	Mapping scale
AI	230m NW	Unspecified Heap	1876	1:10560
26	233m NW	Unspecified Heap	1921	1:10560
AO	236m S	Unspecified Disused Tip	1975	1:10000
AJ	237m N	Unspecified Pit	1921	1:10560
AJ	237m N	Unspecified Pit	1921	1:10560
AM	238m S	Old Coal Levels	1921	1:10560
AM	238m S	Old Coal Levels	1921	1:10560
AN	238m NE	Unspecified Old Level	1897	1:10560
AP	239m SW	Unspecified Pit	1876	1:10560
AN	240m NE	Unspecified Old Level	1921	1:10560
AM	240m S	Old Coal Levels	1947	1:10560
AM	240m S	Old Coal Levels	1921	1:10560
AN	240m NE	Unspecified Ground Workings	1947	1:10560
AL	241m NW	Unspecified Ground Workings	1947	1:10560
AQ	241m S	Unspecified Pit	1897	1:10560
AN	241m NE	Unspecified Pit	1975	1:10000
AN	241m NE	Unspecified Pit	1965	1:10560
AN	242m NE	Unspecified Pit	1921	1:10560
AN	242m NE	Unspecified Pit	1921	1:10560
AR	242m W	Unspecified Heaps	1921	1:10560
AS	244m W	Old Coal Levels	1947	1:10560
AS	244m W	Old Coal Levels	1921	1:10560
AS	244m W	Old Coal Levels	1921	1:10560
AT	245m S	Old Coal Levels	1897	1:10560
AP	246m SW	Unspecified Heaps	1876	1:10560
AM	247m S	Old Coal Levels	1897	1:10560
AP	247m SW	Unspecified Disused Level	1975	1:10000
AU	248m SW	Unspecified Ground Workings	1897	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
AT	248m S	Unspecified Heap	1921	1:10560
AT	248m S	Unspecified Heap	1921	1:10560
Z	248m SW	Unspecified Pit	1921	1:10560
AQ	249m S	Unspecified Disused Quarry	1975	1:10000
AQ	249m S	Unspecified Pit	1965	1:10560
Z	249m SW	Unspecified Old Quarries	1897	1:10560
AT	249m S	Unspecified Pit	1947	1:10560
AP	250m SW	Old Coal Level	1921	1:10560
AP	250m SW	Old Coal Level	1921	1:10560
AP	250m SW	Old Coal Level	1947	1:10560
AP	250m SW	Old Coal Level	1921	1:10560

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

18.3 Underground workings

Records within 1000m

271

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

Features are displayed on the Mining and ground workings map on [page 133 >](#)

ID	Location	Land Use	Year of mapping	Mapping scale
8	On site	Air Shaft	1876	1:10560
A	On site	Unspecified Disused Level	1975	1:10000
A	On site	Trial Level	1947	1:10560
A	On site	Trial Level	1921	1:10560
B	On site	Old Coal Levels	1897	1:10560
F	On site	Unspecified Old Levels	1897	1:10560
G	On site	Trial Level	1876	1:10560
H	On site	Colliery	1947	1:10560
H	On site	Colliery	1921	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
L	1m S	Unspecified Disused Level	1975	1:10000
N	17m S	Old Coal Level	1921	1:10560
N	17m S	Unspecified Disused Level	1975	1:10000
N	18m S	Old Coal Level	1897	1:10560
N	19m S	Old Coal Level	1947	1:10560
O	24m N	Old Coal Levels	1897	1:10560
O	28m N	Old Coal Level	1947	1:10560
O	28m N	Old Coal Level	1921	1:10560
D	35m S	Trial Level	1876	1:10560
Q	44m N	Unspecified Disused Levels	1975	1:10000
Q	45m N	Unspecified Old Levels	1897	1:10560
Q	48m N	Unspecified Old Level	1947	1:10560
Q	48m N	Unspecified Old Level	1921	1:10560
R	72m W	Trial Shaft	1921	1:10560
R	74m W	Trial Shaft	1947	1:10560
R	74m W	Trial Shaft	1897	1:10560
H	74m SW	Old Coal Levels	1947	1:10560
H	77m SW	Old Coal Levels	1921	1:10560
U	77m SW	Unspecified Disused Level	1975	1:10000
R	104m NW	Unspecified Disused Shaft	1975	1:10000
Q	107m N	Unspecified Disused Levels	1975	1:10000
H	109m W	Unspecified Old Levels	1897	1:10560
V	109m NW	Unspecified Disused Level	1975	1:10000
17	114m S	Old Air Shaft	1921	1:10560
R	116m W	Old Air Shaft	1947	1:10560
R	116m W	Air Shaft	1897	1:10560
R	116m W	Old Air Shaft	1921	1:10560
W	119m NW	Trial Level	1876	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
W	129m NW	Trial Shaft	1897	1:10560
W	129m NW	Old Trial Shaft	1947	1:10560
H	132m SW	Unspecified Disused Level	1975	1:10000
Q	132m N	Unspecified Old Levels	1947	1:10560
Q	132m N	Unspecified Old Levels	1921	1:10560
W	133m NW	Disused Trial Shaft	1975	1:10000
W	133m NW	Disused Trial Shaft	1965	1:10560
H	136m SW	Old Air Shaft	1947	1:10560
Y	148m NW	Old Coal Level	1921	1:10560
AA	150m NE	Old Trial Shaft	1921	1:10560
Q	152m N	Unspecified Disused Levels	1975	1:10000
AA	152m NE	Disused Trial Shaft	1965	1:10560
H	153m SW	Air Shaft	1897	1:10560
AA	153m NE	Old Trial Shaft	1947	1:10560
AA	153m NE	Old Trial Shaft	1897	1:10560
AA	154m NE	Unspecified Disused Shafts	1975	1:10000
AC	159m N	Unspecified Old Levels	1947	1:10560
AC	159m N	Unspecified Old Levels	1897	1:10560
AD	159m W	Unspecified Old Level	1897	1:10560
H	160m W	Unspecified Disused Levels	1975	1:10000
AE	161m N	Unspecified Old Levels	1897	1:10560
W	177m NW	Old Coal Level	1921	1:10560
W	178m NW	Old Coal Level	1947	1:10560
W	182m NW	Old Coal Levels	1897	1:10560
W	186m NW	Unspecified Disused Level	1975	1:10000
AG	186m S	Unspecified Disused Level	1975	1:10000
AH	190m S	Unspecified Disused Shaft	1975	1:10000
AH	190m S	Unspecified Disused Shaft	1965	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
AH	195m S	Old Coal Shaft	1897	1:10560
Y	198m NW	Old Coal Level	1947	1:10560
22	201m S	Trial Shaft	1876	1:10560
AJ	202m N	Unspecified Old Level	1947	1:10560
AK	202m NW	Old Coal Levels	1897	1:10560
Y	203m NW	Unspecified Disused Level	1975	1:10000
H	204m SW	Old Coal Levels	1947	1:10560
AJ	205m N	Unspecified Old Level	1897	1:10560
Q	206m N	Unspecified Disused Levels	1975	1:10000
H	208m SW	Unspecified Disused Levels	1975	1:10000
AJ	208m N	Unspecified Disused Level	1975	1:10000
23	214m NW	Air Shaft	1876	1:10560
24	214m W	Air Shaft	1876	1:10560
AK	217m NW	Unspecified Old Level	1947	1:10560
Y	218m NW	Old Coal Levels	1897	1:10560
AK	219m NW	Old Coal Level	1921	1:10560
AN	236m NE	Unspecified Disused Shafts	1975	1:10000
AN	236m NE	Disused Trial Shaft	1965	1:10560
AN	238m NE	Unspecified Old Level	1897	1:10560
AN	240m NE	Unspecified Old Level	1921	1:10560
AM	240m S	Old Coal Levels	1947	1:10560
AM	240m S	Old Coal Levels	1921	1:10560
AS	244m W	Old Coal Levels	1947	1:10560
AT	245m S	Old Coal Levels	1897	1:10560
AM	247m S	Old Coal Levels	1897	1:10560
AP	247m SW	Unspecified Disused Level	1975	1:10000
AP	250m SW	Old Coal Level	1947	1:10560
AP	250m SW	Old Coal Level	1921	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
AP	254m SW	Old Coal Levels	1897	1:10560
H	262m SW	Trial Level	1897	1:10560
AW	264m S	Disused Air Shaft	1975	1:10000
AW	264m S	Disused Air Shaft	1965	1:10560
AW	267m S	Old Air Shaft	1897	1:10560
AW	274m S	Old Air Shaft	1921	1:10560
AS	284m W	Unspecified Disused Levels	1975	1:10000
BC	290m W	Old Coal Level	1947	1:10560
BE	292m W	Old Coal Level	1921	1:10560
AV	293m SE	Unspecified Disused Shaft	1975	1:10000
AV	293m SE	Unspecified Disused Shaft	1965	1:10560
30	293m SW	Air Shaft	1876	1:10560
AV	298m SE	Old Coal Shaft	1947	1:10560
AV	298m SE	Old Coal Shaft	1897	1:10560
AV	298m SE	Old Coal Shaft	1921	1:10560
Z	317m SW	Old Air Shaft	1921	1:10560
Z	318m SW	Air Shaft	1897	1:10560
BI	319m W	Old Coal Levels	1897	1:10560
BK	329m S	Old Coal Levels	1897	1:10560
AR	334m W	Unspecified Disused Levels	1975	1:10000
AV	336m SE	Old Coal Level	1897	1:10560
AR	336m W	Trial Levels	1897	1:10560
AV	341m SE	Old Coal Levels	1947	1:10560
AV	344m SE	Old Coal Levels	1921	1:10560
BL	346m SW	Unspecified Disused Level	1897	1:10560
BH	355m NW	Unspecified Disused Level	1947	1:10560
BO	357m SW	Coal Level	1876	1:10560
BO	371m W	Unspecified Disused Level	1975	1:10000



ID	Location	Land Use	Year of mapping	Mapping scale
BO	371m W	Unspecified Disused Level	1965	1:10560
BO	372m W	Old Coal Level	1947	1:10560
BO	373m W	Old Coal Level	1921	1:10560
BO	373m W	Old Coal Levels	1897	1:10560
BN	382m SE	Coal Level	1897	1:10560
BP	387m S	Unspecified Disused Level	1975	1:10000
BL	388m NW	Unspecified Disused Level	1921	1:10560
BP	389m S	Old Coal Levels	1897	1:10560
BL	390m NW	Unspecified Disused Level	1947	1:10560
BL	391m NW	Old Coal Levels	1947	1:10560
BC	396m W	Old Coal Level	1921	1:10560
BP	397m S	Old Coal Level	1947	1:10560
BP	397m S	Old Coal Level	1921	1:10560
BI	420m W	Old Coal Levels	1897	1:10560
BU	427m S	Unspecified Old Level	1947	1:10560
BU	432m S	Unspecified Old Level	1914	1:10560
BU	434m S	Unspecified Old Level	1921	1:10560
BV	436m W	Old Coal Levels	1897	1:10560
BU	436m S	Unspecified Disused Levels	1975	1:10000
BC	442m W	Trial Level	1876	1:10560
BU	454m S	Old Coal Level	1921	1:10560
37	460m W	Air Shaft	1876	1:10560
BU	460m S	Unspecified Old Level	1947	1:10560
BU	470m S	Old Coal Level	1914	1:10560
BX	471m S	Disused Colliery	1897	1:10560
CA	472m NW	Old Coal Levels	1947	1:10560
BW	475m S	Unspecified Old Level	1914	1:10560
BO	478m SW	Air Shaft	1876	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
BW	481m S	Old Coal Level	1921	1:10560
CA	494m NW	Air Shaft	1897	1:10560
CA	498m NW	Old Coal Levels	1947	1:10560
CA	498m NW	Old Coal Levels	1921	1:10560
BU	499m S	Old Coal Level	1897	1:10560
CE	519m S	Old Coal Level	1914	1:10560
CE	520m S	Old Coal Level	1897	1:10560
CI	521m SE	Unspecified Mine	1975	1:10000
CJ	524m S	Old Coal Level	1921	1:10560
BZ	539m SW	Trial Levels	1897	1:10560
BV	541m W	Air Shaft	1876	1:10560
CJ	546m SW	Unspecified Old Level	1947	1:10560
BV	547m W	Trial Levels	1876	1:10560
CR	552m S	Disused Colliery	1947	1:10560
CI	570m S	Colliery	1947	1:10560
CV	571m S	Old Coal Level	1947	1:10560
CV	571m S	Old Coal Level	1921	1:10560
CT	579m S	Coal Level	1914	1:10560
CX	580m W	Trial Levels	1876	1:10560
CY	590m N	Old Coal Levels	1897	1:10560
CY	596m N	Old Coal Levels	1921	1:10560
CY	597m N	Old Coal Levels	1947	1:10560
DA	600m NW	Old Coal Level	1947	1:10560
DA	600m NW	Old Coal Level	1921	1:10560
DA	603m NW	Old Coal Levels	1897	1:10560
DB	605m N	Old Coal Levels	1897	1:10560
DA	609m NW	Unspecified Disused Level	1975	1:10000
DB	613m N	Old Coal Levels	1921	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
DA	614m NW	Old Coal Level	1947	1:10560
DA	614m NW	Old Coal Levels	1897	1:10560
DA	614m NW	Old Coal Level	1921	1:10560
DB	618m N	Old Coal Levels	1947	1:10560
DA	618m NW	Unspecified Disused Level	1975	1:10000
CZ	621m W	Coal Level	1876	1:10560
DB	622m N	Unspecified Disused Shaft	1975	1:10000
DB	622m N	Unspecified Disused Shaft	1965	1:10560
CR	625m S	Colliery	1897	1:10560
CR	628m S	Colliery	1921	1:10560
CT	631m S	Old Coal Level	1921	1:10560
CZ	638m W	Air Shaft	1876	1:10560
CY	644m N	Old Coal Levels	1921	1:10560
DE	651m W	Colliery	1975	1:10000
DE	651m W	Colliery	1876	1:10560
45	659m S	Old Air Shaft	1897	1:10560
DG	659m SW	Unspecified Old Level	1947	1:10560
DG	659m SW	Coal Level	1914	1:10560
DG	659m SW	Coal Level	1921	1:10560
DE	661m W	Unspecified Mine	1965	1:10560
BX	681m S	Unspecified Old Level	1914	1:10560
CR	682m S	Colliery	1914	1:10560
BX	687m S	Unspecified Old Level	1921	1:10560
DH	691m SW	Unspecified Disused Level	1897	1:10560
DK	697m NW	Old Coal Level	1921	1:10560
DK	700m NW	Old Coal Level	1947	1:10560
DK	700m NW	Old Coal Levels	1897	1:10560
DK	705m NW	Unspecified Disused Levels	1975	1:10000



ID	Location	Land Use	Year of mapping	Mapping scale
DO	713m S	Unspecified Mine	1965	1:10560
53	714m W	Colliery	1897	1:10560
DP	715m S	Unspecified Level	1914	1:10560
DG	718m SW	Unspecified Disused Levels	1975	1:10000
DK	720m NW	Old Coal Levels	1897	1:10560
DT	725m SW	Old Coal Level	1897	1:10560
DD	728m W	Unspecified Level	1876	1:10560
DQ	729m S	Air Shaft	1876	1:10560
DT	752m SW	Old Coal Level	1947	1:10560
DT	752m SW	Old Coal Level	1921	1:10560
-	756m W	Tunnel	1876	1:10560
DX	766m S	Unspecified Old Level	1947	1:10560
DX	766m S	Coal Level	1914	1:10560
DX	766m S	Coal Level	1921	1:10560
DZ	781m SE	Unspecified Old Level	1947	1:10560
DZ	781m SE	Old Ironstone Level	1914	1:10560
CH	788m S	Coal Level	1876	1:10560
DW	788m SW	Old Coal Level	1914	1:10560
DW	790m SW	Unspecified Disused Level	1975	1:10000
DW	792m SW	Unspecified Old Level	1947	1:10560
DZ	793m SE	Old Ironstone Level	1921	1:10560
DZ	796m SE	Old Ironstone Level	1897	1:10560
DW	799m SW	Old Coal Level	1921	1:10560
-	804m E	Trial Level	1897	1:10560
DW	825m SW	Old Coal Levels	1897	1:10560
64	835m SW	Colliery	1921	1:10560
-	839m NW	Unspecified Disused Mine	1965	1:10560
EH	843m N	Unspecified Mine	1975	1:10000



ID	Location	Land Use	Year of mapping	Mapping scale
-	846m W	Old Coal Level	1921	1:10560
-	847m W	Trial Level	1876	1:10560
-	847m W	Disused Colliery	1897	1:10560
-	849m NW	Disused Colliery	1947	1:10560
-	850m W	Trial Shaft	1876	1:10560
EA	851m SW	Old Trial Shaft	1947	1:10560
EA	851m SW	Old Trial Shaft	1921	1:10560
-	852m W	Old Trial Level	1921	1:10560
-	855m W	Old Trial Level	1947	1:10560
EA	855m SW	Unspecified Disused Shaft	1975	1:10000
-	861m W	Trial Shaft	1897	1:10560
-	868m SW	Trial Level	1897	1:10560
-	876m SW	Unspecified Disused Level	1975	1:10000
DW	888m SW	Old Coal Levels	1897	1:10560
EE	889m SW	Disused Colliery	1947	1:10560
-	899m N	Colliery	1947	1:10560
-	929m W	Old Coal Level	1947	1:10560
-	929m W	Old Coal Level	1897	1:10560
EP	929m SE	Unspecified Old Level	1947	1:10560
EP	929m SE	Old Ironstone Level	1914	1:10560
EP	929m SE	Old Ironstone Level	1921	1:10560
EQ	931m S	Coal Level	1876	1:10560
EP	932m SE	Old Ironstone Level	1897	1:10560
DW	940m SW	Old Coal Levels	1897	1:10560
-	952m SW	Unspecified Old Levels	1897	1:10560
ES	955m S	Unspecified Old Levels	1947	1:10560
ES	955m S	Old Coal Levels	1914	1:10560
ES	959m S	Unspecified Disused Levels	1965	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
ES	963m S	Old Coal Levels	1921	1:10560
DW	982m SW	Trial Shaft	1876	1:10560
ES	984m S	Old Coal Levels	1914	1:10560
ES	984m S	Old Coal Levels	1921	1:10560
ES	985m S	Unspecified Disused Level	1975	1:10000
ES	985m S	Unspecified Disused Level	1965	1:10560
-	987m N	Unspecified Mine	1965	1:10560
-	992m N	Colliery	1921	1:10560
ES	999m S	Unspecified Disused Levels	1975	1:10000
ES	999m S	Unspecified Disused Levels	1965	1:10560

This data is sourced from Ordnance Survey®/Groundsure.

18.4 Underground mining extents

Records within 500m

0

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

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

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

This data is sourced from the British Geological Survey.



18.6 Non-coal mining

Records within 1000m

5

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

Features are displayed on the Mining and ground workings map on [page 133 >](#)

ID	Location	Name	Commodity	Class	Likelihood
9	On site	Not available	Iron Ore (Bedded)	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
10	On site	Not available	Iron Ore (Bedded)	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
11	On site	Not available	Iron Ore (Bedded)	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
C	On site	Not available	Iron Ore (Bedded)	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
D	On site	Not available	Iron Ore (Bedded)	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.

This data is sourced from the British Geological Survey.



18.7 JPB mining areas

Records on site

0

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

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m

0

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

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m

0

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

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m

1

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

Location	Mineral
On site	Ironstone

This data is sourced from Groundsure.



18.11 BGS mine plans

Records within 500m**0**

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

This data is sourced from Groundsure.

18.12 Coal mining

Records on site**1**

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

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

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site**0**

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

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

18.14 Gypsum areas

Records on site**0**

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site**0**

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.



18.16 Clay mining

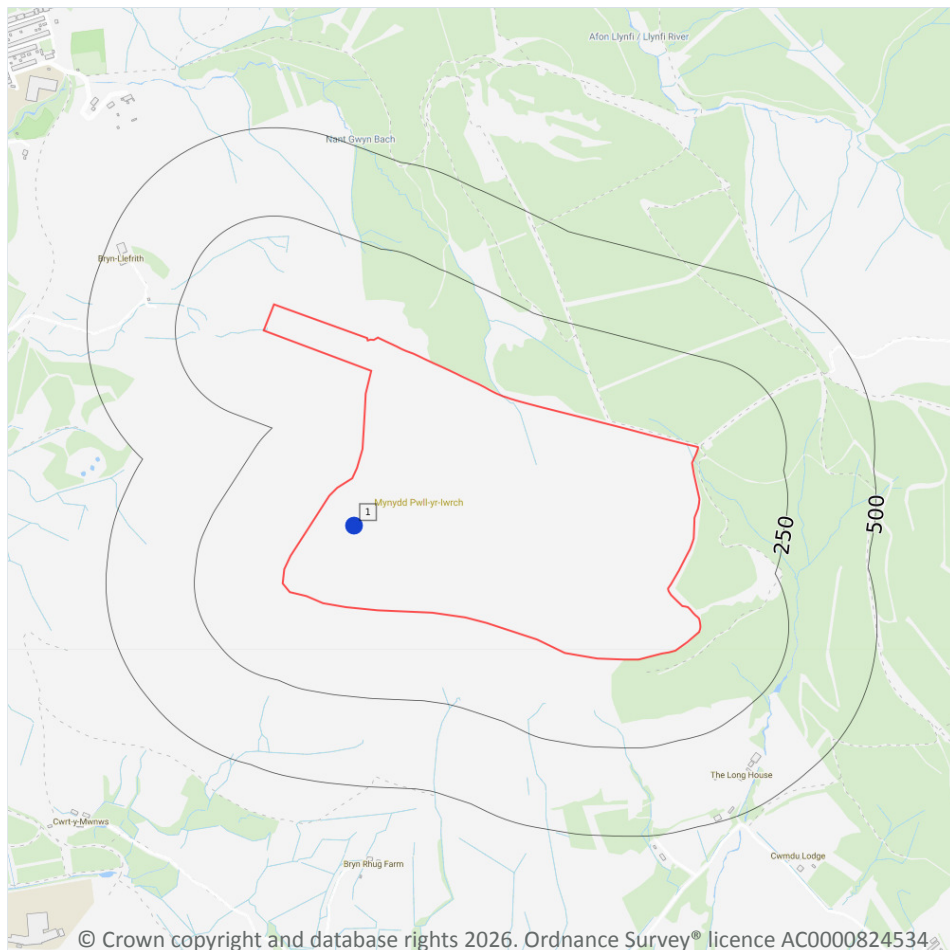
Records on site	0
-----------------	---

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

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



19 Ground cavities and sinkholes



- Site Outline
- Search buffers in metres (m)
- Natural cavities (Area)
- Natural cavities (Point)
- Mining cavities
- Reported recent incidents
- Historical incidents

19.1 Natural cavities

Records within 500m

1

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.

Features are displayed on the Ground cavities and sinkholes map on [page 172](#) >

ID	Location	Details
1	On site	Type: Gulls/Fissures due to Cambering x 1 Superficial Geology: None Bedrock Geology: Upper Coal Measures

This data is sourced from Stantec UK Ltd.



19.2 Mining cavities

Records within 1000m**0**

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

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m**0**

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

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m**0**

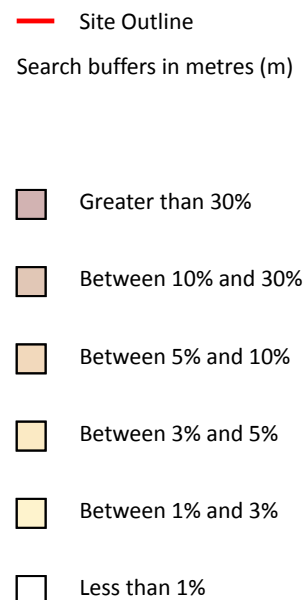
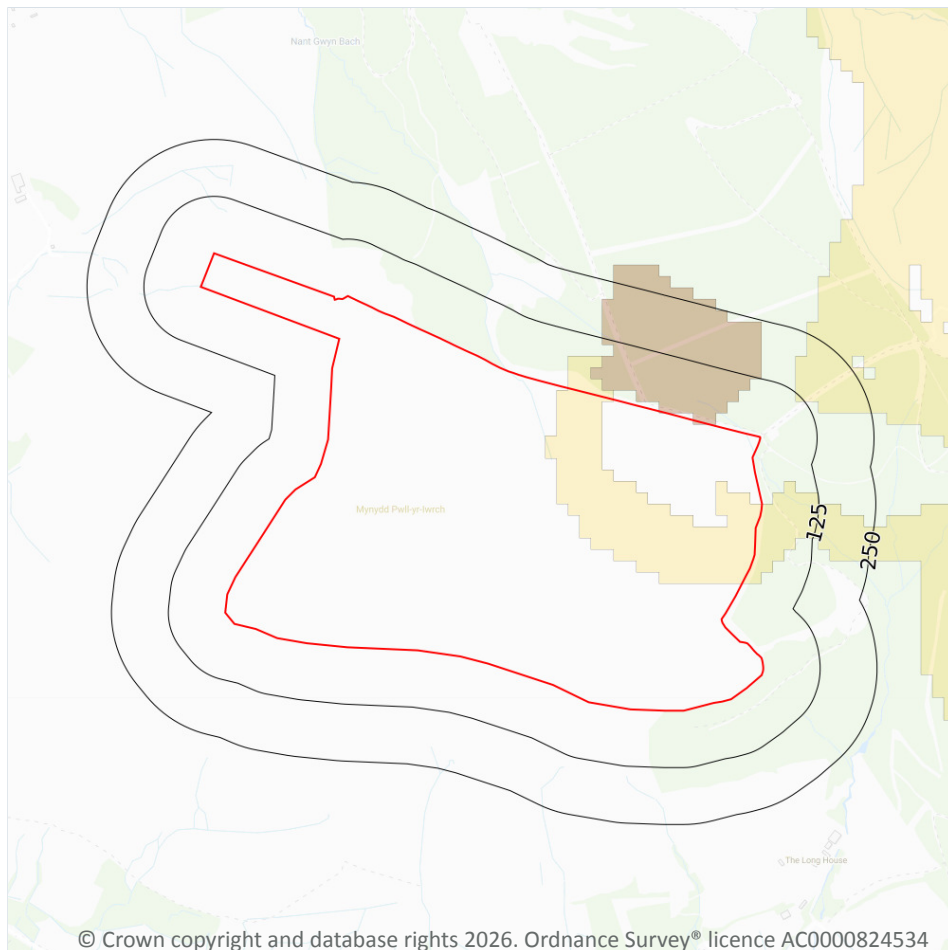
This dataset comprises an extract of 1:10,560, 1:10,000, 1:2,500 and 1:1,250 scale historical Ordnance Survey® maps held by Groundsure, dating back to the 1840s. It shows shakeholes, deneholes and other 'holes' as noted on these maps. Dene holes are medieval chalk extraction pits, usually comprising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

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

This data is sourced from Groundsure.



20 Radon



20.1 Radon

Records on site

3

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 174 >](#)

Location	Estimated properties affected	Radon Protection Measures required
On site	Between 1% and 3%	None



Location	Estimated properties affected	Radon Protection Measures required
On site	Less than 1%	None
On site	Between 10% and 30%	Full

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



21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m

56

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 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg



Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg



Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
8m S	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
9m S	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
13m SW	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
15m S	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
20m S	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
22m N	35 - 45 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg



Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
26m NW	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
28m NE	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
30m S	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
35m NE	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
35m W	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
37m S	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
39m S	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
46m S	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

This data is sourced from the British Geological Survey.

21.3 BGS Measured Urban Soil Chemistry

Records within 50m

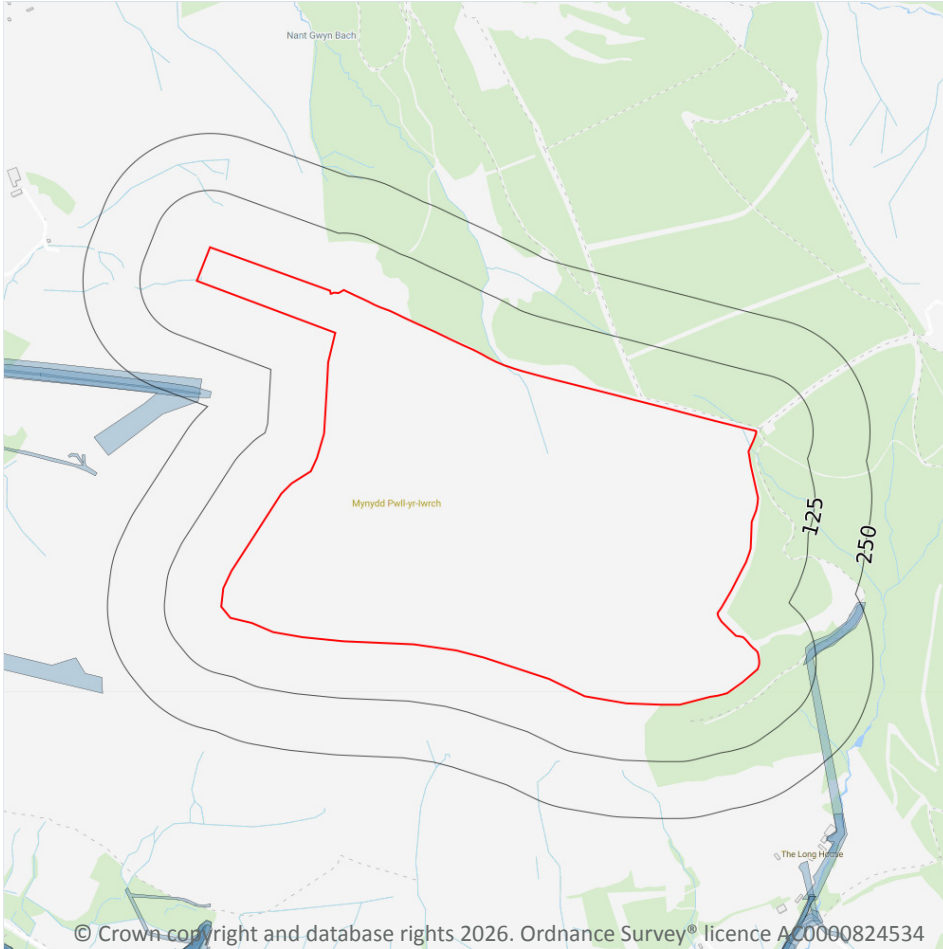
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The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².

This data is sourced from the British Geological Survey.



22 Railway infrastructure and projects



- Site Outline
- Search buffers in metres (m)
- C2 Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

22.1 Underground railways (London)

Records within 250m

0

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

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m

0

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



This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m

0

Railway tunnels taken from contemporary Ordnance Survey® mapping.

This data is sourced from the Ordnance Survey®.

22.4 Historical railway and tunnel features

Records within 250m

5

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

Features are displayed on the Railway infrastructure and projects map on [page 180](#) >

Location	Land Use	Year of mapping	Mapping scale
98m E	Tramway Sidings	1921	10560
104m E	Tramway Sidings	1921	10560
198m S	Railway Sidings	1947	10560
217m S	Railway Sidings	1965	10560
228m S	Railway Sidings	1962	2500

This data is sourced from Ordnance Survey®/Groundsure.

22.5 Royal Mail tunnels

Records within 250m

0

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

This data is sourced from Groundsure/the Postal Museum.



22.6 Historical railways

Records within 250m

0

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

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m

0

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

This data is sourced from Ordnance Survey® and OpenStreetMap.

22.8 Crossrail 2

Records within 500m

0

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

This data is sourced from publicly available information by Groundsure.

22.9 HS2

Records within 500m

0

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

This data is sourced from HS2 Ltd.



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> ↗.

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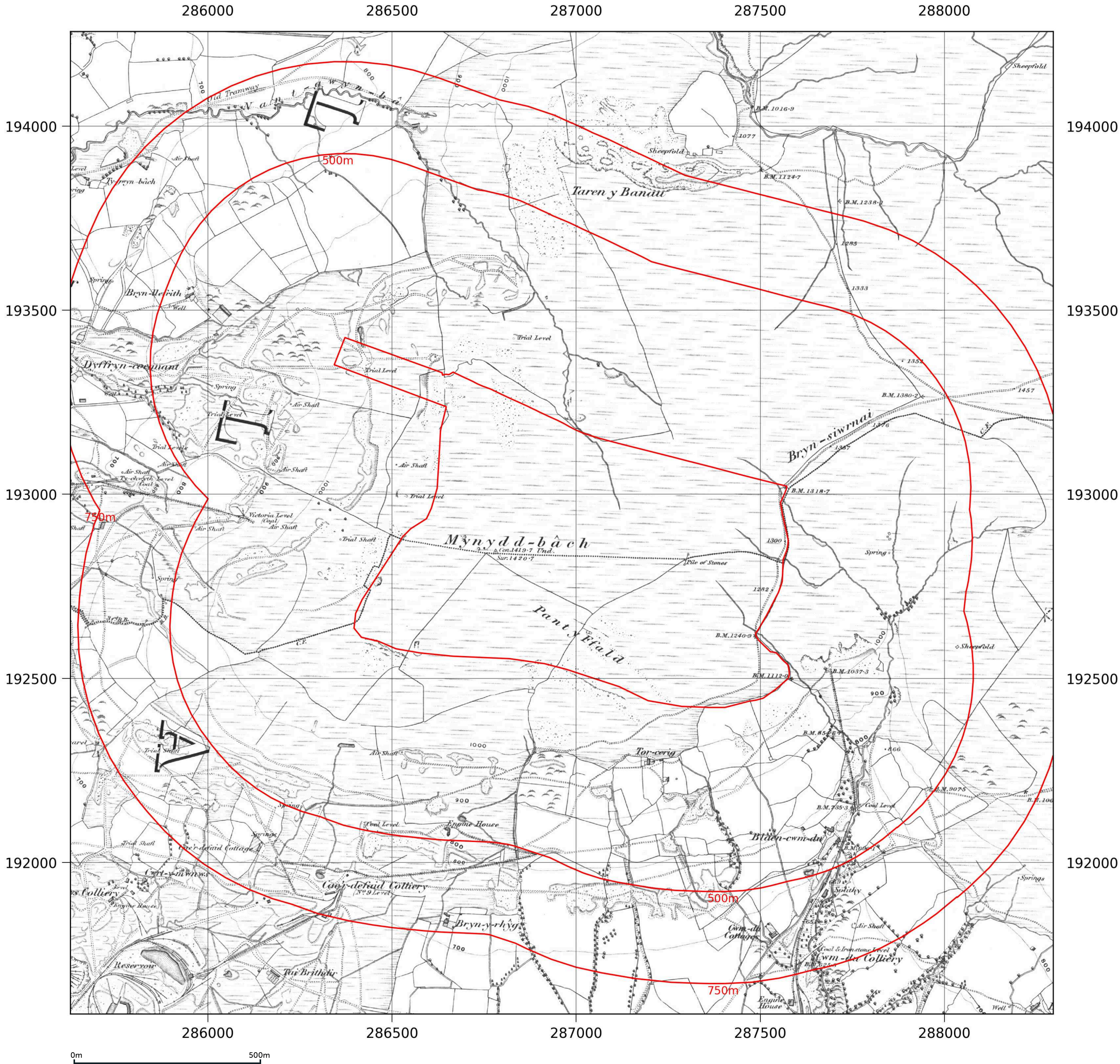
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Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

Map name:	County Series
Map date:	1876
Scale:	1:10,560
Printed at:	1:10,560

Date: 1876
Surveyed: 1876
Revised: 1876

North arrow pointing up, with N, S, E, W labels.

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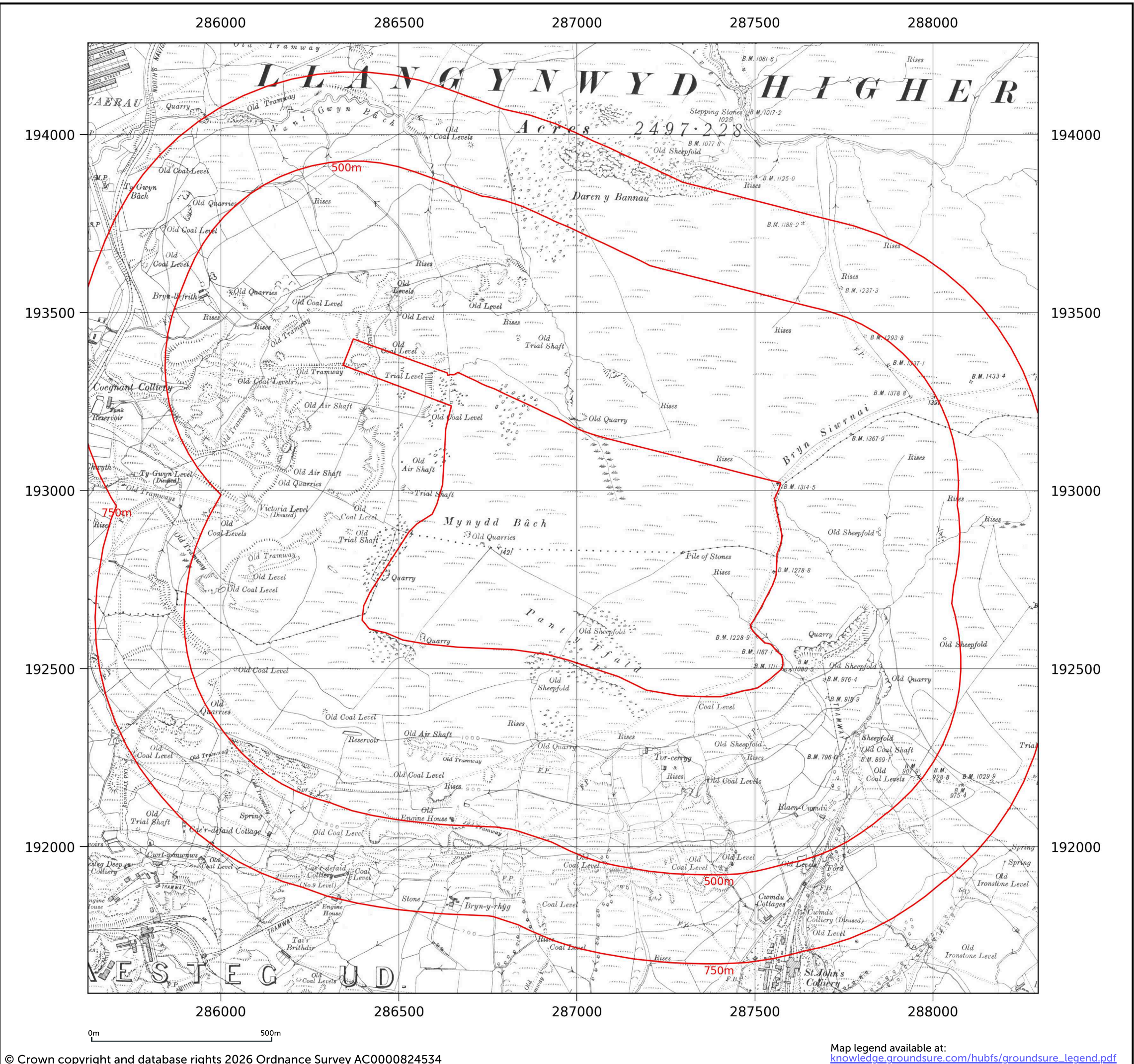


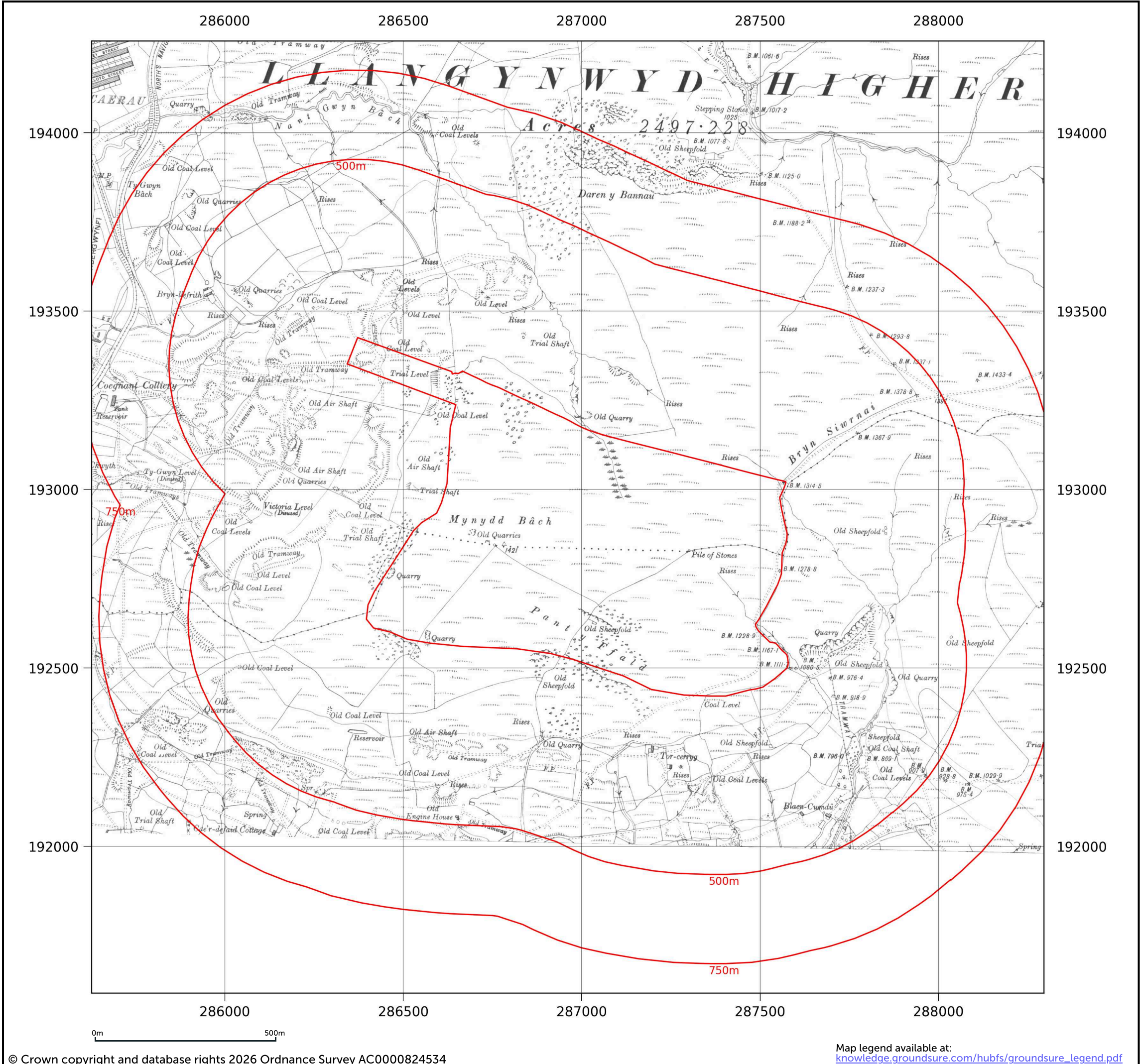
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Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

Map name:	County Series
Map date:	1921
Scale:	1:10,560
Printed at:	1:10,560

Date: 1921
Surveyed: 1875
Revised: 1921

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Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

Map name:	County Series
Map date:	1921
Scale:	1:10,560
Printed at:	1:10,560



Date: 1921
Surveyed: 1875
Revised: 1921
Edition: 1921

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Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

Map name:	County Series
Map date:	1947
Scale:	1:10,560
Printed at:	1:10,560

Date: 1947
Surveyed: 1875
Revised: 1947

Date: 1947
Surveyed: 1875
Revised: 1947

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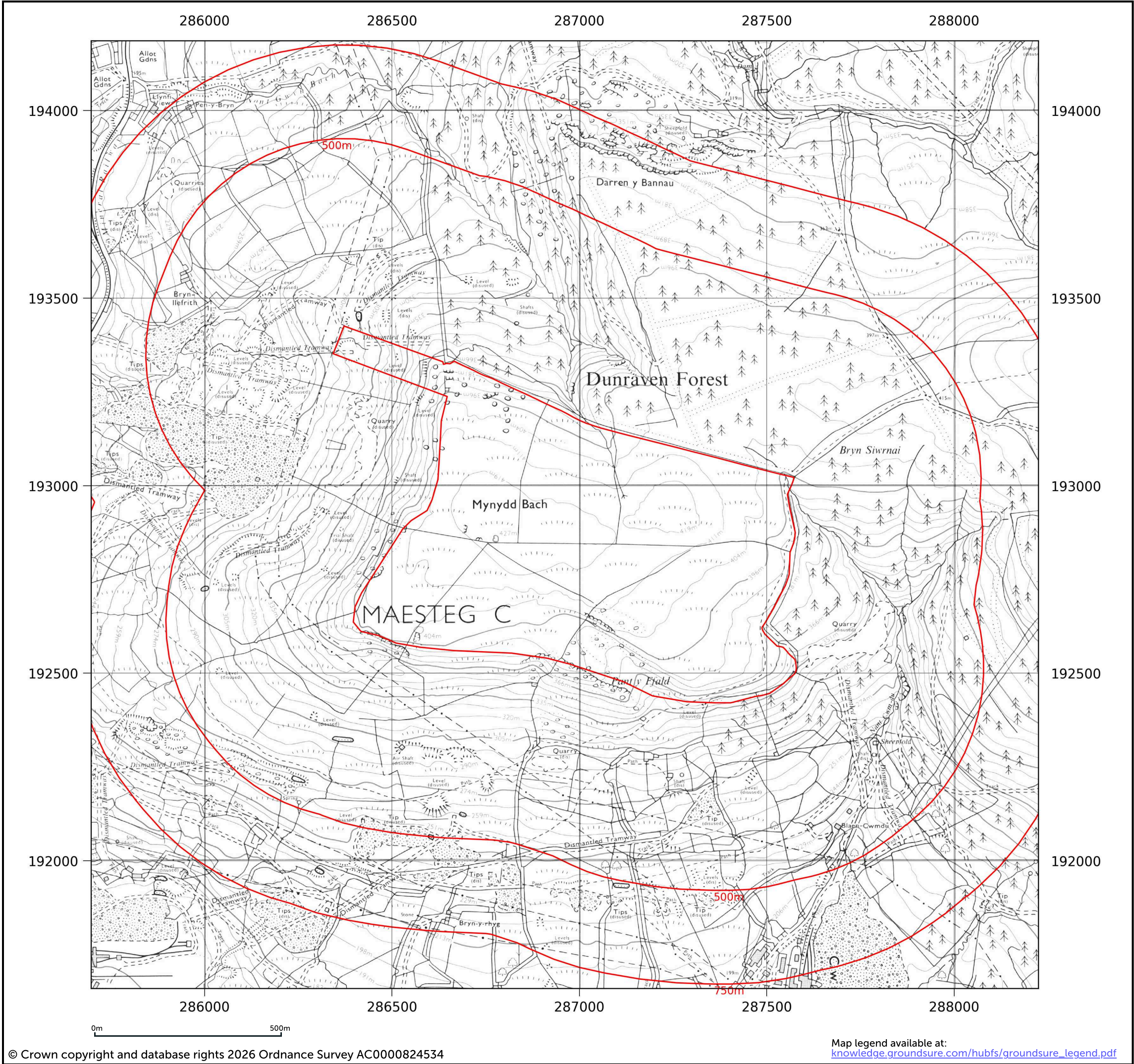
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Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

Map name:	Provisional
Map date:	1965
Scale:	1:10,560
Printed at:	1:10,560

Date: 1965
Surveyed: 1965
Revised: 1965

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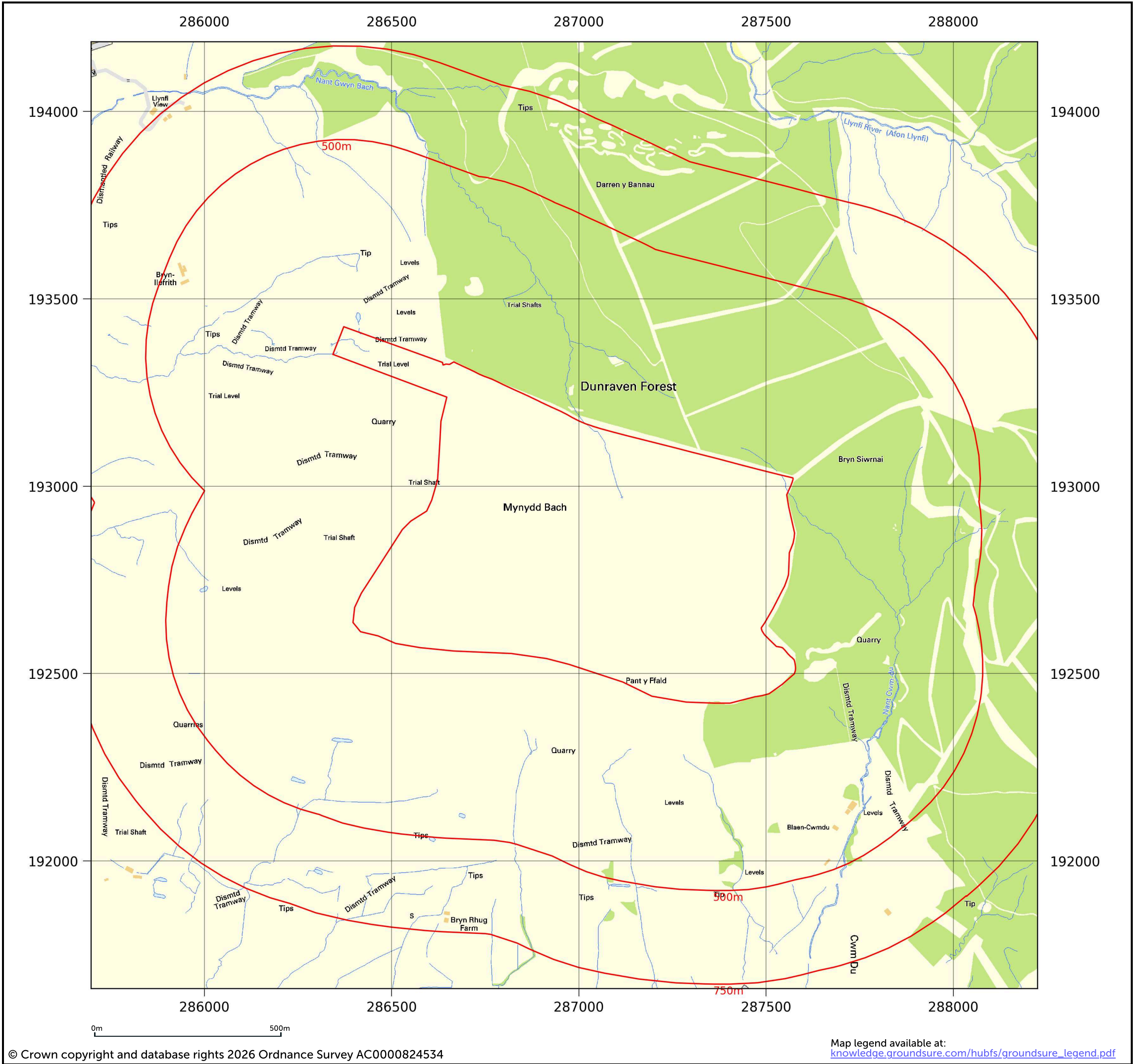
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Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

Map name:	National Grid
Map date:	1975
Scale:	1:10,000
Printed at:	1:10,000



Date: 1975
Surveyed: 1972
Revised: 1975
Copyright: 1975
Levelled: 1964

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Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

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



Date: 2001

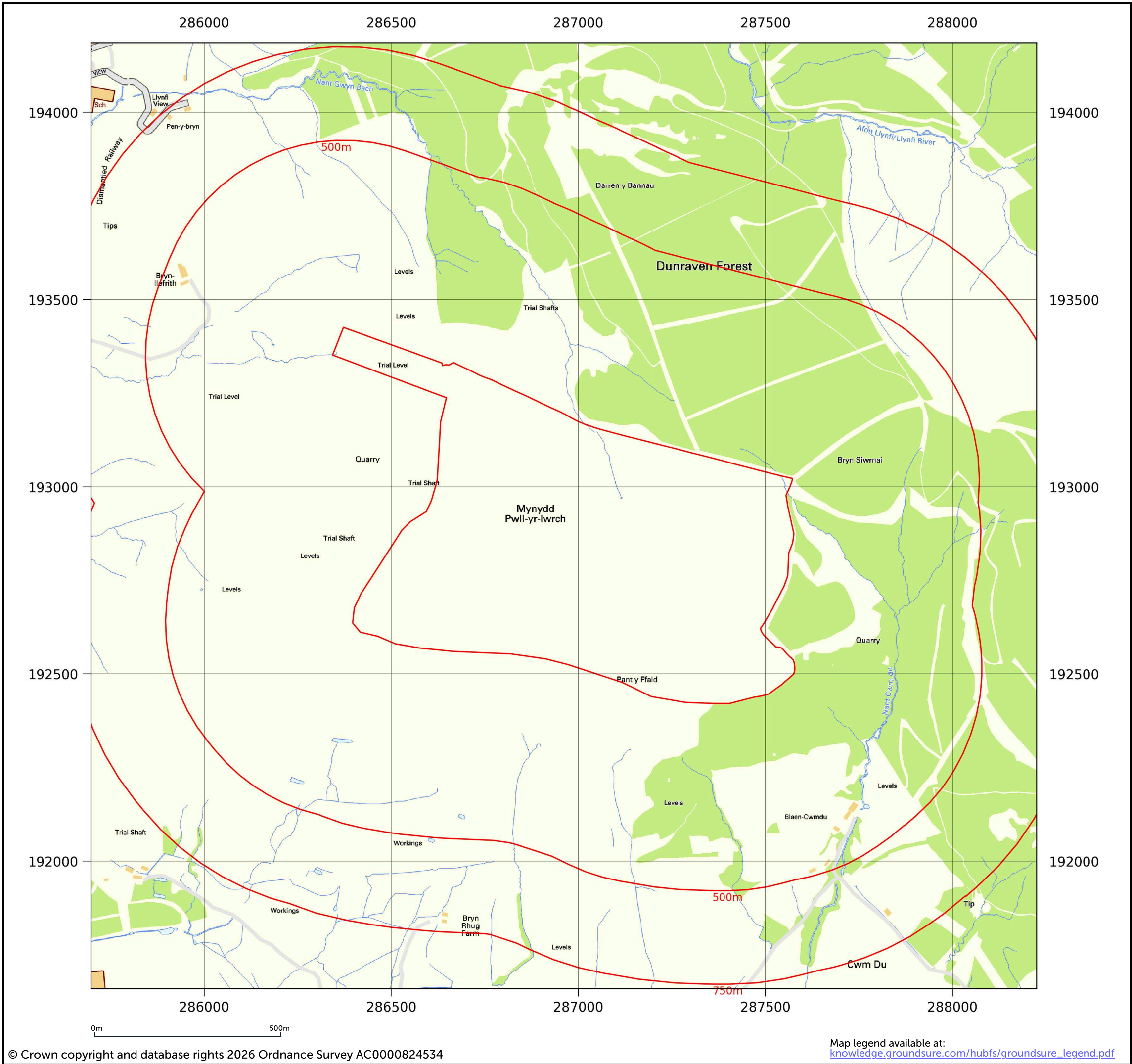
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Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

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

Date: 2010

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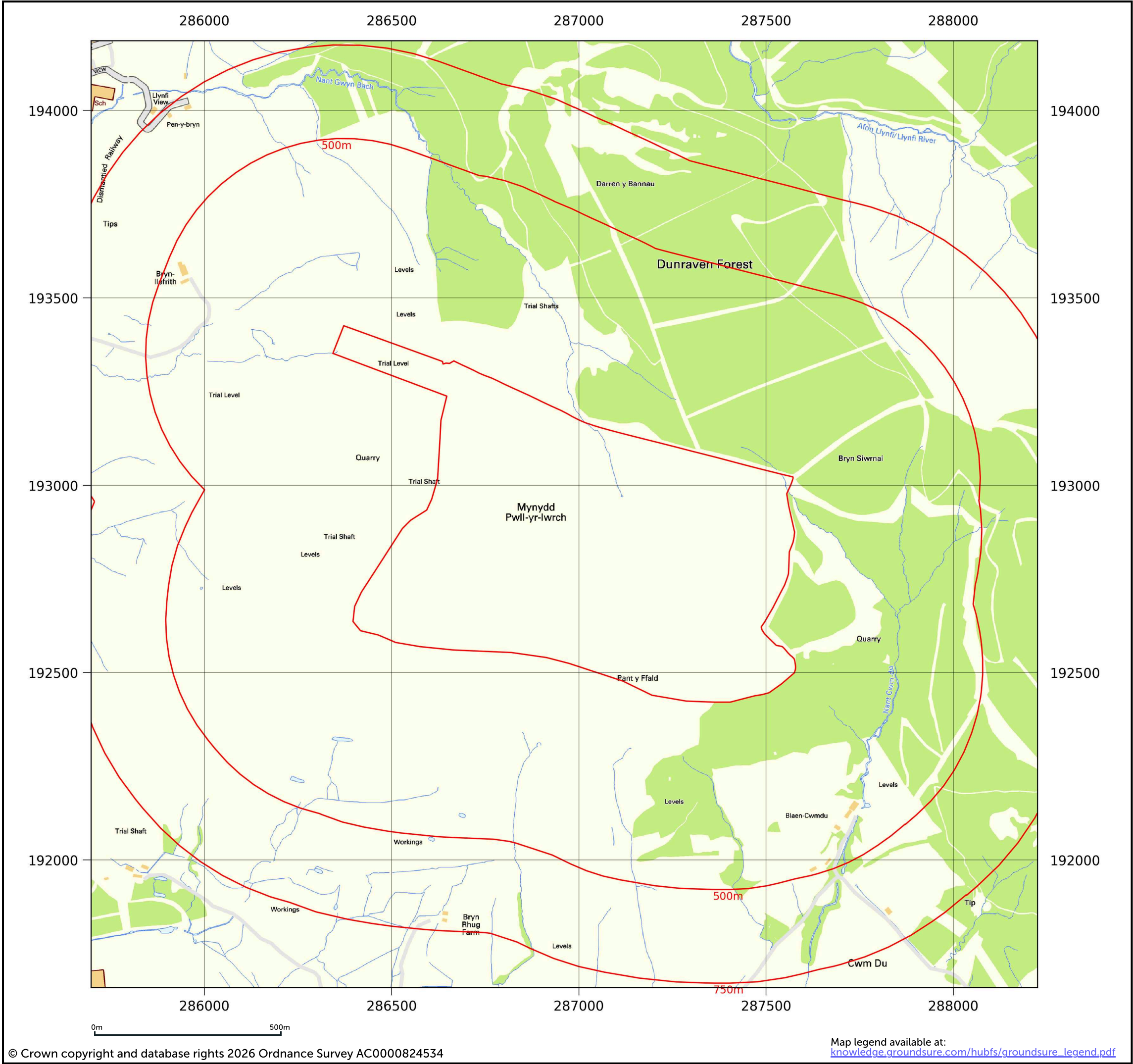


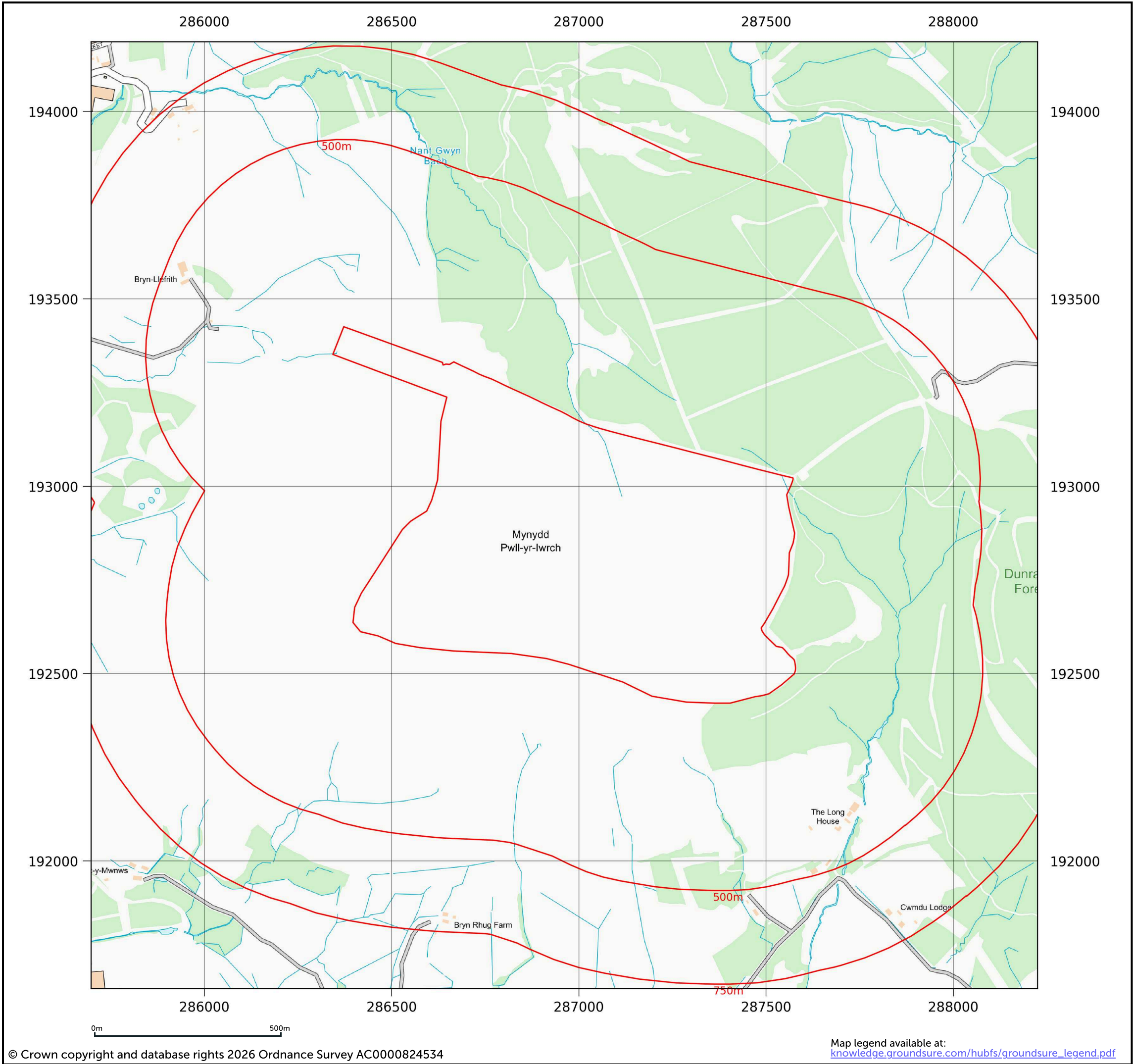
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Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

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

Date: 2015

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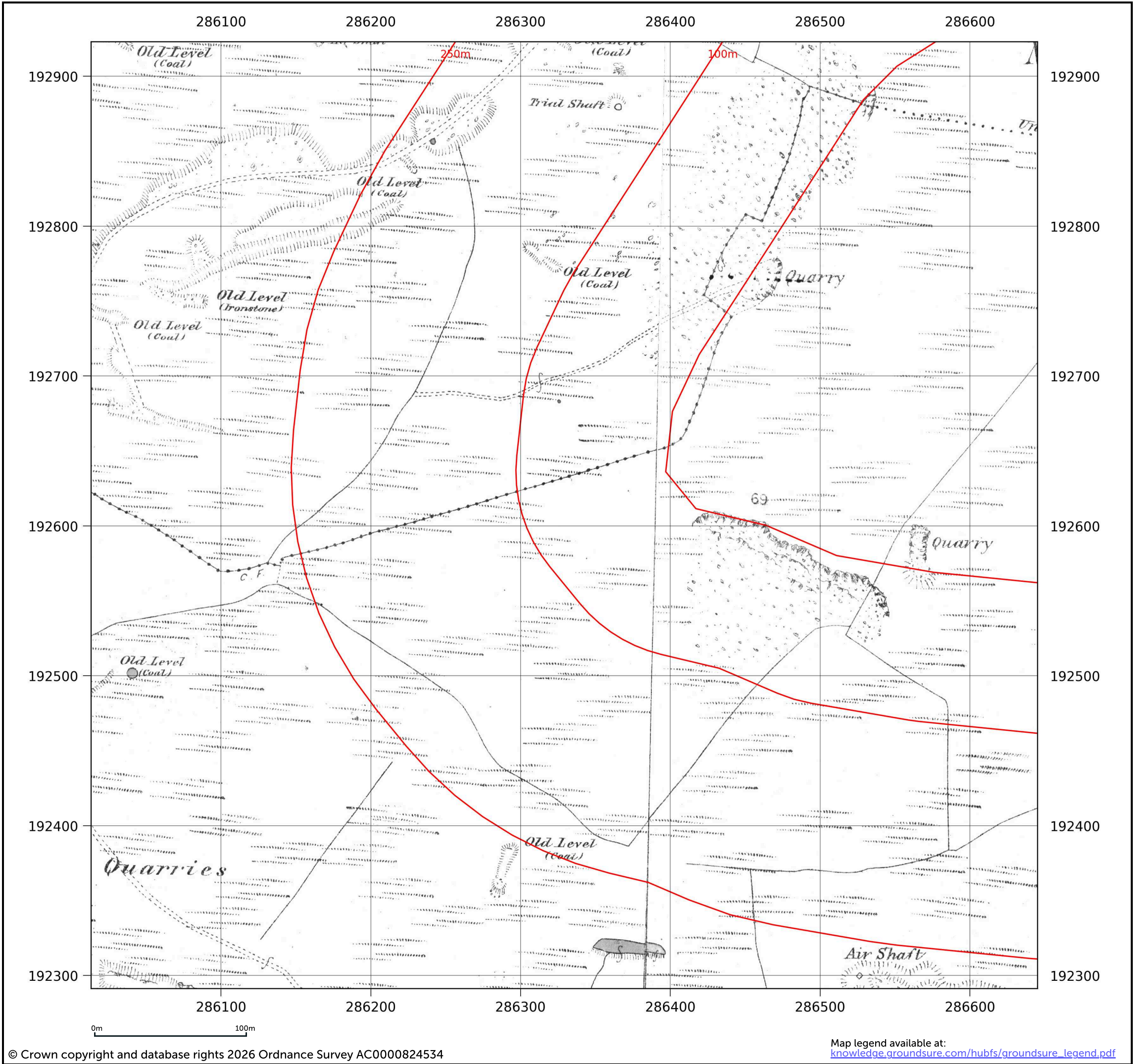
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Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

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



Date: 2025

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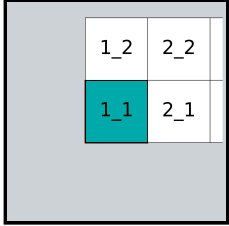
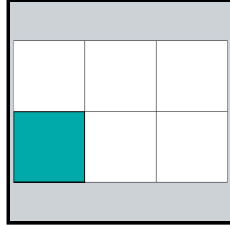


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Production date:	18 June 2026

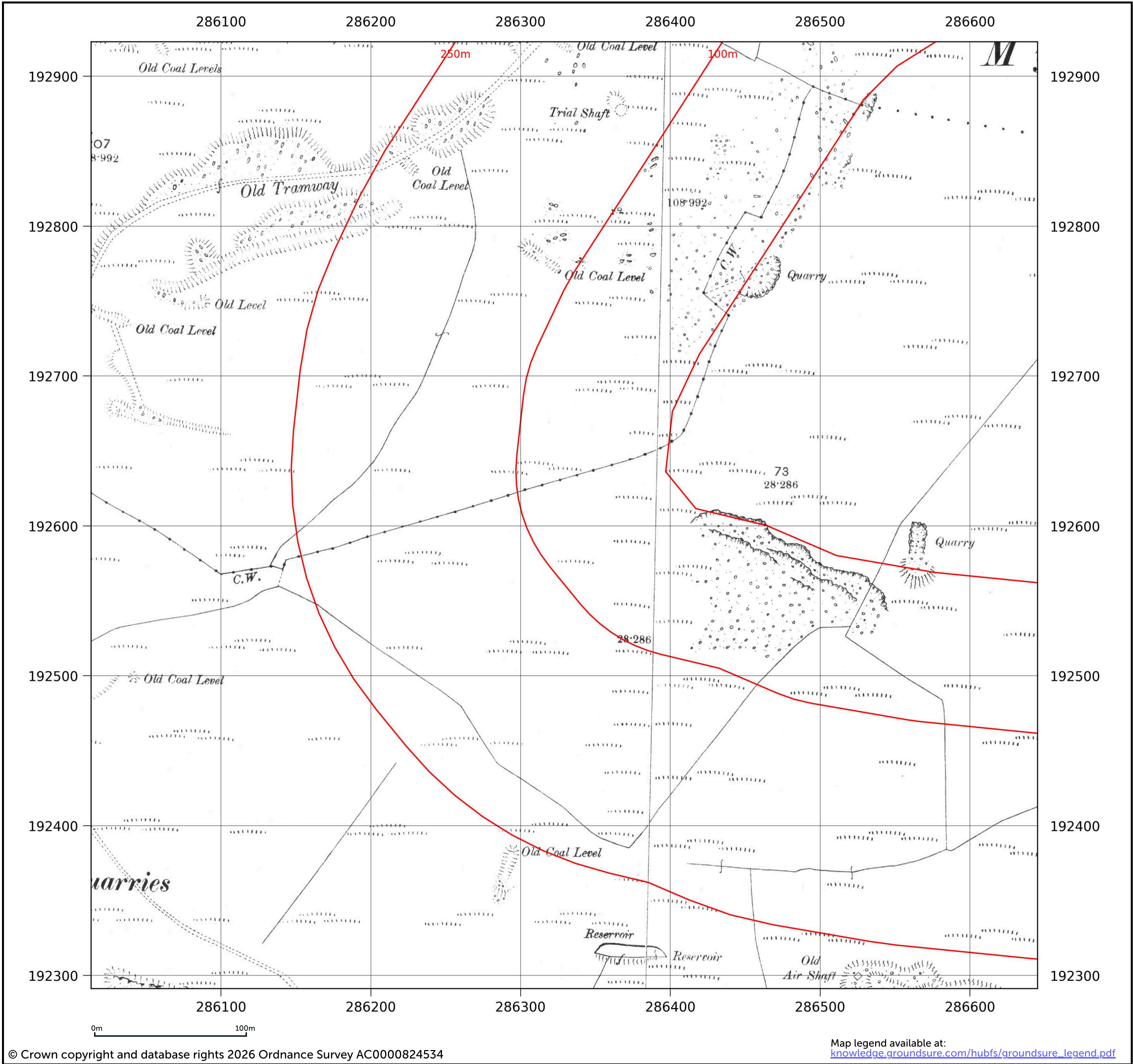
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Map date:	1877-1878
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Printed at:	1:2,500



Date: 1878 Surveyed: 1878 Revised: 1878	Date: 1877 Surveyed: 1877 Revised: 1877
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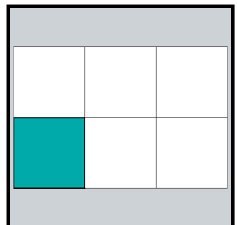


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Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

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Map date:	1899
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Printed at:	1:2,500

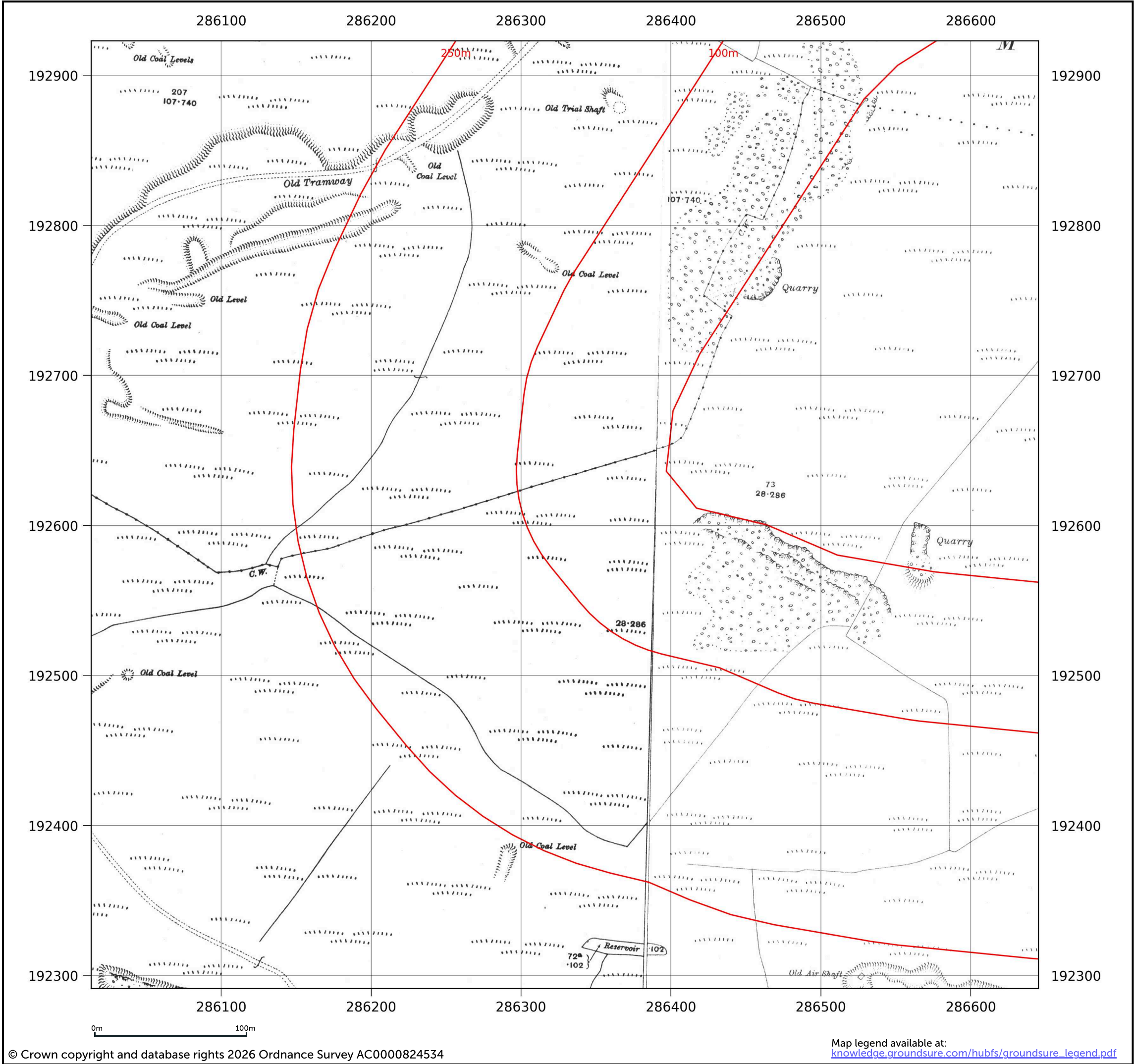
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Surveyed: 1899
Revised: 1899

Date: 1899
Surveyed: 1899
Revised: 1899



1_2	2_2
1_1	2_1

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Site details:

Client ref:

Report ref:

Grid ref:

Production date:

Pwll y Lwrch - Northern Array

P125019UK001

WSP-TWM-EC5-OAJ-Q37

287008.97, 192839.99

18 June 2026

Map name:

Map date:

Scale:

Printed at:

County Series

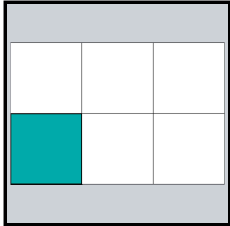
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1:2,500

1:2,500

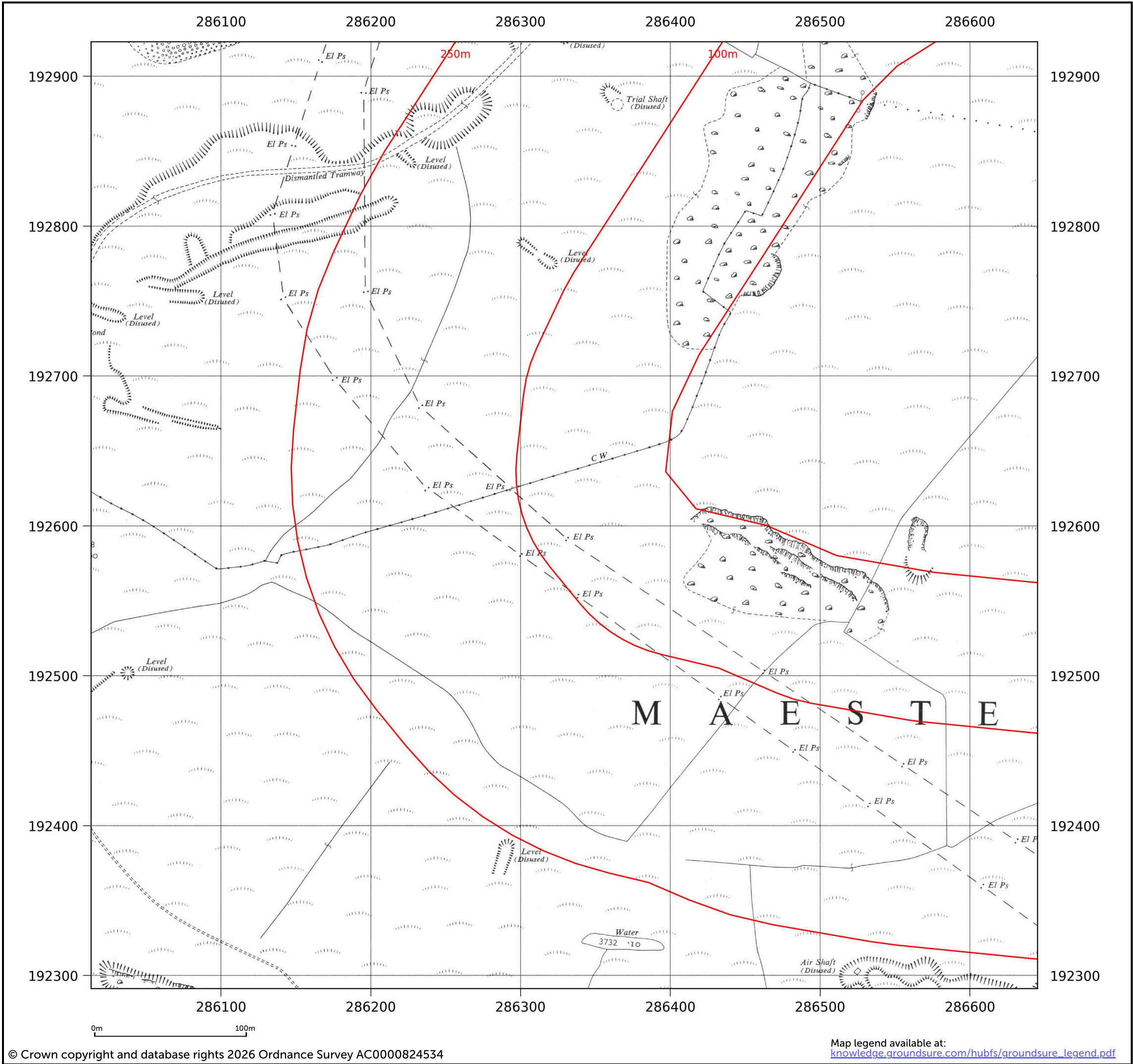
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Surveyed: 1919
Revised: 1919

Date: 1919
Surveyed: 1919
Revised: 1919



1_2	2_2
1_1	2_1

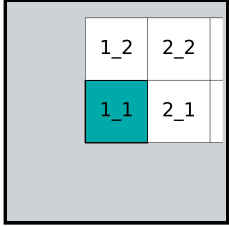
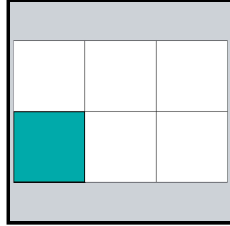
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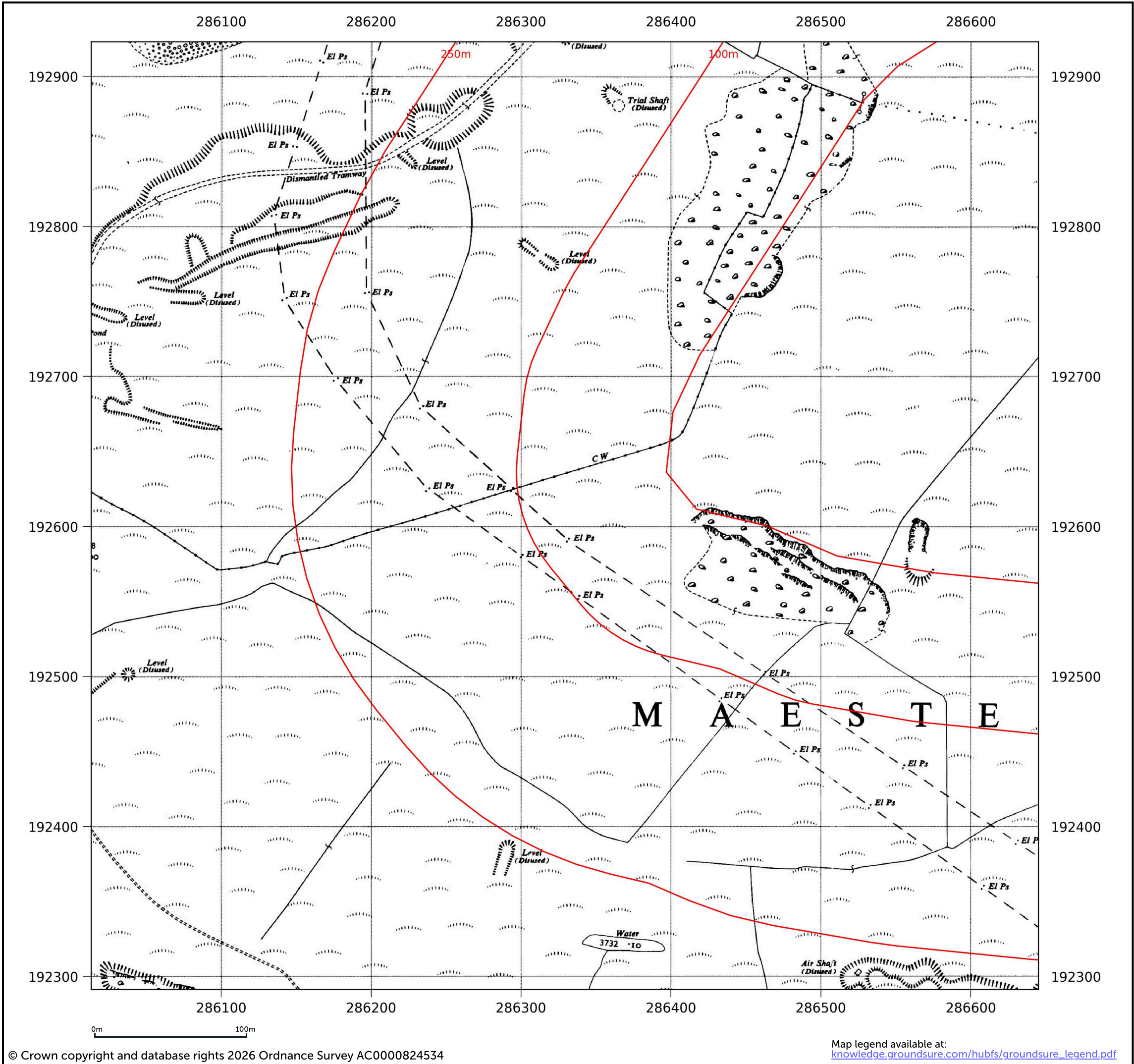
Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

Map name:	National Grid
Map date:	1962
Scale:	1:2,500
Printed at:	1:2,500

Date: 1962
Surveyed: 1961
Revised: 1961
Copyright: 1962
Levelled: 1957



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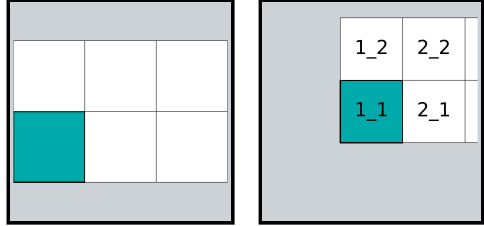


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Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

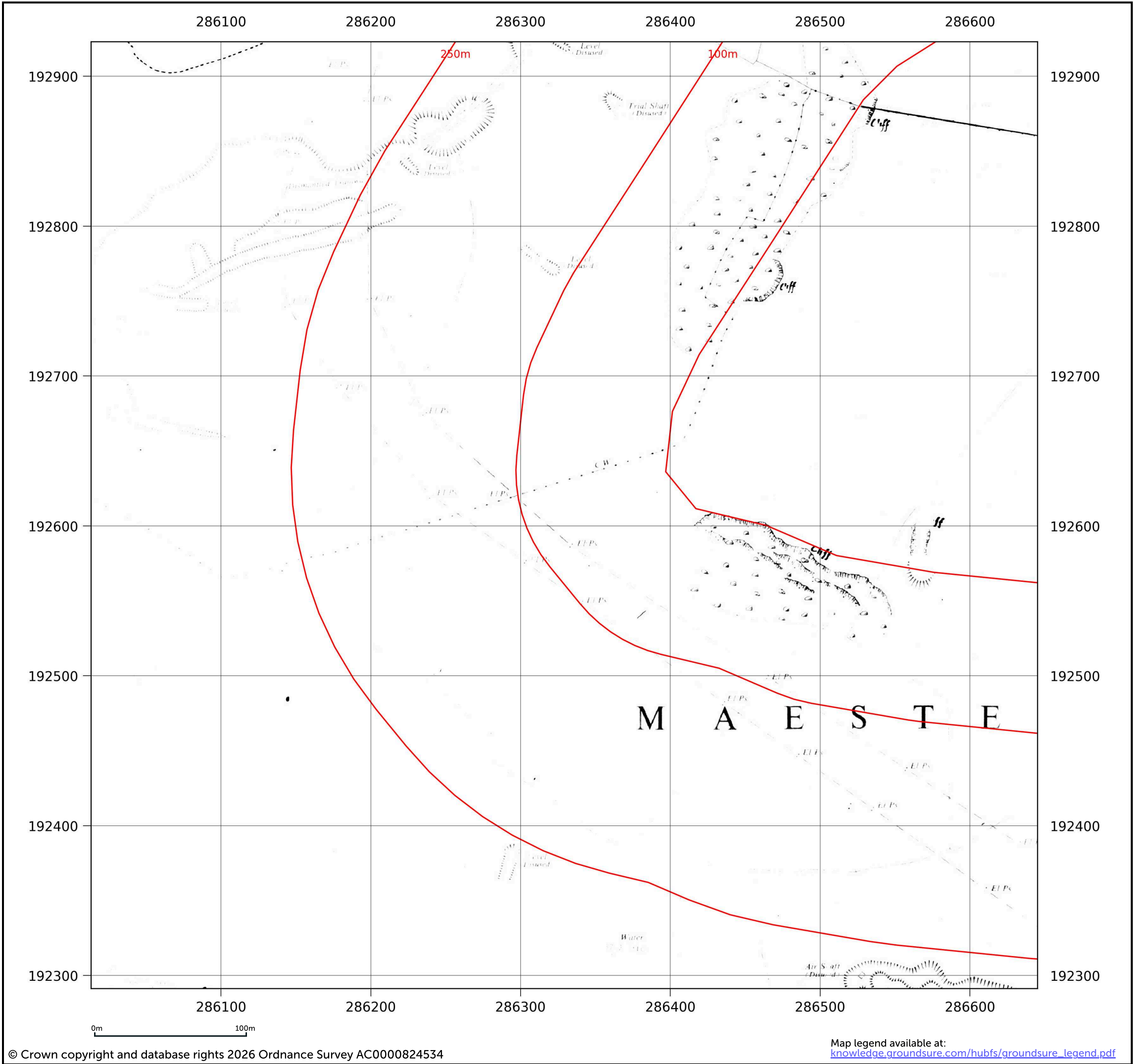
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Map date:	1962
Scale:	1:2,500
Printed at:	1:2,500



Date: 1962



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Site details:

Pwll y Lwrch - Northern Array

Client ref:

P125019UK001

Report ref:

WSP-TWM-EC5-OAJ-Q37

Grid ref:

287008.97, 192839.99

Production date:

18 June 2026

Map name:

National Grid

Map date:

1973

Scale:

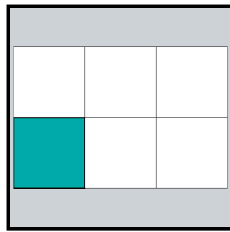
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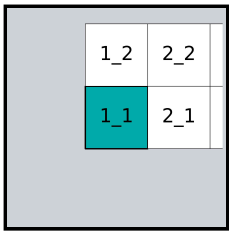
Printed at:

1:2,500

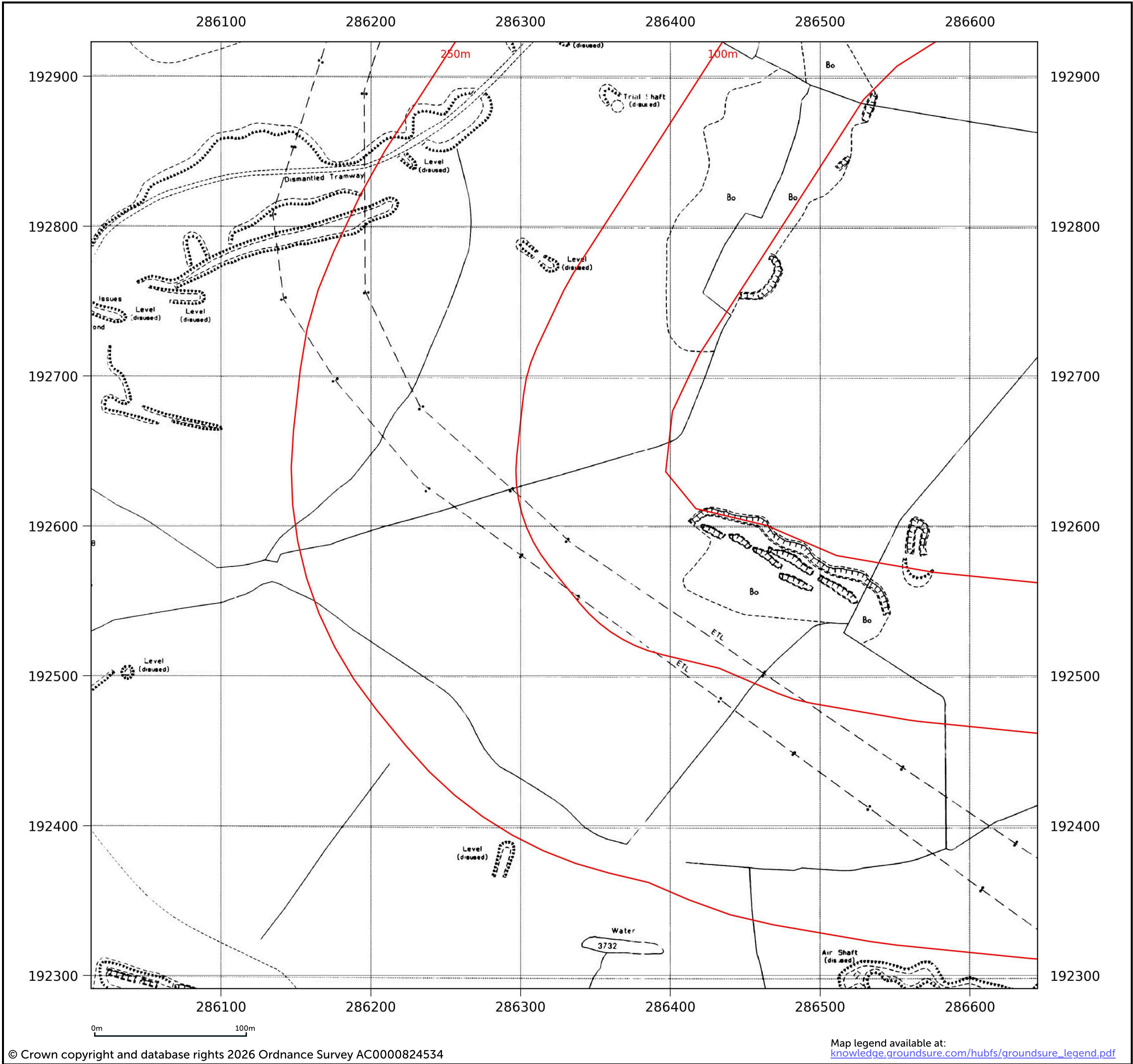


Date: 1973





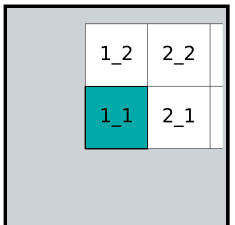
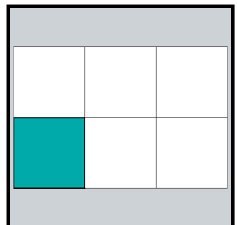
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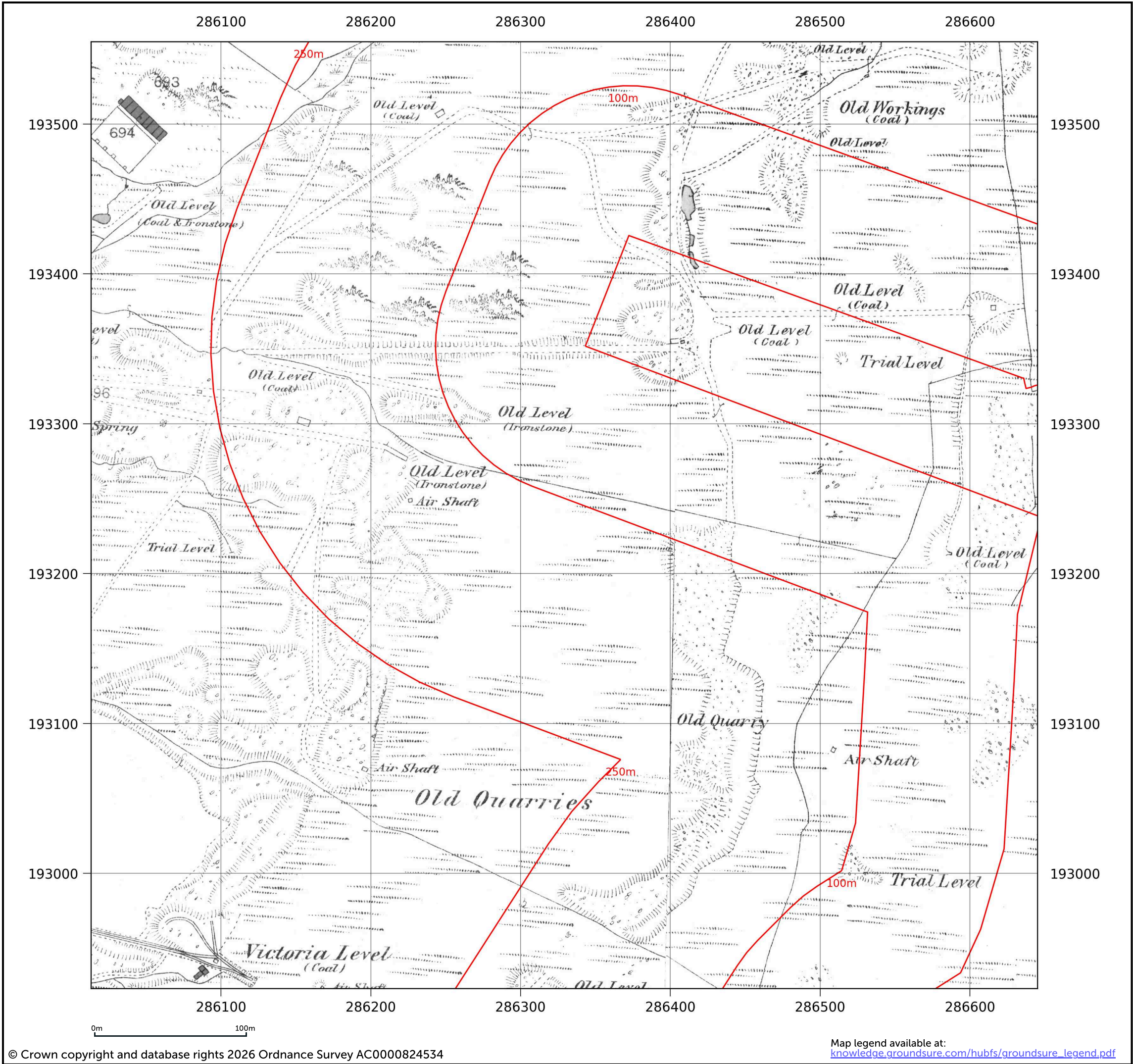
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Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

Map name:	National Grid
Map date:	1993
Scale:	1:2,500
Printed at:	1:2,500

Date: 1993
Copyright: 1993



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Site details:

Client ref:

Report ref:

Grid ref:

Production date:

Pwll y Lwrch - Northern Array

P125019UK001

WSP-TWM-EC5-OAJ-Q37

287008.97, 192839.99

18 June 2026

Map name:

Map date:

Scale:

Printed at:

County Series

1877-1878

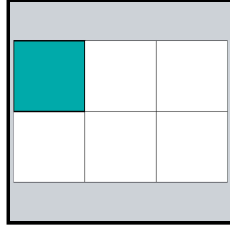
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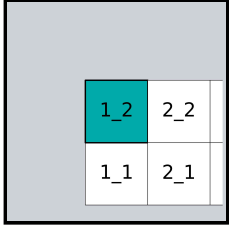
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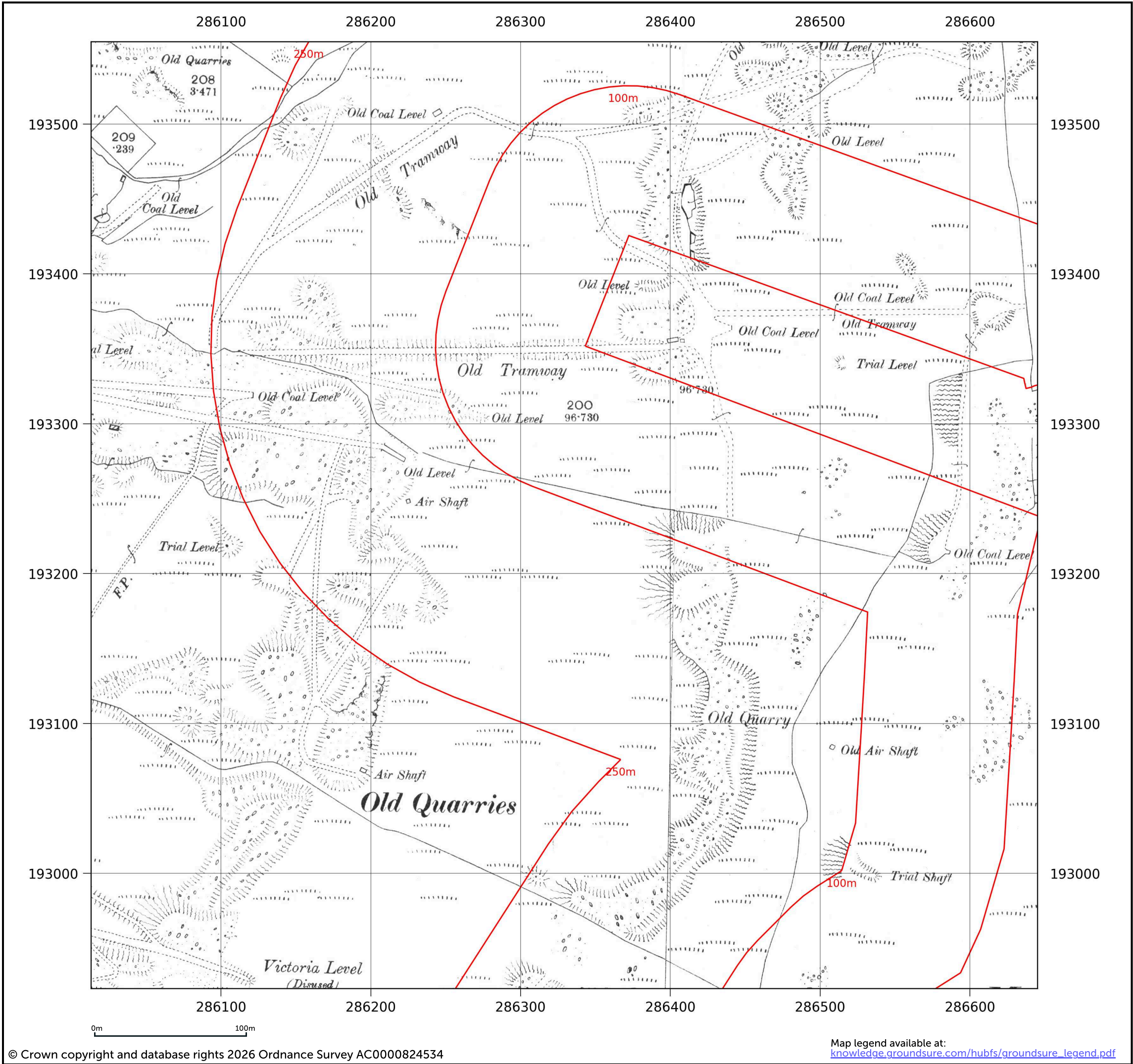
Date: 1878
Surveyed: 1878
Revised: 1878

Date: 1877
Surveyed: 1877
Revised: 1877





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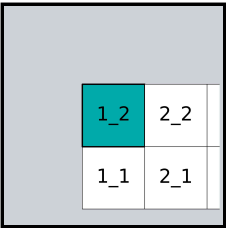
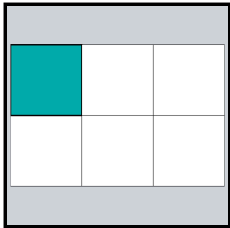


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Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

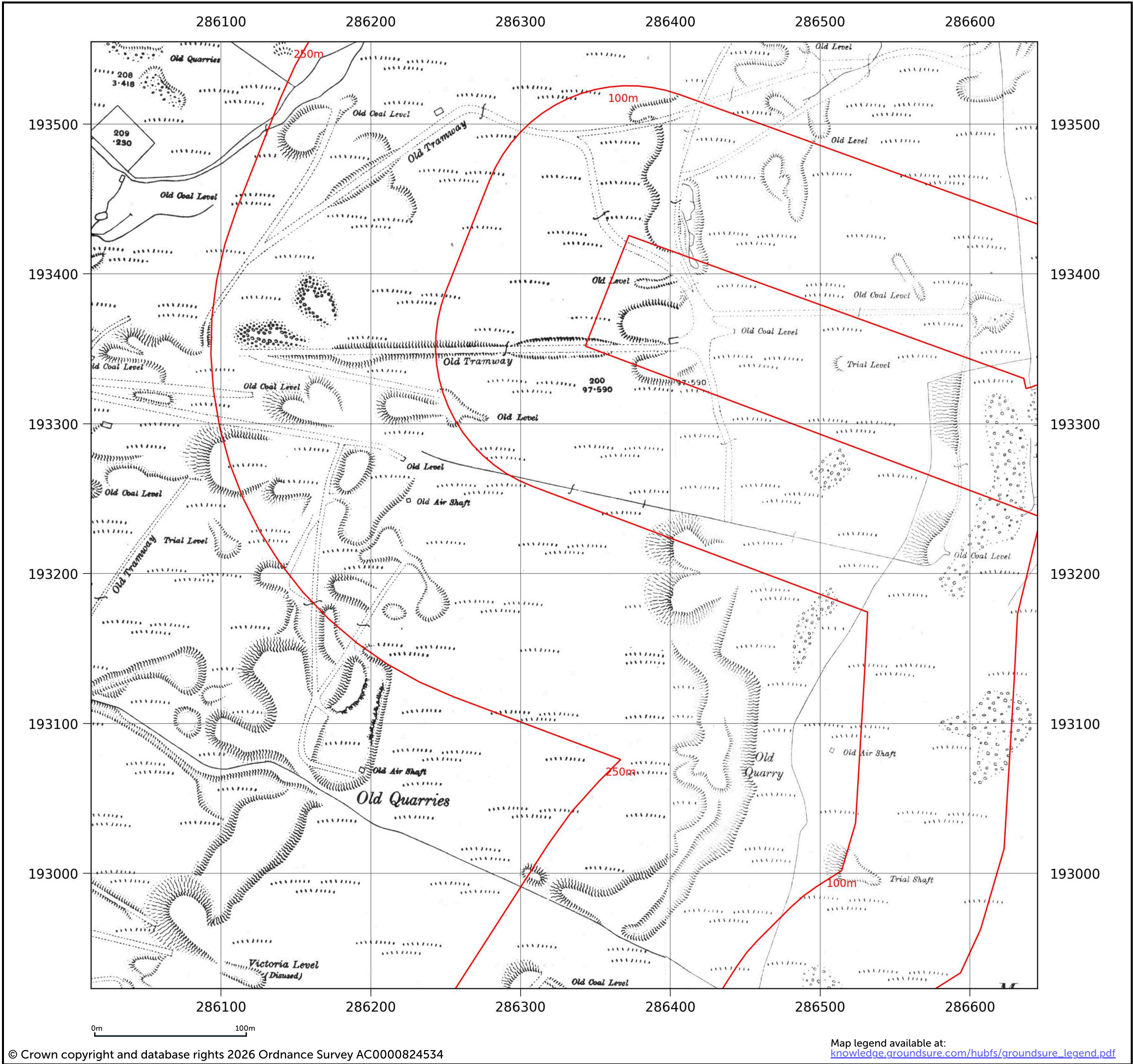
Map name:	County Series
Map date:	1899
Scale:	1:2,500
Printed at:	1:2,500



Date: 1899 Surveyed: 1899 Revised: 1899	Date: 1899 Surveyed: 1899 Revised: 1899
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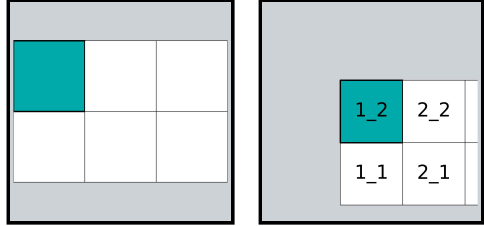


Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

Map name:	County Series
Map date:	1919
Scale:	1:2,500
Printed at:	1:2,500



Date: 1919 Surveyed: 1919 Revised: 1919	Date: 1919 Surveyed: 1919 Revised: 1919
---	---



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Site details:

Client ref:

Report ref:

Grid ref:

Production date:

Pwll y Lwrch - Northern Array

P125019UK001

WSP-TWM-EC5-OAJ-Q37

287008.97, 192839.99

18 June 2026

Map name:

Map date:

Scale:

Printed at:

National Grid

1962

1:2,500

1:2,500

Date: 1962

Date: 1962

Surveyed: 1961

Revised: 1961

Copyright: 1962

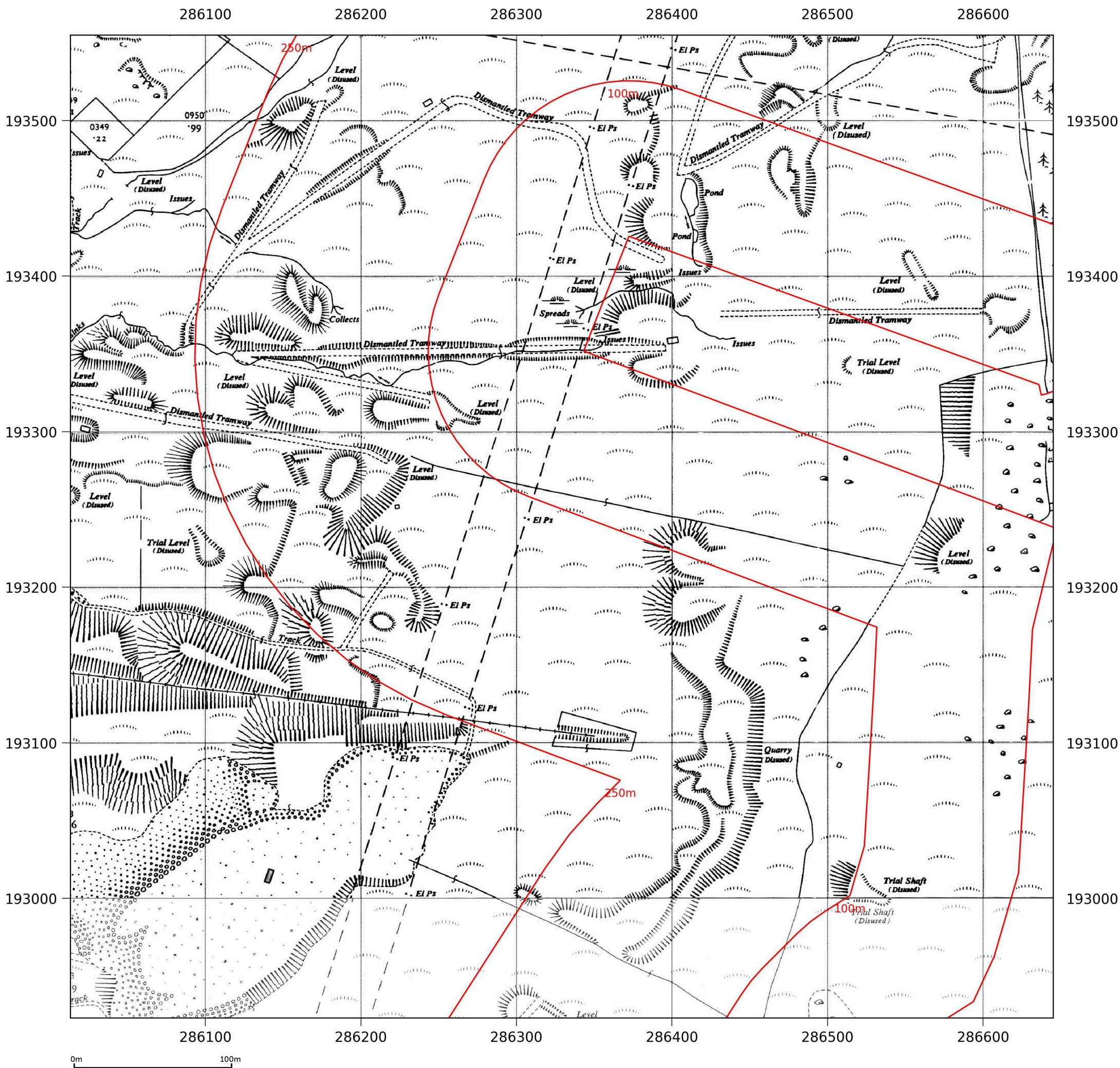
Levelled: 1957

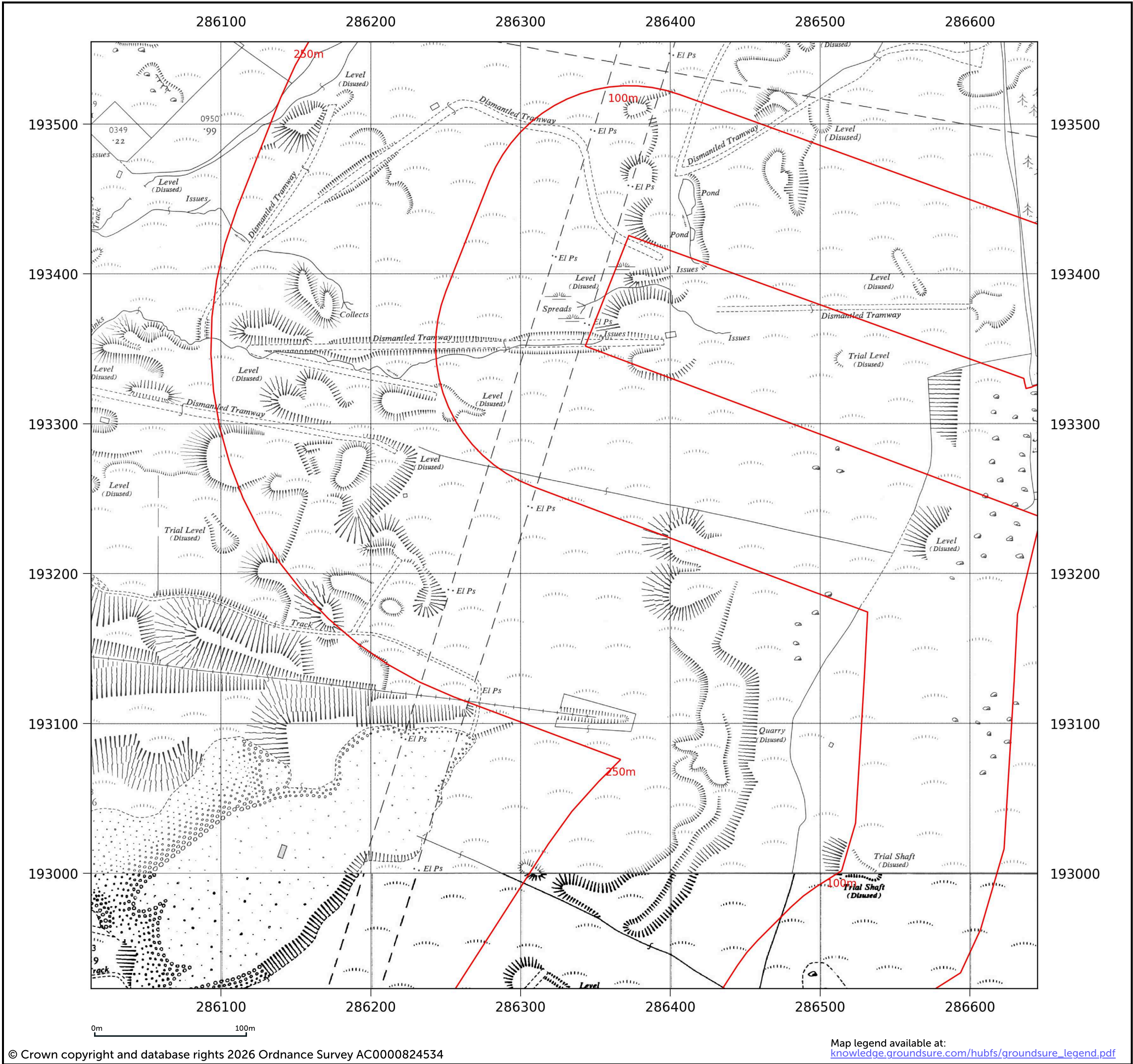
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2_2

1_1

2_1



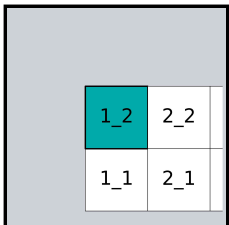
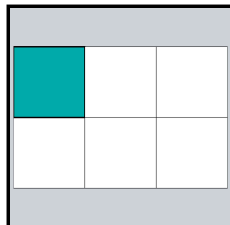


Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

Map name:	National Grid
Map date:	1962
Scale:	1:2,500
Printed at:	1:2,500

Date: 1962
Surveyed: 1961
Revised: 1961
Copyright: 1962
Levelled: 1950

Date: 1962



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Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

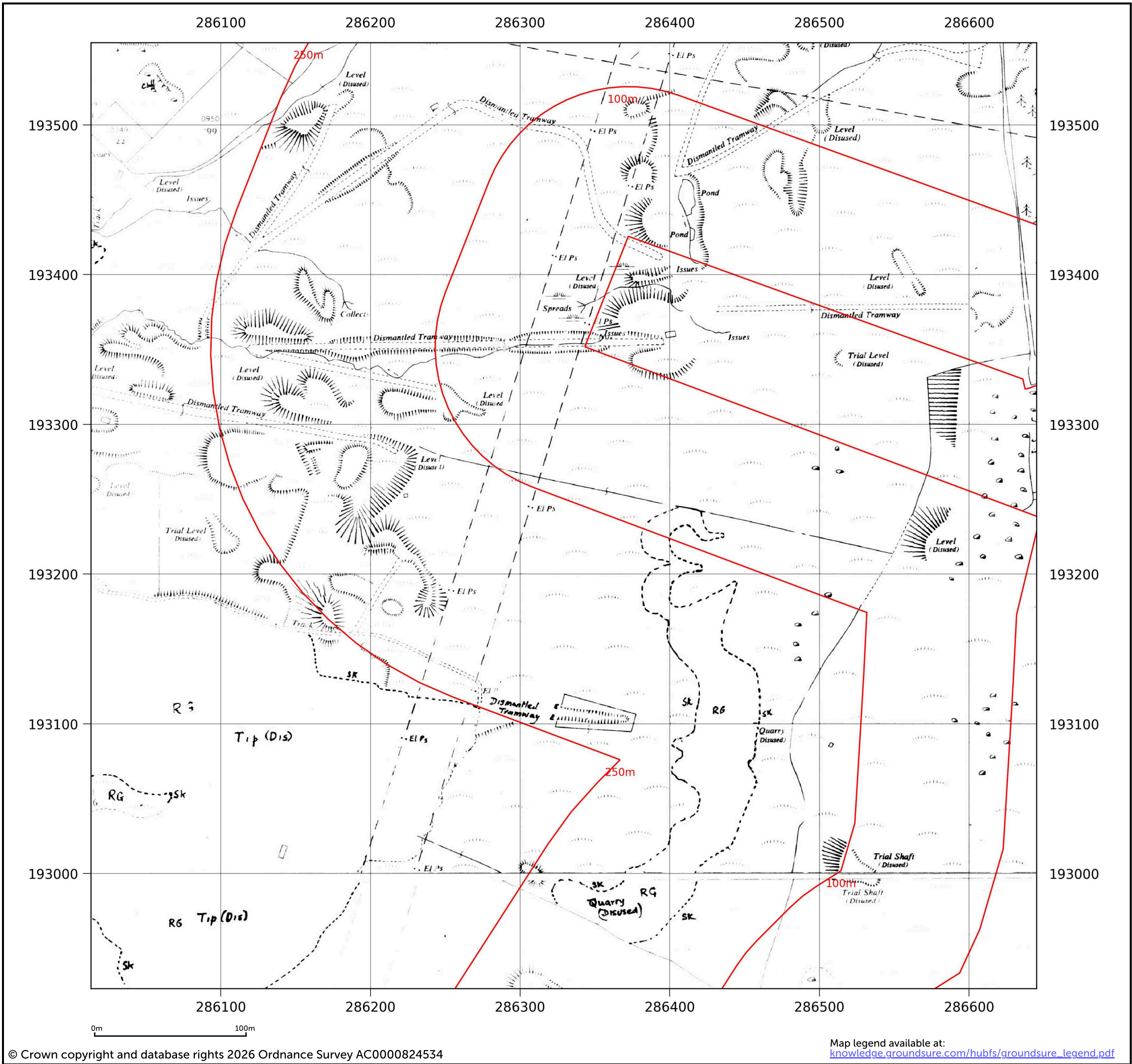
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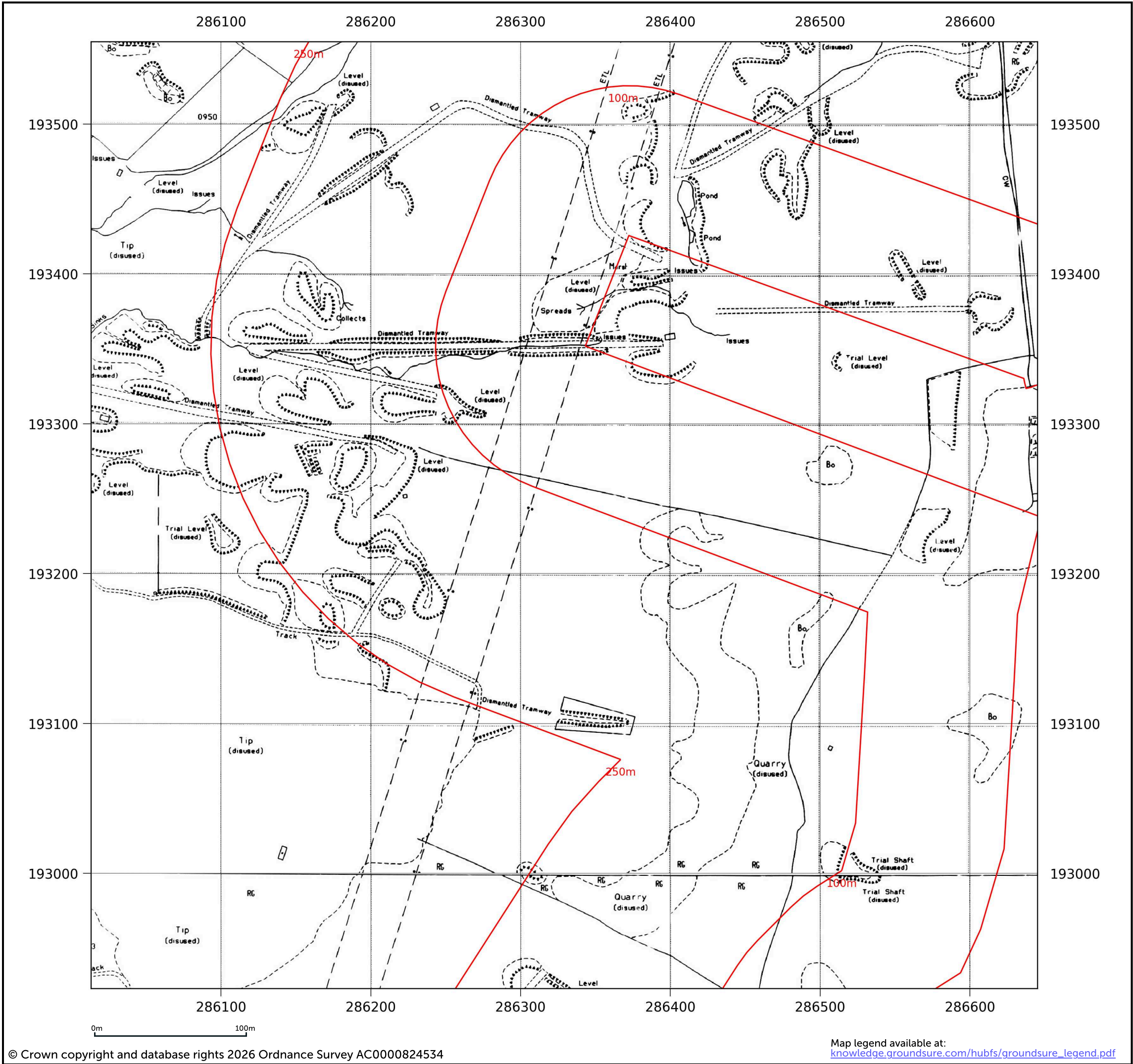


Date: 1973
Date: 1973

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Site details:

Client ref:

Report ref:

Grid ref:

Production date:

Pwll y Lwrch - Northern Array

P125019UK001

WSP-TWM-EC5-OAJ-Q37

287008.97, 192839.99

18 June 2026

Map name:

Map date:

Scale:

Printed at:

National Grid

1993

1:2,500

1:2,500

Date: 1993

Copyright: 1993

Date: 1993

Copyright: 1993

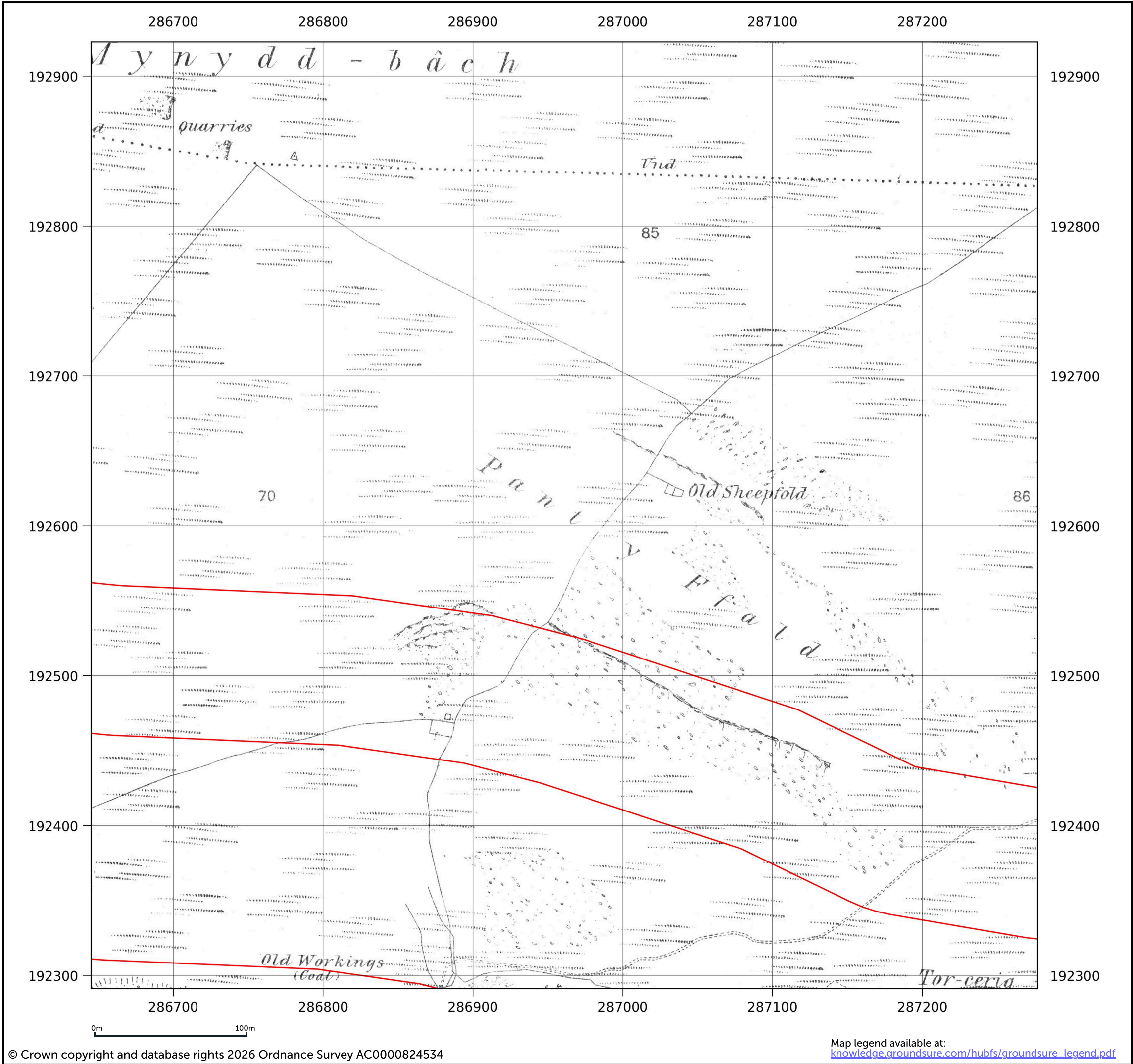
1_2

2_2

1_1

2_1

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Site details:
Client ref:
Report ref:
Grid ref:
Production date:

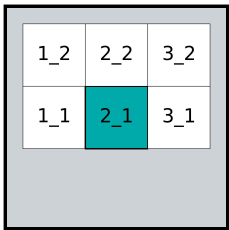
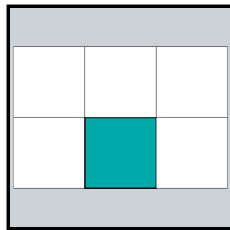
Pwll y Lwrch - Northern Array
P125019UK001
WSP-TWM-EC5-OAJ-Q37
287008.97, 192839.99
18 June 2026

Map name:
Map date:
Scale:
Printed at:

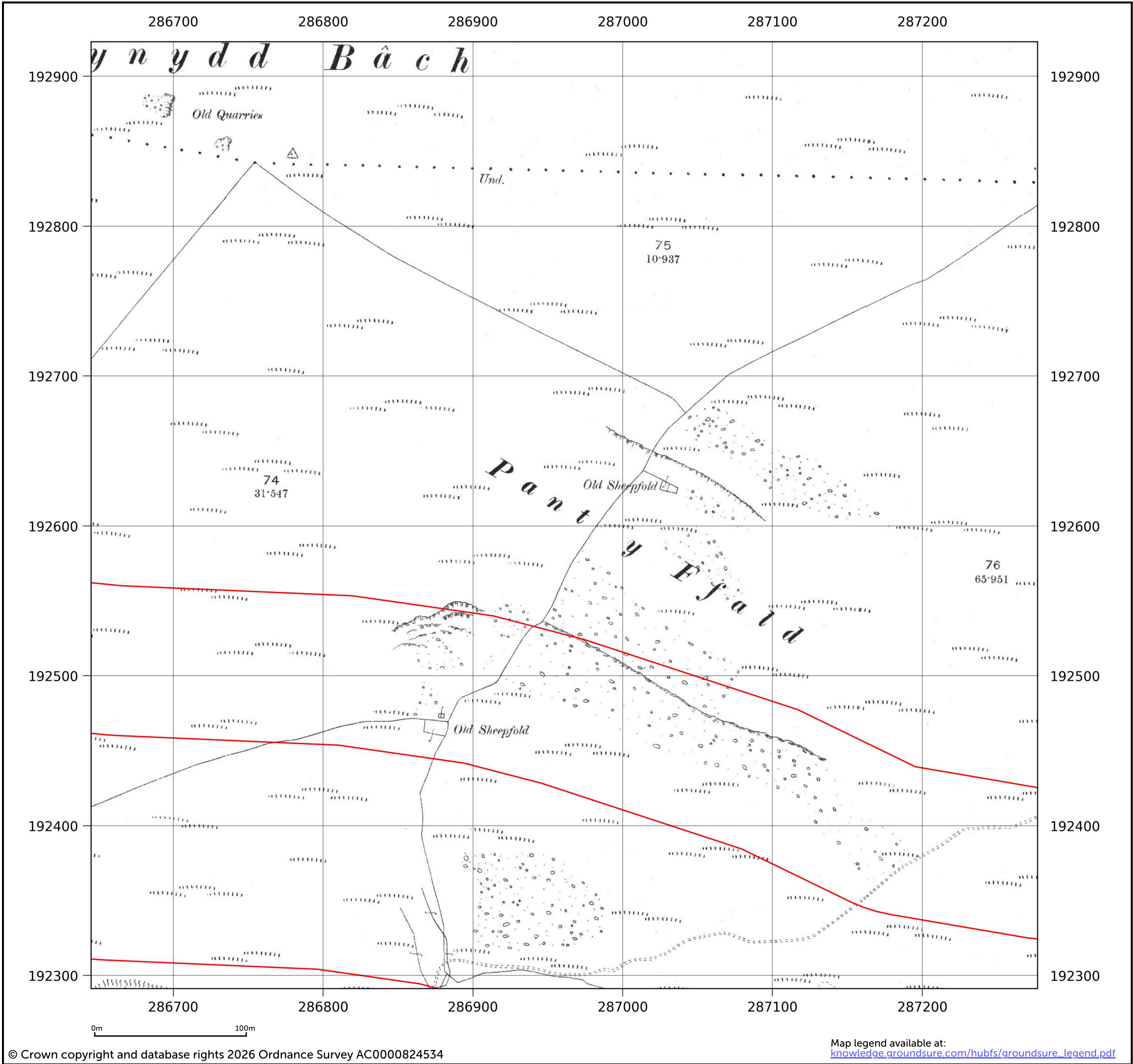
County Series
1877
1:2,500
1:2,500



Date: 1877
Surveyed: 1877
Revised: 1877



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Site details:

Client ref:

Report ref:

Grid ref:

Production date:

Pwll y Lwrch - Northern Array

P125019UK001

WSP-TWM-EC5-OAJ-Q37

287008.97, 192839.99

18 June 2026

Map name:

Map date:

Scale:

Printed at:

County Series

1899

1:2,500

1:2,500

Date: 1899

Surveyed: 1899

Revised: 1899

1_2

2_2

3_2

1_1

2_1

3_1

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Map legend available at:
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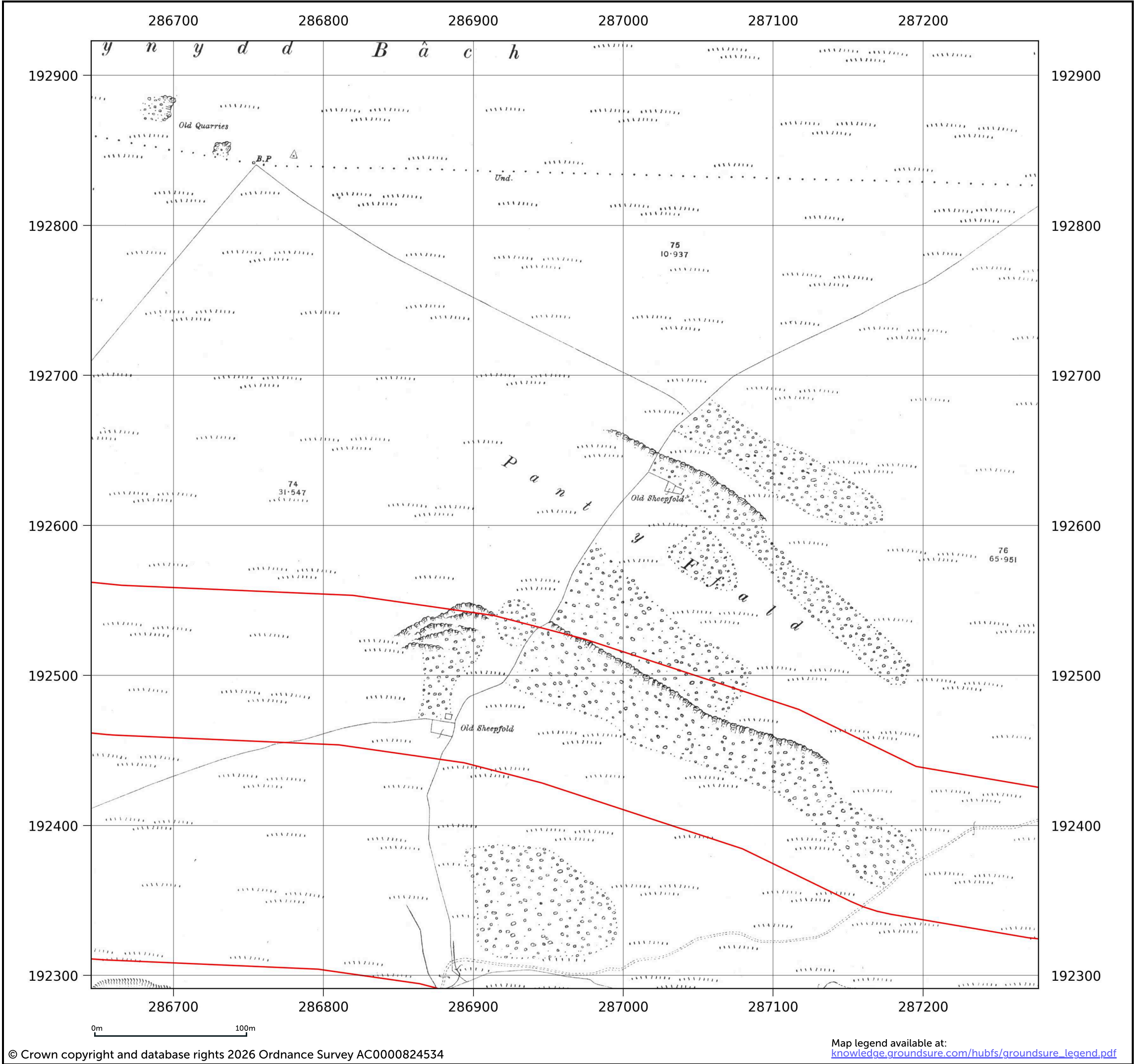
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LOCATION INTELLIGENCE



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Site details:

Client ref:

Report ref:

Grid ref:

Production date:

Pwll y Lwrch - Northern Array

P125019UK001

WSP-TWM-EC5-OAJ-Q37

287008.97, 192839.99

18 June 2026

Map name:

Map date:

Scale:

Printed at:

County Series

1919

1:2,500

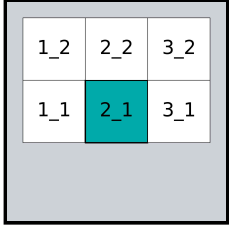
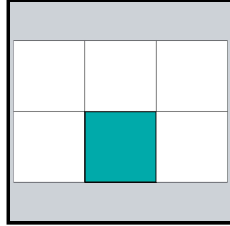
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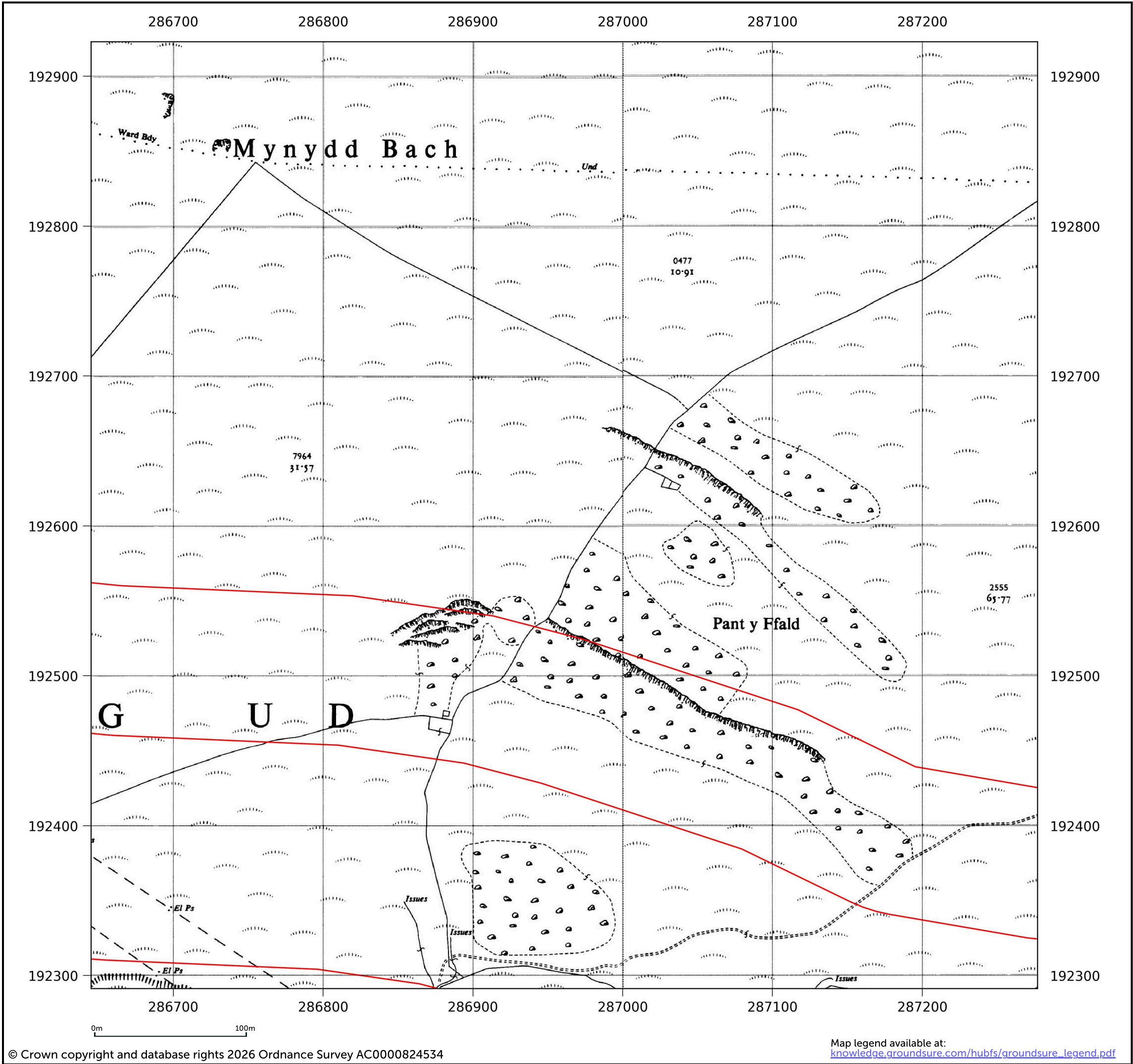
Surveyed: 1919

Revised: 1919





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Site details:

Pwll y Lwrch - Northern Array

Client ref:

P125019UK001

Report ref:

WSP-TWM-EC5-OAJ-Q37

Grid ref:

287008.97, 192839.99

Production date:

18 June 2026

Map name:

National Grid

Map date:

1962

Scale:

1:2,500

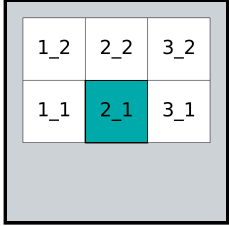
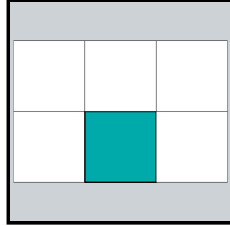
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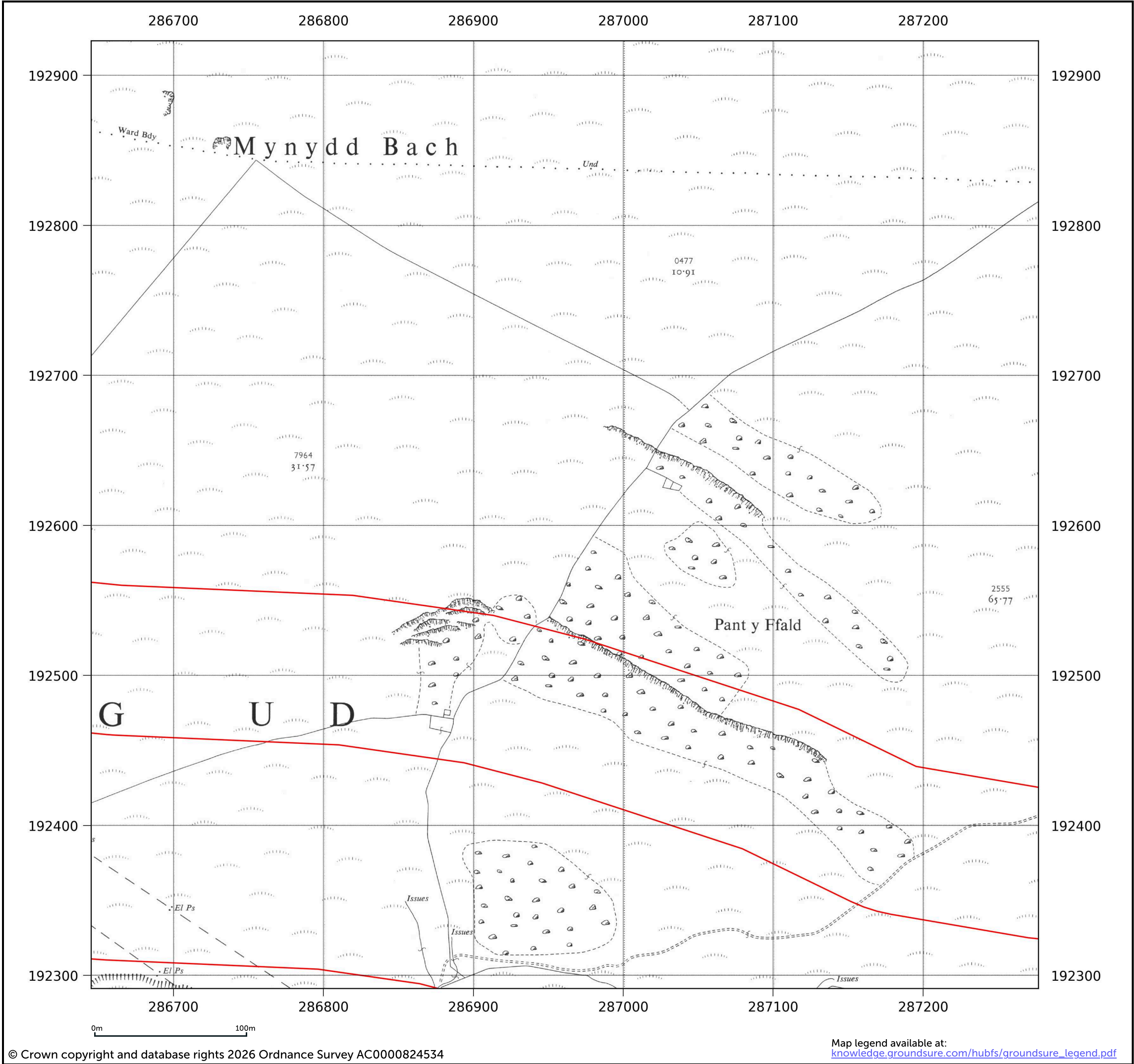


Date: 1962

Date: 1962



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Site details:

Client ref:

Report ref:

Grid ref:

Production date:

Pwll y Lwrch - Northern Array

P125019UK001

WSP-TWM-EC5-OAJ-Q37

287008.97, 192839.99

18 June 2026

Map name:

Map date:

Scale:

Printed at:

National Grid

1962

1:2,500

1:2,500

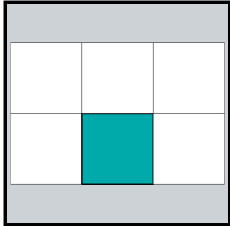
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Surveyed: 1961

Revised: 1961

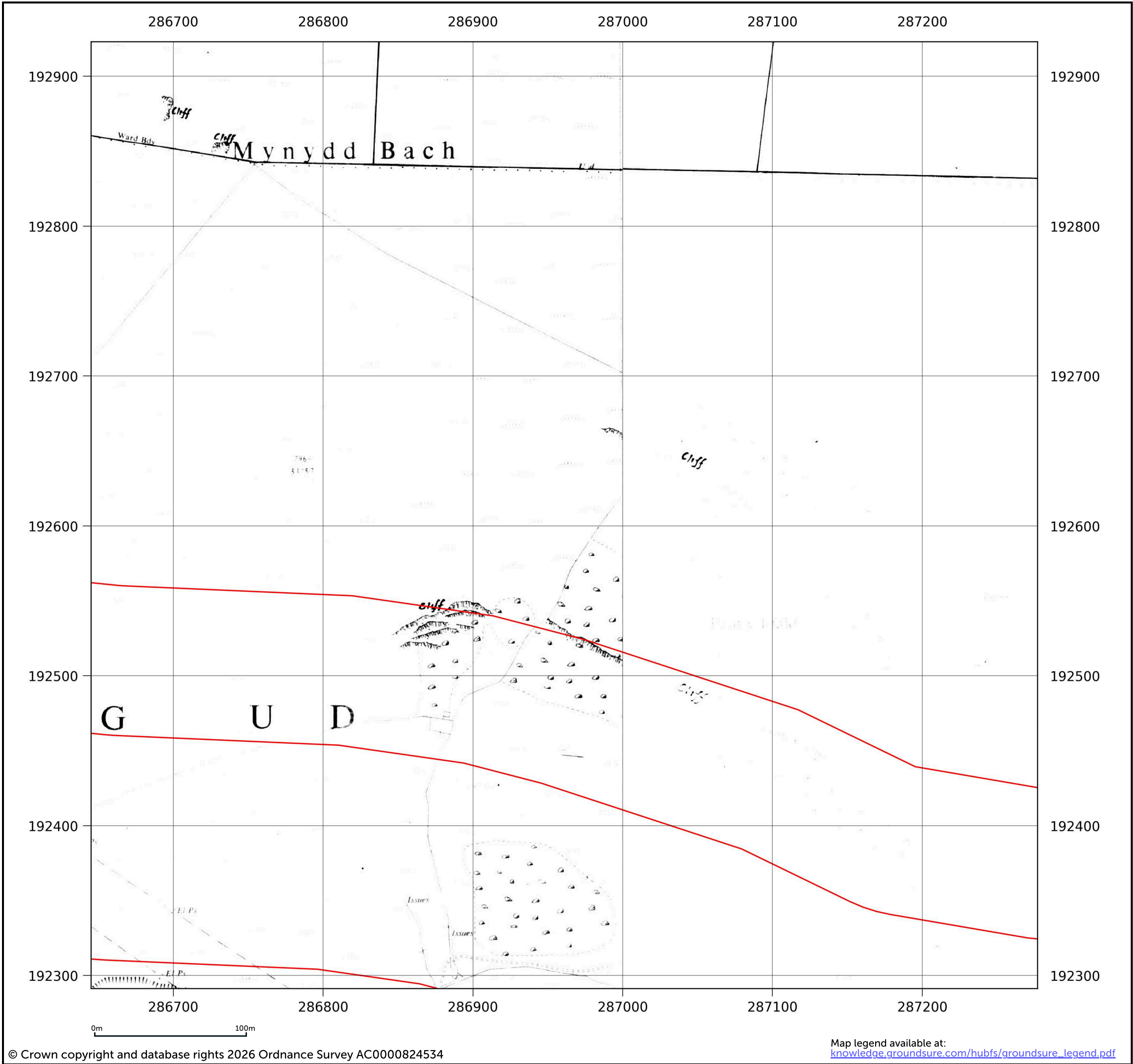
Copyright: 1962

Levelled: 1957



1_2	2_2	3_2
1_1	2_1	3_1

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Site details:

Pwll y Lwrch - Northern Array

Client ref:

P125019UK001

Report ref:

WSP-TWM-EC5-OAJ-Q37

Grid ref:

287008.97, 192839.99

Production date:

18 June 2026

Map name:

National Grid

Map date:

1973

Scale:

1:2,500

Printed at:

1:2,500

Date: 1973

Date: 1973

1_2

2_2

3_2

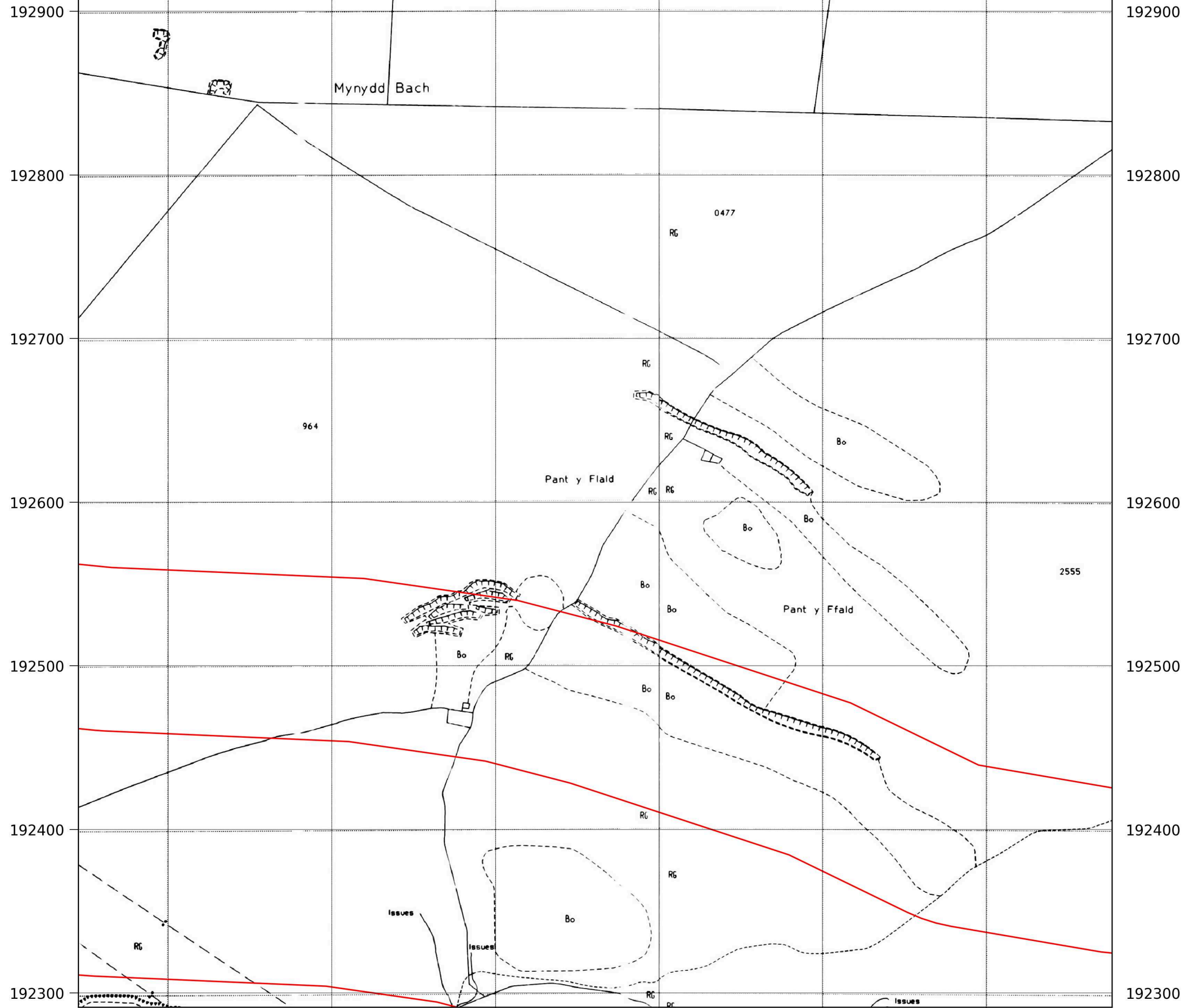
1_1

2_1

3_1

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286700 286800 286900 287000 287100 287200



0m 100m

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



Map Insight

In partnership with



Site details:
Client ref:
Report ref:
Grid ref:
Production date:

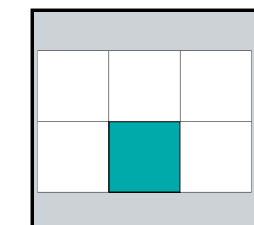
Pwll y Lwrch - Northern Array
P125019UK001
WSP-TWM-EC5-OAJ-Q37
287008.97, 192839.99
18 June 2026

Map name:
Map date:
Scale:
Printed at:

National Grid
1993
1:2,500
1:2,500

Date: 1993
Copyright: 1993

Date: 1993
Copyright: 1993



1_2

2_2

3_2

1_1

2_1

3_1

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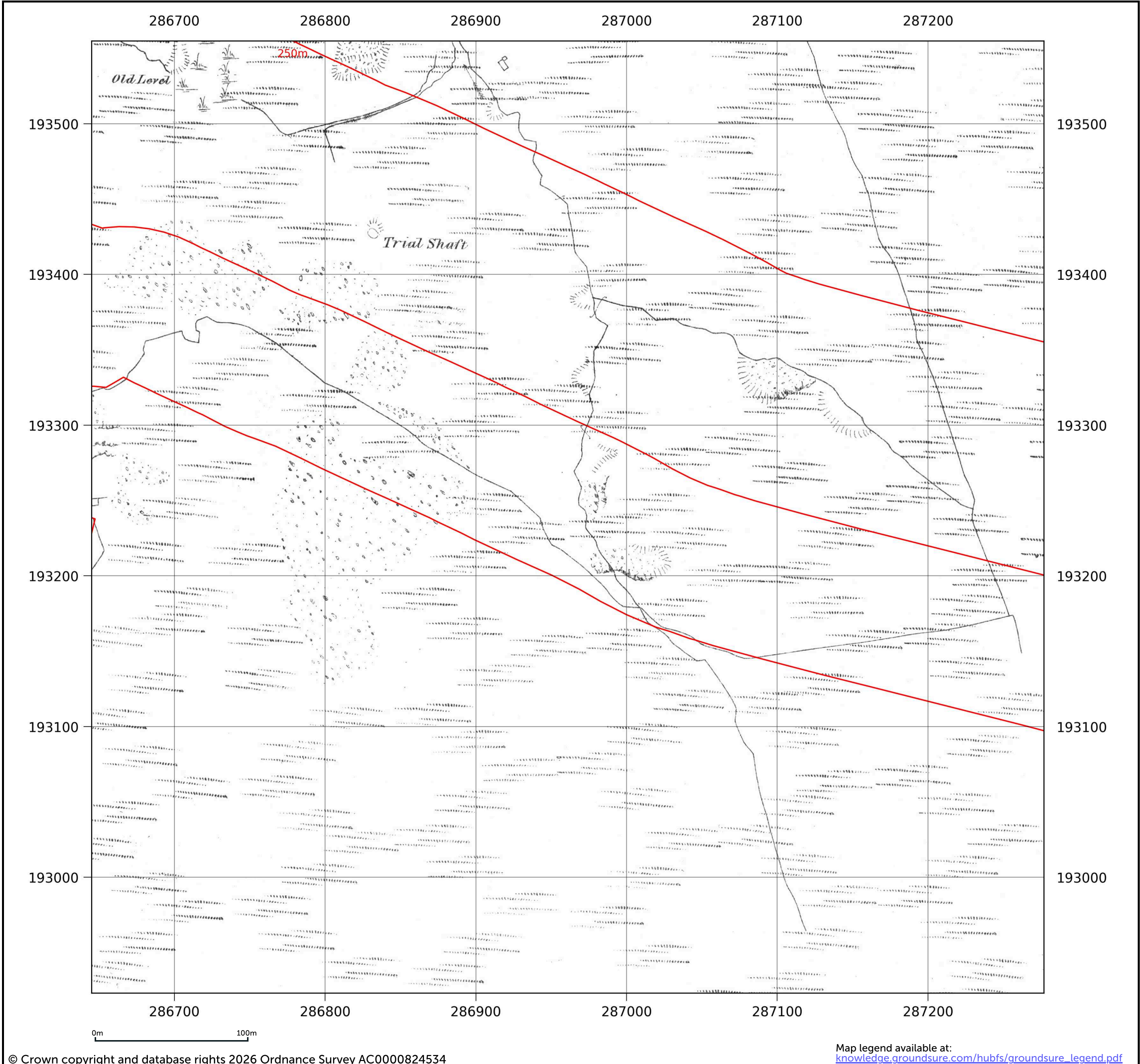


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LOCATION INTELLIGENCE



Ordnance Survey
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Site details:
Client ref:
Report ref:
Grid ref:
Production date:

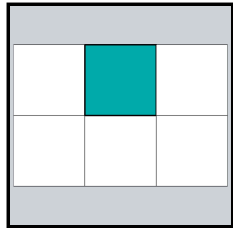
Pwll y Lwrch - Northern Array
P125019UK001
WSP-TWM-EC5-OAJ-Q37
287008.97, 192839.99
18 June 2026

Map name:
Map date:
Scale:
Printed at:

County Series
1877
1:2,500
1:2,500

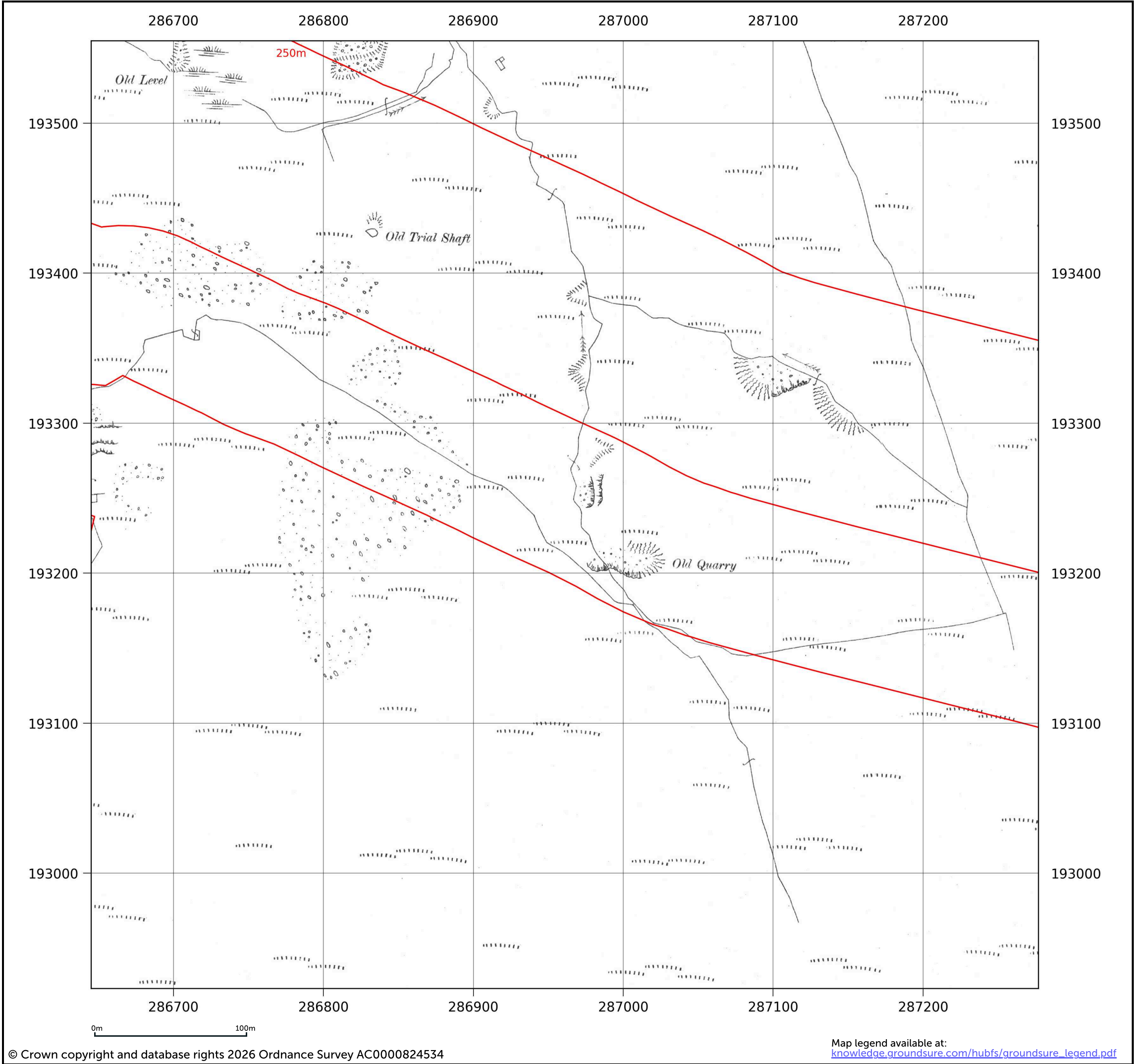


Date: 1877
Surveyed: 1877
Revised: 1877



1_2	2_2	3_2
1_1	2_1	3_1

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Site details:

Pwll y Lwrch - Northern Array

Client ref:

P125019UK001

Report ref:

WSP-TWM-EC5-OAJ-Q37

Grid ref:

287008.97, 192839.99

Production date:

18 June 2026

Map name:

County Series

Map date:

1899

Scale:

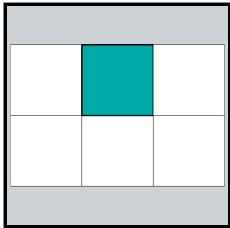
1:2,500

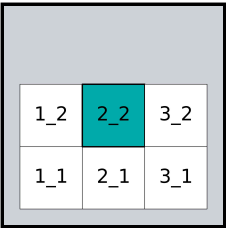
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1:2,500

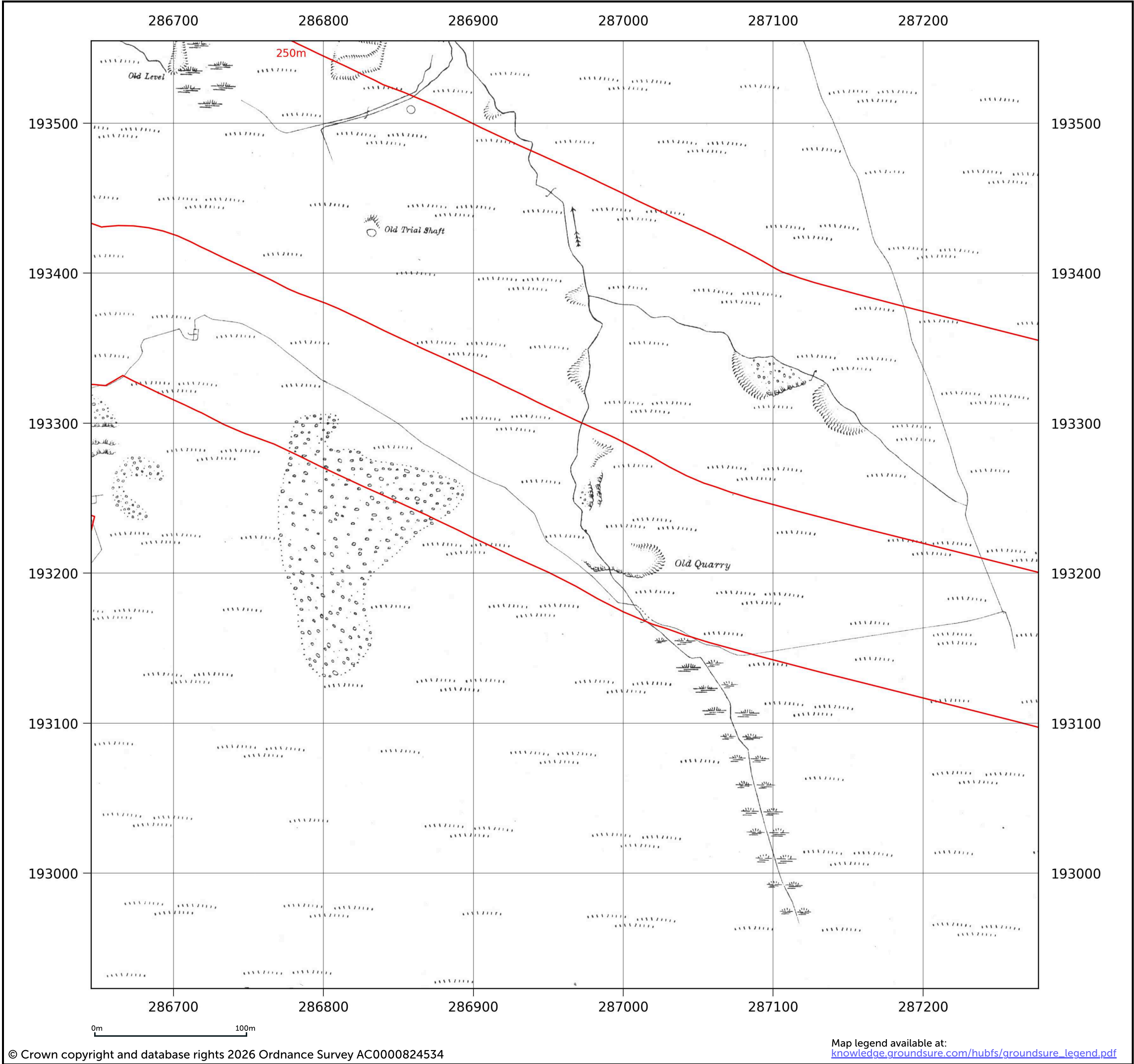


Date: 1899
Surveyed: 1899
Revised: 1899





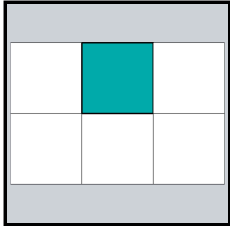
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Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

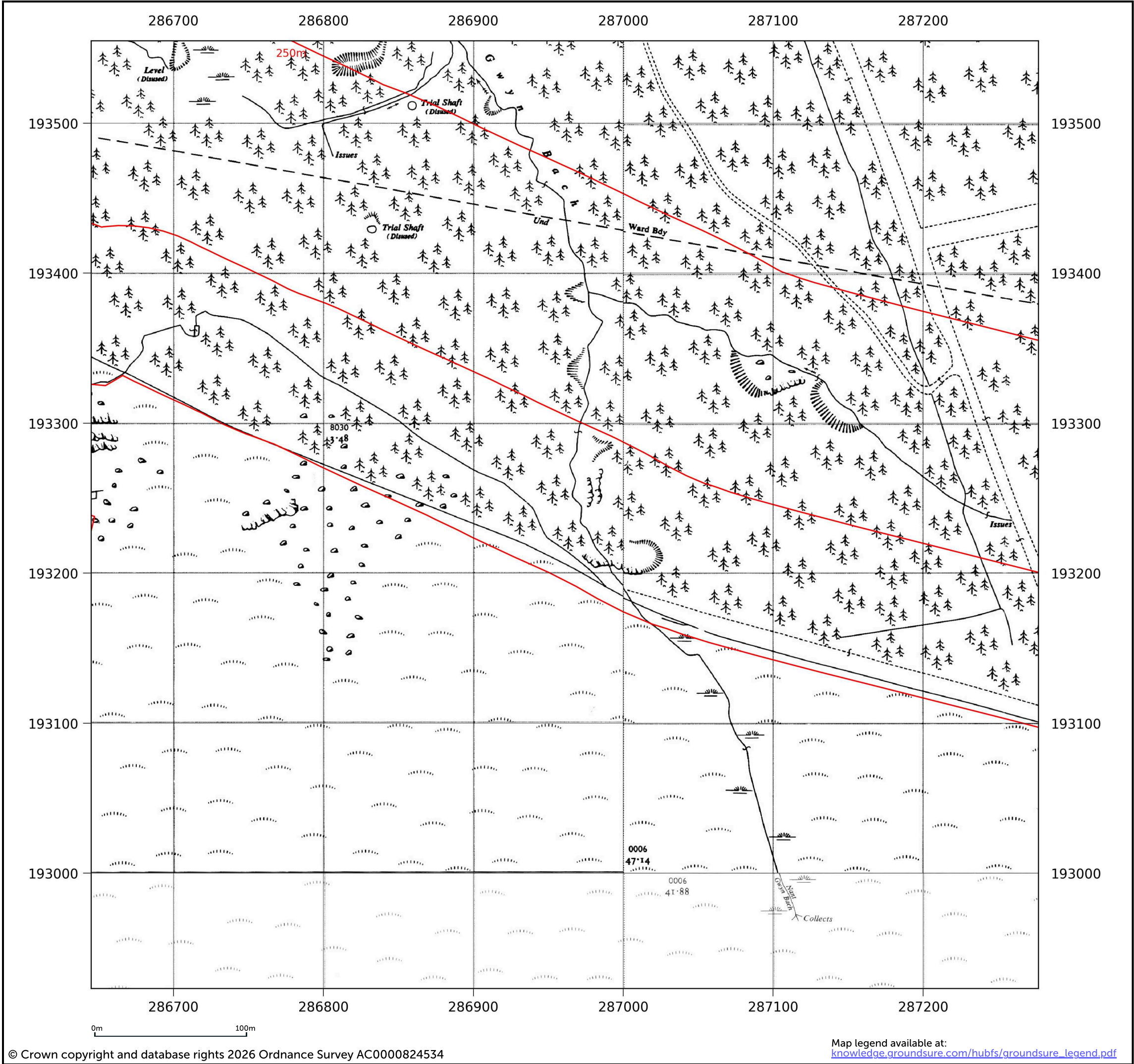
Map name:	County Series
Map date:	1919
Scale:	1:2,500
Printed at:	1:2,500

Date: 1919
Surveyed: 1919
Revised: 1919



1_2	2_2	3_2
1_1	2_1	3_1

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Site details:

Pwll y Lwrch - Northern Array

Client ref:

P125019UK001

Report ref:

WSP-TWM-EC5-OAJ-Q37

Grid ref:

287008.97, 192839.99

Production date:

18 June 2026

Map name:

National Grid

Map date:

1962

Scale:

1:2,500

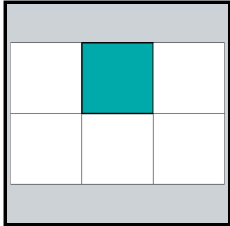
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1:2,500

Date: 1962

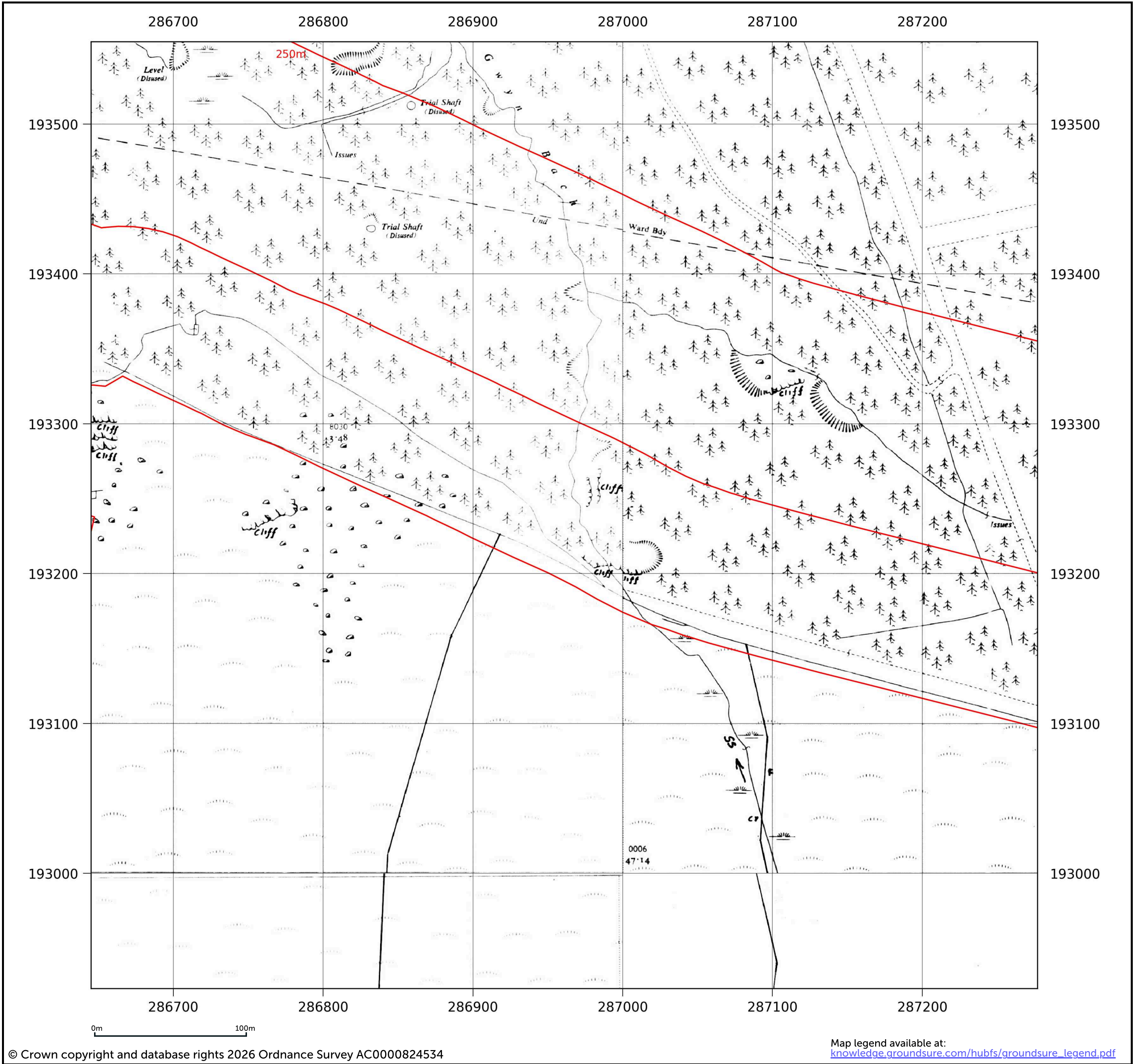
Date: 1962

Date: 1962
Surveyed: 1961
Revised: 1961
Copyright: 1962
Levelled: 1957



1_2	2_2	3_2
1_1	2_1	3_1

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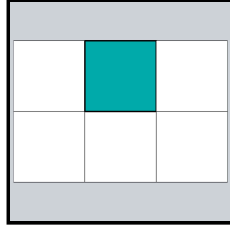


Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

Map name:	National Grid
Map date:	1973
Scale:	1:2,500
Printed at:	1:2,500

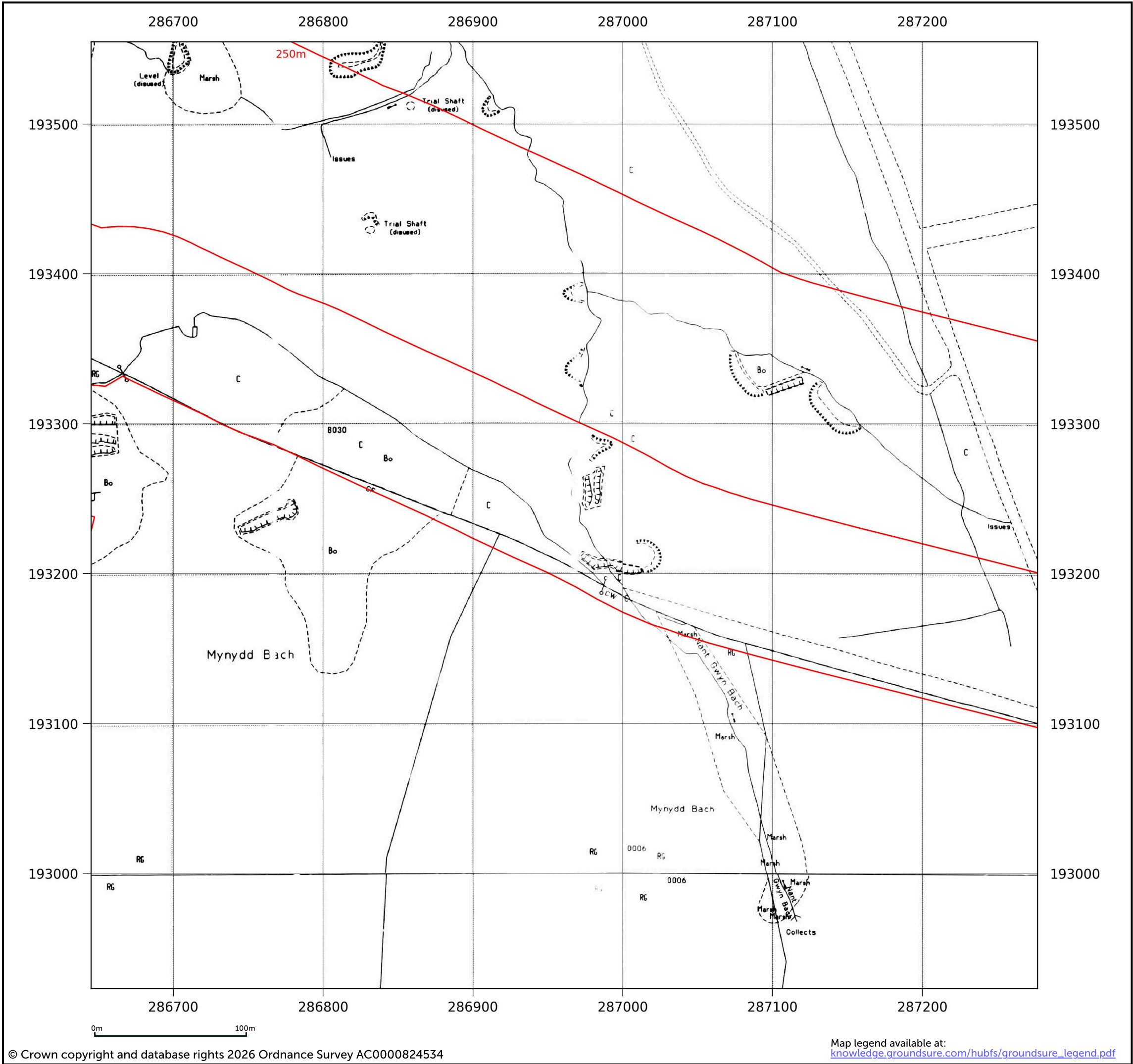


Date: 1973	Date: 1973
Date: 1973	Date: 1973



1_2	2_2	3_2
1_1	2_1	3_1

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Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

Map name:	National Grid
Map date:	1993
Scale:	1:2,500
Printed at:	1:2,500

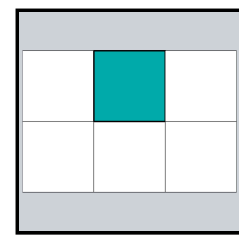


Date: 1993
Copyright: 1993

Date: 1993
Copyright: 1993

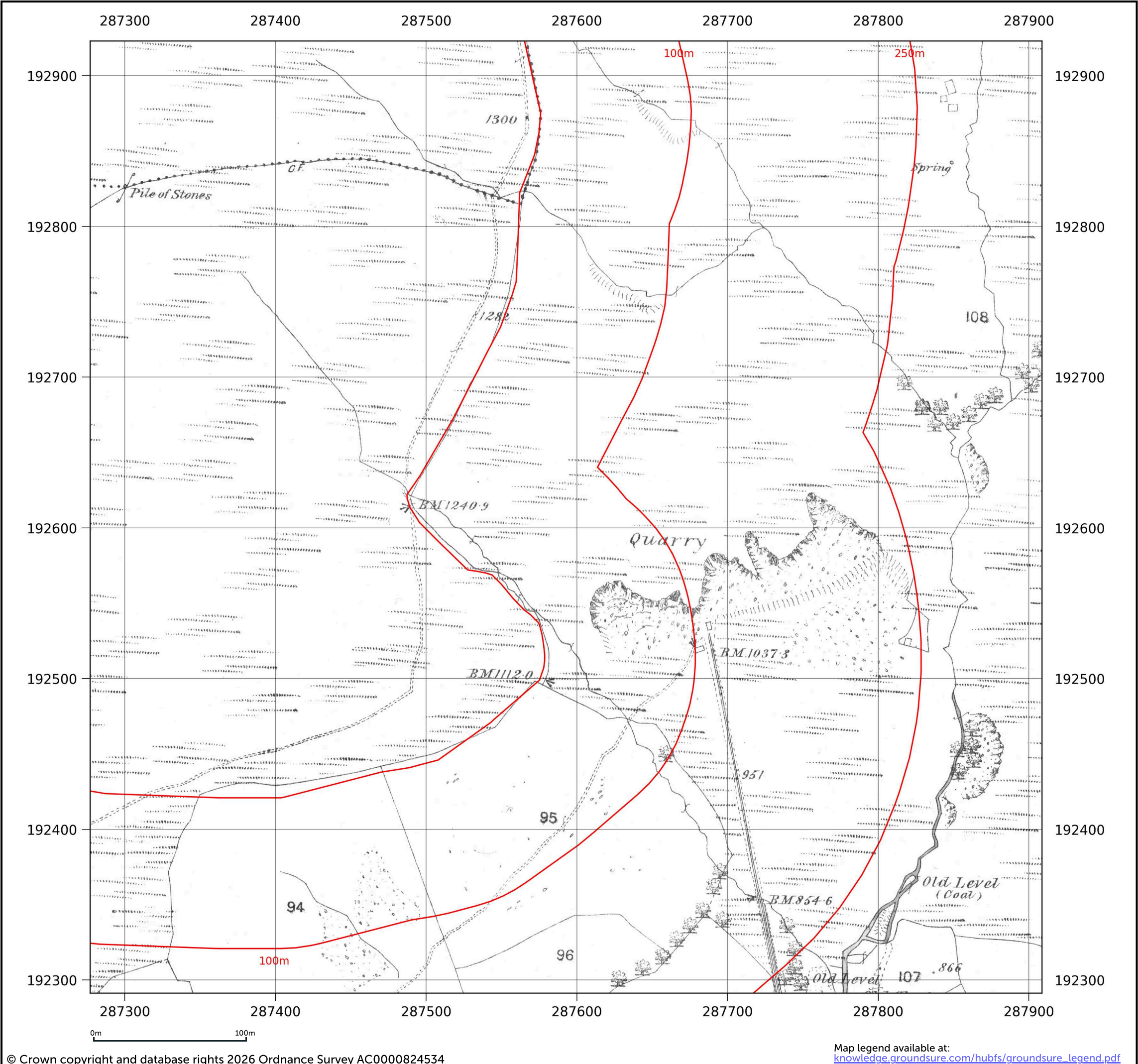
Date: 1993
Copyright: 1993

Date: 1993
Copyright: 1993



1_2	2_2	3_2
1_1	2_1	3_1

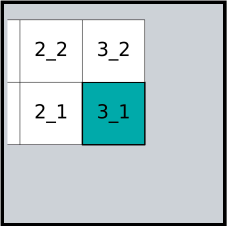
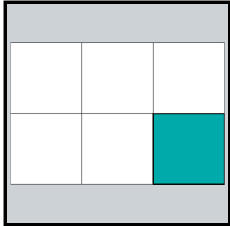
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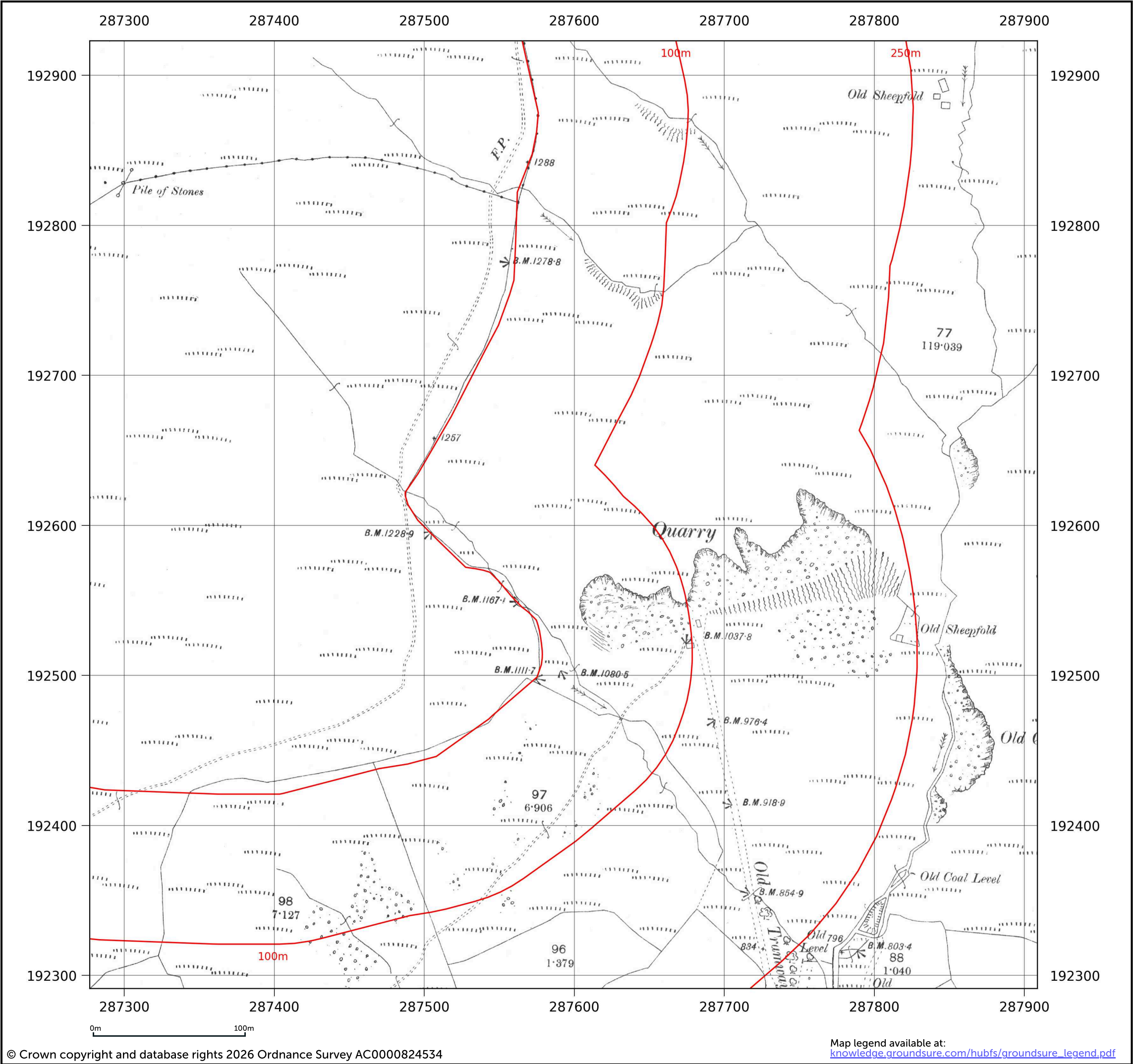
Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

Map name:	County Series
Map date:	1877
Scale:	1:2,500
Printed at:	1:2,500

Date: 1877
Surveyed: 1877
Revised: 1877



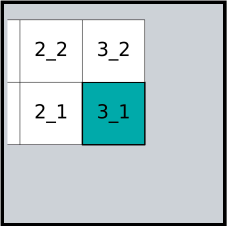
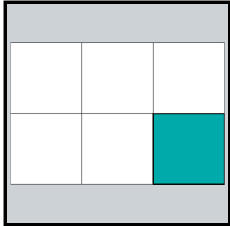
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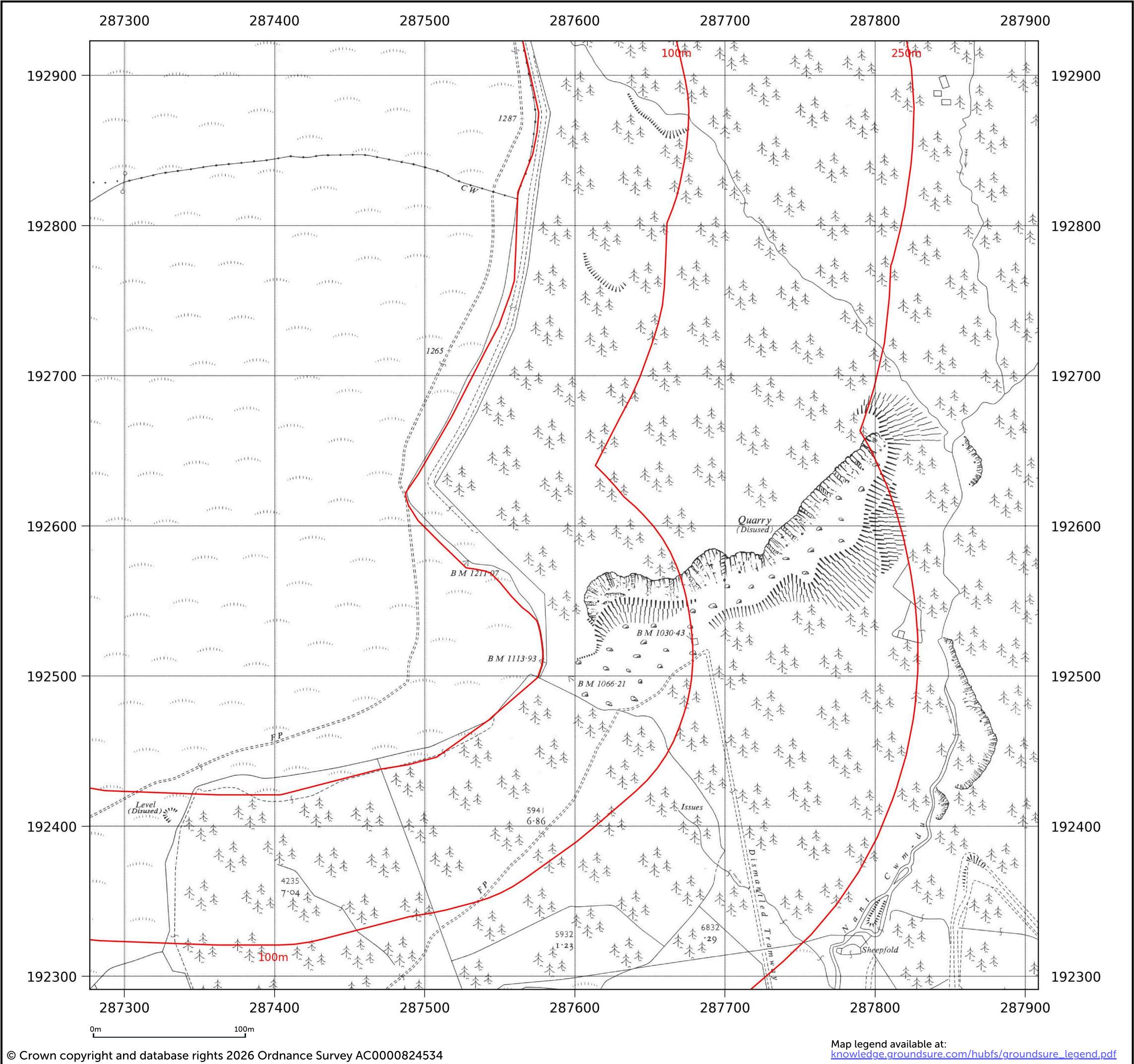
Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

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

Date: 1899
Surveyed: 1899
Revised: 1899



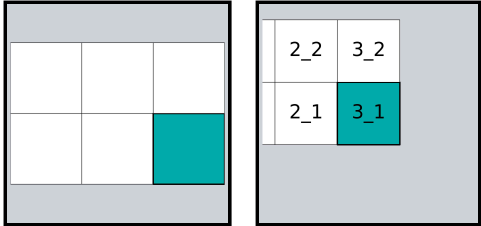
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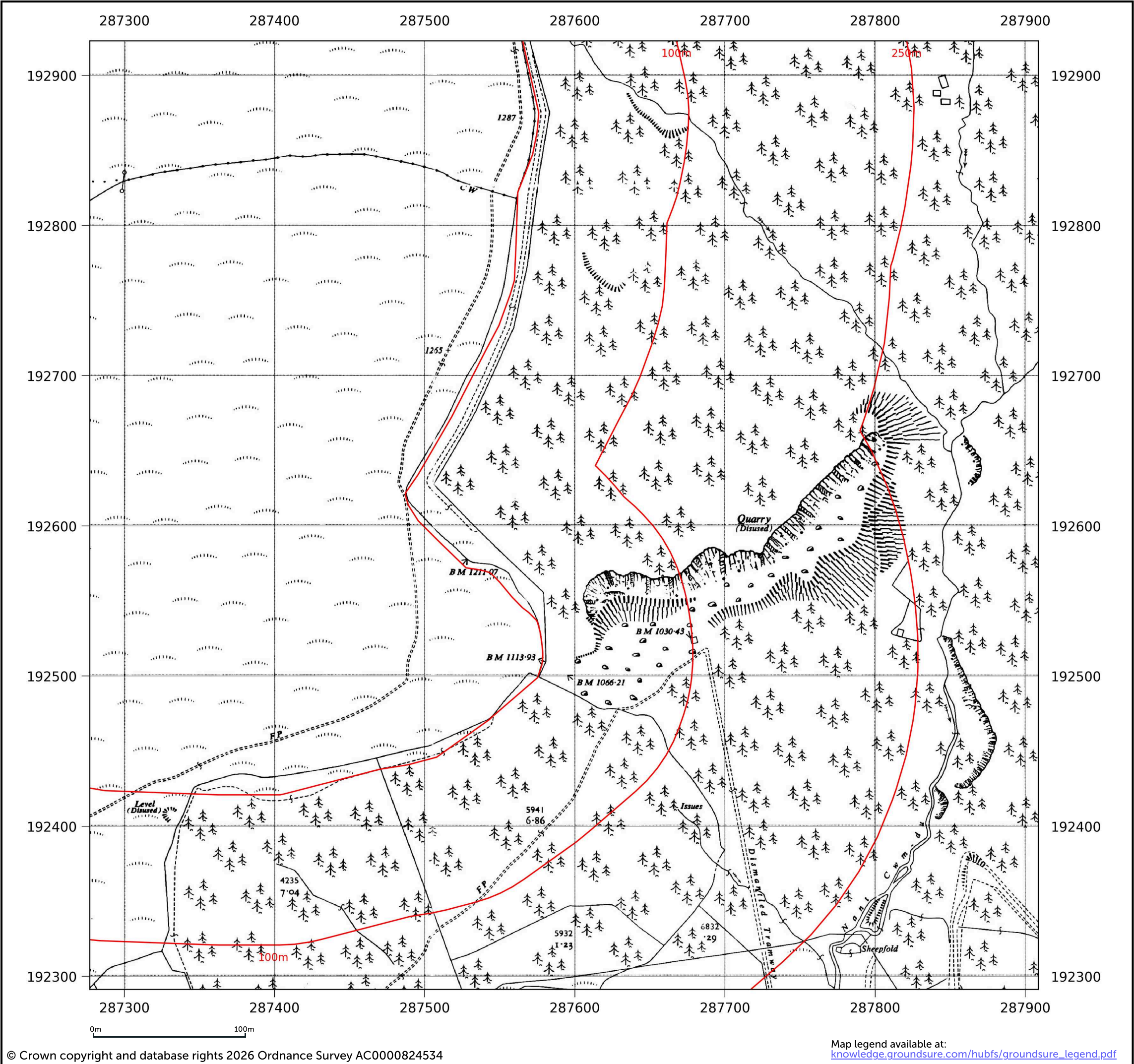
Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

Map name:	National Grid
Map date:	1962
Scale:	1:2,500
Printed at:	1:2,500

Date: 1962
Surveyed: 1961
Revised: 1961
Copyright: 1962
Levelled: 1957



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Site details:
Client ref:
Report ref:
Grid ref:
Production date:

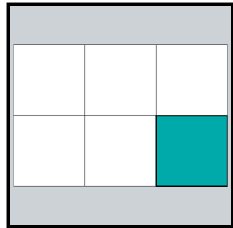
Pwll y Lwrch - Northern Array
P125019UK001
WSP-TWM-EC5-OAJ-Q37
287008.97, 192839.99
18 June 2026

Map name:
Map date:
Scale:
Printed at:

National Grid
1962
1:2,500
1:2,500

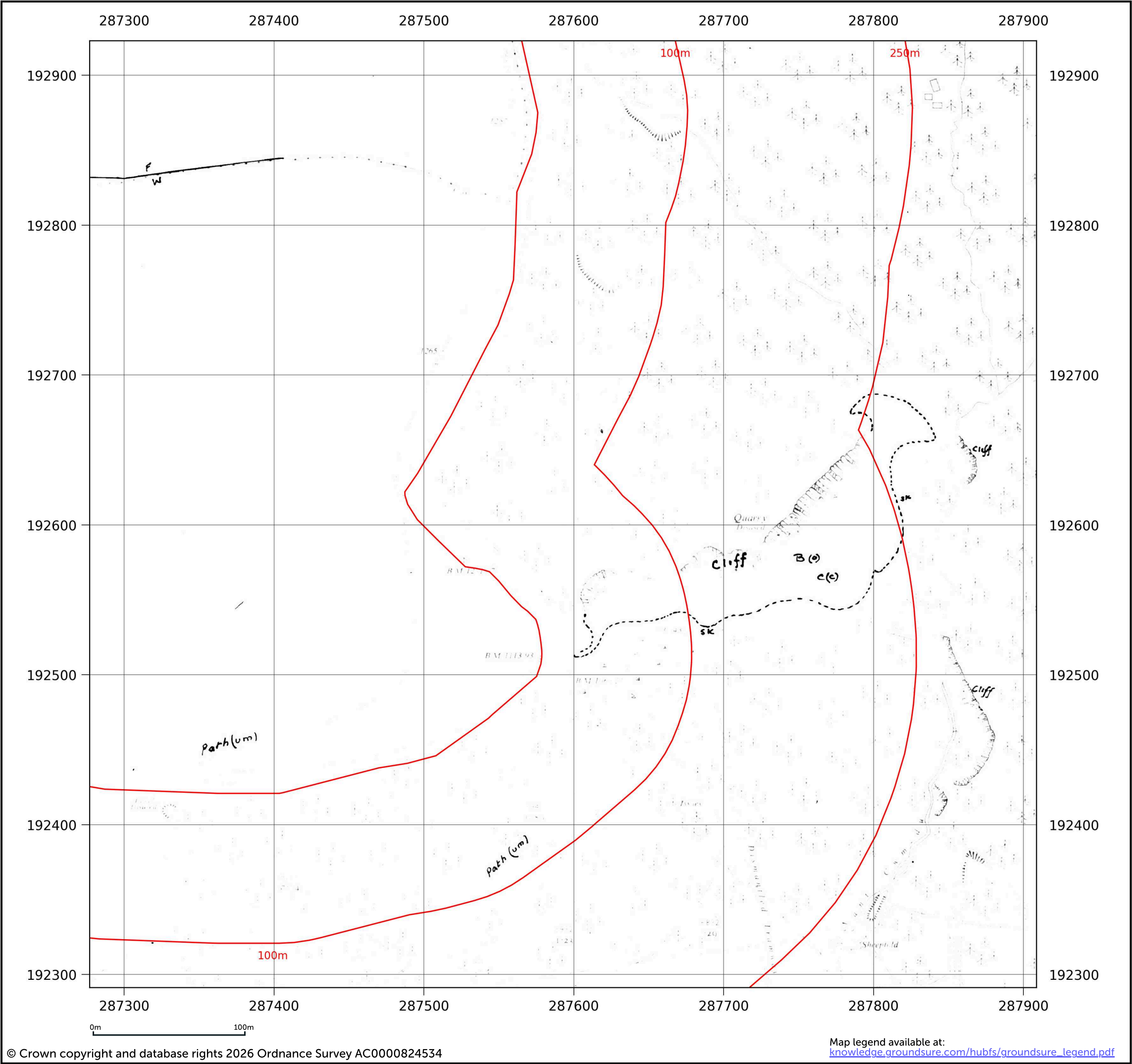


Date: 1962



2_2	3_2
2_1	3_1

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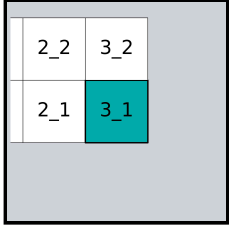
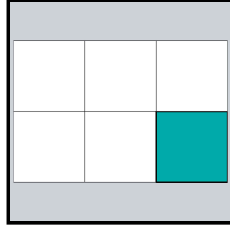


Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

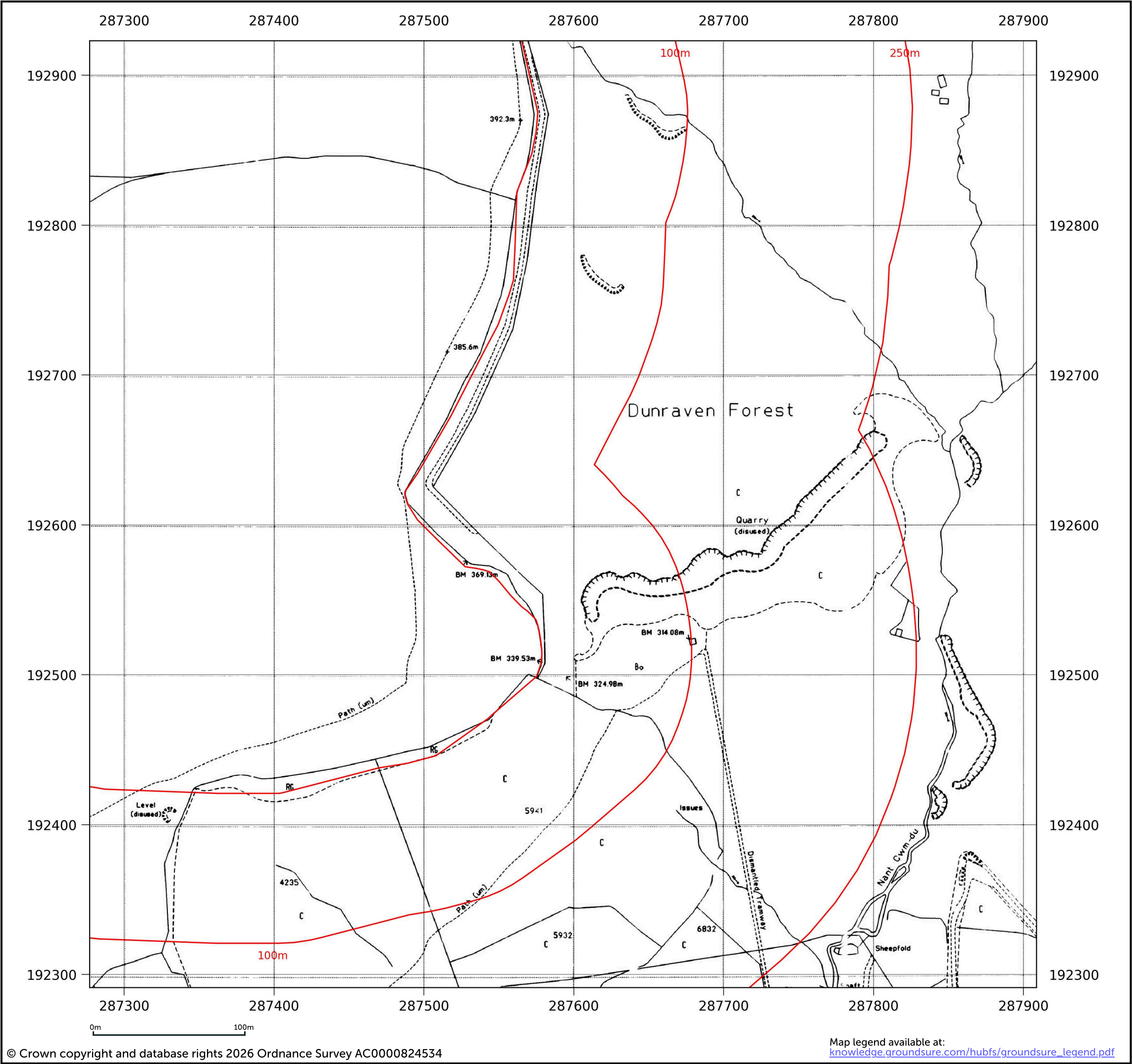
Map name:	National Grid
Map date:	1973
Scale:	1:2,500
Printed at:	1:2,500



Date: 1973



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Site details:

Client ref:

Report ref:

Grid ref:

Production date:

Pwll y Lwrch - Northern Array

P125019UK001

WSP-TWM-EC5-OAJ-Q37

287008.97, 192839.99

18 June 2026

Map name:

Map date:

Scale:

Printed at:

National Grid

1993

1:2,500

1:2,500

Date: 1993

Copyright: 1993

2_2

3_2

2_1

3_1

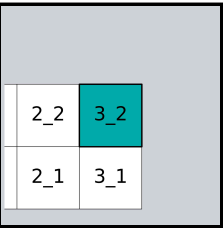
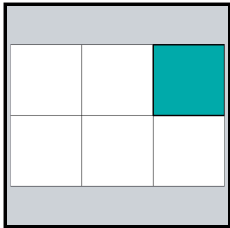
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Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

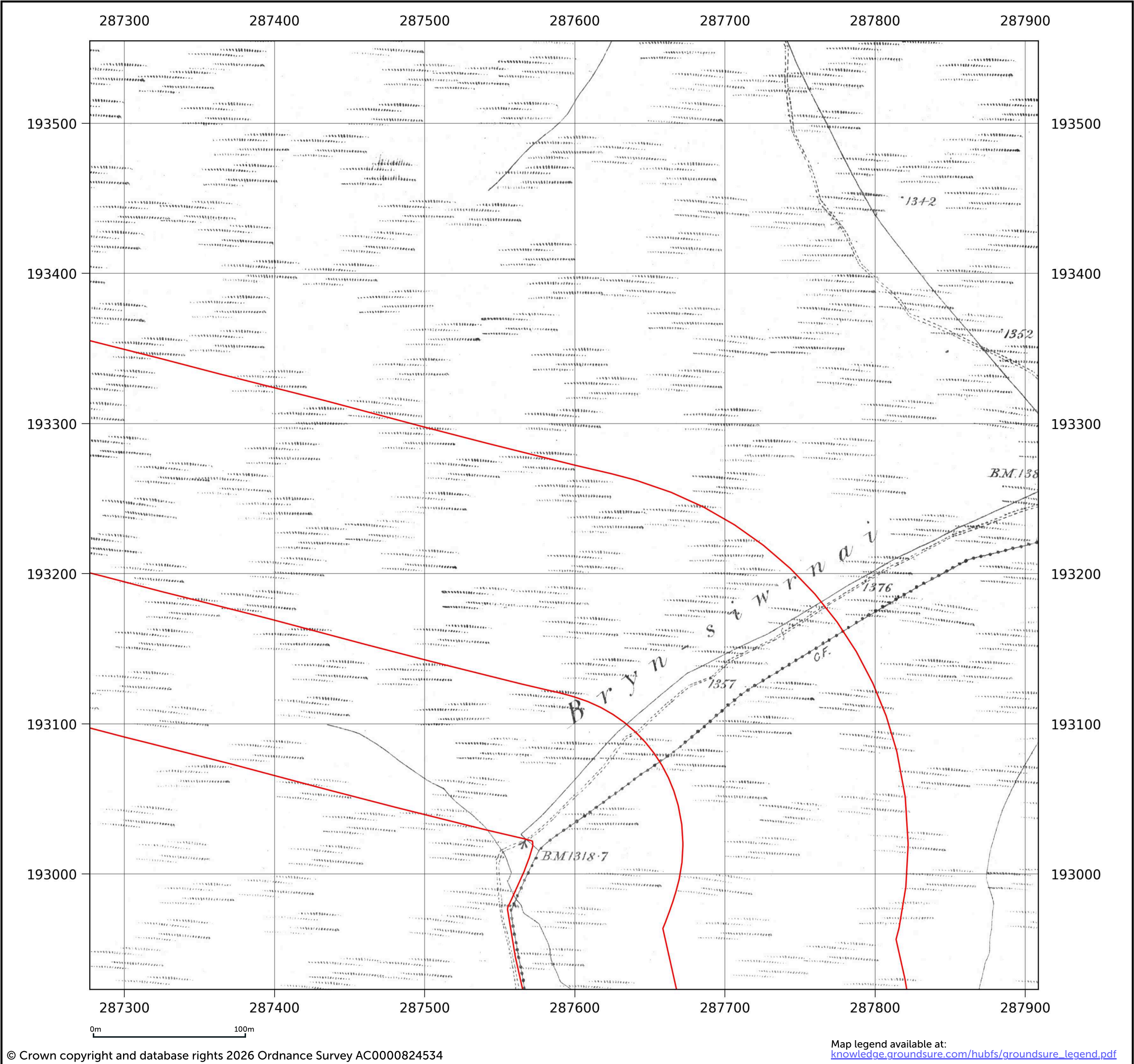
Map name:	County Series
Map date:	1877
Scale:	1:2,500
Printed at:	1:2,500



Date: 1877
Surveyed: 1877
Revised: 1877



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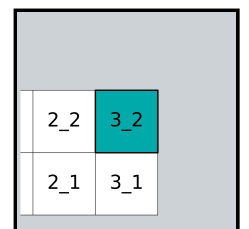
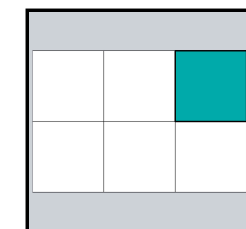


Site details: Pwll y Lwrch - Northern Array
 Client ref: P125019UK001
 Report ref: WSP-TWM-EC5-OAJ-Q37
 Grid ref: 287008.97, 192839.99
 Production date: 18 June 2026

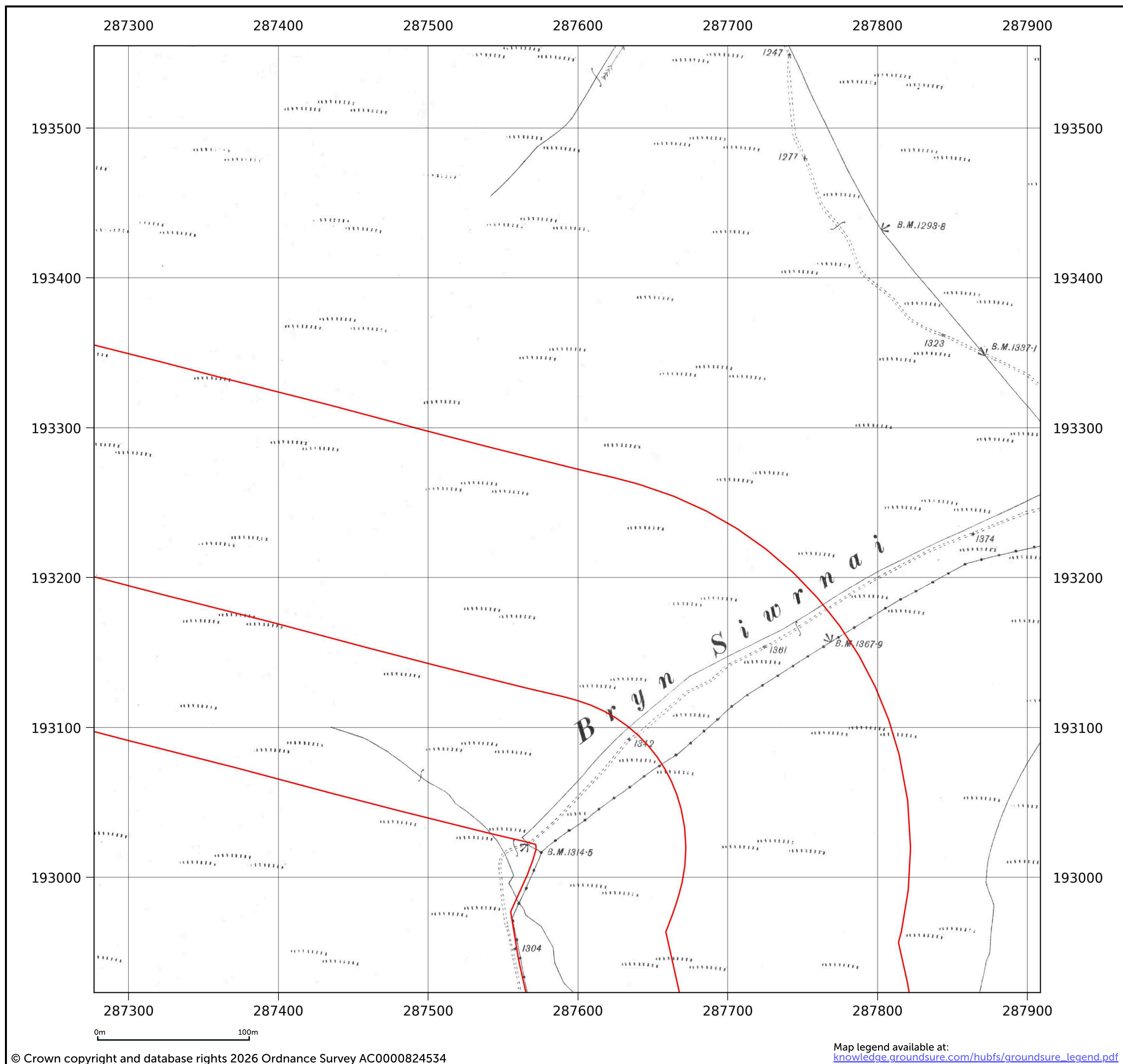
Map name: County Series
 Map date: 1899
 Scale: 1:2,500
 Printed at: 1:2,500

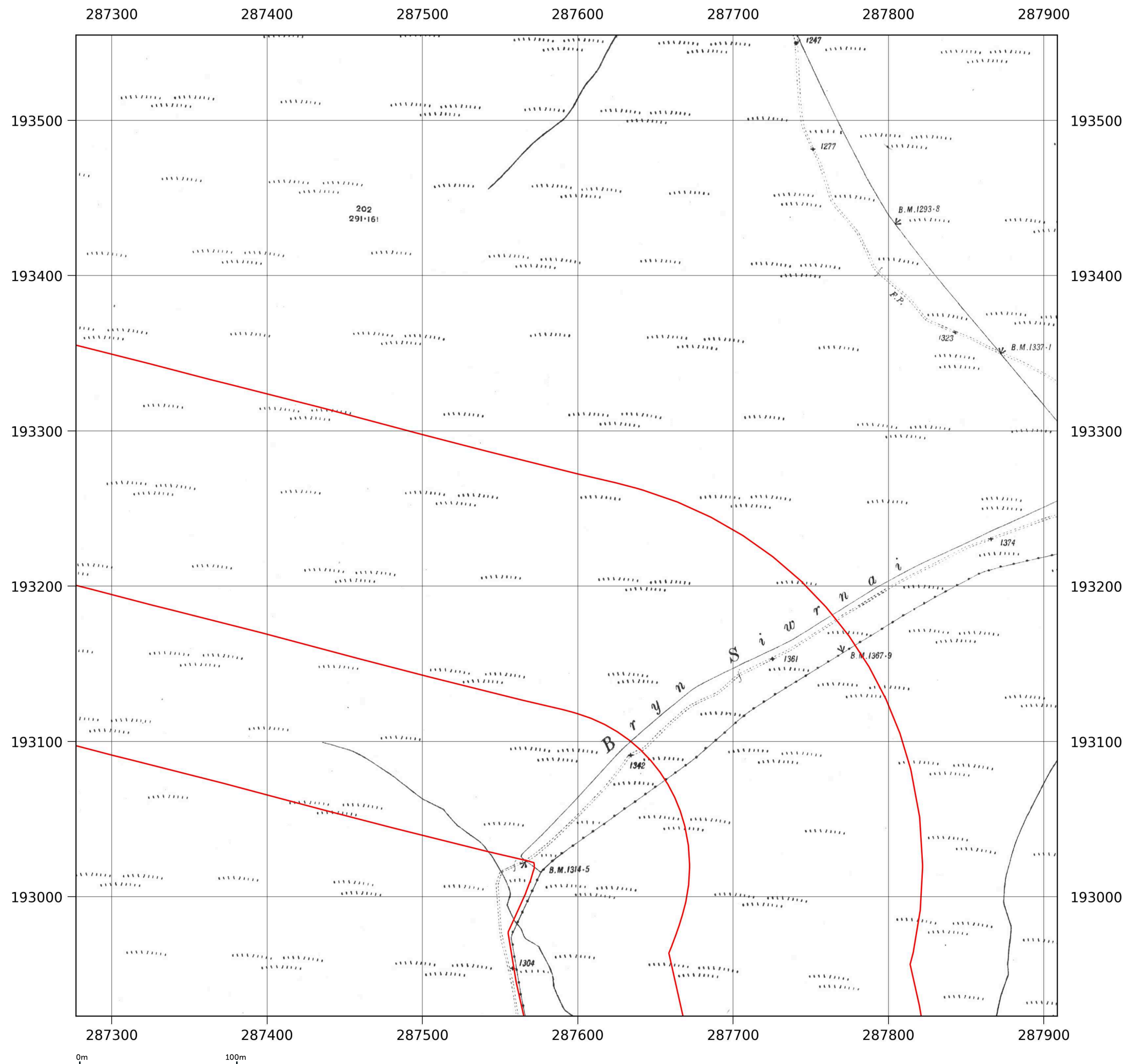


Date: 1899
 Surveyed: 1899
 Revised: 1899



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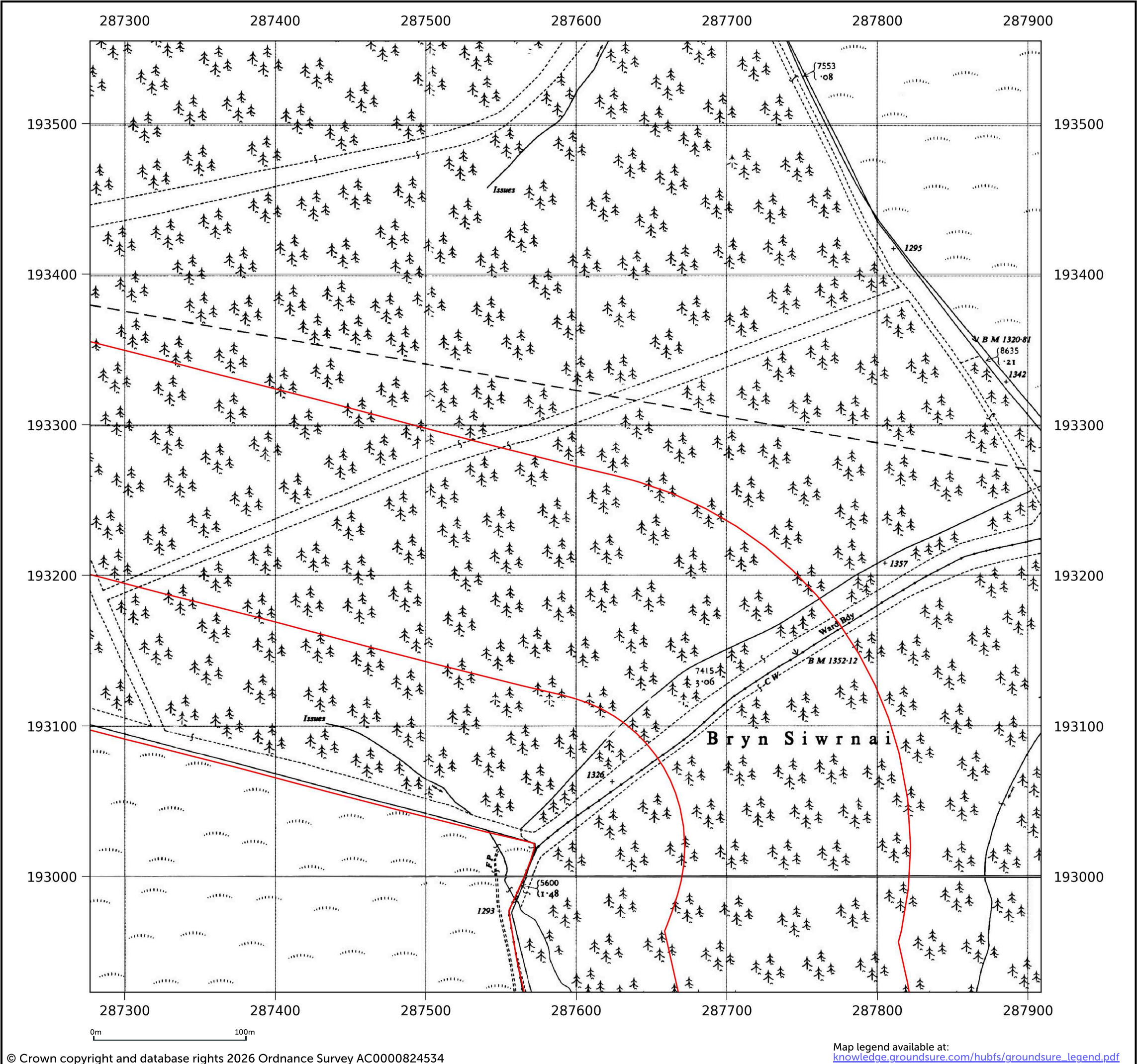
Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

Map name:	County Series	
Map date:	1919	
Scale:	1:2,500	
Printed at:	1:2,500	

Date: 1919 Surveyed: 1919 Revised: 1919
--

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Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

Map name:	National Grid
Map date:	1962
Scale:	1:2,500
Printed at:	1:2,500

Date: 1962

Date: 1962

2_2

3_2

2_1

3_1

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Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

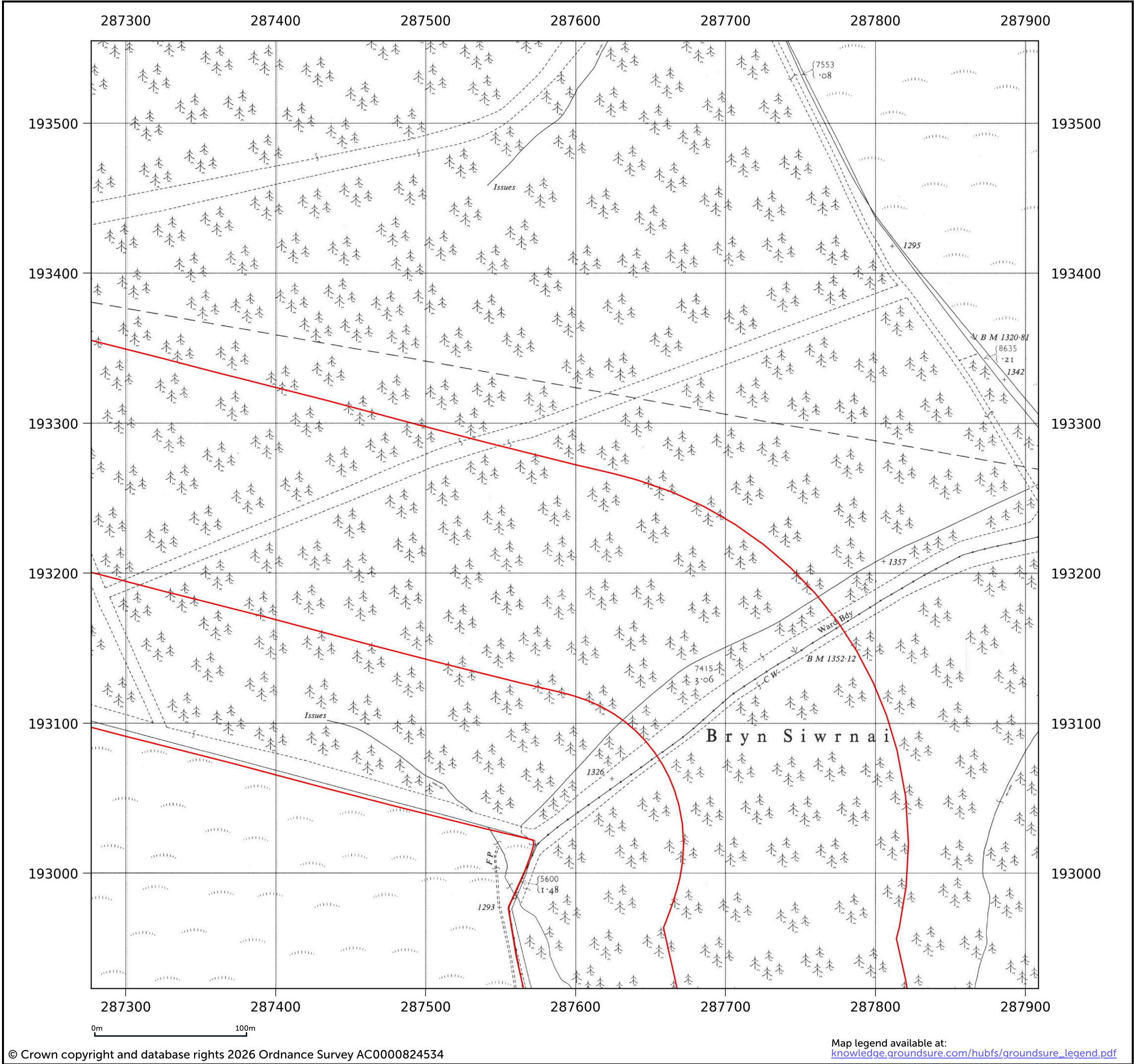
Map name:	National Grid
Map date:	1962
Scale:	1:2,500
Printed at:	1:2,500

N
W
E
S

Date: 1962 Surveyed: 1961 Revised: 1961 Copyright: 1962 Levelled: 1950
Date: 1962 Surveyed: 1961 Revised: 1961 Copyright: 1962 Levelled: 1957

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Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

Map name:	National Grid
Map date:	1973
Scale:	1:2,500
Printed at:	1:2,500

N

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S

Date: 1973

Date: 1973

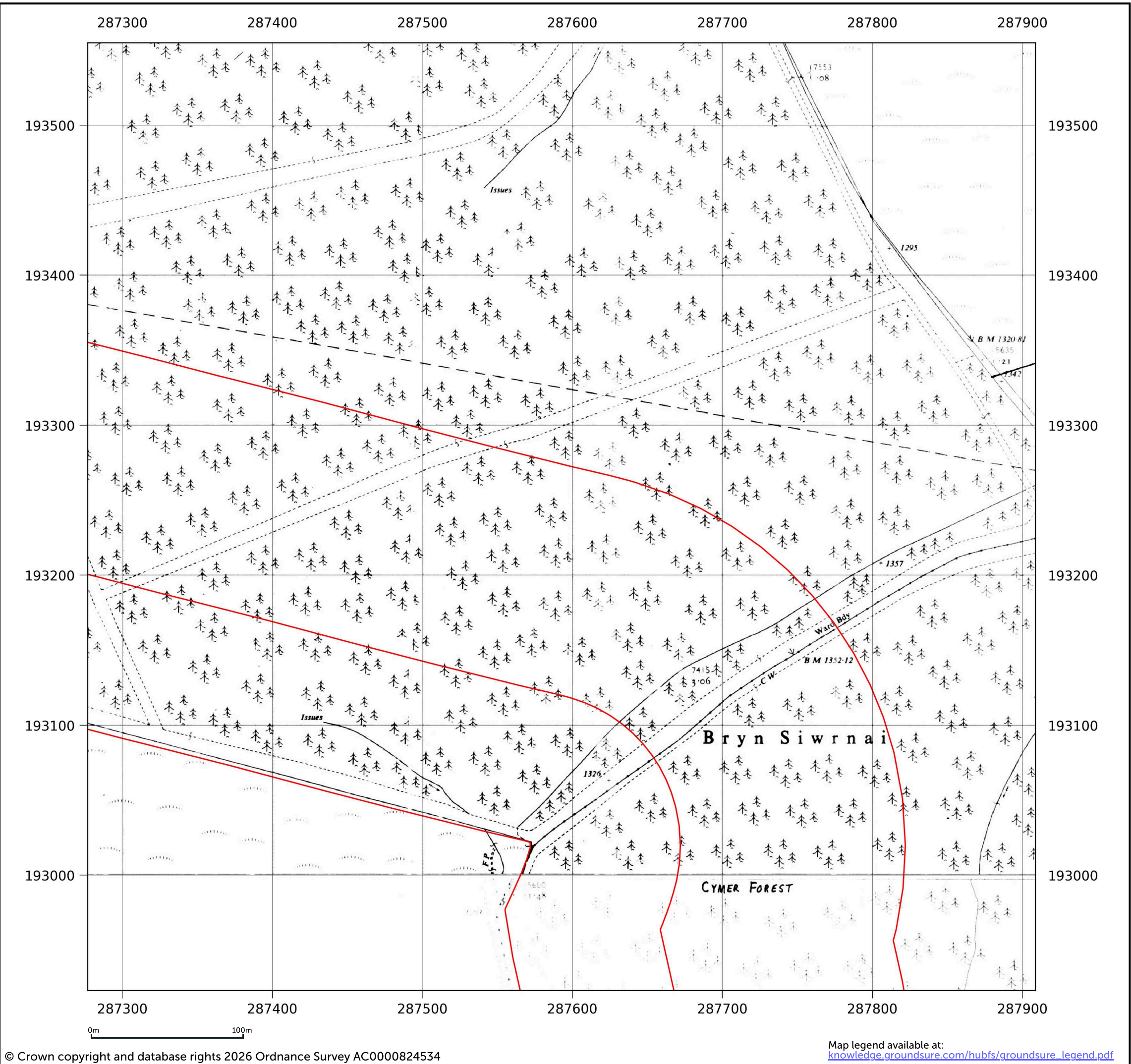
2_2

3_2

2_1

3_1

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Site details:

Client ref:

Report ref:

Grid ref:

Production date:

Pwll y Lwrch - Northern Array

P125019UK001

WSP-TWM-EC5-OAJ-Q37

287008.97, 192839.99

18 June 2026

Map name:

Map date:

Scale:

Printed at:

National Grid

1993

1:2,500

1:2,500

Date: 1993

Copyright: 1993

Date: 1993

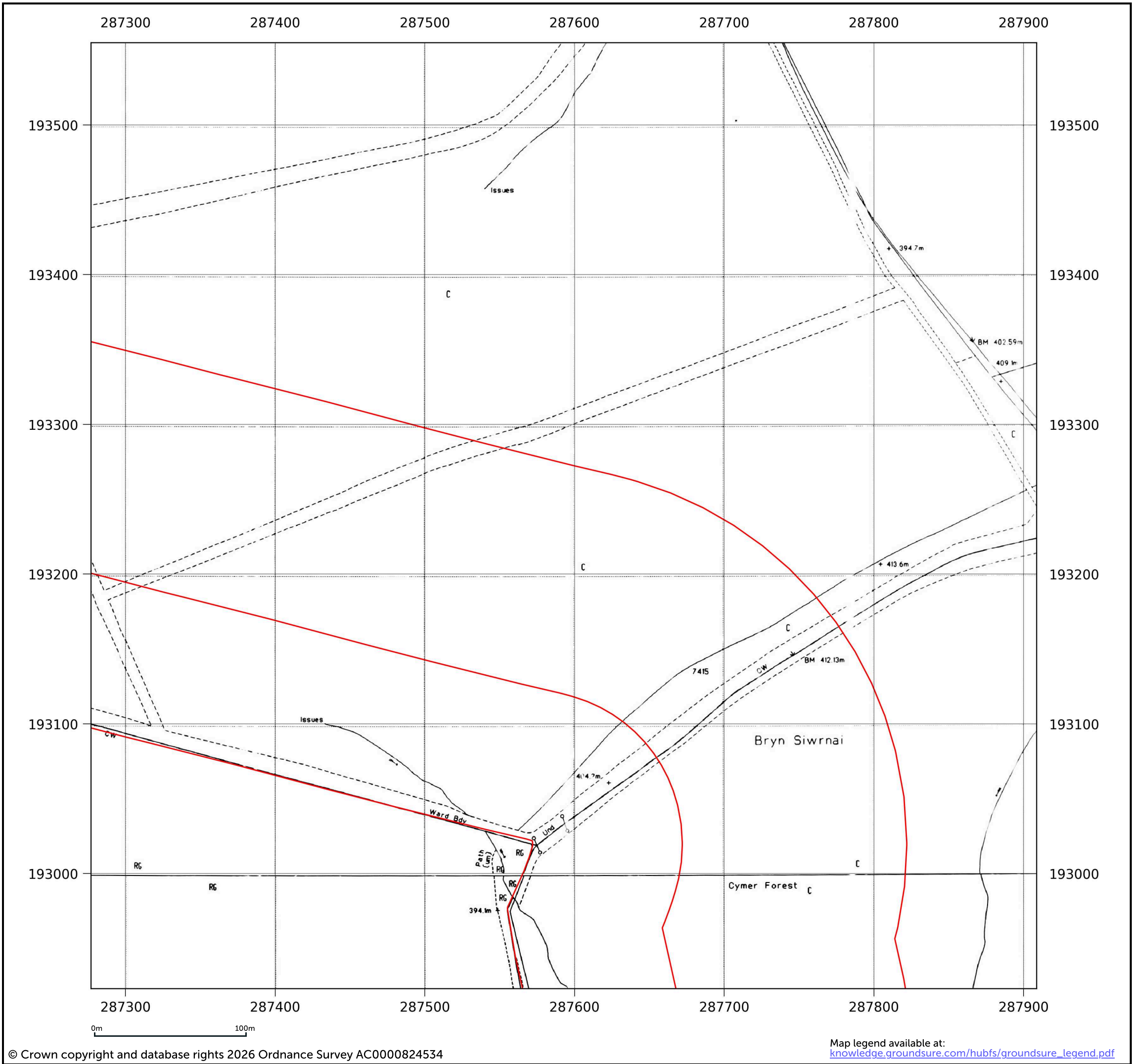
Copyright: 1993

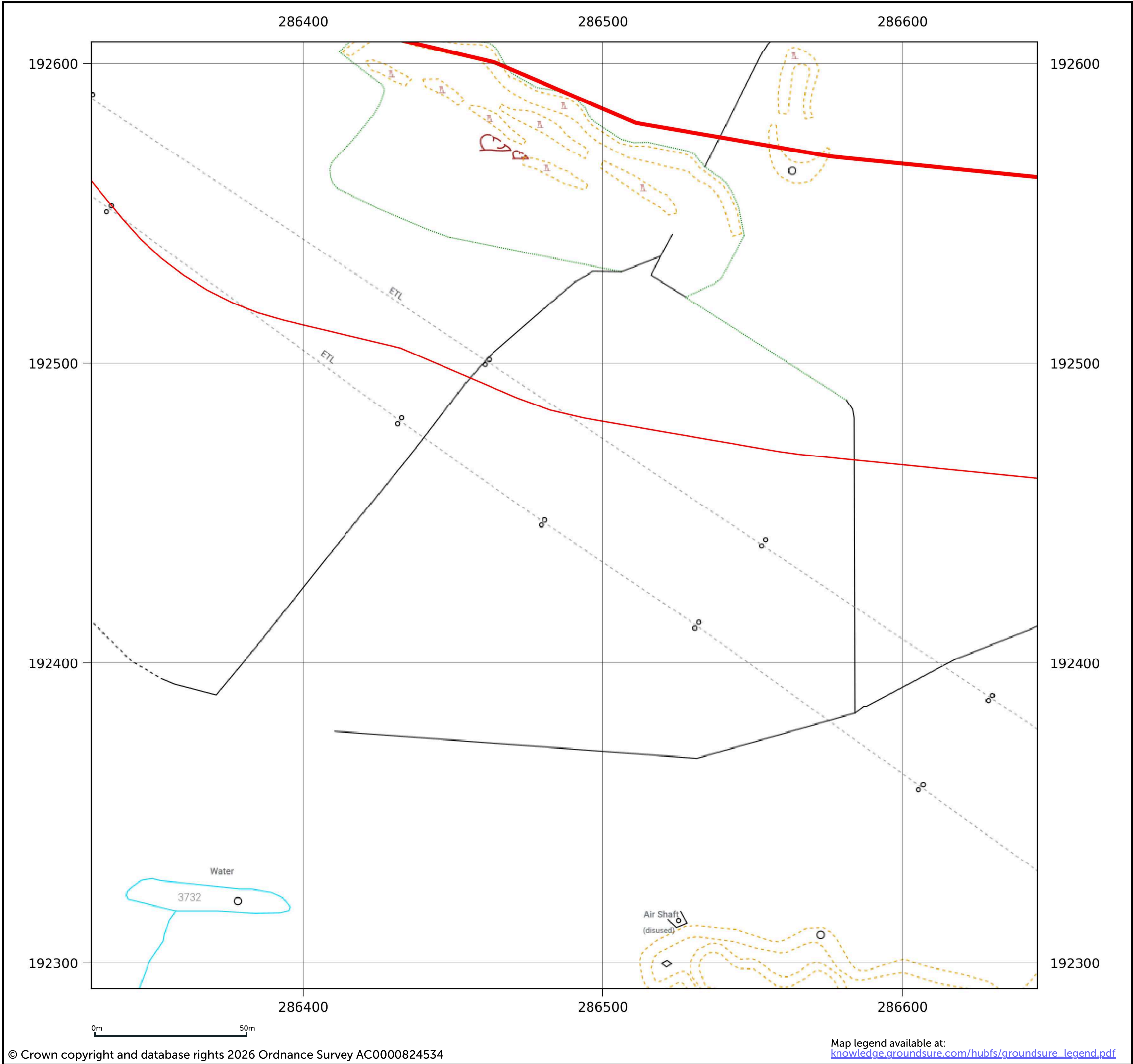
2_2

3_2

2_1

3_1



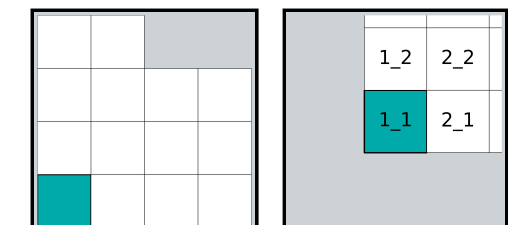


Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

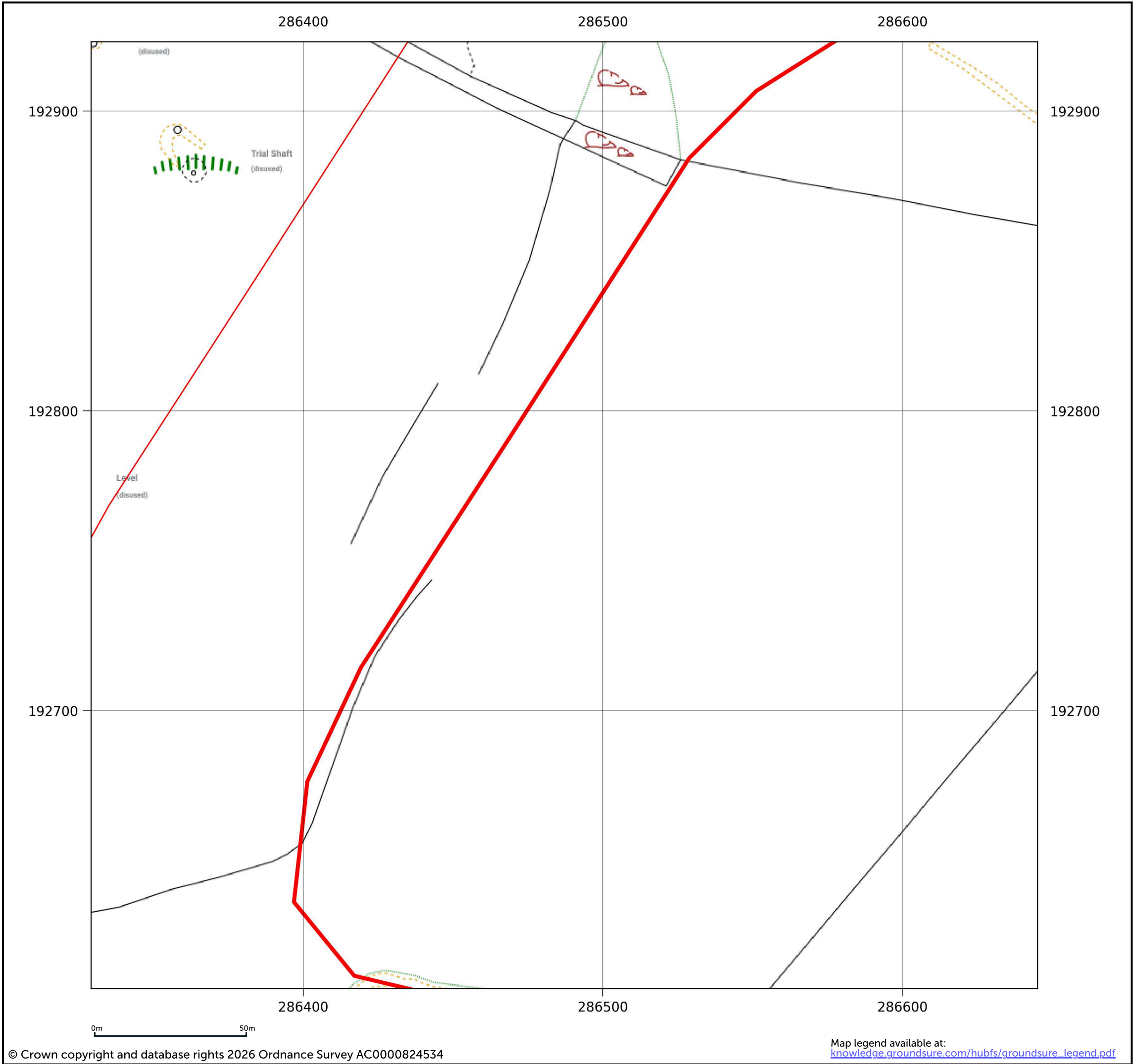
Map name:	LandLine
Map date:	2003
Scale:	1:1,250
Printed at:	1:1,250



Date: 2003



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Site details:

Pwll y Lwrch - Northern Array

Client ref:

P125019UK001

Report ref:

WSP-TWM-EC5-OAJ-Q37

Grid ref:

287008.97, 192839.99

Production date:

18 June 2026

Map name:

LandLine

Map date:

2003

Scale:

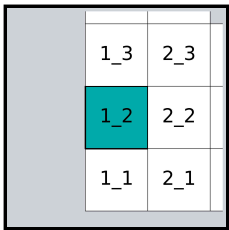
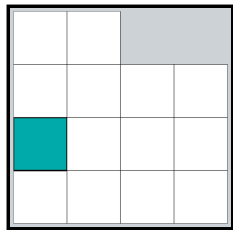
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Printed at:

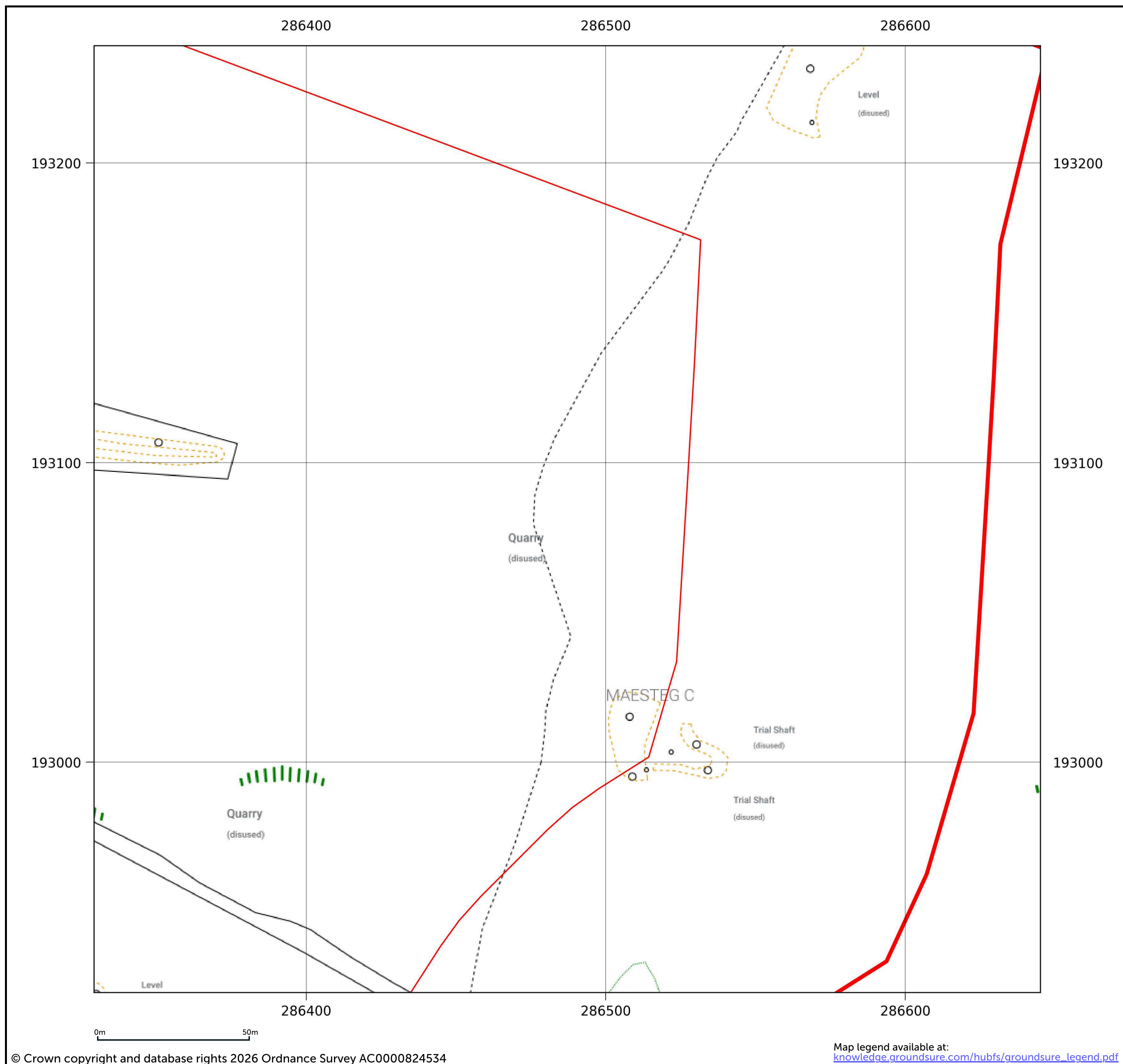
1:1,250



Date: 2003



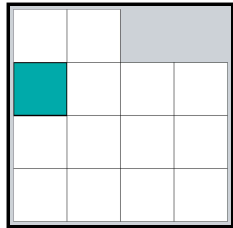
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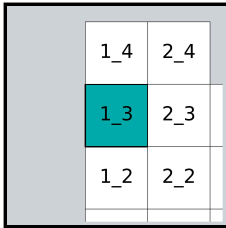


Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

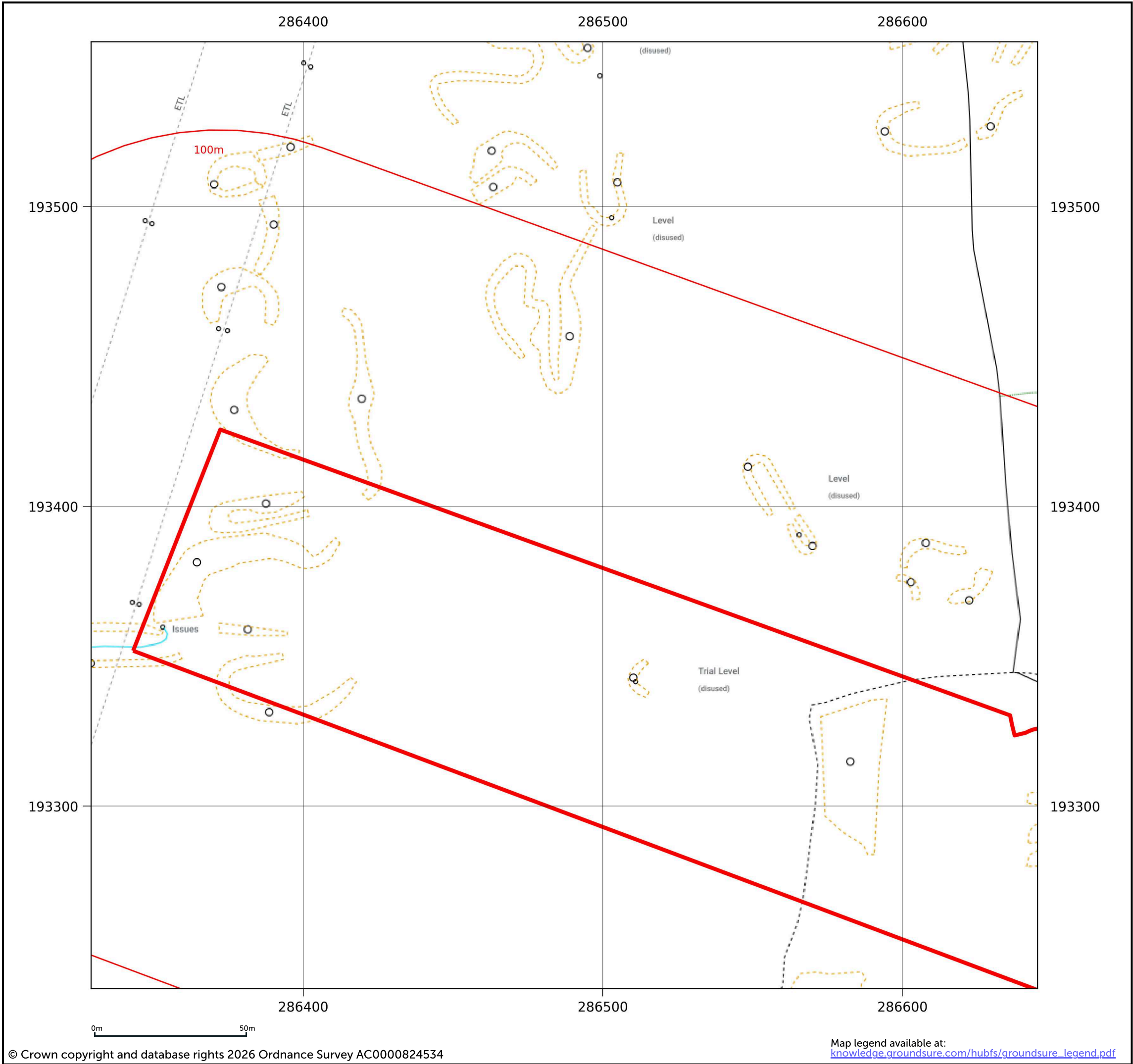
Map name:	LandLine	
Map date:	2003	
Scale:	1:1,250	
Printed at:	1:1,250	

Date: 2003





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Site details:

Pwll y Lwrch - Northern Array

Client ref:

P125019UK001

Report ref:

WSP-TWM-EC5-OAJ-Q37

Grid ref:

287008.97, 192839.99

Production date:

18 June 2026

Map name:

LandLine

Map date:

2003

Scale:

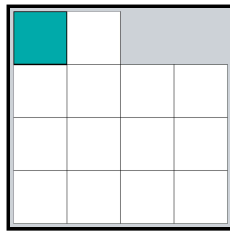
1:1,250

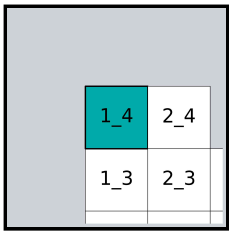
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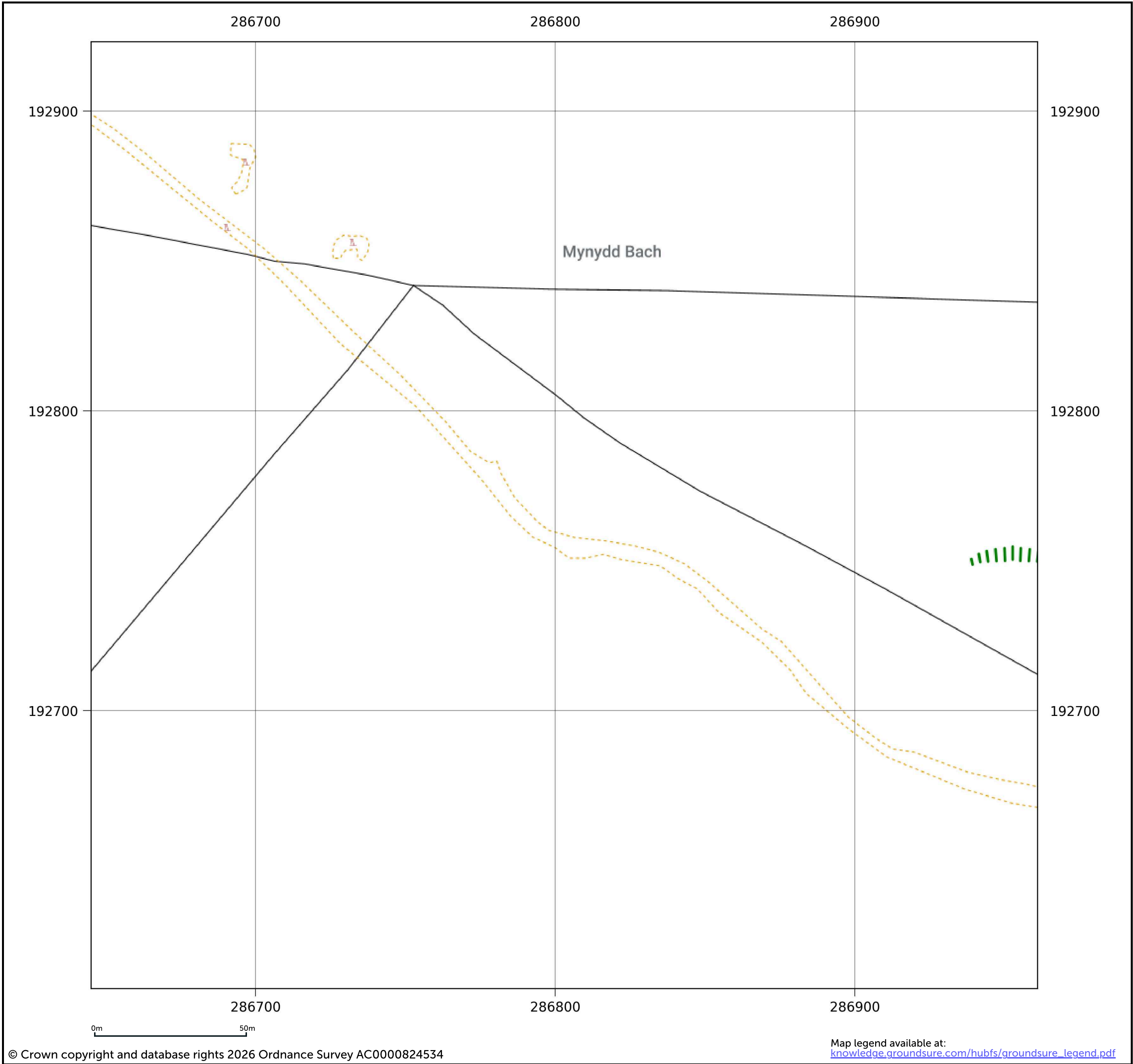


Date: 2003





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Site details:

Pwll y Lwrch - Northern Array

Client ref:

P125019UK001

Report ref:

WSP-TWM-EC5-OAJ-Q37

Grid ref:

287008.97, 192839.99

Production date:

18 June 2026

Map name:

LandLine

Map date:

2003

Scale:

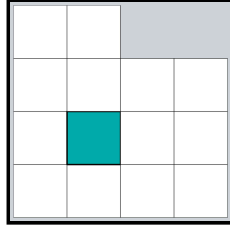
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Printed at:

1:1,250

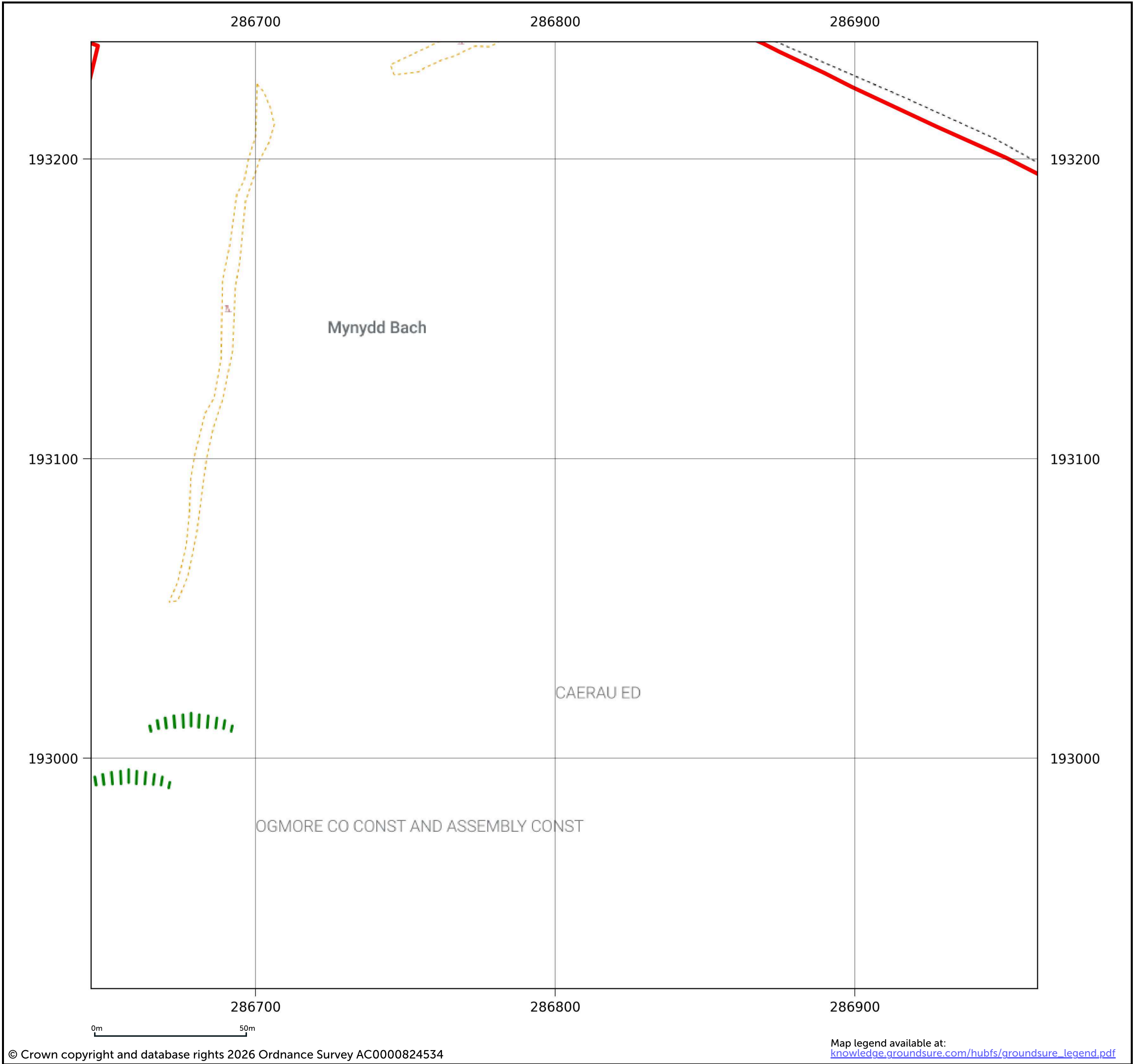


Date: 2003



1_3	2_3	3_3
1_2	2_2	3_2
1_1	2_1	3_1

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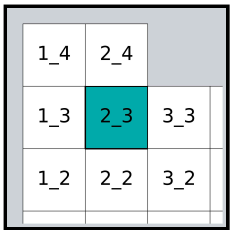
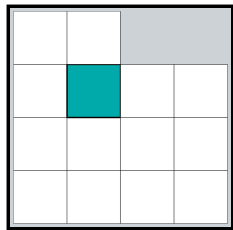


Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

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



Date: 2003



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Site details:

Client ref:

Report ref:

Grid ref:

Production date:

Pwll y Lwrch - Northern Array

P125019UK001

WSP-TWM-EC5-OAJ-Q37

287008.97, 192839.99

18 June 2026

Map name:

Map date:

Scale:

Printed at:

LandLine

2003

1:1,250

1:1,250

N

W

E

S

Date: 2003

1_4

2_4

1_3

2_3

3_3

1_4

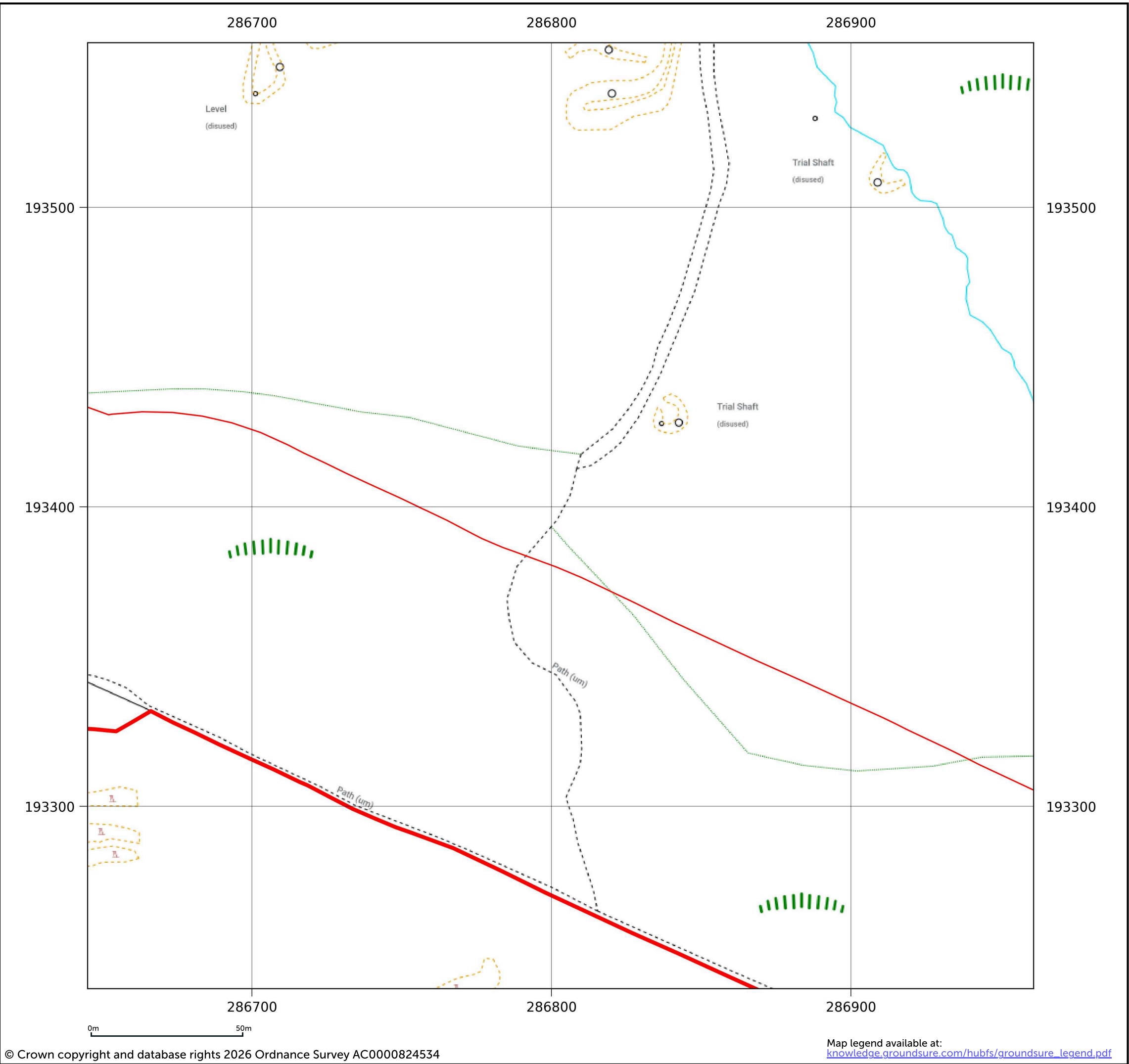
2_4

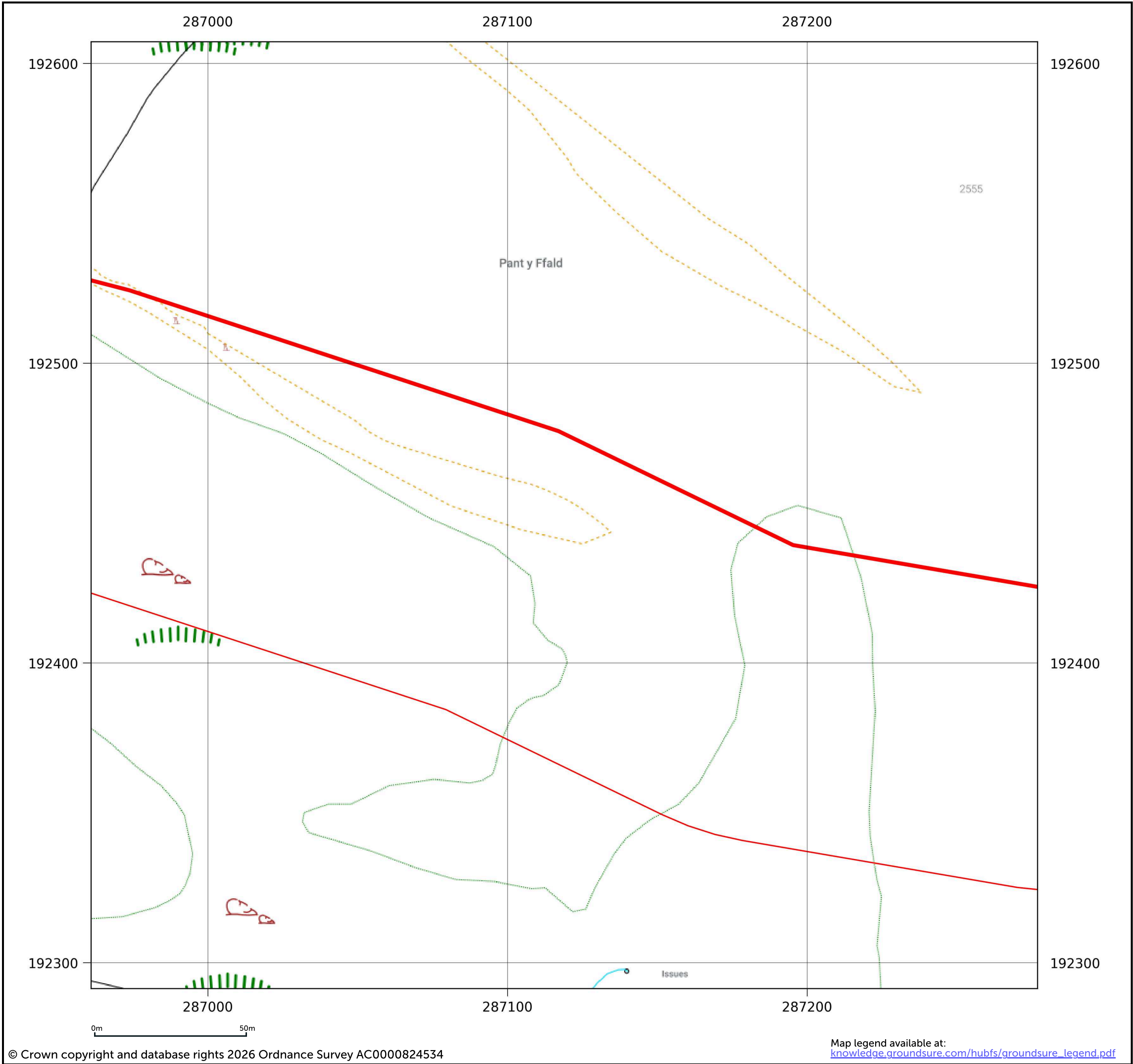
1_3

2_3

3_3

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Site details:
Client ref:
Report ref:
Grid ref:
Production date:

Pwll y Lwrch - Northern Array
P125019UK001
WSP-TWM-EC5-OAJ-Q37
287008.97, 192839.99
18 June 2026

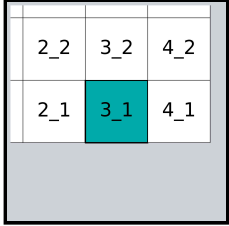
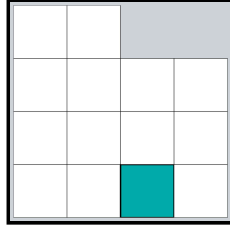
Map name:
Map date:
Scale:
Printed at:

LandLine
2003
1:1,250
1:1,250

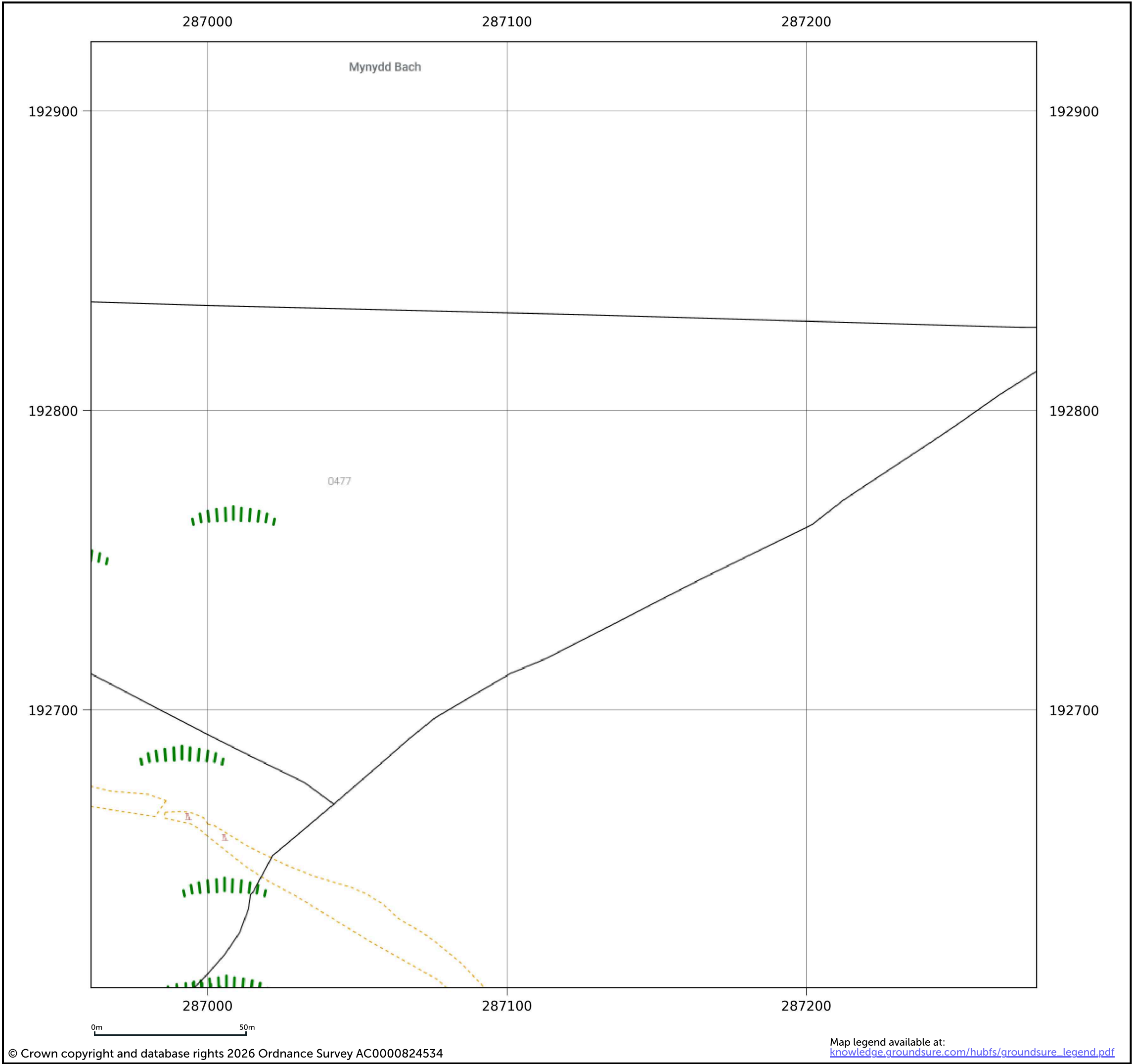




Date: 2003



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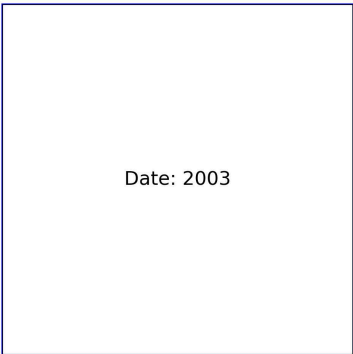
Site details:
Client ref:
Report ref:
Grid ref:
Production date:

Pwll y Lwrch - Northern Array
P125019UK001
WSP-TWM-EC5-OAJ-Q37
287008.97, 192839.99
18 June 2026

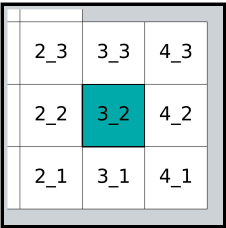
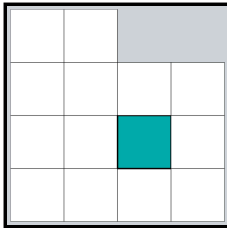
Map name:
Map date:
Scale:
Printed at:

LandLine
2003
1:1,250
1:1,250

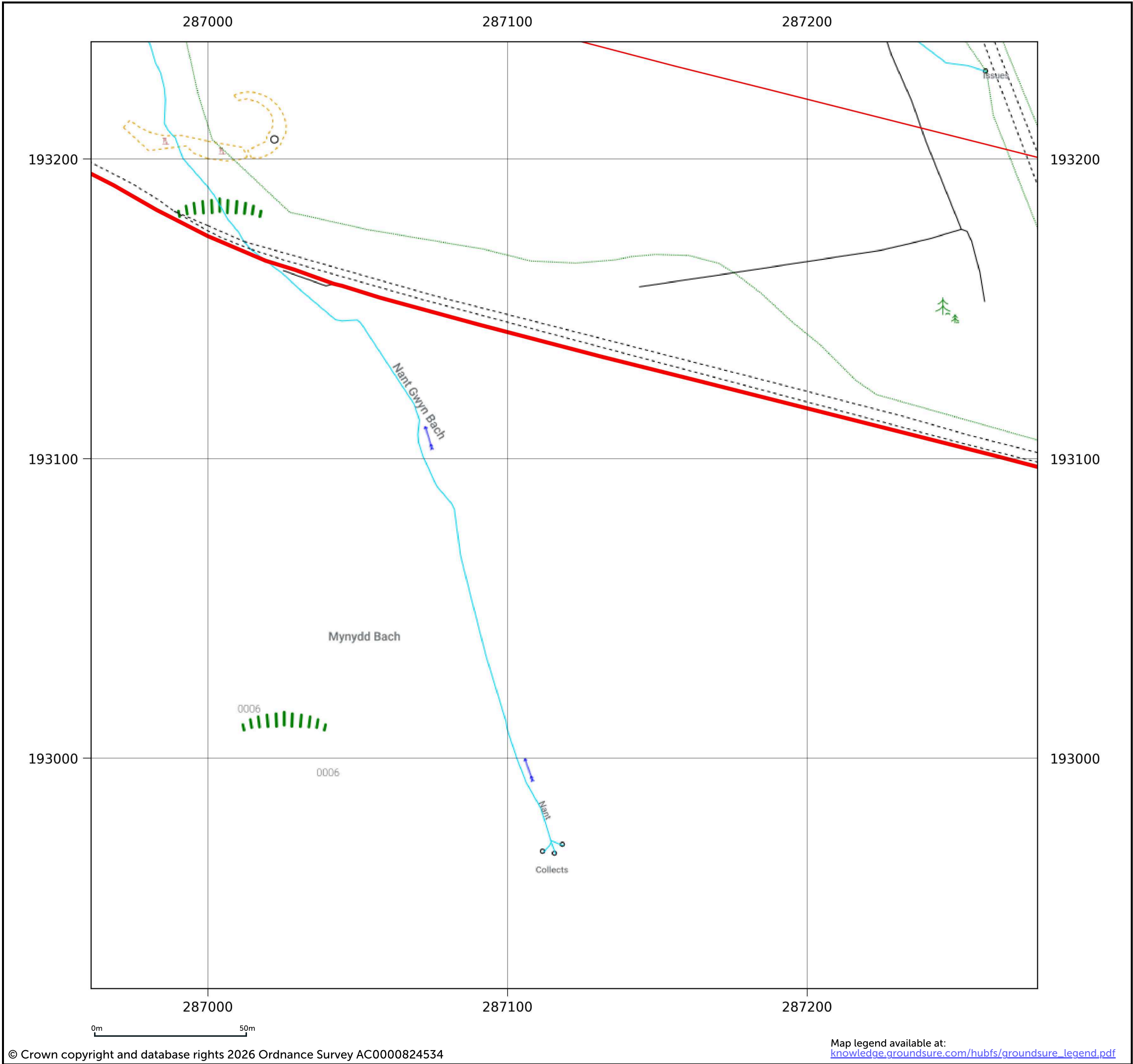




Date: 2003



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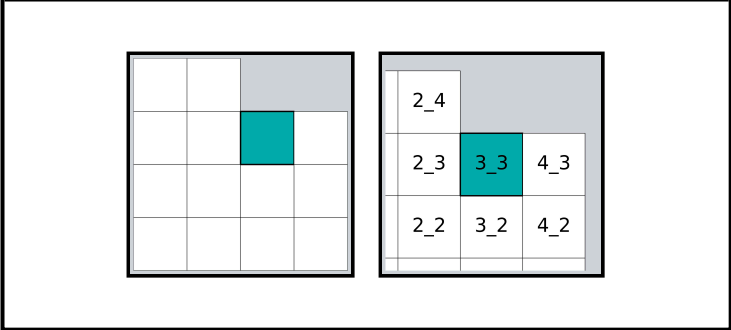


Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

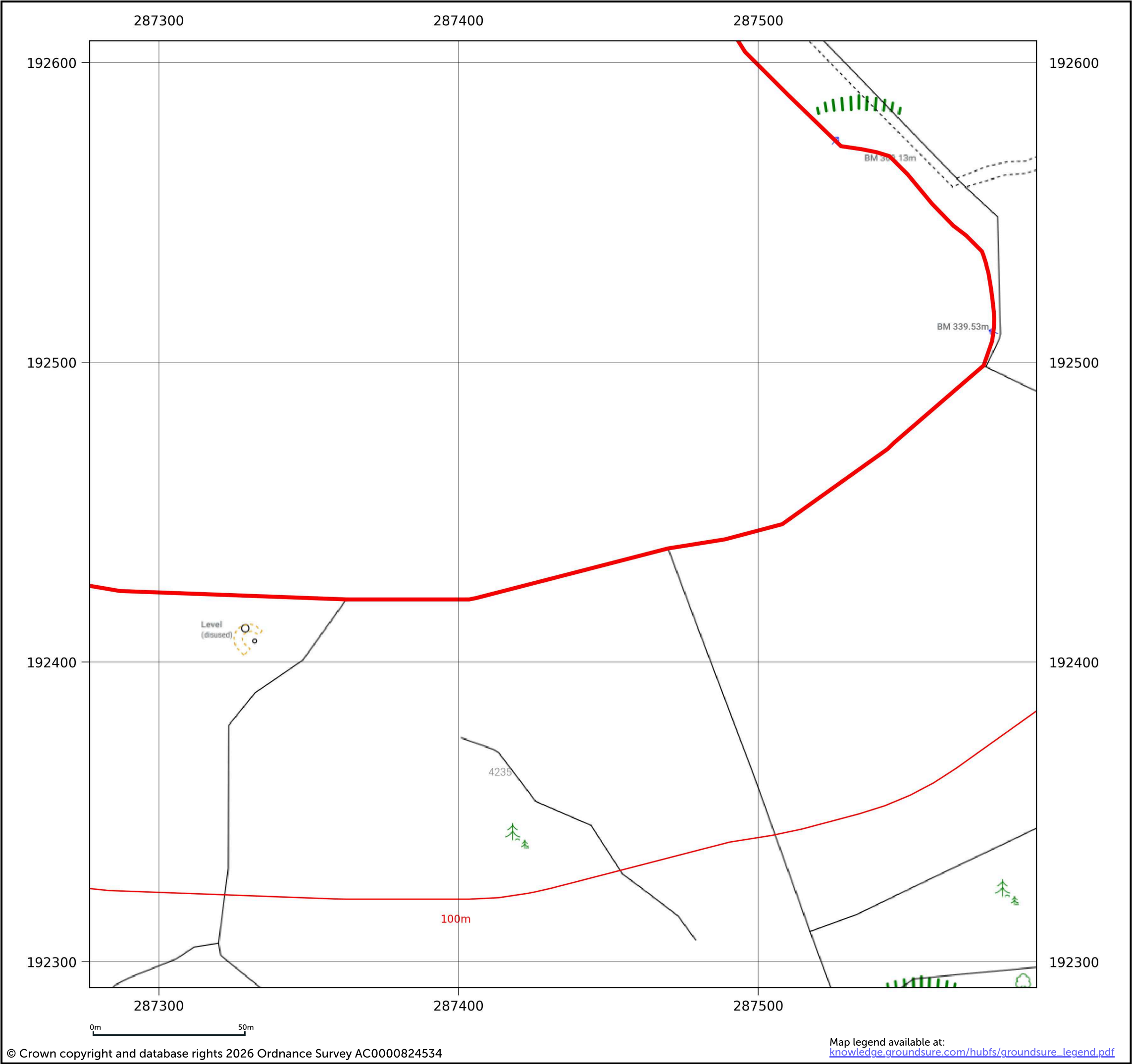
Map name:	LandLine
Map date:	2003
Scale:	1:1,250
Printed at:	1:1,250



Date: 2003



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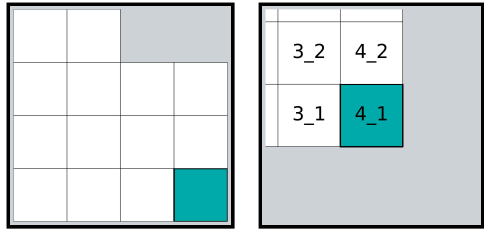


Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

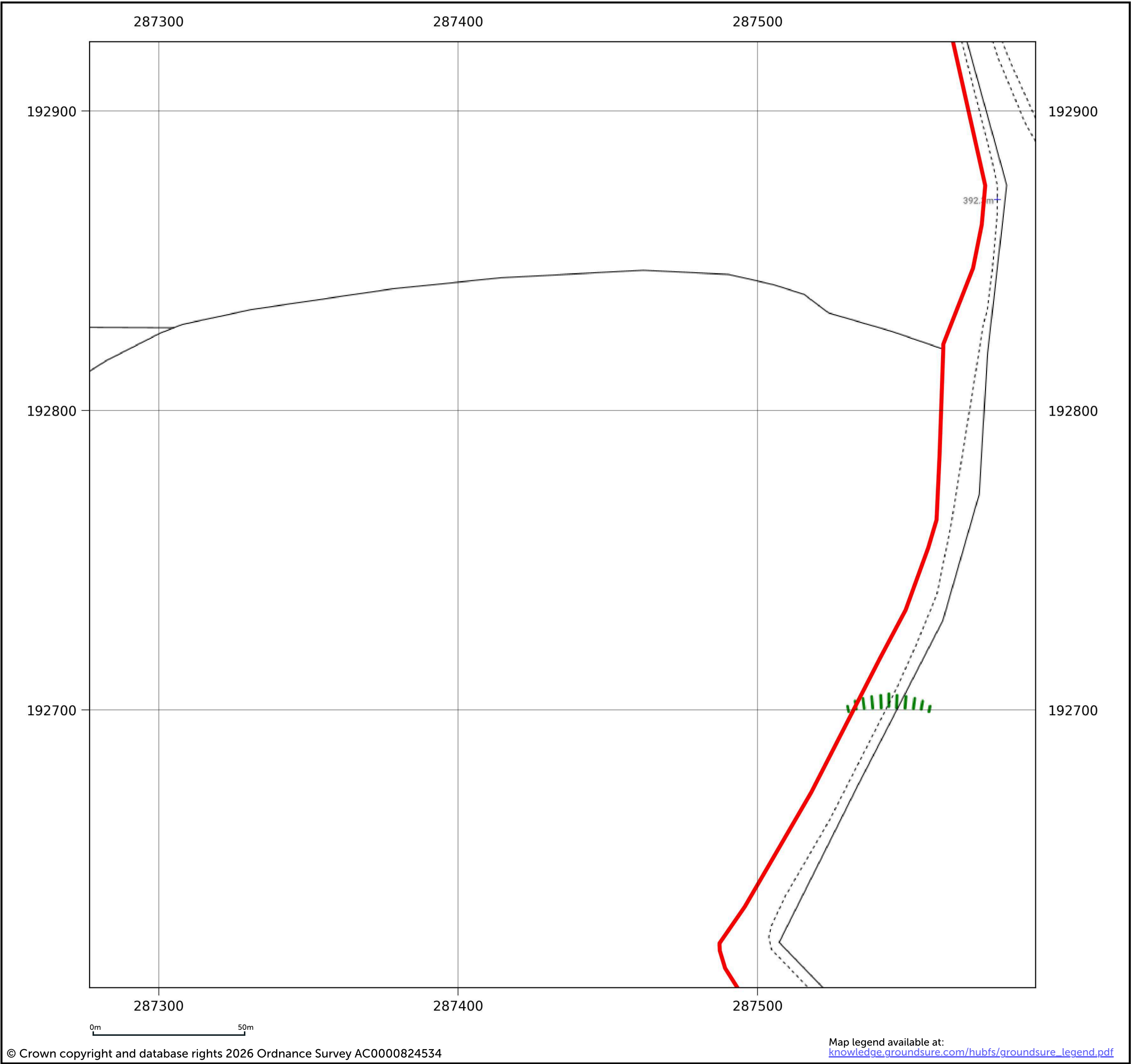
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Date: 2003



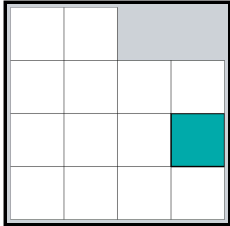
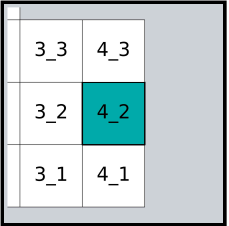
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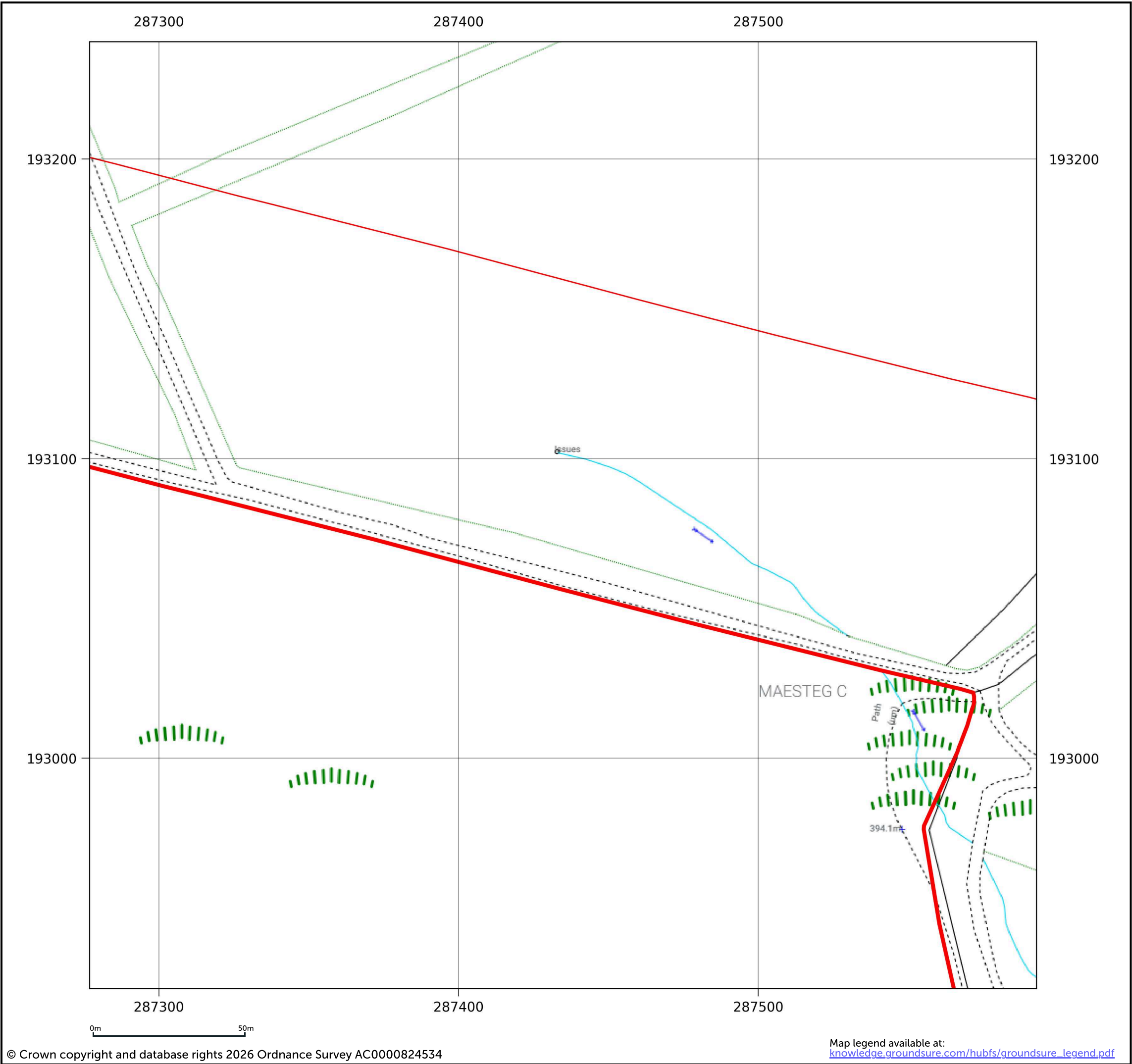
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Client ref:	P125019UK001
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Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

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

Date: 2003

	
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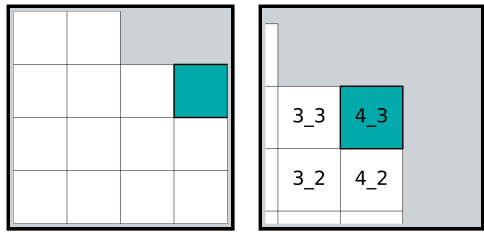


Site details:	Pwll y Lwrch - Northern Array
Client ref:	P125019UK001
Report ref:	WSP-TWM-EC5-OAJ-Q37
Grid ref:	287008.97, 192839.99
Production date:	18 June 2026

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



Date: 2003



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Annex C

COAL AUTHORITY REPORT





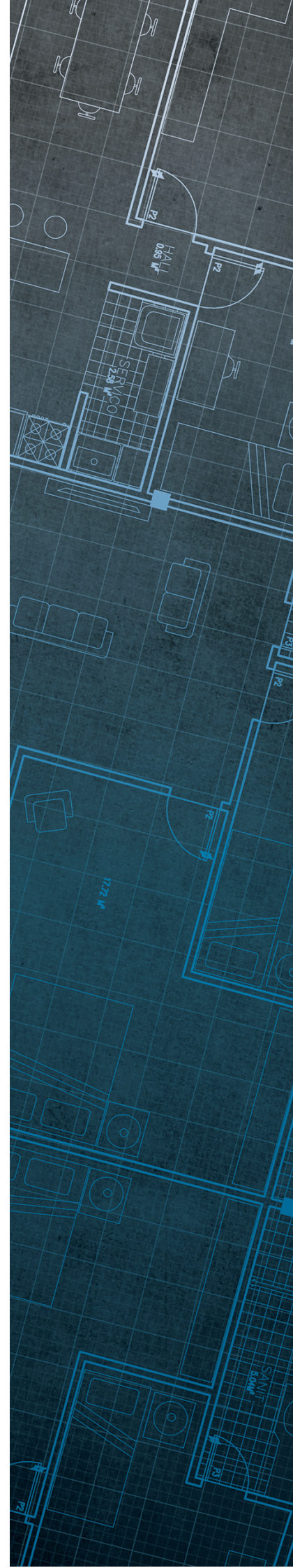
The Coal
Authority

Consultants Coal Mining Report

Pwll Y Lwrch - Northern Array
Bridgend

Date of enquiry: 18 June 2026
Date enquiry received: 18 June 2026
Issue date: 18 June 2026

Our reference: 51003577447001
Your reference: WSP-JNB-EQV-43U-005



Consultants

Coal Mining Report

This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

GROUNDSURE LIMITED

Enquiry address

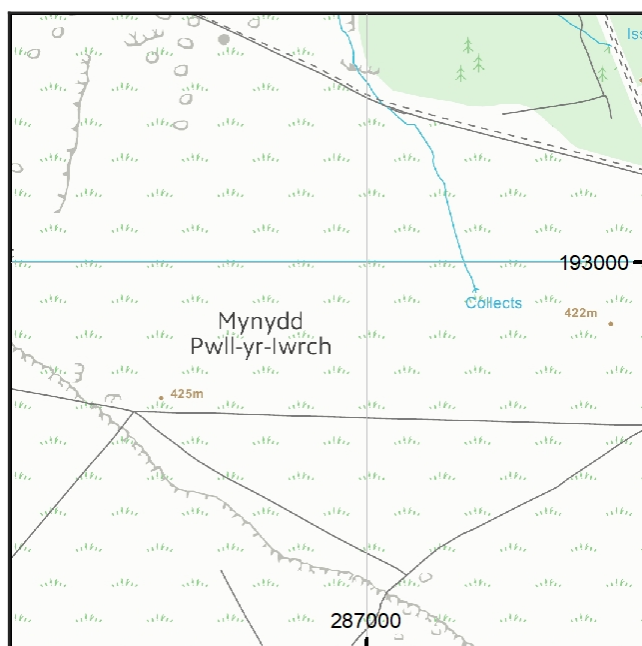
Pwll Y Lwrch - Northern Array
Bridgend

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Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	UNNAMED	Coal	4H9Q	67 	North-West	6.2	South-West	89	1855
unnamed	GORLLWYN	Coal	4DYK	74 	Beneath Property	2.6	North	114	1865
unnamed	PENTRE RIDER	Coal	4Z9A	75 	Beneath Property	5.4	North-East	130	1884
unnamed	UNNAMED	Coal	4H0B	75	Beneath Property	0.0	East	89	1862
unnamed	UPPER PENTRE	Coal	4H9G	76	Beneath Property	4.7	North-East	70	1870
unnamed	UNNAMED	Coal	4H9K	82	Beneath Property	3.5	North-East	89	1865
unnamed	LOWER BLACK BANK	Coal	4H7J	85	Beneath Property	4.6	North-East	60	1855
unnamed	UNNAMED	Coal	4H9P	92	North-West	5.5	South	89	1855
unnamed	UNNAMED	Coal	4H09	93	Beneath Property	4.5	North-East	89	1862
unnamed	UNNAMED	Coal	4H9R	95	Beneath Property	0.0	East	89	1862
unnamed	LOWER BLACK BANK	Coal	4DYI	99	Beneath Property	4.6	North-East	60	1878
unnamed	PENTRE RIDER	Coal	4DYJ	113	Beneath Property	5.4	North-East	81	1884
unnamed	UNNAMED	Coal	4H9J	113	Beneath Property	4.2	North	89	1865
unnamed	LOWER BLACK BANK	Coal	4DYH	116	Beneath Property	4.5	North-East	60	1864
unnamed	UNNAMED	Coal	4H9L	122	Beneath Property	4.7	North-East	89	1865
CWMDU	PENTRE RIDER	Coal	4Z97	125	Beneath Property	4.8	North-East	136	1884
unnamed	EIGHTEEN INCH	Coal	4H8D	126	Beneath Property	4.9	North-East	69	1884
unnamed	UPPER PENTRE	Coal	4DZN	128	Beneath Property	5.6	North-East	70	1870
unnamed	PENTRE RIDER	Coal	4Z9G	130	Beneath Property	2.7	North	130	1881
unnamed	LOWER BLACK BANK	Coal	4H7K	131	Beneath Property	3.8	North-East	60	1877
unnamed	UPPER PENTRE	Coal	4H9I	131	South	4.8	North-East	70	1870

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	LOWER BLACK BANK	Coal	4H7M	133	Beneath Property	4.7	North-East	60	1878
unnamed	PENTRE RIDER	Coal	4H4N	135	Beneath Property	3.4	North-East	81	1884
unnamed	PENTRE RIDER	Coal	4Z98	135	East	5.2	North-East	136	1893
unnamed	EIGHTEEN INCH	Coal	4DYS	137	Beneath Property	5.0	North	74	1884
unnamed	PENTRE RIDER	Coal	4Z99	140	Beneath Property	5.4	North-East	130	1884
unnamed	LOWER BLACK BANK	Coal	4H7G	148	Beneath Property	2.5	North	60	1872
CAER DEFAID	EIGHTEEN INCH	Coal	4DYT	149	Beneath Property	5.0	North-East	74	1897
unnamed	GORLLWYN	Coal	4H98	150	Beneath Property	2.2	North	114	1865
unnamed	PENTRE RIDER	Coal	4Z9E	153	Beneath Property	2.7	North	130	1884
unnamed	UPPER PENTRE	Coal	4H9F	161	Beneath Property	4.3	North-East	70	1890
unnamed	LOWER BLACK BANK	Coal	4H7I	161	South	0.0	East	60	1855
unnamed	PENTRE RIDER	Coal	4Z9C	166	South	4.5	North	130	1884
unnamed	PENTRE RIDER	Coal	4Z9B	167	South	5.5	North-East	136	1884
unnamed	GORLLWYN	Coal	4DYO	170	North-East	4.7	North-East	114	1882
unnamed	GORLLWYN	Coal	4H97	172	South-West	4.3	North-East	114	1865
unnamed	GORLLWYN	Coal	4H99	178	Beneath Property	3.1	North-East	114	1886
unnamed	LOWER BLACK BANK	Coal	4H7H	178	South	4.5	North	60	1855
unnamed	UPPER PENTRE	Coal	4H9D	181	South	3.4	North-East	70	1890
unnamed	GORLLWYN	Coal	4DYN	185	Beneath Property	0.0	East	114	1882
unnamed	GORLLWYN	Coal	4DYL	186	Beneath Property	2.1	North	114	1865
unnamed	GORLLWYN	Coal	4H96	195	South-West	0.0	East	114	1865
CAER DEFAID	EIGHTEEN INCH	Coal	4H8F	197	Beneath Property	0.0	East	69	1895
unnamed	EIGHTEEN INCH	Coal	4DYU	198	Beneath Property	4.6	North-East	74	1882
unnamed	GORLLWYN	Coal	4H95	210	South	7.7	North	114	1865

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	GORLLWYN	Coal	4H9A	216	Beneath Property	5.8	South-West	114	1872
unnamed	GORLLWYN	Coal	4H9C	216	Beneath Property	0.0	East	114	1872
unnamed	TWO FOOT NINE	Coal	4H8U	238	Beneath Property	10.5	South	170	1894
unnamed	TWO FOOT NINE	Coal	4H0R	247	North	2.6	West	170	1900
CAERAU	CAERAU	Coal	4H03	249	West	1.1	North-East	178	1951
unnamed	TWO FOOT NINE	Coal	4H0Q	251	Beneath Property	3.3	North-East	170	1900
MAESTEG DEEP	TWO FOOT NINE	Coal	4H8X	255	Beneath Property	8.7	East	170	1922
unnamed	TWO FOOT NINE	Coal	4H8V	268	Beneath Property	7.6	North-East	170	1896
unnamed	TWO FOOT NINE	Coal	4H8T	281	Beneath Property	0.0	East	170	1925
unnamed	TWO FOOT NINE	Coal	4H0S	284	Beneath Property	3.9	South-West	170	1897
unnamed	TWO FOOT NINE	Coal	4H8W	288	Beneath Property	7.7	North-East	170	1896
unnamed	TWO FOOT NINE	Coal	4H8Z	294	Beneath Property	0.0	East	170	1920
unnamed	CAERAU	Coal	4H7U	299	Beneath Property	14.7	North-West	178	1921
unnamed	TWO FOOT NINE	Coal	4H93	303	Beneath Property	5.7	South	170	1896
unnamed	TWO FOOT NINE	Coal	4H8R	304	South-West	7.5	North-East	170	1930
unnamed	UPPER SIX FEET	Coal	4H0L	307	Beneath Property	2.1	North	183	1896
unnamed	UPPER 6FT RIDER	Coal	4H0I	312	Beneath Property	0.0	East	110	1947
unnamed	TWO FOOT NINE	Coal	4H94	313	Beneath Property	5.8	South	170	1896
unnamed	TWO FOOT NINE	Coal	4H91	316	South	3.7	South-West	163	1937
unnamed	UPPER 6FT RIDER	Coal	4H0J	318	Beneath Property	0.0	East	110	1896
unnamed	TWO FOOT NINE	Coal	4H0T	320	Beneath Property	4.4	North	170	1902
COEGNANT	BUTE	Coal	4DZR	324	West	7.0	North	145	1915
COEGNANT	CAERAU	Coal	4H7S	327	Beneath Property	5.2	North-East	178	1948
unnamed	UPPER SIX FEET	Coal	4H83	329	North-West	5.8	South-West	200	1892
unnamed	CAERAU	Coal	4H7R	330	North-West	6.9	South-West	170	1949
unnamed	UPPER SIX FEET	Coal	4H82	334	North-West	5.7	South	200	1910

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	UPPER SIX FEET	Coal	4H81	335	South-West	0.0	East	200	1912
unnamed	UPPER SIX FEET	Coal	4H0K	339	Beneath Property	0.0	East	183	1892
unnamed	CAERAU	Coal	4H7T	340	North-West	0.0	East	178	1909
unnamed	LOWER NINE FOOT TOP LEAF	Coal	4HA0	340	South	5.7	South	175	1925
unnamed	UPPER SIX FEET	Coal	4H0N	342	Beneath Property	2.0	North-West	190	1900
unnamed	UPPER 6FT RIDER	Coal	4F3B	342	North-West	0.0	East	110	1947
COEGNANT	CAERAU	Coal	4H06	344	Beneath Property	7.4	South-West	147	1931
unnamed	UPPER SIX FEET	Coal	4H84	344	Beneath Property	1.5	South-East	200	1917
ST JOHNS	LOWER NINE FOOT TOP LEAF	Coal	4H9Z	347	South	3.0	North-East	175	1927
unnamed	LOWER NINE FOOT TOP LEAF	Coal	4HA5	348	South	9.7	North-East	175	1918
unnamed	UPPER SIX FEET	Coal	4H85	351	Beneath Property	4.7	South	200	1908
unnamed	CAERAU	Coal	4H7V	353	Beneath Property	0.0	East	178	1930
COEGNANT	BUTE	Coal	4DZT	353	North	1.8	South-West	145	1917
ST JOHNS	BUTE	Coal	4HAL	355	South	0.0	East	130	1933
unnamed	CAERAU	Coal	4H02	366	South-West	1.2	North-East	178	1902
unnamed	BUTE	Coal	4HAJ	366	South-West	1.9	North	130	1941
CAERAU	CAERAU	Coal	4H07	373	Beneath Property	7.9	North-East	178	1923
unnamed	LOWER NINE FOOT TOP LEAF	Coal	4H9V	378	Beneath Property	0.0	East	221	1928
COEGNANT	LOWER NINE FOOT TOP LEAF	Coal	4H9W	378	Beneath Property	4.4	North	135	1928
COEGNANT	LOWER NINE FOOT	Coal	4DZ4	381	Beneath Property	1.3	South	189	1930
unnamed	BUTE	Coal	4HAH	381	Beneath Property	4.0	North-East	130	1928
COEGNANT	CAERAU	Coal	4H05	383	Beneath Property	7.2	South-West	147	1930
ST JOHNS	BUTE	Coal	4HAK	384	Beneath Property	2.1	North-East	130	1949
unnamed	CAERAU	Coal	4H7Y	385	Beneath Property	10.8	South	178	1964

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	CAERAU	Coal	4H7Z	386	Beneath Property	0.0	East	178	1923
unnamed	LOWER NINE FOOT	Coal	4DZ6	387	Beneath Property	9.0	North	189	1914
unnamed	CAERAU	Coal	4H7X	388	Beneath Property	0.0	East	178	1930
ST JOHNS	LOWER NINE FOOT TOP LEAF	Coal	4HA1	391	Beneath Property	4.7	North-East	175	1928
unnamed	YARD	Coal	4H7P	392	South	2.5	North	90	1959
COEGNANT	LOWER NINE FOOT	Coal	4DZ8	394	Beneath Property	2.1	South-West	189	1930
unnamed	LOWER NINE FOOT TOP LEAF	Coal	4H9X	394	Beneath Property	0.0	East	168	1928
unnamed	CAERAU	Coal	4H7W	395	Beneath Property	0.0	East	178	1960
unnamed	LOWER NINE FOOT TOP LEAF	Coal	4X9Y	396	Beneath Property	0.0	East	168	1931
ST JOHNS	BUTE	Coal	4HAI	396	South-West	4.4	North-East	130	1952
COEGNANT	LOWER NINE FOOT	Coal	4DZ7	400	Beneath Property	0.0	East	189	1931
COEGNANT	BUTE	Coal	4DZS	404	Beneath Property	3.3	North-West	145	1925
COEGNANT	BUTE	Coal	4DZQ	406	Beneath Property	0.0	East	145	1931
ST JOHNS	LOWER NINE FOOT TOP LEAF	Coal	4HA3	415	Beneath Property	7.0	South-East	175	1949
unnamed	LOWER NINE FOOT TOP LEAF	Coal	4H9U	418	North-West	0.0	East	135	1930
ST JOHNS	BUTE	Coal	4HAN	429	East	3.9	South-East	130	1985
unnamed	LOWER NINE FOOT TOP LEAF	Coal	4HA4	431	Beneath Property	10.5	South-West	175	1957
unnamed	LOWER 7FT BOTTOM LEAF	Coal	4H87	436	Beneath Property	5.9	North-East	120	1949
unnamed	LOWER NINE FOOT TOP LEAF	Coal	4HA2	443	Beneath Property	13.3	North	175	1927
CAERAU	LOWER NINE FOOT	Coal	4DZC	443	North-East	8.9	South	156	1959
CAERAU	LOWER NINE FOOT	Coal	4DZB	443	North-East	4.1	West	156	1956
unnamed	BUTE	Coal	4HNO	444	Beneath Property	0.0	East	130	1947

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	LOWER NINE FOOT TOP LEAF	Coal	4HA7	449	Beneath Property	3.3	South	175	1974
unnamed	LOWER 7FT BOTTOM LEAF	Coal	4H88	450	South	8.3	North-East	120	1937
COEGNANT	YARD	Coal	4H7N	451	North-West	2.6	North-West	155	1981
CAERAU	LOWER NINE FOOT	Coal	4DZA	451	North	0.0	East	156	1961
unnamed	FIVE FOOT	Coal	4HAA	452	Beneath Property	2.4	East	159	1923
unnamed	LOWER 7FT BOTTOM LEAF	Coal	4H86	453	South	2.4	South-East	120	1940
unnamed	FIVE FOOT	Coal	4HAB	456	Beneath Property	5.1	North	159	1943
unnamed	FIVE FOOT	Coal	4HA8	463	South	0.0	East	159	1934
unnamed	FIVE FOOT GELLIDEG	Coal	4H8J	465	South	0.0	East	145	1954
COEGNANT	YARD	Coal	4H01	470	North-West	0.0	East	146	1981
unnamed	LOWER 7FT BOTTOM LEAF	Coal	4H8A	476	South	0.0	East	120	1946
unnamed	FIVE FOOT GELLIDEG	Coal	4H8H	478	South	4.0	East	152	1959
CAERAU	LOWER NINE FOOT	Coal	4DZI	482	North	9.3	South-West	156	1965
unnamed	FIVE FOOT GELLIDEG	Coal	4H8I	483	Beneath Property	5.4	North	152	1964
ST JOHNS	FIVE FOOT	Coal	4DZ0	489	Beneath Property	3.1	North-East	170	1945
unnamed	FIVE FOOT	Coal	4HAC	490	Beneath Property	8.8	North-East	173	1952
ST JOHNS	FIVE FOOT GELLIDEG	Coal	4H8K	502	Beneath Property	3.9	North-East	145	1962
unnamed	FIVE FOOT	Coal	4DZ1	509	Beneath Property	0.0	East	170	1952
unnamed	LOWER 7FT BOTTOM LEAF	Coal	4H8B	513	Beneath Property	0.0	East	120	1952
unnamed	FIVE FOOT	Coal	4DYZ	514	Beneath Property	4.7	South	192	1950
ST JOHNS	FIVE FOOT	Coal	4DYW	522	South-West	0.0	East	181	1981
COEGNANT	FIVE FOOT GELLIDEG	Coal	4H0D	528	West	0.0	East	135	1958
COEGNANT	FIVE FOOT GELLIDEG	Coal	4D0E	538	North-West	1.7	North-West	155	1973
COEGNANT	FIVE FOOT GELLIDEG	Coal	4H0F	543	Beneath Property	8.3	North	155	1970

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	FIVE FOOT	Coal	4HAD	544	Beneath Property	0.0	East	173	1925
COEGNANT	FIVE FOOT GELLIDEG	Coal	4DOG	546	Beneath Property	3.7	South-East	155	1969
unnamed	FIVE FOOT	Coal	4DZ3	546	North	0.0	East	157	1954
unnamed	FIVE FOOT	Coal	4DZ2	547	Beneath Property	4.3	West	173	1945
unnamed	FIVE FOOT	Coal	4HAG	549	Beneath Property	0.0	East	173	1943
unnamed	FIVE FOOT GELLIDEG	Coal	4H8N	580	East	3.0	South-West	145	1964
unnamed	FIVE FOOT GELLIDEG	Coal	4H80	600	Beneath Property	0.0	East	145	1966
unnamed	FIVE FOOT GELLIDEG	Coal	4H8P	603	East	1.4	South	145	1969
unnamed	FIVE FOOT GELLIDEG	Coal	4H8M	603	South-East	13.0	North-East	145	1963
unnamed	FIVE FOOT GELLIDEG	Coal	4EGK	608	East	2.4	North-West	165	1965

Probable unrecorded shallow workings

None.

Spine roadways at shallow depth

Distance to spine roadway (m)	Direction to spine roadway
Within	N/A

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	286192-052	286371 192809	Treatment details unknown.*	Coal	
Shaft	286192-053	286407 192816	Treatment details unknown.*	Coal	
Shaft	286192-054	286781 192837	Treatment details unknown.*	Coal	
Shaft	286192-055	286719 192979	Treatment details unknown.*	Coal	
Shaft	286192-056	286758 192987	Treatment details unknown.*	Coal	
Shaft	286192-057	286967 192964	Treatment details unknown.*	Coal	
Shaft	286192-083	286575 192474	Treatment details unknown.*	Coal	
Shaft	286192-084	286402 192845	Treatment details unknown.*	Coal	
Shaft	286192-085	286352 192538	Treatment details unknown.*	Coal	
Adit	286193-009	286273 193308	Treatment details unknown.*	Coal	
Adit	286193-012	286358 193399	Treatment details unknown.*	Coal	
Adit	286193-014	286442 193364	Treatment details unknown.*	Coal	
Adit	286193-016	286569 193213	Treatment details unknown.*	Coal	
Adit	286193-017	286511 193341	Treatment details unknown.*	Coal	
Adit	286193-018	286566 193390	Treatment details unknown.*	Coal	
Adit	286193-044	286429 193405	Treatment details unknown.*	Coal	
Shaft	286193-048	286592 193113	Treatment details unknown.*	Coal	
Shaft	286193-050	286701 193166	Treatment details unknown.*	Coal	
Shaft	286193-054	286468 193371	Treatment details unknown.*	Coal	
Shaft	286193-065	286532 193001	Treatment details unknown.*	Coal	
Adit	287192-024	287332 192407	Treatment details unknown.*	Coal	
Shaft	287192-074	287038 192993	Treatment details unknown.*	Coal	
Shaft	287192-086	287055 192655	Treatment details unknown.*	Coal	
Shaft	287192-087	287121 192540	Treatment details unknown.*	Coal	
Shaft	287193-029	287174 193045	Treatment details unknown.*	Coal	
Shaft	287193-031	287142 193122	Treatment details unknown.*	Coal	

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	287193-032	287045 193234	Treatment details unknown.*	Coal	
Shaft	287193-035	287142 193049	Treatment details unknown.*	Coal	
Shaft	287193-036	287310 193012	Treatment details unknown.*	Coal	
Adit	287193-065	287031 193005	Treatment details unknown.*	Coal	

*For your information, before the coal industry was nationalised in 1947, there was no requirement for a mine operator to record mine entry treatment details when a mine was abandoned. Therefore, it is not unusual for us to have no treatment details for many of the 176,000 recorded mine entries on our database. Despite this lack of information, please be assured that the fact we have no treatment recorded does not necessarily mean that the mine entries were left untreated when abandoned.

Abandoned mine plan catalogue numbers

The following abandoned mine plan catalogue numbers intersect with some, or all, of the enquiry boundary:

SWR3724	SWR3725	SWT4079
SW3753	R10979	SWA3419
SW7	SWA2201	11773

Our records show we have more plans than those shown above which could affect the enquiry boundary.

For assistance in identifying the specific abandoned mine plans relevant to your requirements, **please contact us at InformationManagers@MiningRemediation.gov.uk**.

Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
HAFOD	Coal	Yes	Within	N/A	186
LOWER PINCHIN	Coal	Yes	Within	N/A	169
LOWER PINCHIN	Coal	Yes	19.9	North-West	215
LOWER PINCHIN	Coal	Yes	2.8	South	258
LOWER PINCHIN	Coal	Yes	32.4	South	262
LOWER PINCHIN	Coal	Yes	Within	N/A	267
TORMYNDD	Coal	Yes	37.0	South	87
TORMYNDD	Coal	Yes	24.3	South-West	125
TORMYNDD	Coal	Yes	Within	N/A	146
TORMYNDD	Coal	Yes	0.8	North-West	218
TORMYNDD	Coal	Yes	Within	N/A	260
TORMYNDD	Coal	Yes	22.0	South	270
TORMYNDD	Coal	Yes	Within	N/A	285
UNNAMED	Coal	Yes	Within	N/A	173
UNNAMED	Coal	No	Within	N/A	177
UNNAMED	Coal	No	Within	N/A	196
UNNAMED	Coal	No	Within	N/A	275

Geological faults, fissures and breaklines

Please refer to the 'Summary of findings' map (on separate sheet) for details of any geological faults, fissures or breaklines either within or intersecting the enquiry boundary.

Faults under or close to the property recorded.

Opencast mines

Please refer to the "Summary of findings" map (on separate sheet) for details of any opencast areas within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations

None recorded within 50 metres of the enquiry boundary.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence

A damage notice or claim for alleged subsidence damage was made in August 2005 for FIELD OS 2555 - FISSURE 2 CWRT Y MWMWS FARM, MAESTEG, BRIDGEND. However, the claim was rejected.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

A damage notice or claim for alleged subsidence damage was made in August 2005 for FIELD OS 2555 - FISSURE 3 CWRT Y MWMWS FARM, MAESTEG, BRIDGEND. However, the claim was rejected.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

A damage notice or claim for alleged subsidence damage was made in August 2005 for FIELD OS 2555 - FISSURE 1 LAND AT CWRT Y MWNWS FARM, MAESTEG, MID GLAMORGAN. However, the claim was rejected.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

If further subsidence damage claims information is required, please visit www.miningremediation.co.uk.

See Section 4 for further information.

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

Withdrawal of support notices

The property is in an area where notices to withdraw support were given in 1975 and 1980.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Section 4 – Further information

The following potential risks have been identified and as part of your risk assessment should be investigated further.

Future development

If development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply specialist engineering practice required for former mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or coal mines without first obtaining the permission of the Coal Authority.

MINE GAS: Please note, if there are no recorded instances of mine gas within 500m of the enquiry boundary, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed. In these instances, the Coal Authority recommends that a more detailed Gas Risk Assessment is undertaken by a competent assessor.

Development advice

The site is within an area of historical coal mining activity. Should you require advice and/or support on understanding the mining legacy, its risks to your development or what next steps you need to take, please contact us.

Coal mining subsidence

The site is within an area of previous interest. It is close to where the Coal Authority or licensed mine operator has investigated and where necessary remediated issues relating to coal mining subsidence.

The site requires further investigation and may influence your risk assessment. We recommend that you order the appropriate **Coal Authority Subsidence Claims Report**, which will include more information about the hazard.

For further information on specific site or ground investigations in relation to any issues raised in Section 4, please email us at reports@miningremediation.gov.uk.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **email us at reports@miningremediation.gov.uk**.

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

Opencast mines

Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips

Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations

Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites

Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence

Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas

Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

Mine water treatment schemes

Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining

Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing

Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders

Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices

Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

Withdrawal of support notices

Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land

Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

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+44 (0)1623 637 000 (International)
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Annex D

ZETICA DESK STUDY AND RISK ASSESSMENT





Desk Study & Risk Assessment

Document Ref. P17427-26-R1

Revision A

Project Title Maesteg

Client WSP

Date 5th June 2026

Drafted by: Grahame Johnson

Checked by: Harry Clayton

Authorised by: Stefan Lang

EXECUTIVE SUMMARY

Key findings: No significant sources of Unexploded Ordnance (UXO) hazard have been identified.

Key actions: Proceed with works. A UXO awareness briefing is prudent for staff involved in excavations.

UXO hazard assessment

No records have been found to indicate that the Site was bombed and no other significant sources of UXO hazard have been identified on the Site.

It is considered that the Site has a low UXO hazard level, as shown in the following Figure, reproduced as Figure 3 in the main report.

The UXO hazard zone plan of the Site is also given in the accompanying P17427-26-MAP01-A.

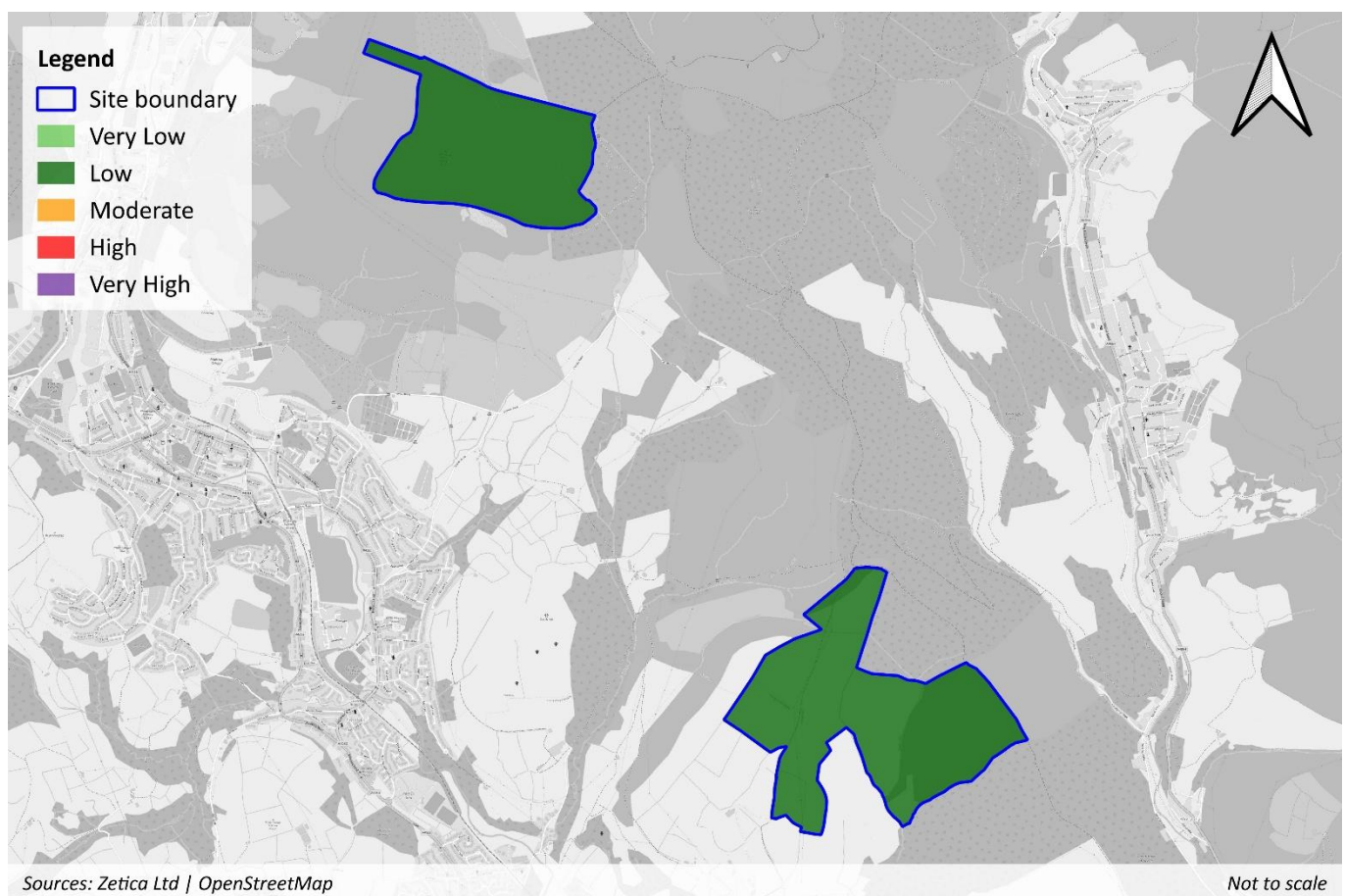


Figure UXO hazard zone plan of the Site

The main findings of the report are summarised below:

- On the 29th September 1942, 1No. Supermarine Spitfire VB (BM575) fighter aircraft crashed approximately 0.2km north-northwest of the Site.
- During World War Two (WWII) the main strategic target in the vicinity of the Site was Royal Ordnance Factory (ROF) Brackla.
- No records have been found to indicate that the Site was bombed during WWII. Records indicate that the nearest High Explosive (HE) bomb fell approximately 0.7km west of the Site.
- There were 2No. Anti-Aircraft (AA) batteries within 10km of the Site during WWII. The potential for an Unexploded AA (UXAA) shell to have fallen on the Site cannot be discounted.

Proposed works

At the time of writing no information on proposed works have been provided. For the purposes for this risk assessment it is assumed that works on the Site may include excavations, boreholes, and piling.

Risk assessment

The Table below, reproduced as Table 5 in the main report, provides a UXO risk assessment for the proposed works on the Site.

Potential UXO	Anticipated Works	PE	PD	L = PE x PD	Likelihood Rating	Severity	Risk Rating	UXO Risk Level
UXB	Excavations	1	1	1	1	5	5	Low
	Boreholes/Piling	1	1	1	1	4	4	Low
Other UXO	Excavations	1	1	1	1	4	4	Low
	Boreholes/Piling	1	1	1	1	3	3	Low

PE = Probability of Encounter, PD = Probability of Detonation, L = Likelihood

Table UXO risk assessment for the Site

Further details on the risk assessment methodology are given in Appendix 1.

Risk mitigation plan

The Table below, reproduced as Table 7 in the main report, summarises the UXO risk for proposed works on the Site and recommended actions.

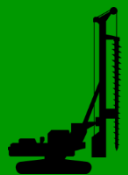
Proposed Works	UXO Risk	Recommended Mitigation
Excavations		Proceed with works – a UXO awareness briefing is prudent for staff involved in excavations.
Boreholes/Piling		Proceed with works

Table Summary of UXO risk mitigation recommendations

Further details on the risk mitigation techniques are given in Section 8.2 and Appendix 2.

What do I do next?

If you have any comments or require further assistance, contact us at uxo@zetica.com or 01993 886 682 and we can help. For more information about our other UXO services, visit www.zeticauxo.com.

If you have requirements to identify other buried hazards (such as mapping utilities, obstructions, or archaeology) we can provide these surveys.

If proposed works on the Site change, or additional works are planned, contact Zetica for a re-assessment of the UXO risk and the risk mitigation requirements.

CONTENTS

Executive Summary.....	i
Contents.....	iii
Abbreviations	v
UXO Desk Study & Risk Assessment.....	1
1 Introduction	1
1.1 Project outline	1
1.2 Sources of information.....	1
1.3 Data confidence level.....	2
2 The Site	3
2.1 Site location	3
3 Military Activity.....	5
3.1 Aircraft crashes	5
3.2 Defences	5
3.3 Military airfields	5
3.4 Munitions factories, depots, and disposal areas.....	6
3.5 Firing ranges and military training areas.....	6
4 Bombing.....	7
4.1 WWI bombing	7
4.2 WWII bombing.....	7
5 Post-WWII Explosive Ordnance Clearance (EOC) & Disposal (EOD) Activities	11
5.1 EOC tasks.....	11
6 UXO Hazard Assessment	12
6.1 UXO hazard level.....	12
7 UXO Risk Assessment.....	13
7.1 Proposed works	13
7.2 UXO risk level	13
7.3 The As Low As Reasonably Practicable (ALARP) principle	13
8 Risk Mitigation Plan	14
8.1 UXO risk summary.....	14
8.2 Risk mitigation techniques	14
8.3 What do I do next?.....	14
Appendices.....	15
Appendix 1 Risk assessment methodology.....	15
Appendix 2 Risk mitigation techniques	17
Appendix 3 Ordnance datasheets	18
Appendix 4 Sources of UXO hazard	24
Appendix 5 Recent UXO finds	28

Appendix 6	Glossary and definitions.....	29
Appendix 7	Bibliography	31
Appendix 8	General notes	32

Plates, figures, and tables

Plate 1 Recent aerial photograph of the Site	4
Figure 1 Site location map	3
Figure 2 Compiled bomb impact map for the vicinity of the Site.....	9
Figure 3 UXO hazard zone plan of the Site	12
Table 1 Data confidence level definitions	2
Table 2 Bombing statistics.....	8
Table 3 Estimated average maximum bomb penetration depths.....	10
Table 4 Hazard level definitions	12
Table 5 UXO risk assessment for the Site.....	13
Table 6 UXO risk level definitions.....	13
Table 7 Summary of UXO risk mitigation recommendations.....	14

Accompanying geospatial data

P17427-26-MAP01-A (UXO Desk Study)

ABBREVIATIONS

AA	Anti-Aircraft
AAP	Aircraft Acceptance Park
ALARP	As Low As Reasonably Practicable
ARP	Air Raid Precaution
BCAC	British and Colonial Aeroplane Company
BGS	British Geological Survey
CIRIA	Construction Industry Research and Information Association
CRAPW	Central Register of Aerial Photography for Wales
EO	Explosive Ordnance
EOC	Explosive Ordnance Clearance
EOD	Explosive Ordnance Disposal
GIS	Geographic Information System
HE	High Explosive
HER	Historic Environment Record
IB	Incendiary Bomb
IWM	Imperial War Museum
LSA	Land Service Ammunition
NARA	National Archives & Records Administration
NCAP	National Collection of Aerial Photography
OSNGR	Ordnance Survey National Grid Reference
RE	Royal Engineers
RFC	Royal Flying Corps
ROF	Royal Ordnance Factory
SAA	Small Arms Ammunition
UXAA	Unexploded Anti-Aircraft
UXB	Unexploded Bomb
UXO	Unexploded Ordnance
WO	War Office
WWI	World War One
WWII	World War Two

UXO DESK STUDY & RISK ASSESSMENT

Please read: Zetica has colour coded each paragraph. Paragraphs with black text on a white background provide site-specific information or information specifically researched as part of this project.

Boxed paragraphs with grey text on a grey background provide general information and, where appropriate, links to online resources giving further detail. These are all available at www.zeticauxo.com. If you cannot access these resources, Zetica can forward them on request.

1 Introduction

1.1 Project outline

Zetica Ltd was commissioned by WSP to carry out a detailed Unexploded Ordnance (UXO) Desk Study and Risk Assessment for 2No. areas totalling approximately 171 hectares (ha) near Maesteg in Bridgend County Borough, Wales (the 'Site').

The aim of this report is to gain a fair and representative view of the potential UXO hazard on or affecting the Site in accordance with the Construction Industry Research and Information Association (CIRIA) C681 'Unexploded Ordnance (UXO), a Guide for the Construction Industry'.

This hazard assessment includes the likelihood and probable location of ordnance being present, and the type and quantity of ordnance anticipated.

It should be noted that some military activity providing a source of UXO hazard may not be recorded and therefore there cannot be any guarantee that all UXO hazards affecting the Site have been identified in this report.

1.2 Sources of information

The main sources of information are detailed in the following sections and referenced at the end of this report.

1.2.1 Zetica Ltd records

Zetica Ltd's in-house records, including the [Zetica Ltd bomb risk maps](#), previous requests for information from government bodies, reference books, and archive material from past work in the region, were consulted.

Relevant documents have been cited in the bibliography of this report.

1.2.2 Historical records, maps, and drawings

Numerous reference documents including historical maps, aerial photographs, and drawings have been consulted, from sources such as:

- The National Archives
- US National Archives & Records Administration (NARA)
- Imperial War Museum (IWM)
- National Collection of Aerial Photography (NCAP)
- The Defence of Britain Project
- Coflein
- National Library of Wales
- Central Register of Aerial Photography for Wales (CRAPW)
- British Geological Survey (BGS)

1.2.3 Local records

Bridgend County Borough Council, the Glamorgan Archives, local historical groups and archaeological bodies, and the Glamorgan-Gwent Historic Environment Record (HER) were consulted for records.

1.3 Data confidence level

In general, there is a high level of confidence in the information sources researched for this report, as defined in Table 1 below. Further detail is given in the text of the report where appropriate.

Historical aerial photography from WWII and immediately post-WWII was not available for the Site. Various other sources (including bomb damage reports and later historical aerial photography) have been used to provide a corroborative assessment of the UXO hazard level on the Site.

Data Confidence Level		Definition
Low		There are very few sources of information, and/or those available are lacking in detail.
Moderate		There is a limited range of available information sources, a key source of information is missing, and/or some sources may be contradictory or lack detail.
High	✓	There is a wide range of available sources of information, which are detailed and corroborate each other.

Table 1 Data confidence level definitions

2 The Site

2.1 Site location

The Site comprises 2No. areas in Bridgend County Borough between Maesteg and Pontycymer, centred on Ordnance Survey National Grid Reference (OSNGR) SS 883914.

The Site comprises upland moorland and trackways. It is bounded on all sides by a mixture of upland moorland, woodland, and trackways.

Figure 1 is a Site location map and Plate 1 is a recent aerial photograph of the Site.

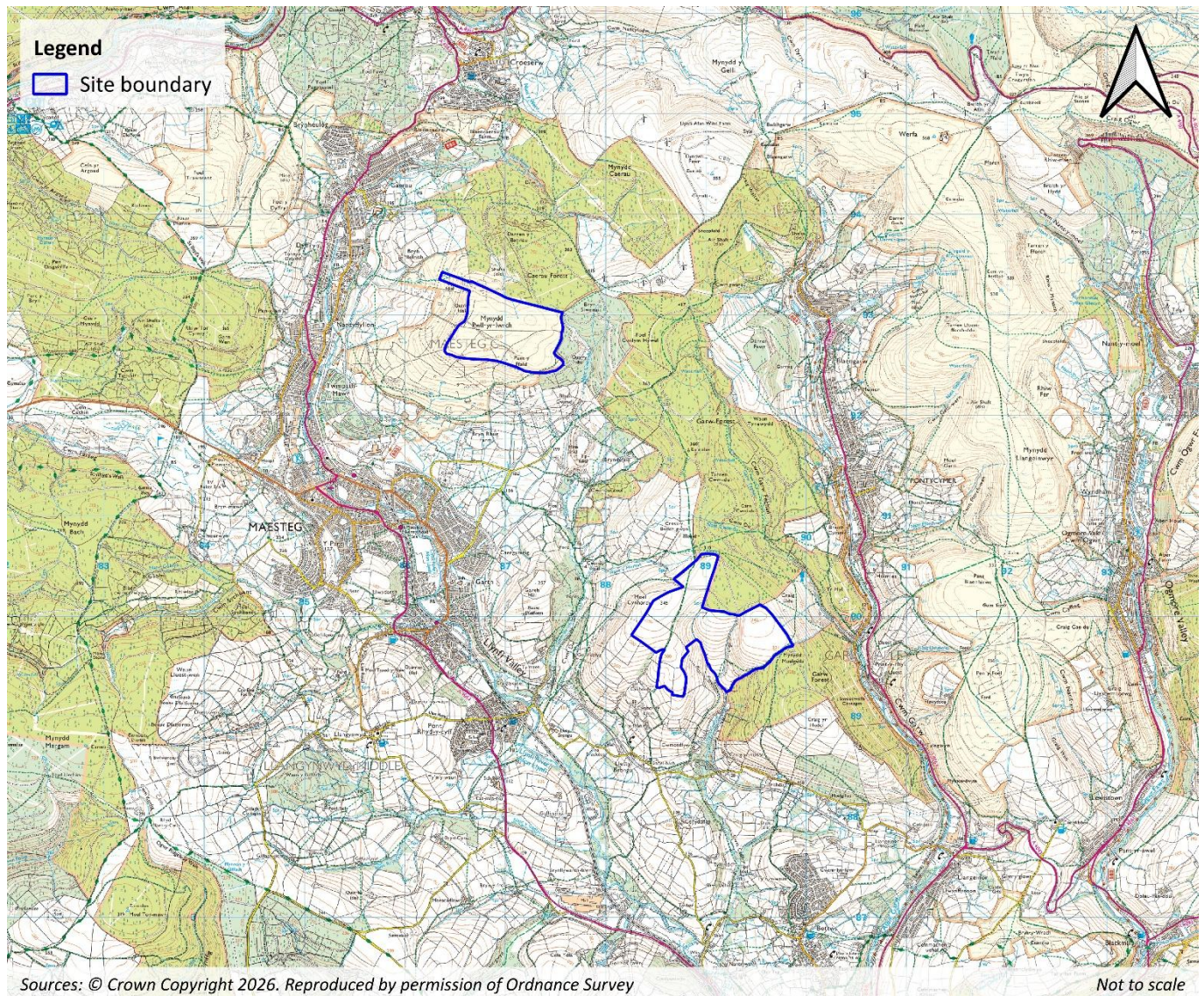


Figure 1 Site location map

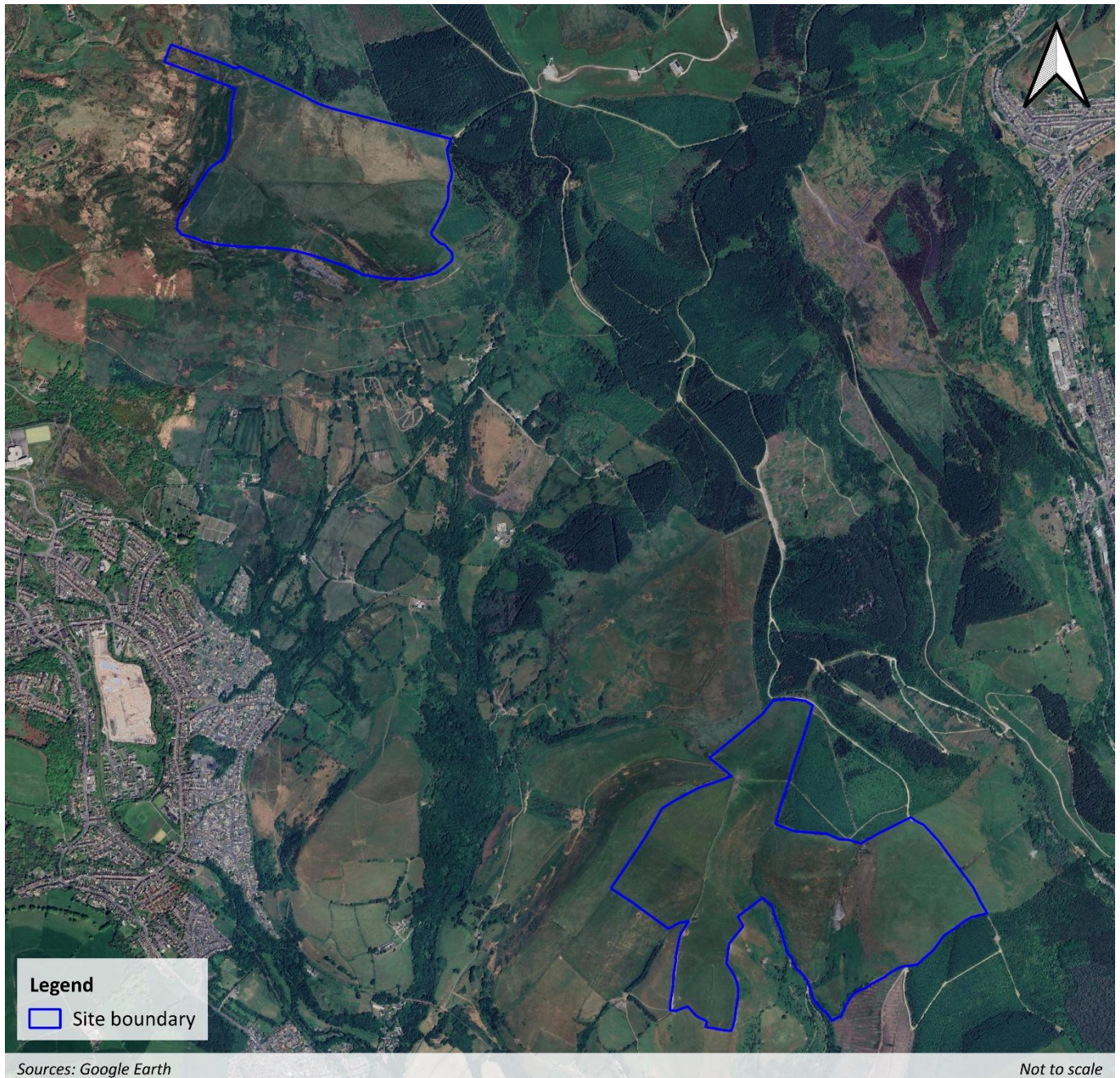


Plate 1 Recent aerial photograph of the Site

3 Military Activity

3.1 Aircraft crashes

Follow the link below for further information on aircraft crashes and their associated potential UXO hazards:

 [Aircraft crashes](#)

No records of any aircraft crashes on the Site have been found. The nearest is detailed below.

29th September 1942

1No. Supermarine Spitfire VB (BM575) fighter aircraft crashed in fog on the northern slope of Moel Cynhordy, near Cwmdul-Isaf Farm (SS 884903), approximately 0.2km north-northwest of the Site.

Records indicate the aircraft was flying a non-operational area sector reconnaissance and familiarisation sortie, and is unlikely to have been armed with a bombload.

Since World War Two (WWII), parts of the wreckage, including 0.303" Browning Small Arms Ammunition (SAA) belts, have been uncovered by souvenir hunters and local farming activity.

Potential UXO hazard

The above aircraft crash may have resulted in SAA and 20mm High Explosive (HE) cannon shells from the aircraft guns being scattered across a wide area, potentially including the Site.

SAA does not provide a significant source of UXO hazard (see Appendix 1).

Aircraft crashes are not considered to provide a significant source of UXO hazard to the Site.

3.2 Defences

Follow the links below for further information on military defences and their associated potential UXO hazards:

 [Anti-Aircraft batteries](#)

 [Home Guard](#)

 [Anti-invasion defences](#)

 [Mined locations](#)

 [Barrage balloons](#)

 [Mortar and gun emplacements](#)

 [Bombing decoys](#)

 [Pillboxes](#)

3.2.1 Anti-Aircraft (AA) batteries

During World War One (WWI), there were no AA batteries recorded within 20km of the Site.

During WWII, there were 2No. Heavy AA (HAA) batteries recorded within 10km of the Site. The nearest was located at Bryn (SS 801918), approximately 6.4km west-southwest of the Site. It was armed with 4No. 3.7" guns.

Potential UXO hazard

Given the presence of AA batteries in the surrounding area, the potential for an Unexploded AA (UXAA) shell to have fallen on the Site unnoticed, whilst unlikely, cannot be totally discounted.

3.3 Military airfields

Follow the link below for further information on military airfields and their associated potential UXO hazards:

 [Military airfields](#)

No records of any military airfields on or in close proximity to the Site have been found.

During WWI, the nearest operational airfield was Royal Flying Corps (RFC) Filton, approximately 70.8km east-southeast of the Site.

It was established in 1910 as a factory airfield for the British and Colonial Aeroplane Company (BCAC), which designed and manufacturing airframes and aero engines for various aircraft types. This included Bristol F.2 fighter aircraft.

During WWI, the BCAC airfield was requisitioned as RFC Filton. It was an Aircraft Acceptance Park (AAP), which received, assembled, and tested military aircraft from local manufacturers. In April 1918, RFC Filton became Royal Air Force (RAF) Filton.

After WWI, RAF Filton continued in use for flying training and as a factory airfield for the BCAC.

During WWII, the nearest operational airfield was RAF Stormy Down, approximately 10.5km southwest of the Site.

It was established in 1938 as No. 9 Armament Training Station, renamed as No. 7 Air Observer School in September 1939.

In November 1939, No. 7 Air Observers School became No. 7 Bombing & Gunnery School, before the airfield was renamed as RAF Stormy Down in 1940.

Throughout WWII, RAF Stormy Down continued to operate mainly as a training station with No. 7 Bombing & Gunnery School, flying several aircraft types. This included Avro Anson multi-role and Miles Martinet target tug aircraft.

In August 1944, operational flying from RAF Stormy Down ceased. The airfield continued in use for glider training until closure in 1947. The land has since been redeveloped for industrial use.

Military airfields are not considered to provide a source of UXO hazard to the Site.

3.4 Munitions factories, depots, and disposal areas

Follow the links below for further information on munitions factories, depots, disposal areas, and their associated potential UXO hazards:

 [Munitions factories](#)

 [Munitions depots](#)

 [Explosives factories](#)

 [Munitions disposal areas](#)

No records of any munitions factories, depots, or disposal areas on or in close proximity to the Site have been found.

3.5 Firing ranges and military training areas

Follow the links below for further information on firing ranges, military training areas, and their associated potential UXO hazards:

 [Artillery ranges](#)

 [Military training areas](#)

 [Bombing ranges](#)

 [Small arms ranges](#)

No records of any firing ranges or military training areas on or in close proximity to the Site have been found.

4 Bombing

4.1 WWI bombing

See Appendix 4.1 or click [here](#) for further information on WWI bombing and the associated potential UXO hazard.

No records have been found to indicate that the Site was bombed during WWI.

4.2 WWII bombing

See Appendix 4.3 or click [here](#) for further information on WWII bombing and the associated potential UXO hazard.

No records have been found to indicate that the Site was bombed during WWII. Further details are provided in the sections below.

4.2.1 Bombing in South Wales and Bridgend

The most significant strategic targets in South Wales were concentrated along the coast, and included Cardiff, Swansea, and Pembroke Dock, all over 10km from the Site. Between 1940 and 1943, these cities were subjected to multiple heavy air raids.

Air raids on Swansea and the Neath Valley commenced in June 1940 and continued until 1943. The heaviest air raids occurred between the 19th and 21st February 1941, the 'Swansea Blitz'. Approximately 900No. HE bombs and 30,000No. Incendiary Bombs (IBs) fell on Swansea and the surrounding area.

Bombing densities in the vicinity of the Site, which was predominantly rural, were typically low. Most incidents resulted from aircraft jettisoning unused bombloads enroute to and from significant strategic targets in nearby Port Talbot, Bridgend, and the Neath Valley.

It should be noted that, although rural areas were bombed less heavily than urban districts, Air Raid Precaution (ARP) records may under-represent the number and frequency with which bombs fell in rural areas.

4.2.2 Strategic targets

From the late 1930s, the Luftwaffe carried out reconnaissance flights over the UK to identify and photograph potential strategic targets. Bombing efforts were typically concentrated against these targets to disrupt vital industry and supply lines and weaken Britain's military force.

The Site was located in a predominantly rural area which contained few strategic targets. The nearest identified Luftwaffe target was Royal Ordnance Factory (ROF) Brackla, approximately 8.3km south-southeast of the Site.

4.2.3 Bombing densities and incidents

During WWII, official bombing statistics were recorded according to local authority districts. In England, Wales, and Northern Ireland, local authorities were categorised as Rural Districts (RD), Urban Districts (UD), Municipal Boroughs (MB), Metropolitan Boroughs (MetB), or County Boroughs (CB). Scotland used Landward Areas (LA), Large Burghs (LB), Small Burghs (SB), and Counties of the City (CC).

Official UK bombing statistics were compiled from a number of sources. Differences in the way the figures were originally reported and collated has led to discrepancies in the summary data.

Discrepancies between the data below and other records, such as bomb clearance records, suggest that these statistics are likely to under-represent actual bombing.

Zetica defines WWII bombing density as the number of HE bombs per 405ha, with the following level definitions:

Very Low

Low

Moderate

High

Very High

0 ≤ 5	5 ≤ 15	15 ≤ 50	50 ≤ 250	250+
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Table 2 provides the overall bombing statistics recorded for local authorities relevant to the Site, where bold text indicates the local authorities in which the Site was located. Note that Table 2 excludes figures for IBs.

Local Authority	HE bombs	PMs	Other	Total	Bombs per 405ha
Pen Y Bont RD	128	4	0	132	3.2
Ogmore & Garew UD	8	0	0	8	0.4
Maesteg UD	0	0	0	0	0.0
Port Talbot MB	87	1	3	91	3.9
Rhondda UD	36	4	3	43	1.8
Glyncorwg UD	3	0	0	3	0.2
Bridgend UD	0	0	0	0	0.0

Table 2 Bombing statistics

Details of the nearest recorded bombing incidents to the Site are given below.

17th August 1940

Several HE bombs fell on Maesteg, approximately 1.9km southwest of the Site.

26th October 1940

Several IBs fell on the Maesteg area, within approximately 1.7km southwest of the Site.

10th January 1941

1No. HE bomb fell on open ground near Coegnant Colliery, approximately 0.7km west of the Site.

11th January 1941

1No. HE bomb fell on allotments at Caerau, approximately 0.9km northwest of the Site.

12th February 1941

Several HE bombs fell on Maesteg, within approximately 1.9km southwest of the Site.

31st May 1941

2No. HE bombs fell on Caerau, between approximately 1.0km and 1.1km west-northwest of the Site.

Figure 2 is a map showing the approximate location of recorded bomb impacts in the immediate vicinity of the Site. IBs shown are indicative of larger numbers of similar devices that fell within the given area.

The map has been compiled from multiple sources, including air raid incident reports, and bomb census maps.

The bomb map is also given in the accompanying P17427-26-MAP01-A.

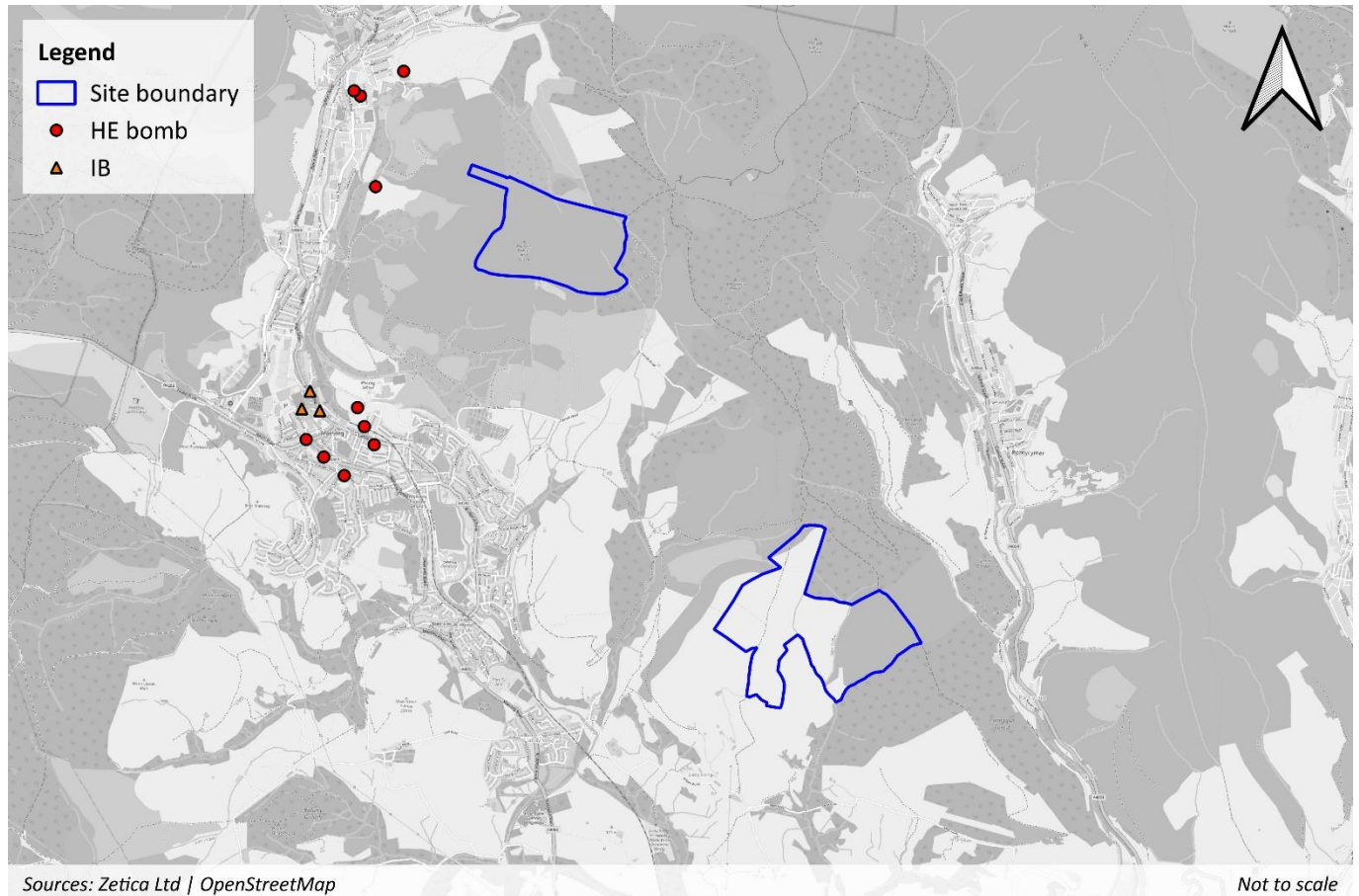


Figure 2 Compiled bomb impact map for the vicinity of the Site

Potential UXO hazard

No records have been found indicating that the Site was bombed.

It should be noted that historical aerial photography for the Site was not available (see Section 1.3). Given that the localised bombing density in the vicinity of the Site was low, it is considered that this would only confirm the conclusions above.

WWII bombing is not considered to provide a significant source of UXO hazard to the Site.

4.2.4 Abandoned bombs

Many Unexploded Bombs (UXBs) were mapped and removed during wartime, when conditions and demands on bomb disposal teams allowed.

War Office (WO) statistics show that between October 1940 and May 1941, 93% of UXBs were either 50kg or 250kg. Larger UXBs, whilst rarer, are often difficult to recover. This is due to both deeper penetration depths and the presence of two or more fuzes combined with more sensitive explosive fillings.

Royal Engineers (RE) records indicate that by the 27th February 1946, over 45,000No. UXBs had been disposed of.

Only a small number of UXBs were left in-situ and registered as officially abandoned bombs. There were several potential reasons for abandoning a UXB, including a lack of clarity on its exact location, deep penetration depth, and location away from populations and critical infrastructure.

Click [here](#) for further information on abandoned bombs and the associated potential UXO hazard.

No records have been found to indicate that any officially abandoned bombs are located on the Site.

4.2.5 Bomb penetration depths

At the time of writing, no Site-specific ground investigation data was provided.

BGS 1:50,000 Sheet 248 Pontypridd (Solid & Drift) and BGS borehole records from nearby investigations have been consulted to produce an indicative overview of the Site geology.

The WWII geology of the Mynydd Bach part of the Site is understood to consist of the Llynfi Member, Rhondda Member, or South Wales Middle Coal Measures Formation.

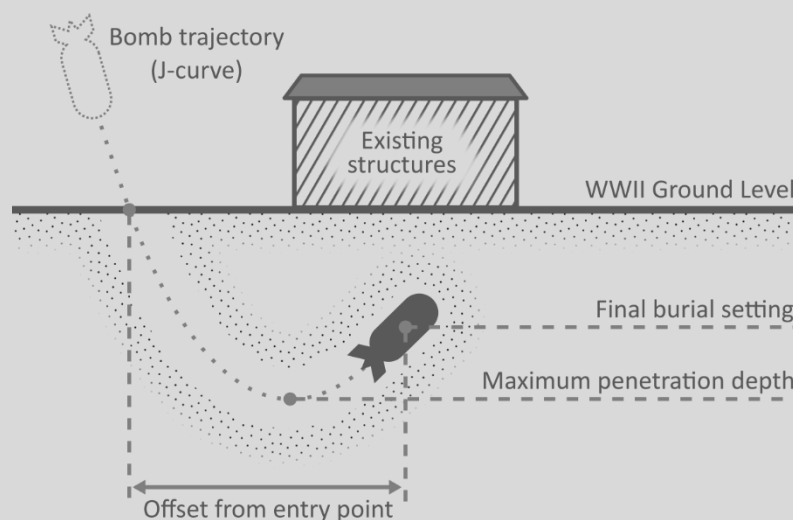
Table 3 provides an estimate of average maximum bomb penetration depths for the Site assuming WWII ground conditions of more than 20m of sandstone and mudstone, with intermittent coal seams. These depths are taken from [Zetica's unexploded bomb depth calculator](#).

Bomb weight	Estimated average maximum penetration depth
50kg	2.5m
250kg	3.5m
500kg	6.0m

Table 3 Estimated average maximum bomb penetration depths

These calculations can be refined on receipt of Site-specific information.

The estimated bomb penetration depths given in Table 3 are from WWII ground level, assuming that the bomb had no retarding units fitted, was stable in flight and penetration, and impacted homogenous soil at an angle of 10-15° from the vertical while travelling at approximately 260m/s.



Under these conditions, a bomb will enter the ground and travel on the same trajectory until momentum is nearly lost. The bomb will then turn abruptly to the horizontal before coming to rest. The horizontal distance between the centre of the entry hole and the centre of the bomb at rest is known as the 'offset'. A significant horizontal movement from the original point of entry is common.

Low-level attacks may have an impact angle of 45° or more from the vertical, which typically creates an even greater offset during soil penetration.

The average offset is one third of the penetration depth. If hardstanding or Made Ground were present during WWII, bomb penetration depths would have been significantly reduced but offset may have been up to four times greater.

5 Post-WWII Explosive Ordnance Clearance (EOC) & Disposal (EOD) Activities

Since the end of WWII, UXO has been routinely discovered across the UK. Often such finds are made during construction or by members of the public (e.g. through metal detecting, magnet fishing), resulting in the reactive call-out of EOC and EOD units. Other UXO finds are part of planned clearance activities by military and commercial EOC/EOD teams.

Most EOC/EOD tasks in the UK relate to the discovery of Land Service Ammunition (LSA), particularly grenades and mortars. This is reflective of their widespread use in military training activities and as defensive weapons around military establishments such as airfields. UXBs are less commonly found, though often cause more disruption because of their size.

Examples of recent UXO finds across the UK are given in Appendix 5.

5.1 EOC tasks

Zetica holds no records of post-WWII EOC tasks occurring in the vicinity of the Site.

6 UXO Hazard Assessment

6.1 UXO hazard level

Hazard Level	Definition
Very Low	There is positive evidence that UXO is not present (e.g. through physical constraints or removal).
Low	There is no positive evidence that UXO is present, but its occurrence cannot be totally discounted.
Moderate	There is positive evidence that ordnance was present or that other uncharted ordnance may be present as UXO.
High	There is positive evidence that UXO is present.
Very High	As high, but requires immediate attention due to the potential hazard.

Table 4 Hazard level definitions

No records have been found to indicate that the Site was bombed and no other significant sources of UXO hazard have been identified on the Site.

It is considered that the Site has a low UXO hazard level, as shown in Figure 3.

The UXO hazard zone plan of the Site is also given in the accompanying P17427-26-MAP01-A.

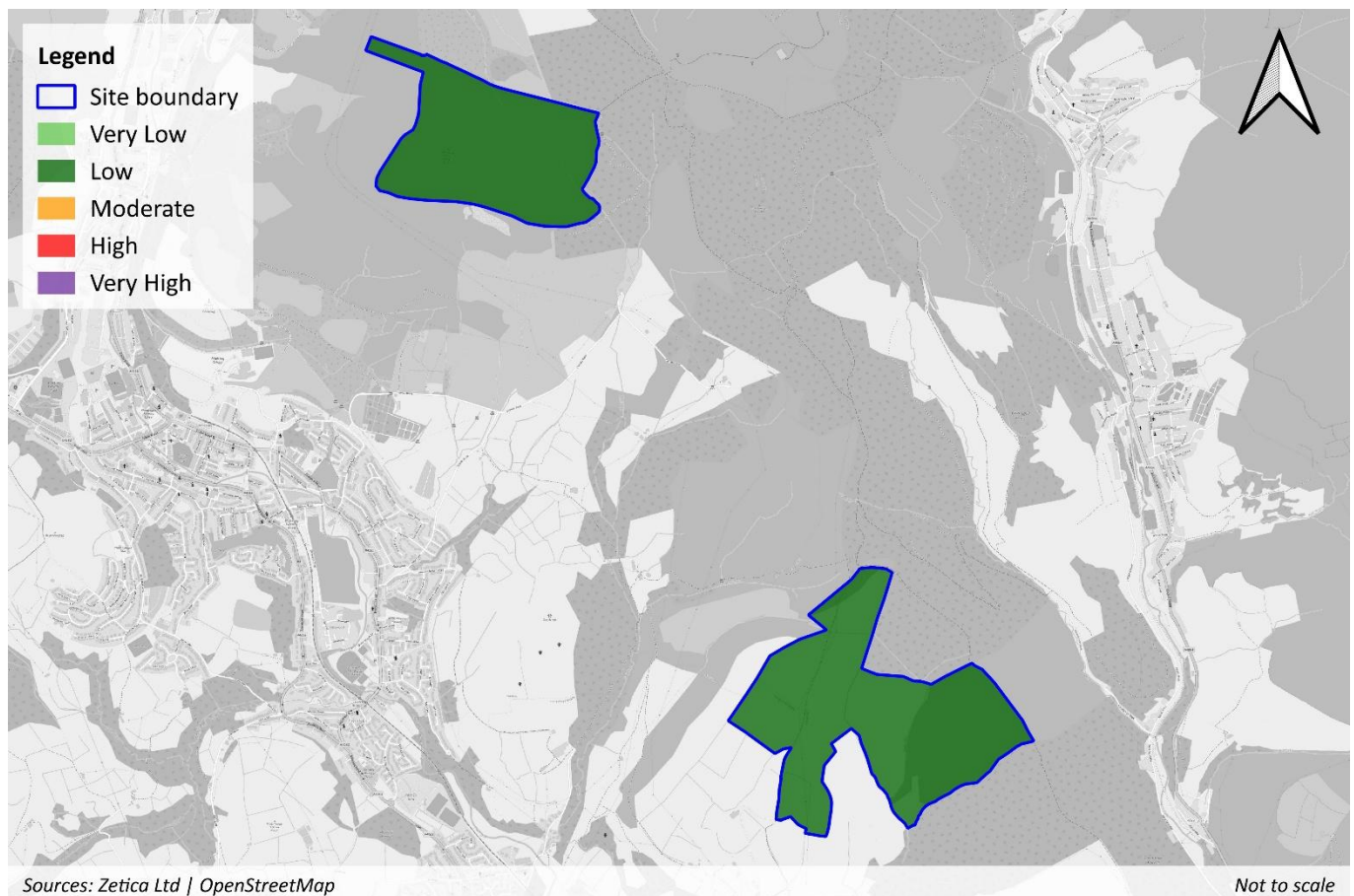


Figure 3 UXO hazard zone plan of the Site

7 UXO Risk Assessment

7.1 Proposed works

At the time of writing no information on proposed works have been provided. For the purposes for this risk assessment it is assumed that works on the Site may include excavations, boreholes, and piling.

7.2 UXO risk level

The UXO risk assessment for proposed works on the Site is given in Table 5.

Potential UXO	Anticipated Works	PE	PD	L = PE x PD	Likelihood Rating	Severity	Risk Rating	UXO Risk Level
UXB	Excavations	1	1	1	1	5	5	Low
	Boreholes/Piling	1	1	1	1	4	4	Low
Other UXO	Excavations	1	1	1	1	4	4	Low
	Boreholes/Piling	1	1	1	1	3	3	Low

PE = Probability of Encounter, PD = Probability of Detonation, L = Likelihood

Table 5 UXO risk assessment for the Site

It is considered that there is a [RISK LEVEL] UXO risk to the proposed works, as defined in Table 6.

Risk Level	Risk Rating	Definition
Very Low	0-1	Little action is required, provided suitable procedures are in place to ensure appropriate action is taken should the risk level change.
Low	2-5	Tolerable. Engineering activity need not alter if procedures are in place to manage the residual UXO risk.
Moderate	6-15	Typically intolerable. Prudent for risk mitigation measures to be undertaken where practicable.
High	16-20	Intolerable, except in extraordinary circumstances. Essential that all practicable risk mitigation measures are undertaken.
Very High	21-25	Unacceptable. Imperative that all risk mitigation measures are undertaken.

Table 6 UXO risk level definitions

7.3 The As Low As Reasonably Practicable (ALARP) principle

Where a UXO risk is identified, it is the responsibility of clients, designers, and contractors to determine the tolerability of the identified risk and reduce that risk to ALARP.

The ALARP approach is a key principle of UK health and safety legislature. ALARP principles aim to protect those at risk, whilst ensuring the costs and benefits of the risk mitigation measures are proportional.

8 Risk Mitigation Plan

Key findings: No significant sources of UXO hazard have been identified.

Key actions: Proceed with works. A UXO awareness briefing is prudent for staff involved in excavations.

8.1 UXO risk summary

Table 7 summarises the UXO risk for proposed works on the Site and recommended actions.

Proposed Works	UXO Risk	Recommended Mitigation
Excavations		Proceed with works – a UXO awareness briefing is prudent for staff involved in excavations.
Boreholes/Piling		Proceed with works

Table 7 Summary of UXO risk mitigation recommendations

8.2 Risk mitigation techniques

Risk mitigation techniques for the Site are summarised below. Further details are given in Appendix 2.

8.2.1 UXO awareness briefing

It is prudent that all staff involved in intrusive works are provided with a formal UXO awareness briefing.

The briefing offers some recognition skills for typical UXO and suitably sensitise staff to be vigilant during site works.

8.3 What do I do next?

If you have any comments or require further assistance, contact us at uxo@zetica.com or 01993 886 682 and we can help. For more information about our other UXO services, visit www.zeticauxo.com.

If you need to identify other buried hazards (e.g. mapping utilities, obstructions, or archaeology) we can provide these surveys.

If proposed works on the Site change, or additional works are planned, contact Zetica for a re-assessment of the UXO risk and the risk mitigation requirements.

APPENDICES

Appendix 1 Risk assessment methodology

A UXO risk assessment has been undertaken for the proposed works, given in Section 7.2.

Firstly, the probability of encountering (PE) UXO and the probability of detonating (PD) an item of UXO have been considered and rated for the proposed construction techniques. These are defined in the Table below.

Probability of Encounter/Detonation	Rating
Frequent, highly likely, almost certain.	5
Probable, more likely to happen than not.	4
Occasional, increased chance or probability.	3
Remote, unlikely to happen but could.	2
Improbable, highly unlikely.	1
Impossible.	0

Table Probability rating definitions

Next, the probability of encounter and detonation (PE x PD) have been used to generate the likelihood (L) of encountering and detonating UXO, as shown in the Table below. This calculation is cumulative (i.e. if the PE is low then the PD is also considered low).

L ranges from 25, a certainty of UXO being encountered and detonated on the Site by engineering activity, to 0, a certainty that UXO does not occur on the Site and will not be detonated by engineering activity. An overall likelihood rating is determined from the range of L values.

L = PE x PD	Likelihood of Encounter and Detonation	Likelihood Rating
21 – 25	Frequent, highly likely, almost certain.	5
16 – 20	Probable, more likely to happen than not.	4
6 – 15	Occasional, increased chance or probability.	3
2 – 5	Remote, unlikely to happen but could.	2
1	Improbable, highly unlikely.	1
0	Impossible.	0

Table Likelihood value ranges, definitions, and ratings

The likelihood rating is then multiplied by the severity, as defined in the Table below.

Severity	Rating
Multiple fatalities.	5
Major injury, long term health issues, single fatality.	4
Minor injury, short term health issues, no fatalities.	3
First aid case but no lost time or ill health.	2
Minor injuries, no first aid.	1
No injuries.	0

Table Severity rating definitions

This calculation provides an overall risk rating, as shown in the Table below.

LIKELIHOOD RATING	SEVERITY						
		5	4	3	2	1	0
	5	25	20	15	10	5	0
	4	20	16	12	8	4	0
	3	15	12	9	6	3	0
	2	10	8	6	4	2	0
	1	5	4	3	2	1	0
	0	0	0	0	0	0	0

Table UXO risk rating matrix

UXO AWARENESS BRIEFING

This ensures that in the unlikely event that UXO is encountered:

- UXO awareness briefings can be provided to all site workers but can also be provided to key site staff and cascaded out to new staff using the provided hardcopy materials without Zetica's attendance.



Appendix 3 Ordnance datasheets

SMALL ARMS AMMUNITION



.303", 6.5mm, and .30-06 SAA



Spent SAA cartridges



Loose SAA



Belted 0.5" SAA

Typical Characteristics

Small Arms Ammunition (SAA) refers to a wide variety of cartridges with projectiles up to ~12.7mm (0.5") in calibre. Weapons using SAA may be man-portable or mounted on vehicles such as tanks and aircraft.

SAA may be found loose or in belts, magazines, or clips. Rounds may be spent (fired) or unspent (intact). Encounters with SAA are particularly common around military establishments such as ranges, training areas, and airfields. Aircraft crashes and shipwrecks are other common sources of SAA encounter.

Generally, SAA presents a kinetic hazard. Detonation typically requires striking the percussion cap with force, causing the propellant to burn and create gas that ejects the projectile. Some varieties of SAA may feature fuzes and explosive fillings (e.g., High Explosive/Incendiary). This is most common for SAA with projectiles over 10mm (0.4") in calibre.

Any SAA encountered should be treated with respect and advice sought from a UXO specialist.



The selection of common SAA calibres shown above is indicative. It is not exhaustive. The appearance of SAA can vary considerably depending on its origin and intended purpose.

AUTOCANNON ROUNDS



British 20mm autocannon rounds



20mm & 30mm projectiles



20mm projectile

Typical Characteristics

Autocannons or 'cannons' are commonly found in defensive emplacements or on vehicles such as tanks and aircraft. Their projectiles are typically ~15 – 60mm (0.6 – 2.4") in calibre and often feature fuzes and explosive fillings such as High Explosive/Incendiary. They should be treated with the same respect as other UXO such as shells and grenades.

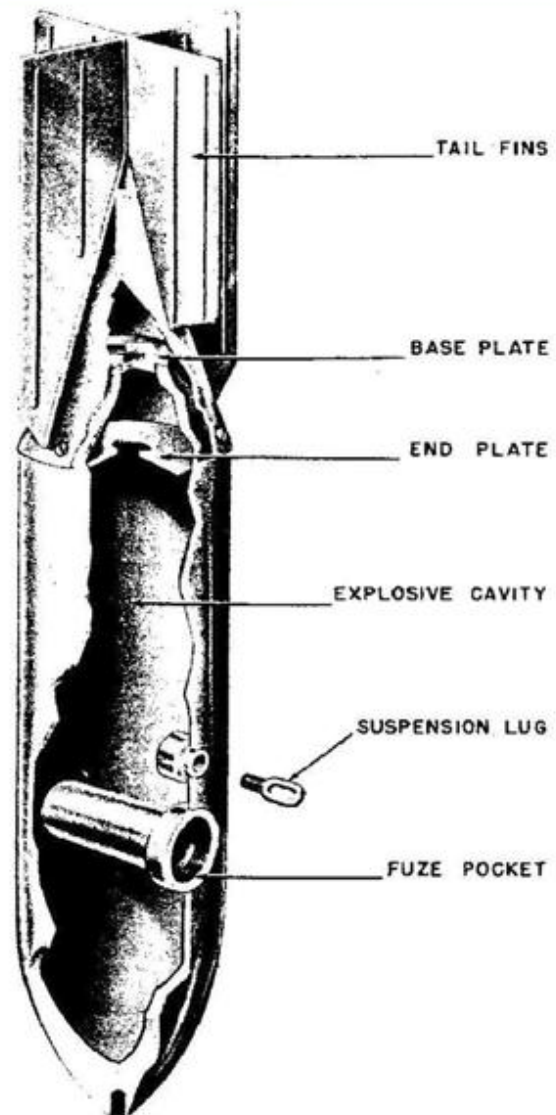
Cannon rounds may be found loose or in belts, magazines, or clips. They may be discovered spent (fired) or unspent (intact). In either case, the projectile may remain unexploded and dangerous.

Cannon rounds are often found around firing ranges, airfields, aircraft crashes, or shipwrecks, where Small Arms Ammunition (SAA) is also anticipated. It is important to maintain recognition skills so that SAA and cannon rounds are not misidentified.



The selection of common calibres shown above is indicative. It is not exhaustive. The appearance of autocannon rounds can vary considerably depending on its origin and intended purpose.

SPRENGBOMBE CYLINDRISCH SC-50 (High Explosive Bomb SC-50)



Typical Specifications

Description: Cylindrical with ogive nose and four-fin tail

Purpose: General purpose bomb (blast and fragmentation)

Colour: Body Dark grey or grey-beige
Marks Yellow stripes on tail cone

Filling: TNT, Amatol, or Trialen

Dimensions: Body 766mm x 200mm (30.2" x 7.9")
& Tail 1090mm x 280mm (42.9" x 11")

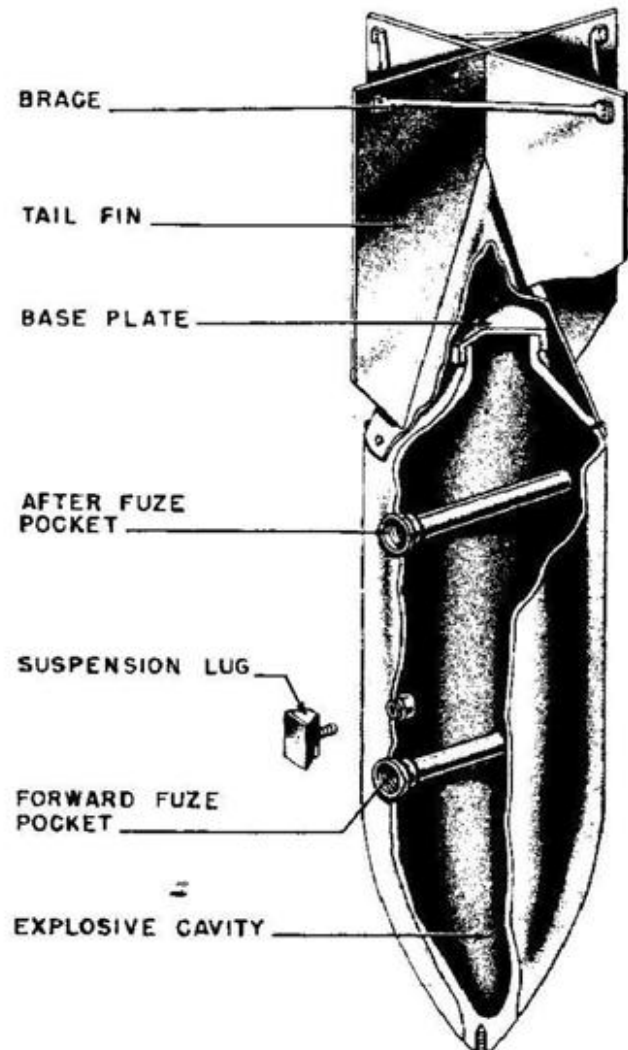
Charge Weight: 21 – 25kg

Construction: Body Forged, cast, or tubular steel
Tail Sheet steel

Fuze: Electrical (impact or delay)

Variations: Minor variations in construction & length, may have additional external features (see supplementary sheet)

SPRENGBOMBE CYLINDRISCH SC-250 (High Explosive Bomb SC-250)



Typical Specifications

Description: Cylindrical with ogive nose and braced four-fin tail

Colour: Body Dark grey or grey-beige
Marks Yellow stripes on tail cone

Dimensions: Body 1172mm x 368mm (46" x 14.5")
& Tail 1654mm x 512mm (65.1" x 20.2")

Construction: Body Forged, cast, or tubular steel
Tail Sheet steel

Variations: Minor variations in construction & length, may have additional external features (see supplementary sheet)

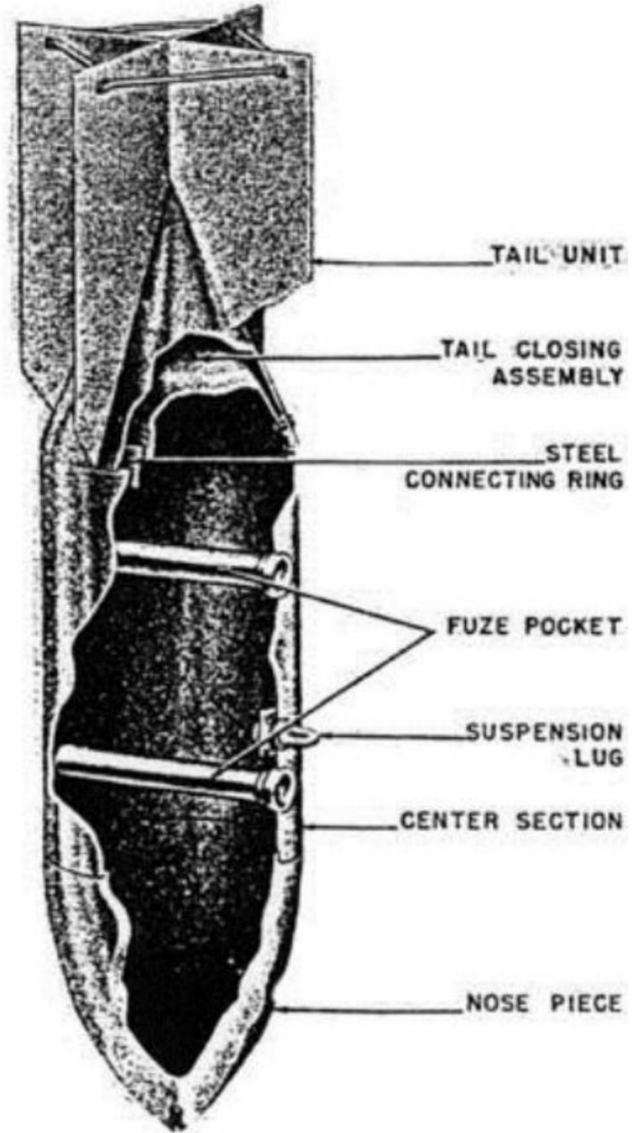
Purpose: General purpose bomb (blast and fragmentation)

Filling: TNT, Amatol, or Trialen

Charge Weight: 125 – 130kg

Fuze: Electrical (impact or delay)

SPRENGBOMBE CYLINDRISCH SC-500 (High Explosive Bomb SC-500)



Typical Specifications

Description: Cylindrical with ogive nose and braced or ring-bound four-fin tail

Colour: Body Dark grey or grey-beige
Marks Yellow stripes on tail cone

Dimensions: Body 1423mm x 470mm (56" x 18.5")
& Tail 1971mm x 640mm (77.6" x 25.2")

Construction: Body Forged, cast, or tubular steel
Tail Sheet steel

Variations: Minor variations in construction & length, may have additional external features (see supplementary sheet)

Purpose: General purpose bomb (blast and fragmentation)

Filling: TNT, Amatol, or Trialen

Charge Weight: 250kg

Fuze: Electrical (impact or delay)

ANTI-AIRCRAFT PROJECTILES



3" AA shell



3.7" AA shell



3.7" AA shell



4.5" AA shell



AA Fuze (No. 199)

Typical Characteristics

Anti-Aircraft (AA) guns are artillery pieces designed to engage aircraft. They may be categorised as Heavy AA (HAA) or Light AA (LAA) depending on their role. HAA guns are similar to conventional artillery pieces. LAA guns are typically autocannons.

AA rounds may be found spent (fired) or unspent (intact). Spent rounds are typically found in the vicinity of defended locations or firing ranges. Unspent rounds are most common near production, storage, and disposal facilities, and may have an attached propellant cartridge which is also hazardous. Whether spent or unspent, AA projectiles may remain unexploded and dangerous.

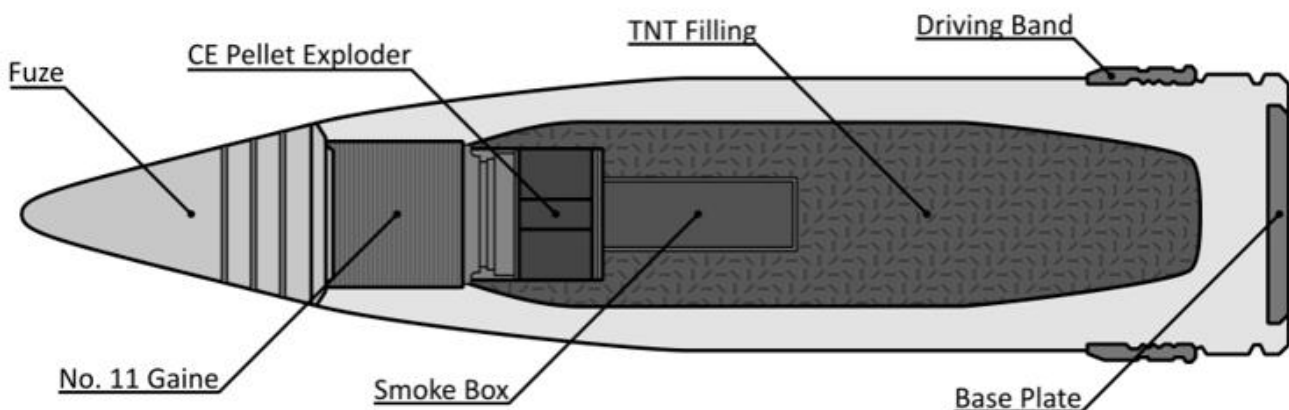
During WWI and WWII a range of HAA guns were used, each with specific projectiles. The first guns were often conversions of existing weapons, while later guns were designed specifically for the role. The typical specifications of a HAA projectile are provided below. Dimensions for the main calibres of WWI- and WWII-era British HAA projectile are provided overleaf.

Description: Cylindrical with ogive nose, one or more driving bands, and flat base

Filling: High Explosive (TNT, RDX, Amatol, etc...) or shrapnel

Construction: **Projectile** Forged or cast steel
Cartridge Sheet brass

Fuze: **WWI** Igniferous (time) and mechanical (impact)
WWII Mechanical or igniferous (time) or electrical (proximity)



Indicative cross-section of a British WWII-era 3.7" AA Shell (HE filling)

Appendix 4 Sources of UXO hazard

Appendix 4.1 Aircraft crashes

AIRCRAFT CRASHES

Military aircraft operations sometimes resulted in aircraft crashes, particularly during wartime when aerial activity was significantly higher.

Whilst many aircraft crashes occurred during take-off and landing at military airfields, they could occur anywhere across the country. Collisions, enemy engagements, aircraft faults, pilot error, and adverse weather conditions were all causes for crashes.

Depending on the nature of the crash, debris, including aircraft parts and any munitions onboard, could be scattered over a wide area around the crash site.



Wellington X3790 Mark III, 7th August 1943



Douglas A-20 Havoc, 28th May 1944



Consolidated B-24H Liberator, 5th October 1944

Determining the type of aircraft and the activity the aircraft was involved in at the time of crashing is important to understanding any potential Unexploded Ordnance (UXO) hazard it might present. A transport aircraft ferrying personnel between airfields is unlikely to have been armed, whilst a bomber aircraft on return from an unsuccessful mission could have been carrying a full bomb load.

Aircraft crash sites were generally cleared quickly where possible. Those in remote or inaccessible locations may not have been investigated or cleared during wartime.

Crashes outside of wartime were typically more thoroughly cleared of debris than those which occurred during wartime, reducing the potential for an associated UXO hazard to remain.

Hazard

Whether an aircraft crash provides a potential source of UXO hazard is dependent on the type of aircraft that crashed, its operational status, its ordnance load, and any clearance efforts.

Small Arms Ammunition (SAA) from the aircraft's defensive guns is the most common source of ordnance associated with aircraft crashes. Some later aircraft were armed with 20mm cannons which fired cannon shells instead of SAA. Cannon shells have High Explosive (HE) content and constitute a more significant potential UXO hazard than SAA. Both SAA and cannon shells could scatter over a wide area around a crash site.

Aircraft crashing with full or partial bomb loads may provide a potential Unexploded Bomb (UXB) hazard. Bombs may have been jettisoned prior crashing, thrown wide of the aircraft during the crash, or remained onboard.

Unless disturbed, there is no statutory requirement for the Ministry of Defence (MoD) to clear aircraft crash sites. The MoD advise that if crashed aircraft are found, they should be left undisturbed where possible. Where a fatal crash site is located, the disturbance of the site may be prohibited due to its status as a war grave.

Appendix 4.2 WWI bombing

WORLD WAR ONE (WWI) BOMBING

During WWI, strategic aerial bombardment of the UK took place for the first time. An estimated 9,000No. German bombs were dropped on Britain during the course of 51No. airship and 52No. aircraft raids.

Many of these raids were carried out on London and Southeast England, with areas along the East Coast also targeted regularly due to their proximity to the European continent. Raids further inland were rare and West England and Wales were out of reach for German aircraft of the time.



4.7l Incendiary (L) and
12.5kg Carbonit bombs (R)



12.5kg P.u.W bombs



300kg P.u.W bomb



Zeppelin LZ44 (LZ74) rigid airship



Zeppelin Staaken R.XIV ('Giant') bomber aircraft



12.5kg, 50kg, 100kg, and 300kg P.u.W bombs



Gotha G.IV bomber aircraft

Early aerial bombing in WWI was carried out by rigid airships known as Zeppelins, which were predominantly replaced by 1917 by bomber aircraft. Bombing initially relied on visual aiming, with bombsights not developed until later in the war. This inaccuracy meant that bombs often fell some way from their intended targets.

The first recorded raid against England was on the 21st December 1914 in Dover. Zeppelin raids intensified during 1915 and 1916, with aircraft raids becoming more frequent after 1917. The last aircraft raid of WWI took place on the 19th May 1918, when 41No. aircraft dropped over 2,500lbs of bombs on London and surrounding districts.

WWI aerial-dropped bombs range from small incendiary bombs up to 1,000kg Prufanstalt und Werft der Fliogertruppe (P.u.W) High Explosive (HE) bombs.

Hazard

Given the low bombing density of WWI raids, it is typically considered unlikely for a WWI Unexploded Bomb (UXB) to be encountered.

Areas subjected to sustained bombing raids in WWI may have recorded higher numbers of UXBs. In these areas, where there has been no significant development since WWI, the potential of a UXB remaining from WWI cannot be totally discounted.

Appendix 4.3 WWII bombing

WORLD WAR TWO (WWII) BOMBING

WWII bombing raids in the UK began in summer 1940. Bombing densities increased towards major cities, coastal towns, cathedral cities, or areas with strategic targets such as docks and harbours, industrial areas, and airfields. German bombing campaigns extensively used High Explosive (HE) bombs. 50kg and 250kg HE bombs were most common, although 500kg and larger sizes were also used. Not all HE bombs were intended to explode on impact and some had timing mechanisms where detonation could occur over 70 hours after impact.

Incendiary Bombs (IBs) were dropped in large numbers, typically alongside HE bombs, to start fires to cause damage and hinder repair efforts. They ranged from small 1kg IBs to 250kg and 500kg Oil Bombs (OB). Some IBs were fitted with bursting charges or steel noses to cause additional damage.

Anti-Personnel (AP) bombs and Parachute Mines (PMs) were also deployed. AP bombs were 1kg and 2kg and could inflict damage up to 150m away. PMs could be up to 4m long and were typically detonated either magnetically or by noise/vibration. Anti-shipping PMs were commonly dropped over navigable rivers, dockland areas, and coastlines.

In 1944, use of the Flying Bomb (V1), a pilotless guided missile, and the Long-Range Rocket (V2), a ballistic missile rocket, began. They travelled at high speeds to avoid detection and caused significant damage on impact.



50kg and 500kg HE bombs



1,000kg magnetic PM



Luftwaffe Dornier bomber aircraft on a bombing raid over Woolwich Arsenal, 7th September 1940



Defusing of UXB in WWII

WWII bomb targeting could be inaccurate, especially in the first year of the war, and bomb loads could fall significantly off target. Bomb loads were also dropped in 'tip and run' raids, where crews would drop their bombs to avoid Anti-Aircraft (AA) fire or Allied aircraft, on route to or from the intended target.

Urban areas typically had systems for reporting bomb incidents and dealing with Unexploded Bombs (UXB). In more rural areas where fewer bombing raids occurred, it is known that Air Raid Precaution (ARP) records under-represent the number and frequency of bombs falling. However, it was possible for bombs to be unrecorded or recorded poorly in any area.

Of the ~75,000No. tons of bombs dropped on Britain in WWII, an estimated 11% of them failed to detonate.

Hazard

Whether a UXB hazard exists on a site will depend on various factors: whether the Site was bombed, how heavy the raids in the area were and what were the raids targeting, and the potential for a UXB impact to have been missed or have gone unrecorded.

On any site the potential for UXBs cannot be totally discounted, and therefore it is essential that detailed local bombing records are obtained when assessing a UXB hazard.

Appendix 4.4 Anti-Aircraft batteries

ANTI-AIRCRAFT (AA) BATTERIES

In World War One (WWI) AA batteries were gradually established throughout England to counter German aerial bombardment. These defences were concentrated around London, coastal areas, and cities with significant industry. By June 1916, there were approximately 271No. AA guns and 258No. searchlight installations defending London alone.

Common WWI AA defences included 3", 75mm, 1-pounder (-pdr), and 6-pdr guns. Many of these guns were mobile, mounted on trucks or travelling platforms, to enable them to follow the course of an airship or aircraft.

WWI Unexploded AA (UXAA) shells could fall up to 13km from the AA gun, although they typically fell within 10km.



WWI 3" 20cwt AA gun



A typical WWII HAA battery layout, with associated accommodation camp



WWII 3.7" AA guns in production



WWI 13-pdr 9cwt AA gun



WWII 50-calibre Jeep-mounted AA gun

During World War Two (WWII), AA batteries were used extensively to counter enemy aircraft during bombing raids. Numerous AA guns were established in and around major cities and strategic targets throughout the UK.

3No. types of AA batteries in WWII existed:

- Heavy AA (HAA) – typically 3.7", 4.5", and 5.25" calibre guns designed to engage high flying bomber aircraft. These tended to be permanent gun emplacements.
- Rocket AA (ZAA) – fired 3" or 3.7" AA rockets with a maximum altitude of 5,800m and a ground range of 9km. These tended to be permanent gun emplacements.
- Light AA (LAA) – typically used 40mm shells and machine gun ammunition and designed to counter low flying aircraft. These were often mobile and moved periodically as required.

WWII UXAA shells could fall across a wide area and up to 27km from the AA gun, although they typically fell within 15km.

Hazard

AA batteries had munitions stores for shells used at the battery and Small Arms Ammunition (SAA) for troops manning the position. Stores were typically removed at the end of WWI/WWII, although spillage and disposal in the vicinity of the battery may have occurred and cannot be discounted.

In areas heavily defended by AA batteries, the potential for UXAA shells falling on a site should also be considered, accounting for the likely range of the AA batteries.

Appendix 5 Recent UXO finds

UXO finds in the UK are a regular occurrence, although they almost never result in an accidental detonation.

Zetica Ltd, and other commercial EOD companies, uncover and make safe thousands of items of UXO each year, though details rarely make it to public knowledge. Publicly recorded discoveries also occur regularly, as shown by the list of recent significant UXO finds in the UK below. Keep up to date with the latest UXO finds [here](#).

During construction works in January and February 2025, approximately 176No. practice bombs were discovered at a children's park in Wooler, Northumberland. The practice bombs were removed safely.

On the 3rd May 2025, 1No. 3" mortar was found on the banks of the River Arun, near Arundel. It was disposed of safely by a Royal Navy EOD team.

On the 11th and 12th June 2025, 2No. 8" naval shells were discovered at Bidnay Yard, in Appledore, Devon. They were relocated by an EOD team to Westward Ho! beach and disposed of in a controlled explosion.

On the 4th July 2025, 2No. WWI-era 18-pounder artillery shells were discovered in Charlesworth, Derbyshire. They were destroyed in a controlled explosion by an Army EOD unit.

On the 5th August 2025, 3No. Unexploded German IBs were unearthed in a garden on Plassey Street, Penarth. They were rendered safe by an EOD team.

On the 11th August 2025, a wildfire on Langdale Moor in North Yorkshire caused at least 18No. explosions of buried ordnance. The area has historically been used as a military training, including intensive live-fire battle training.

On the 18th September 2025, 76No. WWII-era practice bombs were excavated from a pit in a field off Longstowe Road, Cambridgeshire, near Gransden Lodge Airfield. The bombs were destroyed in controlled explosions by an EOD team.



Example of a practice bomb



Example of a WWII-era mortar

On the 7th October 2025, 18No. artillery shells washed up on Drigg Beach, Cumbria. They were identified and marked by the Coastguard and an EOD team, and safely detonated in controlled explosions.

On the 12th December 2025, an unexploded artillery shell was discovered during routine drainage work at Royal Liverpool Golf Club. It was detonated in a controlled explosion by an Army EOD team.

On the 14th January 2026, 1No. German SC50 HE bomb was dredged up in Exmouth Marina, and another was found on a building site in Millbay, Plymouth. Both were taken out to sea for detonation.

On the 12th March 2026, several smoke signals and small munition fragments were found on Medmerry Beach, near Chichester. The beach was historically used as a bombing and air-to-ground firing range. The items were detonated in controlled explosions.

Appendix 6 Glossary and definitions

Abandoned Explosive Ordnance (AXO)	Explosive ordnance that has not been used during an armed conflict, that has been left behind or disposed of by a party to an armed conflict, and which is no longer under control of that party. Abandoned explosive ordnance may or may not have been primed, fuzed, armed, or otherwise prepared for use.
Detonation	The high-speed chemical breakdown of an energetic material producing heat, pressure, flame, and a shock wave.
Device	Any component, sub-assembly or completed ordnance. It can apply to detonators, primers, gaines, fuzes, shells, or bombs.
Explosive	Compounds forming energetic materials that under certain conditions chemically react, rapidly producing gas, heat, and pressure.
Explosive Ordnance (EO)	All munitions containing explosives, nuclear fission or fusion materials, and biological and chemical agents. This includes bombs and warheads; guided and ballistic missiles; artillery, mortar, rocket, and Small Arms Ammunition; all mines, torpedoes, and depth charges; pyrotechnics; clusters and dispensers; cartridge and propellant actuated devices; electro-explosive devices; clandestine and improvised explosive devices; and all similar or related items or components that are explosive in nature.
Explosive Ordnance Clearance (EOC)	The operation of ordnance detection, investigation, identification, and removal, with Explosive Ordnance Disposal being a separate operation.
Explosive Ordnance Disposal (EOD)	The detection, identification, on-site evaluation, rendering safe, recovery, and final disposal of Unexploded Ordnance.
Explosive Ordnance Reconnaissance (EOR)	The detection, identification, and on-site evaluation of Unexploded Ordnance before Explosive Ordnance Disposal.
Explosive Remnants of War (ERW)	Unexploded Ordnance and Abandoned Explosive Ordnance, excluding landmines.
Explosive Substances & Articles (ESA)	Explosive substances are solid or liquid substances (or a mixture) which are either: capable by a chemical reaction of producing gas at a speed, temperature, and pressure to cause damage to the surroundings; or designed to produce an effect by heat, light, sound, gas, or smoke (or a combination) as a result of a non-detonative, self-sustaining, exothermic reaction. One or more explosive substances form an explosive article.
Fuze	The part of an explosive device that initiates the main explosive charge to function.
Gain	Small explosive charge that is sometimes placed between the detonator and the main charge of a munition to ensure ignition.
Geophysical survey	A range of methods that can be used to detect objects or identify ground conditions without the need for intrusive methods (such as excavation or drilling).
Hazard	A potential source of harm or adverse health effect on a person or persons.

High Explosive (HE)	Secondary explosives (commonly known as HE) make up the main charge or filling of an ordnance device. They are usually less sensitive than primary explosives. Examples of secondary explosives are Nitro-glycerine (NG), Trinitrotoluene (TNT), Amatol (Ammonium nitrate and TNT), gunpowder, and Cyclotrimethylenetrinitramine (RDX).
Land Service Ammunition (LSA)	Items of ordnance thrown, propelled, or placed during land warfare, to include SAA, grenades, mortar bombs, projectiles, rockets, and landmines.
Munition	A complete device charged with explosives, propellants, pyrotechnics, initiating composition, or nuclear, biological, or chemical material for use in military operations, including demolitions. These fall into three categories: inert (contain no explosives), live (contain explosives but have not been fired), and blind (have fired but failed to function as intended.)
Primary Explosive	Explosives used to initiate less-sensitive explosives and usually extremely sensitive to friction, heat, and pressure. Primary explosives are commonly found in detonators. Examples of primary explosives are lead azide, lead styphnate, and mercury fulminate.
Propellants	A chemical substance – either solid, liquid, or gas – that produces energy through combustion or decomposition to generate thrust or force, but without detonating like a high explosive.
Pyrotechnic	An explosive article or substance designed to produce an effect by heat, light, sound, gas, or smoke (or a combination), because of non-detonative, self-sustaining, exothermic chemical reactions.
Risk	The likelihood that a person may be harmed or suffer adverse health effects if exposed to a hazard.
Small Arms Ammunition (SAA)	Projectiles around 12mm or less in calibre and no longer than approximately 100mm. They are fired from weapons including rifles, pistols, shotguns, and machine guns.
Unexploded Anti-Aircraft (UXAA) Shell	Ordnance containing High Explosives, although they can also contain pyrotechnic compounds that produce smoke. They ranged from 2" to 5.25" calibre, although most common were 3.7" and 4.5" HE shells. Typically fired from Anti-Aircraft guns.
Unexploded Bomb (UXB)	A common term for unexploded air-dropped munitions.
Unexploded Ordnance (UXO)	Explosive ordnance that has been primed, fuzed, armed, or otherwise prepared for use and subsequently fired, dropped, launched, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or material and remains unexploded either by malfunction or design or for any other cause.
V1	The Vergeltungswaffe-1 ('Reprisal Weapon 1'), known colloquially in English as the Flying Bomb, Pilotless Aircraft, Buzz Bomb, or Doodlebug. It was the first guided missile used in WWII and the forerunner of today's cruise missile.
V2	The Vergeltungswaffe-2 ('Reprisal Weapon 2') was the first ballistic missile. It was used primarily against Belgian and British targets during the later stages of WWII.

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Appendix 8 General notes

1. This report has been prepared in relation to the specific requirement of the contract or commission.
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Annex E

GENERAL LIMITATIONS



REPORT LIMITATIONS - GROUND AND WATER

GENERAL

1. WSP UK Limited has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed and outlined in the body of the report.
2. Unless explicitly agreed otherwise, in writing, this report has been prepared under WSP UK Limited standard Terms and Conditions as included within our proposal to the Client.
3. Project specific appointment documents may be agreed at our discretion and a charge may be levied for both the time to review and finalise appointments documents and also for associated changes to the appointment terms. WSP UK Limited reserves the right to amend the fee should any changes to the appointment terms create an increase risk to WSP UK Limited.
4. The report needs to be considered in the light of the WSP UK Limited 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.

PHASE 1 GEO ENVIRONMENTAL AND PRELIMINARY RISK ASSESSMENTS

Coverage: *This section covers reports with the following titles or combination of titles: phase 1; desk top study; geo environmental assessment; development appraisal; preliminary environmental risk assessment; constraints report; due diligence report; geotechnical development review; environmental statement; environmental chapter; project scope summary report (PSSR), program environmental impact report (PEIR), geotechnical development risk register; and, baseline environmental assessment.*

5. The works undertaken to prepare this report comprised a study of available and easily documented information from a variety of sources (including the Client), together with (where appropriate) a brief walk over inspection of the Site and correspondence with relevant authorities and other interested parties. Due to the short timescales associated with these projects responses may not have been received from all parties. WSP UK Limited cannot be held responsible for any disclosures that are provided post production of our report and will not automatically update our report.
6. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only for the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, WSP UK Limited reserves the right to review such information and, if warranted, to modify the opinions accordingly.
7. It should be noted that any risks identified in this report are perceived risks based on the information reviewed. Actual risks can only be assessed following intrusive investigations of the site.
8. WSP UK Limited does not warrant work / data undertaken / provided by others.



REPORT LIMITATIONS - GROUND AND WATER

INTRUSIVE INVESTIGATION REPORTS

Coverage: *The following report titles (or combination) may cover this category of work: geo environmental site investigation; geotechnical assessment; GIR (Ground Investigation reports); preliminary environmental and geotechnical risk assessment; and, geotechnical risk register.*

9. The investigation has been undertaken to provide information concerning either:
 - i. The type and degree of contamination present at the site in order to allow a generic quantitative risk assessment to be undertaken; or
 - ii. Information on the soil properties present at the site to allow for geotechnical development constraints to be considered.
10. The scope of the investigation was selected on the basis of the specific development and land use scenario proposed by the Client and may be inappropriate to another form of development or scheme. If the development layout was not known at the time of the investigation the report findings may need revisiting once the development layout is confirmed.
11. For contamination purposes, the objectives of the investigation are limited to establishing the risks associated with potential contamination sources with the potential to cause harm to human health, building materials, the environment (including adjacent land), or controlled waters.
12. For geotechnical investigations the purpose is to broadly consider potential development constraints associated with the physical property of the soils underlying the site within the context of the proposed future or continued use of the site, as stated within the report.
13. The amount of exploratory work, soil property testing and chemical testing undertaken has necessarily been restricted by various factors which may include accessibility, the presence of services; existing buildings; current site usage or short timescales. The exploratory holes completed assess only a small percentage of the area in relation to the overall size of the Site, and as such can only provide a general indication of conditions.
14. The number of sampling points and the methods of sampling and testing do not preclude the possible existence of contamination where concentrations may be significantly higher than those actually encountered or ground conditions that vary from those identified. In addition, there may be exceptional ground conditions elsewhere on the site which have not been disclosed by this investigation and which have therefore not been taken into account in this report.
15. The inspection, testing and monitoring records relate specifically to the investigation points and the timeframe that the works were undertaken. They will also be limited by the techniques employed. As part of this assessment, WSP UK Limited has used reasonable skill and care to extrapolate conditions between these points based upon assumptions to develop our interpretation and conclusions. The assumption made in forming our conclusions is that the ground and groundwater conditions (both chemically and physically) are the same as have been encountered during the works undertaken at the specific points of investigation. Conditions can change between investigation points and these interpretations should be considered indicative.
16. The risk assessment and opinions provided are based on currently available guidance relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values. Specific assumptions associated

REPORT LIMITATIONS - GROUND AND WATER

with the WSP UK Limited risk assessment process have been outlined within the body or associated appendix of the report.

17. Additional investigations may be required in order to satisfy relevant planning conditions or to resolve any engineering and environmental issues.
18. Where soil contamination concentrations recorded as part of this investigation are used for commentary on potential waste classification of soils for disposal purposes, these should be classed as indicative only. Due consideration should be given to the variability of contaminant concentrations taken from targeted samples versus bulk excavated soils and the potential variability of contaminant concentrations between sampling locations. Where major waste disposal operations are considered, targeted waste classification investigations should be designed.
19. The results of the asbestos testing are factually reported and interpretation given as to how this relates to the previous use of the site, the types of ground encountered and site conceptualisation. This does not however constitute a formal asbestos assessment. These results should be treated cautiously and should not be relied upon to provide detailed and representative information on the delineation, type and extent of bulk ACMs and / or trace loose asbestos fibres within the soil matrix at the site.
20. If costs have been included in relation to additional site works, and / or site remediation works these must be considered as indicative only and must be confirmed by a qualified quantity surveyor.

EUROCODE 7: GEOTECHNICAL DESIGN

21. On 1st April 2010, BS EN 1997-1:2004 (Eurocode 7: Geotechnical Design – Part 1) became the mandatory baseline standard for geotechnical ground investigations.
22. In terms of geotechnical design for foundations, slopes, retaining walls and earthworks, EC7 sets guidance on design procedures including specific guidance on the numbers and spacings of boreholes for geotechnical design, there are limits to methods of ground investigation and the quality of data obtained and there are also prescriptive methods of assessing soil strengths and methods of design. Unless otherwise explicitly stated, the work has not been undertaken in accordance with EC7. A standard geotechnical interpretative report will not meet the requirements of the Geotechnical Design Report (GDR) under Eurocode 7. The GDR can only be prepared following confirmation of all structural loads and serviceability requirements. The report is likely to represent a Ground Investigation Report (GIR) under the Eurocode 7 guidance.

DETAILED QUANTITATIVE RISK ASSESSMENTS AND REMEDIAL STRATEGY REPORTS

23. These reports build upon previous report versions and associated notes. The scope of the investigation, further testing and monitoring and associated risk assessments were selected on the basis of the specific development and land use scenario proposed by the Client and may not be appropriate to another form of development or scheme layout. The risk assessment and opinions provided are based on currently available approaches in the generation of Site Specific Assessment Criteria relating to contamination concentrations and are not considered to represent a risk in a specific land use scenario to a specific receptor. No liability can be accepted for the retrospective effects of any future changes or amendments to these values, associated models or associated guidance.



REPORT LIMITATIONS - GROUND AND WATER

- 24.** 24. The outputs of the Detailed Quantitative Risk Assessments are based upon WSP UK Limited manipulation of standard risk assessment models. These are our interpretation of the risk assessment criteria.
- 25.** 25. Prior to adoption on site they will need discussing and agreeing with the Regulatory Authorities prior to adoption on site. The regulatory discussion and engagement process may result in an alternative interpretation being determined and agreed. The process and timescales associated with the Regulatory Authority engagement are not within the control of WSP UK Limited. All costs and programmes presented as a result of this process should be validated by a quantity surveyor and should be presumed to be indicative.

GEOTECHNICAL DESIGN REPORT (GDR)

- 26.** 26. The GDR can only be prepared following confirmation of all structural loads and serviceability requirements. All the relevant information needs to be provided to allow for a GDR to be produced.

MONITORING (INCLUDING REMEDIATION MONITORING REPORTS)

- 27.** 27. These reports are factual in nature and comprise monitoring, normally groundwater and ground gas and data provided by contractors as part of an earthworks or remedial works.
- 28.** 28. The data is presented and will be compared with assessment criteria.

Annex F

RISK ASSESSMENT METHODOLOGY



RISK ASSESSMENT METHODOLOGY

The environmental risk assessment aims to assess the significance of each potential contaminant linkage. The key to the classification is that the designation of risk is based upon the consideration of both:

- **The magnitude of the potential consequence** (i.e. severity). It takes into account both the potential severity of the hazard and the sensitivity of the receptor.
- **The magnitude of probability** (i.e. likelihood). It takes into account both the presence of the hazard and receptor and the integrity of the pathway.

The definitions for the qualitative risk assessment have been taken from "Guidance for the Safe Development of Housing on Land Affected by Contamination" Annex 4 R&D Publication 66: 2008 Volume 2.

The Likelihood Probability Classifications of SPR Linkage being realised is presented in **Table F.1**.

TABLE F.1 LIKELIHOOD PROBABILITY CLASSIFICATIONS OF SPR LINKAGE BEING REALISED

Classification	Definition	Examples
Unlikely	There is pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long-term.	a) Elevated concentrations of toxic contaminants are present below hardstanding. b) Light industrial unit <10 yrs old containing a double skinned UST with annual integrity testing results available.
Low Likelihood	There is pollutant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a long period such an event would take place, and is less likely in the shorter term.	a) Elevated concentrations of toxic contaminants are present in soils at depths >1m in a residential garden, or 0.5-1.0m in public open space. b) Ground/groundwater contamination could be present on a light industrial unit constructed in the 1990s containing a UST in operation over the last 10 years – the tank is double skinned but there is no integrity testing or evidence of leakage.
Likely	There is pollutant linkage and all the elements are present and in the right place which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short-term and likely over the long-term.	a) Elevated concentrations of toxic contaminants are present in soils at depths of 0.5-1.0m in a residential garden, or the top 0.5m in public open space. b) Ground/ groundwater contamination could be present from an industrial site containing a UST present between 1970 and 1990. The tank is known to be single skin. There is no evidence of leakage although there are no records of integrity tests.
High Likelihood	There is pollutant linkage and an event would appear very likely in the short-term and almost inevitable over the long-term, or there is evidence at the receptor of harm or pollution	a) Elevated concentrations of toxic contaminants are present in soils in the top 0.5m in a residential garden. b) Ground/groundwater contamination could be present from chemical works, containing a number of USTs,

Classification	Definition	Examples
		having been in operation on the same site for over 50 years.

“Potential Consequence of Contaminant Linkage” gives an indication of the sensitivity of a given receptor to a particular source or contaminant of concern under consideration. It is based on full exposure via the particular linkage being examined. The classification of consequence is presented in **Table F.2**.

TABLE F.2 OUTLINE OF HAZARD CONSEQUENCE CLASSIFICATIONS FOR RECEPTOR TYPES FROM CONTAMINATION IMPACT:

Classification	Human Health	Controlled Water	Ecology	Property Structures/ Crops and animals	Examples
Severe	Highly elevated concentrations likely to result in “significant harm” to human health as defined by the EPA 1990, Part 2A, if exposure occurs.	Equivalent to EA Category 1 pollution incident including persistent and/or extensive effects on water quality; leading to closure of a potable abstraction point; major impact on amenity value or major damage to agriculture or commerce.	Major damage to aquatic or other ecosystems, which is likely to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long-term maintenance of the population.	Catastrophic damage to crops, buildings or property.	Significant harm to humans is defined in circular 01/2006 as death, disease*, serious injury, genetic mutation, birth defects or the impairment of reproductive functions. Major fish kill in surface water from large spillage of contaminants from site. Highly elevated concentrations of Hazardous or priority substances present in groundwater close to small potable abstraction (high sensitivity). Explosion, causing building collapse (can also equate to immediate human health risk if buildings are occupied).
Medium	Elevated concentrations which could result in “significant harm” to human health as defined by the EPA 1990, Part 2A if exposure occurs.	Equivalent to EA Category 2 pollution incident including significant effect on water quality; notification required to abstractors; reduction in amenity value or significant damage to agriculture or commerce.	Significant damage to aquatic or other ecosystems, which may result in a substantial adverse change in its functioning or harm to a species of special interest that may endanger the long-term maintenance of the population.	Significant damage to crops, buildings or property.	Significant harm to humans is defined in circular 01/2006 as death, disease*, serious injury, genetic mutation, birth defects or the impairment of reproductive functions. Damage to building rendering it unsafe to occupy e.g. foundation damage resulting in instability. Ingress of contaminants through plastic potable water pipes.

Classification	Human Health	Controlled Water	Ecology	Property Structures/ Crops and animals	Examples
Mild	Exposure to human health unlikely to lead to "significant harm".	Equivalent to EA Category 3 pollution incident including minimal or short lived effect on water quality; marginal effect on amenity value, agriculture or commerce.	Minor or short lived damage to aquatic or other ecosystems, which is unlikely to result in a substantial adverse change in its functioning or harm to a species of special interest that would endanger the long-term maintenance of the population.	Minor damage to crops, buildings or property.	Exposure could lead to slight short-term effects (e.g. mild skin rash). Surface spalling of concrete.
Minor	No measurable effects on humans	Equivalent to insubstantial pollution incident with no observed effect on water quality or ecosystems.	Equivalent to insubstantial pollution incident with no observed effect on water quality or ecosystems.	Repairable effects of damage to buildings, structures and services.	The loss of plants in a landscaping scheme. Discoloration of concrete.

The risk matrix to link the likelihood and consequence is shown in **Table F.3**.

TABLE F.3 RISK MATRIX

Likelihood:	Unlikely	Low Likelihood	Likely	High Likelihood
Potential Consequence:				
Severe	Moderate/low risk	Moderate Risk	High Risk	Very High Risk
Medium	Low	Moderate/low risk	Moderate Risk	High Risk
Mild	Very low risk	Low Risk	Moderate/low risk	Moderate Risk
Minor	Very low risk	Very low risk	Low Risk	Low Risk

The overall risk definitions are summarised in **Table F.4**.

TABLE F.4 RISK DEFINITIONS

Risk	Definition
Very Low	It is a low possibility that harm could arise to a designated receptor, but it is likely at worst, that this harm if realised would normally be mild or minor.
Low	It is possible that harm could arise to a designated receptor from identified hazard, but it is likely at worst, that this harm if realised would normally be mild. It is unlikely that the site owner/or occupier would face substantial liabilities from such a risk. Further investigative work (which is likely to be limited) to clarify the risk may be required. Any subsequent remediation works are likely to be relatively limited.
Moderate	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, and if any harm were to occur it is more likely, that the harm would be relatively mild. Further investigative work is normally required to clarify the risk and to determine the potential liability to site owner/occupier. Some remediation works may be required in the longer term.
High	Harm is likely to arise to a designated receptor from an identified hazard at the site without remediation action. Realisation of the risk is likely to present a substantial liability to the site owner/or occupier. Investigation is

Risk	Definition
	required as a matter of urgency to clarify the risk. Remediation works may be necessary in the short-term and are likely over the longer term.
Very High	There is a high probability that severe harm could arise to a designated receptor from an identified hazard at the site without remediation action OR there is evidence that severe harm to a designated receptor is already occurring. Realisation of that risk is likely to present a substantial liability to be site owner/or occupier. Investigation is required as a matter of urgency and remediation works likely to follow in the short-term.

Annex G

CIRIA RISK DEFINITIONS



CIRIA RISK DEFINITIONS

Table A1 - Classifications of Probability

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

Table A2 - Classifications of Consequence

Classification	Definition
Severe	Short-term (acute) risk to human health likely to result in "significant harm" as defined by the Environment Protection Act 1990, Part IIA. Short-term risk of pollution of sensitive water resource. Catastrophic damage to buildings/property. A short-term risk to a particular ecosystem, or organism forming part of such ecosystem.
Medium	Chronic damage to Human Health ("significant harm" as defined in DETR, 2000). Pollution of sensitive water resources. A significant change in a particular ecosystem, or organism forming part of such ecosystem.
Mild	Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services (significant harm as defined in the Draft Circular on Contaminated Land, DETR, 2000). Damage to sensitive buildings/structures/services or the environment.
Minor	Harm, although not necessarily significant harm, which may result in a financial loss, or expenditure to resolve, Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc.). Easily repairable effects of damage to buildings, structures and services

The risk categories presented in this report, taking into account both probability and severity, are based on the matrix presented in **Table A3** below, following CIRIA C552.

Table A3 - Adopted Risk Categories / Comparison of Consequence Against Probability

Probability	Consequence			
	Severe	Medium	Mild	Minor
High Likelihood	Very High Risk	High Risk	Moderate Risk	Low to Moderate Risk
Likely	High Risk	Moderate Risk	Low to Moderate Risk	Low Risk
Low Likelihood	Moderate Risk	Low to Moderate Risk	Low Risk	Very Low Risk
Unlikely	Low to Moderate Risk	Low Risk	Very Low Risk	Very Low Risk



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