

EnviroSmart Plus



Phase 1 Contaminated Land Assessment

Site address

Penstrowed Quarry
Penstrowed
Caersws
SY17 5SG

Date issued

April 2023

Report status

Final

Grid Reference

306860, 290970

Site Area

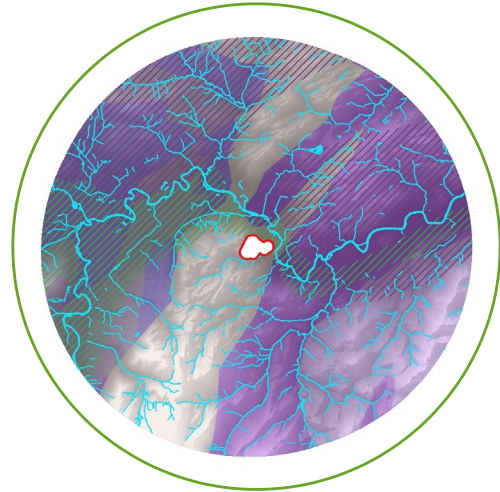
6.7 ha

Report prepared for

GF Griggs Ltd

Report reference

79011R1



Risk – Low/Moderate to Moderate

Given the nature of the historical land use and therefore the potential for contamination to be present at the Site, it is recommended that a proportionate programme of site investigation and monitoring works be undertaken in order to establish the presence or absence of contamination and to enable a quantitative assessment of the associated environmental risks.

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Executive Summary

The purpose of this EnviroSmart report is to provide clear and pragmatic advice regarding the nature and potential significance of contaminated land hazards which may be present at the study site. GeoSmart are providing consultancy and professional opinion based upon our collation, interpretation and assessment of information contained within an Envirocheck report, and other sources where expressly stated (i.e. site visits, photographs, and anecdotal evidence). It is acknowledged that the risk assessment findings are based on documentary sources of information alone.

Site analysis

1. Probability/likelihood of a contaminant hazard at the Site	High likelihood	
	Likely	
	Low likelihood	
2. Potential severity/consequence of any impacts	Unlikely	
	Severe	
	Medium	
	Mild	
3. Overall land quality risks posed by the Site	Minor	
	Very high	
	High	
	Moderate	
	Moderate/low	
	Low	
	Very low	

Summary of existing and proposed development

The Site is currently used as a quarry and for light industrial use. Numerous workshops and temporary storage containers are present on Site. Light industrial uses include vehicle storage and repairs, and miscellaneous storage (including refrigerators), bulk fuel storage is also present. Development proposals comprise the demolition/removal of existing structures and the construction of a new caravan park with amenity space and recreational land.

Environmental Setting

The Site is partially underlain by superficial Alluvial Fan Deposits which is classified as a Secondary (A) Aquifer and the bedrock geology consists of Penstrowed Grits Formation which is classified as a Secondary (B) Aquifer.

The nearest water feature is the Watercourse, located along western boundary of the Site boundary.

The nearest sensitive land use is Ancient and semi-natural woodland located c. 120m south of the Site.

Site History

Historical mapping confirms that the Site has been used as a quarry since 1884. It is likely that the quarry existed before this date however mapping is not available to confirm. Aerial imagery indicates that the existing buildings on Site were constructed by 2006.

Radon

The Site lies in an area where 3 to 5% of homes are at or above the UK radon action level (200 Bq/m3).

Coal Mining

The Site does not lie within an identified coal mining area and is therefore unlikely to be affected by related ground stability or mine gas issues.

Summary of Conceptual Site Model (CSM)

Source of Contamination

Potential for inorganic and low volatility organic and volatile organic contaminants to be present within the subsurface soils associated with the industrial land use, bulk fuel storage and oil spills. Potential for asbestos containing materials within the subsurface soils associated with broken fragments of roofing material identified on the Site walkover. Potential for dissolved phase contaminants to be present within shallow groundwater. Potential for elevated methane and carbon dioxide to be present within the sub-surface soils associated with infilling activities on Site. Potential for radon within the subsurface.

Receptors

Human Health, Controlled Water (Groundwater within the underlying superficial Secondary (A) aquifer and bedrock Secondary (B) aquifer; and the partially culverted watercourse located along the north western boundary of the Site, and Sensitive Land Uses ('Ancient and semi-natural woodland (c. 120m south).

Human Health (pathway)

Dermal contact, ingestion & inhalation of soils & soil dust. Consumption of home grown produce. Ingress into water supply pipework and subsequent water ingestion. Migration of vapours to surface; inhalation indoors. Liberation of sub surface ACMs and inhalation of asbestos fibres. Lateral and vertical migration into on-Site buildings; potential to cause asphyxiation or an explosion. Lateral migration towards on-Site buildings; potential to cause long term health effects.

Controlled Waters (pathway)

Dissolution into pore water/shallow groundwater and subsequent migration. Dissolution into aqueous phase and preferential migration via drainage structures. Lateral and vertical groundwater movement via natural or artificial flow paths.

Preliminary Risk Assessment

Overall, the preliminary risk classification of the Site in relation to the proposed redevelopment is considered to be Low/Moderate to Moderate.

Recommendations / Next Steps

Phase 2 intrusive investigation

Given the nature of the current and historical land use and therefore the potential for contamination to be present at the Site, it is recommended that a proportionate programme of site investigation and monitoring works be undertaken in order to establish the presence or absence of contamination and to enable a quantitative assessment of the associated environmental risks.

Radon assessment / mitigation measures

Given that the Site lies in an area where 3% to 5% of homes are at or above the UK radon action level (200 Bq/m³), it is recommended that either further Radon Assessment is undertaken or that appropriate Radon Mitigation Measures are included in any future built structures.

Further information can be found at <http://www.ukradon.org/information/> Additionally local building control may have further knowledge in relation to radon risks within the area.

1. Introduction



1.1 Background

The study site (from herein known as 'the Site') is situated at Penstrowed Quarry in Penstrowed, Caersws. A location plan of the Site is shown in Section 1.5. A proposed development plan of the Site is shown in Section 1.6.

GeoSmart was commissioned by GF Griggs Ltd in March 2023 to undertake a Phase 1 Land Quality Assessment for the Site. The report has been requested in order to support a proposed planning application for the Site.

The proposed development is for the construction of a new caravan park with amenity areas and recreational land.

The EnviroSmart report has been undertaken by firstly compiling information concerning the Site and the surrounding area, including current and historical land uses, geological records and registered pollution incidents. The information which is gathered is then used to construct a 'conceptual site model', including an understanding of likely contaminant sources, pathways and receptors. Finally, a preliminary assessment of risks posed to identified receptors (i.e., people, buildings or the natural environment) from the anticipated land quality at the Site is performed. The risk assessment methodology is consistent with CIRIA C552 (2001); see Section 3.4 for details.

1.2 Purpose of this report

The purpose of this EnviroSmart report is to provide clear and pragmatic advice regarding the nature and potential significance of contamination hazards which may be present at the Site.

1.3 Report contents

This report is divided into two sections, as described below:

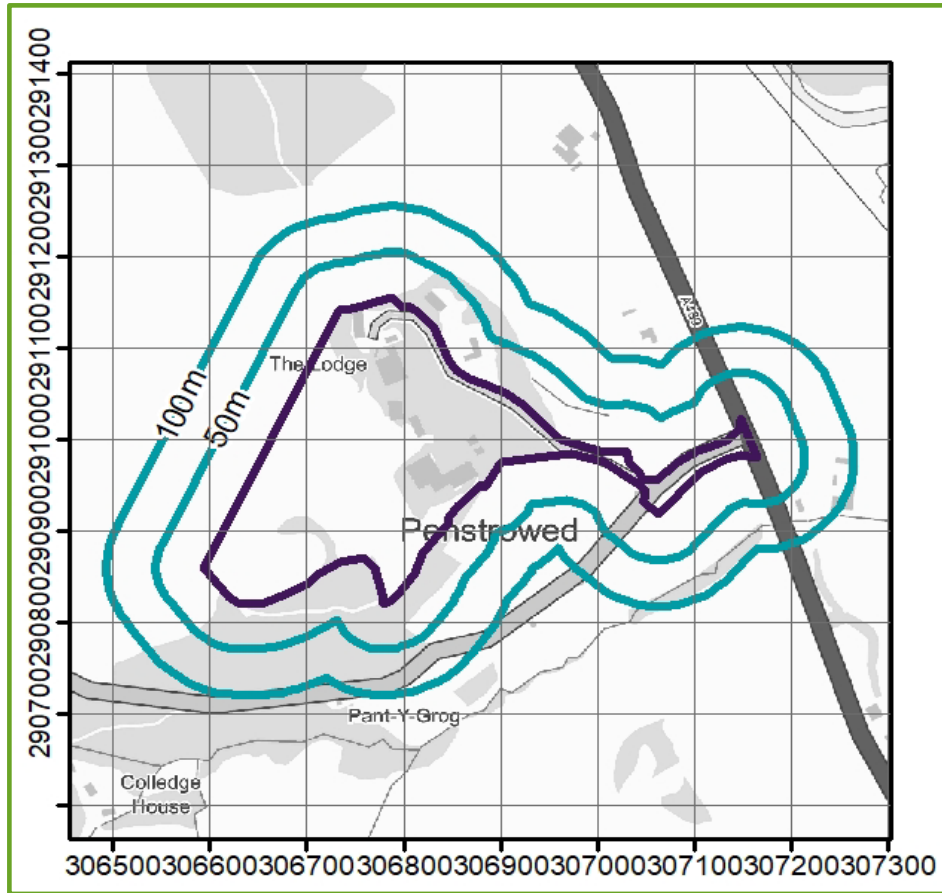
Section	Content	Purpose
Section 2: LAND QUALITY ASSESSMENT	A summary of the site history and environmental setting, the findings of the preliminary risk assessment and associated recommendations	To present a clear and concise overview of the land quality issues facing the Site, including recommendations of how to manage any land contamination which may be present
Section 3: SUPPORTING INFORMATION	A collection of site specific information on which the land quality assessment is based	To provide detailed information in support of the risk assessment; this section also represents a source of reference data for use in any subsequent site works/assessments

1.4 Report limitations

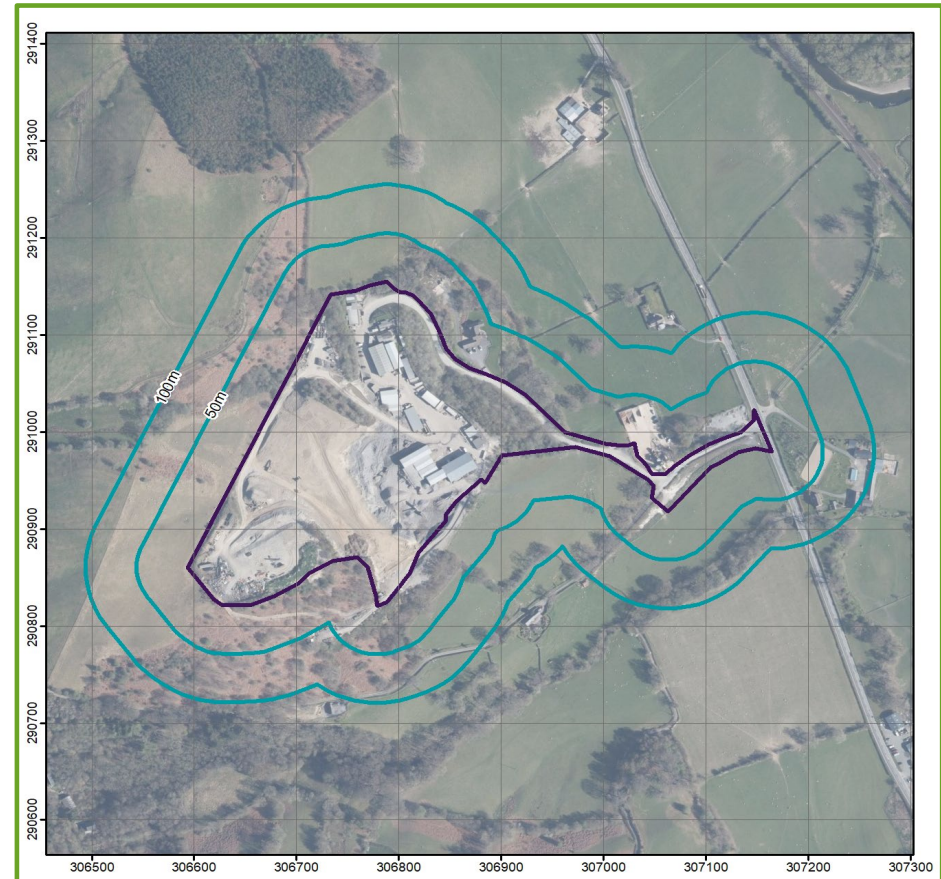
It is noted that the findings presented in this report are largely based on information supplied by third parties. Whilst we assume that all information is representative of past and present conditions we can offer no guarantee as to its validity.

This report excludes consideration of potential hazards arising from any activities at the Site other than normal use and occupancy for the intended land uses. Hazards associated with any other activities have not been assessed and must be subject to a specific risk assessment by the parties responsible for those activities.

1.5 Site location plan



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BlueSky copyright and database rights 2023

1.6 Proposed Site development plan




2. Land quality assessment




2.1 Site details

Site name:	Penstrowed Quarry	Current land cover:	Majority hardstanding/building cover (85%) with modest soft landscaping (15%)
Current use:	Industrial development		
Proposed use:	Commercial development	Site area:	6.7 ha



2.2 Conceptual understanding (potential sources of contamination)

 Site history <i>(historical land use taken within 250m radius of the Site boundary)</i>	Date	Description of land use		POTENTIAL SOURCES OF CONTAMINATION	Source description	LIKELY PROBABILITY OF CONTAMINATION
		On-Site	Off-Site			
	1884-1885	Penstrowed Quarry mapped in the north of the Site. Undeveloped/pasture land mapped in the south of the Site.	Wesleyan Chapel mapped adjacent to the south east of the Site. Gravel pit mapped c. 70m north east of the Site. Penstrowed Hall mapped c. 75m to the east of the Site. 'birches' woodland mapped c. 100m to the south of the Site. Spring mapped c. 165m to the south west of the Site. Railway line mapped c. 250m east. Quarry mapped c. 250m south west of the Site. Woodland and undeveloped pastureland mapped to the south, west and north of the Site.	<p>The land use history suggests that there is the potential for contamination to have occurred on-Site relating to the following:</p> <p>Industrial land incl. quarry Potential for bulk storage of fuels and/or miscellaneous chemicals. Note: given the land use history of the Site there is potential for underground storage tanks or pipelines containing chemical and fuel residues to be present.</p> <p>Miscellaneous fuel and chemical spills (i.e., fuels used for heating & powering machinery/vehicles, oils and lubricants, paints/thinners, degreasers, etc.).</p> <p>Potential for localised deposition of boiler ash/coke and other industrial combustion wastes and by-products.</p> <p>Made Ground associated with former development/demolition activities.</p> <p>Asbestos containing materials (ACM) may have been incorporated within the built structures in the past; the disturbance of any such materials may have resulted in asbestos being present within the sub surface surrounding the buildings.</p> <p>Continued</p>		
	1885	No discernible change on Site.	No discernible change off Site.			
	1902	No discernible change on Site.	No discernible change off Site.			
	1903	'incline' mapped in the centre of the Site. No discernible change to the quarry on Site.	Spring mapped c. 25m south. Gravel pit c. 70m north east now mapped as 'old gravel pit'. Old quarry mapped adjacent to the south of the Site. Penstrowed Bridge mapped c. 125m east of the Site.			
	1938-1953	No discernible change on Site.	No discernible change on Site.			


2.2 Conceptual understanding (potential sources of contamination)

 Site history <i>(historical land use taken within 250m radius of the Site boundary)</i>	Date	Description of land use		POTENTIAL SOURCES OF CONTAMINATION	Source description	LIKELY	PROBABILITY OF CONTAMINATION
		On-Site	Off-Site				
	1953	No change.	Undefined buildings mapped c. 240m north east of the Site.	POTENTIAL SOURCES OF CONTAMINATION	<p>Continued</p> <p>The land use history suggests that there is the potential for contamination to have occurred <u>off-Site</u> relating to the following:</p> <p>Railway land Herbicide residues (possibly including atrazine and simazine from historical vegetation control) . Fuel and engine oil spills /leakage from train engines. Lubricant residues from associated rolling stock/carriages. Made Ground/fill materials associated with the construction of the rail line. Asbestos containing materials (ACM) may have been incorporated within the built structures in the past; the disturbance of any such materials may have resulted in asbestos being present within the sub surface surrounding the buildings. Coal residues associated with the former material stores (in the case of sidings).</p>	LIKELY	PROBABILITY OF CONTAMINATION
	1963	No discernible change on Site.	No discernible change off Site.				
	1975	No discernible change on Site.	No discernible change off Site.				
	1983	No discernible change on Site.	College mapped c. 180m south.				
	1988	No discernible change on Site.	No discernible change off Site.				
	1994	No discernible change on Site.	No discernible change off Site.				
	1996	No discernible change on Site.	No discernible change off Site.				
	2000	No discernible change on Site.	Disused quarry mapped c. 145m north.				
	2006 (aerial imagery)	Multiple buildings constructed across the Site. Vehicles present across the Site.	No discernible change off Site.				
	2009 (aerial imagery)	Further buildings constructed in the centre of the Site	No discernible change off Site.				
	2011 (aerial imagery)	Quarrying activity extended into the west of the Site.	No discernible change off Site.				
	2020 (aerial imagery)	Additional buildings in the centre of the Site demolished.	No discernible change off Site.				
	2023	No discernible change on Site.	No discernible change off Site.				



2.2 Conceptual understanding (potential sources of contamination)

 <p>Current land use</p>	<p>The Site is currently used as a quarry and for light industrial use. Numerous workshops and temporary storage containers are present on Site, as indicated by photographs 1, 8, 9, 27 and 28 in section 3.2 of this report. Light industrial uses include vehicle storage and repairs, and miscellaneous storage (including refrigerators).</p> <p>There are no known buried storage tanks at the Site.</p> <p>There is known bulk fuel and/or chemical storage on Site.</p> <p>Additional information concerning the current Site condition is presented in Section 2.5 (site walkover information).</p>			POTENTIAL SOURCES OF CONTAMINATION	<p>Given the Site's current use, there is potential for localised contamination relating to the following:</p> <p>Bulk fuel storage: Given the ongoing presence of bulk fuel/chemical storage on-Site, there is potential for leakage to be occurring, which may impact on the prevailing land quality. However, it is noted that existing tanks were identified to be in good condition during the Site walkover. A minor spill/leak was identified adjacent to a disused tank in the south west of the Site. (photographs 12, 13 and 15).</p> <p>Asbestos: Asbestos containing materials may be present within the on-Site buildings. Note: it is assumed that if present such materials will be dealt with appropriately during the Site development works.</p> <p>Waste materials: Current site operations/activities give rise to the production of waste materials (solids, liquids or air emissions) which may potentially impact on the immediate land quality.</p>	LIKELY	PROBABILITY OF CONTAMINATION																															
 <p>Neighbouring industrial land uses <i>(see environmental data report in Section 3.3 for full listing)</i></p>	<p>No potentially contaminative land uses are located within 250m of the Site.</p> <table border="1"> <thead> <tr> <th>Distance from Site</th> <th>Number of active industrial land uses</th> <th>Number of inactive industrial land uses</th> </tr> </thead> <tbody> <tr> <td>1 - 50 m</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> </tr> <tr> <td>51 - 100m</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> </tr> <tr> <td>101 - 250 m</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Nr</th> <th>Nearest distance</th> <th>Land use / permitted activity / authorisation</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">0</td> <td style="text-align: center;">NA</td> <td>Fuel station entries</td> </tr> <tr> <td style="text-align: center;">0</td> <td style="text-align: center;">NA</td> <td>Gas pipelines</td> </tr> <tr> <td style="text-align: center;">0</td> <td style="text-align: center;">NA</td> <td>Underground electrical cables</td> </tr> <tr> <td style="text-align: center;">0</td> <td style="text-align: center;">NA</td> <td>Control of major accident hazards sites (COMAH)</td> </tr> <tr> <td style="text-align: center;">0</td> <td style="text-align: center;">NA</td> <td>Notification of installations handling hazardous substances (NIHHS)</td> </tr> <tr> <td style="text-align: center;">0</td> <td style="text-align: center;">NA</td> <td>Explosives sites</td> </tr> </tbody> </table>				Distance from Site	Number of active industrial land uses		Number of inactive industrial land uses	1 - 50 m	0	0	51 - 100m	0	0	101 - 250 m	0	0	Nr	Nearest distance	Land use / permitted activity / authorisation	0	NA	Fuel station entries	0	NA	Gas pipelines	0	NA	Underground electrical cables	0	NA	Control of major accident hazards sites (COMAH)	0	NA	Notification of installations handling hazardous substances (NIHHS)	0	NA	Explosives sites
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2.2 Conceptual understanding (potential sources of contamination)

 <p>Neighbouring industrial land uses <i>(see environmental data report in Section 3.3 for full listing)</i></p>	0	NA	Planning hazardous substance consents	POTENTIAL SOURCES OF CONTAMINATION	<p>Given the absence of any current potentially contaminative land uses/activities within 250m of the Site no associated contamination hazards have been identified.</p>	UNLIKELY	PROBABILITY OF CONTAMINATION
	0	NA	Planning hazardous substance enforcements				
	0	NA	Sites determined as Contaminated Land under Part IIA of the Environmental Protection Act 1990				
	5	c.15m E	Records of Licensed Discharge Consents.				
	0	NA	Integrated pollution prevention and control sites				
	1	c. 5m E	Local Authority pollution prevention and control sites				
	0	NA	Local Authority pollution prevention and control enforcements				
	0	NA	Records of Category 3 or 4 Radioactive Substance Licences				


2.2 Conceptual understanding (potential sources of contamination)

 <p>EA/NRW recorded pollution incidents <i>(see environmental data report in Section 3.3 for full listing)</i></p>	<p>No Environment Agency/Natural Resources Wales pollution incidents have been recorded within 250 m of the Site.</p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">POTENTIAL SOURCES OF CONTAMINATION</p>	<p>No potential for gross contamination has been identified in relation to any pollution incidents occurring near to the Site.</p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">NEGLECTIBLE</p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">PROBABILITY OF CONTAMINATION</p>
 <p>Landfills / waste sites <i>(taken within 500m radius of the Site boundary, see environmental data report in Section 3.3 for full listing)</i></p>	<p>There are no BGS recorded landfills located within 500 m of the Site.</p> <p>There are no Natural Resources Wales listed historical landfills located within 500 m of the Site.</p> <p>There are no registered landfills located within 500 m of the Site.</p> <p>There are no Local Authority listed historical landfills located within 500 m of the Site.</p> <p>The following other waste sites are registered within 500 m of the Site:</p> <ul style="list-style-type: none"> 0 Records of registered waste transfer sites. 0 Records of registered waste treatment or disposal sites. 2 Records of licenced waste management facilities. 		<p>Given the absence of any historical or operational landfills within close proximity of the Site no associated contamination hazards have been identified.</p> <p>The on-Site waste management record may pose a potential risk to the potential land quality.</p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">LIKELY</p>	

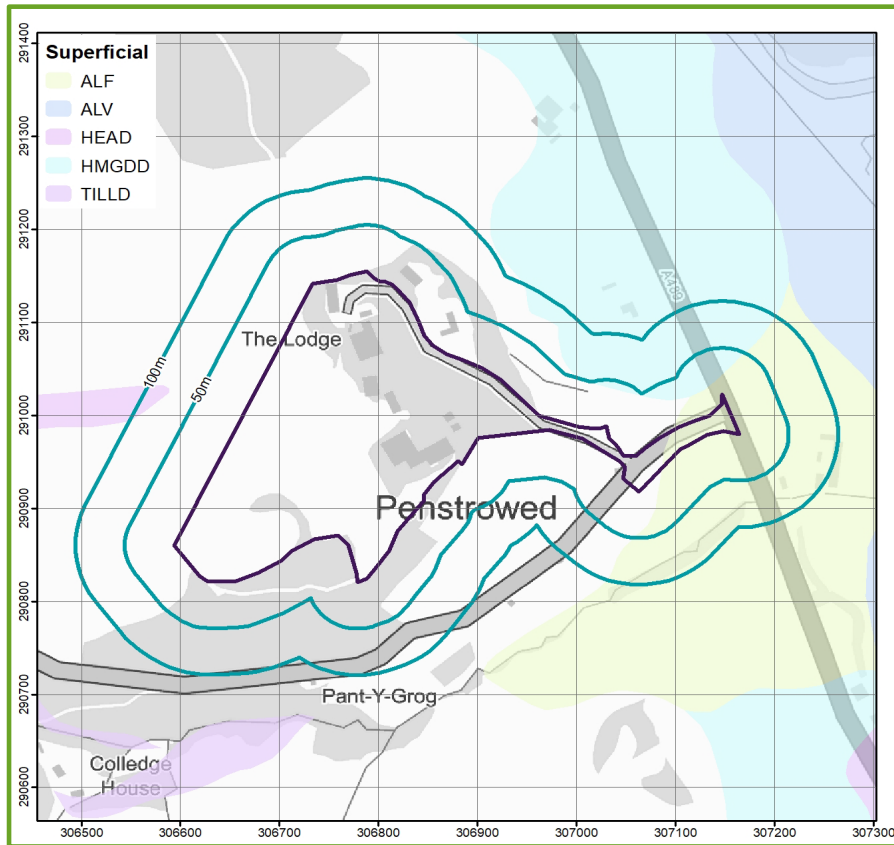
2.2 Conceptual understanding (potential sources of contamination)

<p>Rn</p> <p>Radon <i>(see environmental data report in Section 3.3 for full listing)</i></p>	<p>According to current UK radon mapping the Site lies in an area where 3 to 5% of homes are at or above the UK radon action level (200 Bq/m³).</p>	<p>POTENTIAL SOURCES OF CONTAMINATION</p>	<p>3 to 5% of homes are at or above the UK radon action level (200 Bq/m³).</p>	<p>LOW LIKELIHOOD</p>	<p>PROBABILITY OF CONTAMINATION</p>
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2.3 Conceptual understanding (environmental sensitivity / potential severity of impacts)

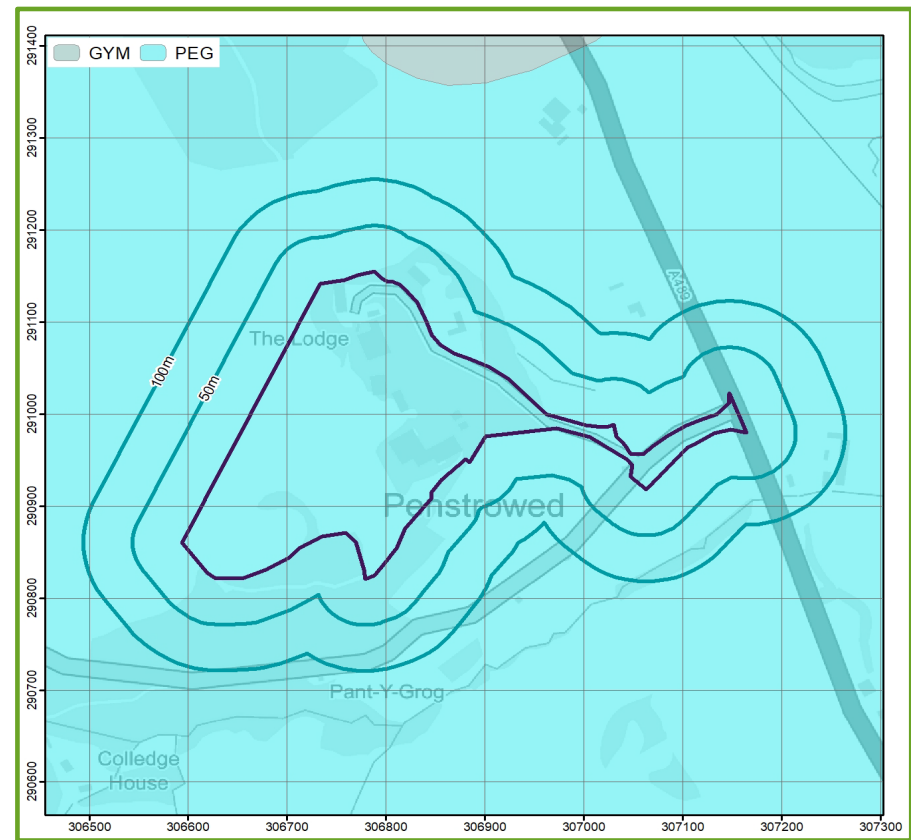
 <p>Geology and Groundwater <i>(see the environmental data report in Section 3.3 for full details)</i></p>	<p>British Geological Survey mapping indicates that the Site is partially underlain by Alluvial Fan Deposits (ALF) which comprises sand and gravel and is classified as a Secondary (A) Aquifer.</p> <p>British Geological Survey mapping indicates that the bedrock geology consists of Penstrowed Grits Formation (PEG) which comprises of sandstone and mudstone and is classified as a Secondary (B) Aquifer.</p> <p>According to the GeoSmart Groundwater Flood Risk (GW5) Map (GeoSmart, 2023). The risk of groundwater flooding at the Site is 'negligible'.</p> <p>The Site does not lie within a groundwater Source Protection Zone (SPZ).</p> <p>The following groundwater abstraction licences are held within 1 km of the Site:</p> <ul style="list-style-type: none"> Mr R H Jones, general farming and domestic abstraction c. 120m south Messrs G R & D Christmas general farming and domestic abstraction c. 400m east 	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">POTENTIAL RECEPTORS</p> <p>A Secondary (A) Aquifer comprises permeable layers capable of supporting water supply at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.</p> <p>A Secondary (B) Aquifer is likely to comprise lower permeability layers which may yield limited amounts of groundwater due to localised fissures, thin permeable horizons and weathering.</p> <p>Based on the susceptibility of the Site to groundwater flooding, a groundwater flood risk assessment is not considered necessary for the Site.</p> <p>The depth to groundwater beneath the Site is unknown.</p> <p>The presence of one or more groundwater abstraction licences within close proximity of the Site indicates a reasonable groundwater resource potential.</p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">MEDIUM</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">POTENTIAL SEVERITY OF IMPACT</p>
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Superficial Geology (BGS, 2023)




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Bedrock Geology (BGS, 2023)






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2.3 Conceptual understanding (environmental sensitivity / potential severity of impacts)

 <p>Geohazards <i>(see the environmental data report in Section 3.3 for full details)</i></p>	<p>The Site does not lie within a 'Coal Mining Reporting Area'.</p> <p>There are no brine affected areas within 75 m of the Site.</p> <p>Artificial ground / Made Ground is anticipated on Site.</p> <p>There are no natural hazards (with a hazard rating of moderate or above) at or within 50 m of the Site.</p>	<p>POTENTIAL RECEPTORS</p>	<p>The Site does not lie within an identified coal mining area and is therefore unlikely to be affected by related ground stability or mine gas issues.</p> <p>The Site does not lie within an area of former brine working and is therefore unlikely to be affected by related ground stability issues.</p> <p>BGS GeoIndex Onshore mapping confirms that worked ground (undivided) is present on Site.</p>	<p>MEDIUM</p>	<p>POTENTIAL SEVERITY OF IMPACT</p>
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2.3 Conceptual understanding (environmental sensitivity / potential severity of impacts)

 <p>Surface water <i>(see the environmental data report in Section 3.3 for full details)</i></p>	<p>The nearest water feature is the partially culverted watercourse located along the north western boundary of the Site.</p> <p>The Site lies within a Flood Zone 1 (low probability).</p> <p>There are no surface water abstraction licences within 1 km of the Site.</p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">POTENTIAL RECEPTORS</p>	<p>The relatively close proximity of the identified surface water feature(s) suggests that a potential linkage could occur if any contamination were present on Site. Mobile contamination may potentially enter nearby water features via any shallow groundwater or possibly via preferential flow pathways such as buried services.</p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">MEDIUM</p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">POTENTIAL SEVERITY OF IMPACT</p>
 <p>Environmental designations <i>(see the environmental data report in Section 3.3 for full details)</i></p>	<p>The following environmentally sensitive land uses are present within 500 m of the Site:</p> <ul style="list-style-type: none"> Ancient and semi-natural woodland is located c. 120m south of the Site. A plantation on ancient woodland is located c. 410m north of the Site. Ancient and semi-natural woodland is located c. 485m north of the Site. 		<p>The relatively close proximity of the identified environmental designations suggests that a potential contaminant linkage could occur if any contamination were present on Site.</p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">MEDIUM</p>	
 <p>Human receptors</p>	<p>Proposed residents/users of the Site plus neighbouring residences.</p>		<p>Human receptors are proposed to be present on Site.</p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">SEVERE</p>	

2.4 Regulator perspective

Consultation date	29th March 2023	Powys County Council
GeoSmart consultant	Jessica Bayliff	David Jones
Consultation outcome	<p>"The subject site shown in your submission to us is identified as potential contaminated land in accordance with the Authority's Contaminated Land Strategy. This is due to its former use as quarrying, transport manufacture and mineral railway. There are no current plans to inspect the land however, it is possible that potential contamination may be investigated at a future date in accordance with the Authority's Contaminated Land Strategy.</p> <p>The Contaminated Land Team does not hold further information, however It is recommended that you consult our planning department and/or the planning portal to ascertain whether reports exist."</p>	

2.4 Site investigation and analysis

<p>Site investigations were carried out by GroundSolve Ltd. And DETS prior to the completion of this report. The full reports are included in Section 3.7.</p> <p>The location of sampling and the investigation methodology is not known, therefore results have been treated with caution and have been considered only alongside known evidence of Site contamination.</p>	
GroundSolve Ltd chemical test results (2021)	<p>GroundSolve Ltd. conducted chemical testing in unconfirmed locations on Site in 2021. The testing found no exceedances in concentrations of "metals & non metals", "petroleum hydrocarbons", "polyaromatic hydrocarbons" and "other contaminants". The report also states that no asbestos was detected.</p> <p>Whilst no exceedances were identified, it is not known to what guidance value the exceedances have been compared to.</p> <p>The report is included in Section 3.7.</p>
DETS soil sampling (2021)	<p>Soil sampling results from February 2021 were reported by DETS and are included in Section 3.7.</p>

2.5 Site inspection (see photographs in section 3.2)

Inspection date	21st March 2023	General site description	Quarry with various workshops including vehicle repairs. A residential building is located in the North of the Site.
GeoSmart consultant	Jessica Bayliff & Rebecca Conway	Site contact (position)	Graham (owner)
Topography	Variable topography- a layered site owing to the differing phases of excavation. The Site is raised to a considerably higher elevation than neighbouring land. Steep embankments are located on the boundaries of the Site.	Ground cover	The higher terraces on Site, located in the south west are comprised of excavated & compacted land and grassed/weakly vegetated coverage. Mounds of excavated material are located across the Site, for use in a silt trap located in the centre of the Site (photograph 6). Access roads between terraces are comprised of concrete/gravel. Land adjacent to the silt trap on the middle terrace on Site is comprised of partially compacted gravel.
Current site land use	Quarry with associated workshops (including vehicle repair) and temporary storage containers. Access to the Site is possible from the east via an access road which extends to the highest elevations on Site in the south west.	On-Site structures	Multiple workshops are located in the centre of the Site, used for vehicle repair, storage and miscellaneous light industrial work (photographs 8 and 9). The workshops vary in size, with the majority comprising of hardstanding ground. Some areas of workshops are exposed to soft standing (photographs 10 and 11). Temporary (hired) storage containers are located in the north and centre of the Site. The main Site office and car parking area is located in the north of the Site along with a single residential building.

2.5 Site inspection (see photographs in section 3.2)

<p>Visual / olfactory evidence of contamination</p>	<p>Storage of unused vehicles across the Site with minor fuel spills (photograph 14). Evidence of burned material on the higher terraces (photograph 17). Storage and stockpiling of miscellaneous machinery and metal waste across the Site (externally and internally) (photographs 4 and 5). Storage of batteries across the Site (photograph 18). Possible asbestos containing materials were identified adjacent to the workshops in the centre of the Site (photograph 19). Storage of chemicals across the Site. The majority of containers were raised on pallets (photograph 20).</p>	<p>On-Site drainage/surface water features</p>	<p>Silt trap (open water feature) located in the east of the Site (photograph 21). A piped water collection system is located in the west of the Site; collected water is used to wash vehicles/machinery on the higher terraces on Site prior to the installation of a pumped water system on Site (photograph 22). A culverted minor watercourse (stream) is located along the north western boundary of the Site (Photographs 23 and 24). Water from the highest elevations flows along the boundary.</p>
<p>Bulk storage tanks (fuel and chemical storage)</p>	<p>Multiple disused tanks are located across the Site. Three (3) storage tanks were identified to be in use. The in use tanks were identified to be in a good condition and stored on a brick bund (photographs 25-26). A minor spill was identified from an out of use tank in the south west of the Site (photograph 15). Multiple IBCs (intermediate bulk containers) were identified across the Site (photograph 13 and 7). An undefined storage tank was identified on the higher terraces in the west of the Site (photograph 16).</p>	<p>Invasive species</p>	<p>No direct evidence of any invasive species was observed during the Site walkover.</p>

2.5 Site inspection (see photographs in section 3.2)

Neighbouring land uses	North	Agricultural	Off-Site contaminant sources	No visual or olfactory evidence of any off-Site contamination was observed during the Site walkover.
	South	Agricultural/woodland		
	East	Agricultural/residential		
	West	Agricultural		
Local water features	A partially culverted watercourse was identified along the north western boundary of the Site.		Distance to nearest residential property	The nearest residential (off-Site) accommodation is currently located c. 5m to the east of the Site boundary.
Comments	The client advised that infilled areas on Site were filled using material from on Site and off Site.			

2.6 Preliminary Risk Assessment

Nr	Sources	Pathways	TYPE	Receptors	Consequence	Probability	Risk classification	Comments
On-Site sources: Quarry Light industrial use including vehicle repair workshops Industrial storage including refrigerators and vehicles Bulk fuel storage								
1	Potential for inorganic and low volatility organic contaminants to be present within the subsurface soils	Dermal contact, ingestion & inhalation of soils & soil dust	HH	Future Site occupants	MEDIUM	LOW LIKELIHOOD	MODERATE/LOW RISK	The existing and historical industrial use of the Site and the identified sources of contamination may give rise to contamination on Site which has the potential to impact future site users. However, the nature of the proposed development means that the exposure to the contaminants is likely to be limited and therefore the risk reduced.
2		Consumption of home grown produce	HH		MEDIUM	LOW LIKELIHOOD	MODERATE/LOW RISK	
3		Ingress into water supply pipework and subsequent water ingestion	HH		MEDIUM	LOW LIKELIHOOD	MODERATE/LOW RISK	
4		Building materials in direct contact with aggressive ground	PROP	Future Site buildings	MEDIUM	LOW LIKELIHOOD	MODERATE/LOW RISK	As made ground is anticipated beneath the Site, it would be considered prudent to verify the underlying ground condition prior to foundation design.
5		Dissolution into pore water/shallow groundwater and subsequent migration	CW	Alluvial Fan Deposits (a Secondary (A) Aquifer)	MEDIUM	LOW LIKELIHOOD	MODERATE/LOW RISK	The potential presence of contaminants as a result of oil spills and industrial use on Site could impact groundwater quality within the superficial and bedrock deposits.
6		Dissolution into pore water/shallow groundwater and subsequent migration	CW	Penstrowed Grits Formation (a Secondary (B) Aquifer)	MEDIUM	LOW LIKELIHOOD	MODERATE/LOW RISK	

2.5 Preliminary Risk Assessment

Nr	Sources	Pathways	TYPE	Receptors	Consequence	Probability	Risk classification	Comments
On-Site sources: Quarry Light industrial use including vehicle repair workshops Industrial storage including refrigerators and vehicles Bulk fuel storage								
7	Potential for inorganic and low volatility organic contaminants to be present within the subsurface soils	Dissolution into pore water/shallow groundwater and subsequent lateral migration	CW	Watercourse (along western boundary)	MEDIUM	LOW LIKELIHOOD	MODERATE/LOW RISK	As the watercourse is present on-Site, there is potential that any contaminants present on the Site could impact the watercourse, due to preferential migration or direct surface runoff.
8		Dissolution into aqueous phase and preferential migration via drainage structures	CW		MEDIUM	LOW LIKELIHOOD	MODERATE/LOW RISK	
9		Dissolution into pore water/shallow groundwater and subsequent lateral migration	ECO	Ancient and semi-natural woodland (c. 120m south).	MEDIUM	UNLIKELY	LOW RISK	Whilst the potential presence of contaminants on Site could impact the sensitive land use, the risk classification reflects the reasonable distance to the feature.

2.6 Preliminary Risk Assessment

Nr	Sources	Pathways	TYPE	Receptors	Consequence	Probability	Risk classification	Comments
10	Potential for volatile organic contaminants to be present within the subsurface soils	Dermal contact, ingestion & inhalation of soils & soil dust	HH	Future Site occupants	MEDIUM	LOW LIKELIHOOD	MODERATE/LOW RISK	The existing and historical industrial use of the Site and the identified sources of contamination may give rise to contamination on Site which has the potential to impact future site users. However, the nature of the proposed development means that the exposure to the contaminants is likely to be limited and therefore the risk reduced.
11		Consumption of home grown produce	HH		MEDIUM	LOW LIKELIHOOD	MODERATE/LOW RISK	
12		Ingress into water supply pipework and subsequent water ingestion	HH		MEDIUM	LOW LIKELIHOOD	MODERATE/LOW RISK	It would be prudent to ensure any new water supply was installed in clean fill trenches utilising barrier pipework as a precaution.
13		Migration of vapours to surface; inhalation indoors	HH		MEDIUM	LOW LIKELIHOOD	MODERATE/LOW RISK	Given the identified oil spills and bulk storage fuel tanks on Site, a vapour risk could pose a risk to future Site users. It is recognised that in-use bulk storage tanks were in good condition and stored on brick bunds. It is also recognised that the proposed development is the demolition of existing structures and construction of new commercial caravans, therefore the risk is reduced.
14		Migration of vapours to surface; inhalation outdoors	HH		MEDIUM	UNLIKELY	LOW RISK	

2.5 Preliminary Risk Assessment

Nr	Sources	Pathways	TYPE	Receptors	Consequence	Probability	Risk classification	Comments
15	Potential for volatile organic contaminants to be present within the subsurface soils	Building materials in direct contact with aggressive ground	PROP	Future Site buildings	MEDIUM	LOW LIKELIHOOD	MODERATE/LOW RISK	As made ground is anticipated beneath the Site, it would be considered prudent to verify the underlying ground condition prior to foundation design.
16		Dissolution into pore water/shallow groundwater and subsequent migration	CW	Alluvial Fan Deposits (a Secondary (A) Aquifer)	MEDIUM	LOW LIKELIHOOD	MODERATE/LOW RISK	The potential presence of contaminants as a result of oil spills and industrial use on Site could impact groundwater quality within the superficial and bedrock deposits.
17		Dissolution into pore water/shallow groundwater and subsequent migration	CW	Penstrowed Grits Formation (a Secondary (B) Aquifer)	MEDIUM	LOW LIKELIHOOD	MODERATE/LOW RISK	
18		Dissolution into pore water/shallow groundwater and subsequent migration	CW	Watercourse (along western boundary)	MEDIUM	LOW LIKELIHOOD	MODERATE/LOW RISK	As the watercourse is present on-Site, there is potential that any contaminants present on the Site could impact the watercourse, due to preferential migration or direct surface runoff.
19		Dissolution into aqueous phase and preferential migration via drainage structures	CW		MEDIUM	LOW LIKELIHOOD	MODERATE/LOW RISK	
20		Dissolution into pore water/shallow groundwater and subsequent lateral migration	ECO	Ancient and semi-natural woodland (c. 120m south).	MEDIUM	UNLIKELY	LOW RISK	Whilst the potential presence of contaminants on Site could impact the sensitive land use, the risk classification reflects the reasonable distance to the feature.

2.6 Preliminary Risk Assessment

Nr	Sources	Pathways	TYPE	Receptors	Consequence	Probability	Risk classification	Comments
21	Potential for asbestos containing materials within the subsurface soils	Liberation of sub surface ACMs and inhalation of asbestos fibres	HH	Future Site occupants	MEDIUM	LIKELY	MODERATE RISK	Whilst chemical testing on Site carried out in 2021 did not identify any asbestos, potential ACM was identified in the centre of the Site, adjacent to the workshops (photograph 19). As the material was broken upon identification, it is possible that asbestos containing material may be present within the near-surface soils.
22	Potential for dissolved phase contaminants to be present within shallow groundwater	Lateral and vertical groundwater movement via natural or artificial flow paths	CW	Alluvial Fan Deposits (a Secondary (A) Aquifer)	MEDIUM	LOW LIKELIHOOD	MODERATE/LOW RISK	Whilst the depth to groundwater on Site is unknown, the potential presence of contaminants as a result of oil spills and industrial use on Site could impact groundwater quality within the superficial and bedrock aquifers.
23		Lateral and vertical groundwater movement via natural or artificial flow paths	CW	Penstrowed Grits Formation (a Secondary (B) Aquifer)	MEDIUM	LOW LIKELIHOOD	MODERATE/LOW RISK	
24		Lateral and vertical groundwater movement via natural or artificial flow paths	CW	Watercourse (along western boundary)	MEDIUM	LOW LIKELIHOOD	MODERATE/LOW RISK	As the watercourse is present on-Site, there is potential that any contaminants present on the Site could impact the watercourse, due to preferential migration or direct surface runoff.
25		Lateral and vertical groundwater movement via natural or artificial flow paths	ECO	Ancient and semi-natural woodland (c. 120m south).	MEDIUM	UNLIKELY	LOW RISK	Whilst the potential presence of contaminants on Site could impact the sensitive land use, the risk classification reflects the reasonable distance to the feature.




2.5 Preliminary Risk Assessment

Nr	Sources	Pathways	TYPE	Receptors	Consequence	Probability	Risk classification	Comments
26	Potential for elevated methane to be present within the sub-surface soils	Lateral and vertical migration into on-Site buildings; potential to cause an explosion	HH	On-Site properties and their occupants	SEVERE	LOW LIKELIHOOD	MODERATE RISK	Due to the use of the Site, and the known infilling activities, an appreciable gas source is possible. The client advised that infilling on Site was undertaken using material from on Site and off Site. Whilst it is anticipated that infill material will be inert arisings from quarrying activities (reducing the potential of gas generation), this is not confirmed. Additionally the proposed caravans are expected to be raised above ground level reducing the potential for ground gas migration into the caravans.
27		Lateral migration towards off-Site buildings; potential to cause an explosion	HH	Off-Site properties and their occupants				
28	Potential for elevated carbon dioxide to be present within the subsurface soils	Lateral and vertical migration into on-Site buildings; potential to cause asphyxiation	HH	Occupants of on-Site buildings		LOW LIKELIHOOD	MODERATE RISK	
29		Lateral migration towards off-Site buildings; potential to cause asphyxiation	HH	Occupants of off-Site buildings		LOW LIKELIHOOD	MODERATE RISK	
30	Potential for radon within the subsurface	Lateral migration towards on-Site buildings; potential to cause long term health effects	HH	Occupants of on-Site buildings	MEDIUM	LOW LIKELIHOOD	MODERATE/LOW RISK	The Site lies in an area where 3 to 5% of homes are at or above the UK radon action level (200 Bq/m3).
OVERALL RISK RATING							MODERATE RISK	

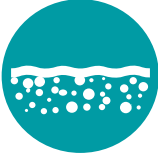

2.5 Preliminary Risk Assessment

Nr	Sources	Pathways	TYPE	Receptors	Consequence	Probability	Risk classification	Comments
Off-Site sources: Railway tracks c. 250m north east								
	Potential for both inorganic and volatile organic contaminants to be present within the subsurface soils	Dermal contact, ingestion & inhalation of soils & soil dust	HH	Future Site occupants	MEDIUM	UNLIKELY	LOW RISK	The risk classification reflects the reasonable distance to the railway land use.
		Consumption of home grown produce	HH		MEDIUM	UNLIKELY	LOW RISK	
		Ingress into water supply pipework and subsequent water ingestion	HH		MEDIUM	UNLIKELY	LOW RISK	
		Migration of vapours to surface; inhalation indoors	HH		MEDIUM	UNLIKELY	LOW RISK	
		Migration of vapours to surface; inhalation outdoors	HH		MEDIUM	UNLIKELY	LOW RISK	

2.7 Next Steps

	<p>Phase 2 intrusive investigation</p>	 	<p>Given the nature of the current and historical land use and therefore the potential for contamination to be present at the Site, it is recommended that a proportionate programme of site investigation and monitoring works be undertaken in order to establish the presence or absence of contamination and to enable a quantitative assessment of the associated environmental risks.</p> <p>Further advice:</p> <p>Please contact info@geosmartinfo.co.uk for further information regarding the need for a Phase 2 investigation.</p> <p>For information on reputable site investigation companies, enquiries can be made directly to your local authority or via www.endsdirectory.com</p>
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2.8 Other recommendations

✓	SuDSmart Report		<p>It is recommended that a Sustainable Drainage Assessment is undertaken prior to development commencing. Given the potential for contamination infiltration drainage may not be suitable.</p> <p>Please contact info@geosmartinfo.co.uk for further information and a site specific quotation.</p>
✓	Radon assessment / mitigation measures		<p>Given that the Site lies in an area where 3% to 5% of homes are at or above the UK radon action level (200 Bq/m³), we recommend that either further Radon Assessment is undertaken or that appropriate Radon Mitigation Measures are included in any future built structures.</p> <p>Further information can be found at http://www.ukradon.org/Information/ Additionally local building control may have further knowledge in relation to radon risks within the area.</p>

3. Supporting Information



The following supporting information is contained in this section:

Section	Content
3.1	Referenced materials used in the EnviroSmart reporting
3.2	Site photographs
3.3	Published environmental data records (Landmark Envirocheck report Penstrowed Quarry, Penstrowed, Caersws, SY17 5SG. REF: 308820180_1_1) including: <ul style="list-style-type: none"> • Aerial photographs and site map • Environmental permits, incidents and registers • Landfill and other waste sites • Current land use information • Geology • Hydrogeology and hydrology • Flooding • Designated environmentally sensitive sites • Other environmental factors
3.4	Risk assessment methodology
3.5	Historical land use maps

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Tel: 01743 298100

Email: info@geosmartinfo.co.uk

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Milford House
43-55 Milford Street
Salisbury
Wiltshire SP1 2BP
Tel: 01722 333306
Fax: 01722 332296
Email: admin@tpos.co.uk

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- Provide a final response, in writing, at the latest within 40 working days of receipt.
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Commercial Director
GeoSmart Information Limited
Suite 9-11, 1st Floor
Old Bank Buildings, Bellstone
Shrewsbury
SY1 1HU

Tel: 01743 298100
martinlucass@geosmartinfo.co.uk

3.1 References

The following references were used to inform the conceptual site model and preliminary risk assessment:

British Geological Survey, 2023. GeolIndex Onshore (<http://mapapps2.bgs.ac.uk/geoindex/home.html>)

British Standards Institute, 2011. Investigation of potentially contaminated sites – code of practice. BS10175:2011+A2:2017.

CIRIA, 2001. Contaminated land risk assessment. A guide to good practice. Publication C552. CIRIA London. ISBN 0-86017-552 9

Environment Agency, 2020. Land Contamination Risk Management (LCRM)

GeoSmart Information Limited, 2023. National Groundwater Flood Risk Map (GW5)

Health Protection Agency, 2000. Spring 2000 Newsletter featuring: Radon: Guidance on Protective Measures for New Dwellings (BR 211).

Landmark, 2023. Landmark Envirocheck report Penstrowed Quarry, Penstrowed, Caersws, SY17 5SG. REF: 308820180_1_1

DETS, 2021. Certificate of Analysis REF: 21-02798.

GroundSolve Ltd. Chemical test results interpretation.

3.2 Site photographs

Photograph 1: Aerial view of workshops on Site, facing south east



Photograph 2: Quarry head wall in the centre of the Site



Photograph 3: Machinery used on higher terraces in the south west



Photograph 4: Miscellaneous waste/storage on higher terraces in the south west



Photograph 5: Miscellaneous metal waste on the higher terraces in the south west



Photograph 6: Excavated material stored on higher terraces



Photograph 7: Ad blue storage



Photograph 8: Workshops



Photograph 9: Chemicals in workshops



Photograph 10: Hardstanding on floor of workshops



Photograph 11: Softstanding on floor of workshops



Photograph 12: disused bulk fuel tank



Photograph 13: In use bulk fuel and chemical tanks adjacent to workshops



Photograph 14: Minor oil/fuel spills from stored vehicles on higher terraces



Photograph 15: Minor fuel spill from disused bulk fuel tanks on higher terraces in the south west



Photograph 16: Undefined storage tank on higher terraces in south west



Photograph 17: Burned material in the south west of the Site



Photograph 18: Battery storage adjacent to workshops, on hardstanding



Photograph 19: Potentially asbestos containing material located adjacent to the main workshops in the centre of the Site



Photograph 20: Storage of chemicals on pallets



Photograph 21: Silt trap located in the west of the Site



Photograph 22: Piped water collection/open storage system in the south west of the Site



Photograph 23: Culvert on stream along the north western boundary



Photograph 24: Partially culverted stream along the north western boundary



Photograph 25: Bulk fuel storage tanks in use in main workshops on Site



Photograph 26: Bulk fuel storage tank concrete/brick bunds



Photograph 27: Temporary storage containers and contents



Photograph 28: Temporary storage containers and contents



3.3 Environmental data report

Readily available environmental information relating to the Site and its surrounding area has been provided by Landmark.

Envirocheck[®] Report:

Datasheet

Order Details:

Order Number:

308820180_1_1

Customer Reference:

79011

National Grid Reference:

306860, 290970

Slice:

A

Site Area (Ha):

6.7

Search Buffer (m):

1000

Site Details:

Penstrowed Quarry

Penstrowed

Caersws

SY17 5SG

Client Details:

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Geological	25
Industrial Land Use	29
Sensitive Land Use	30
Data Currency	32
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Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination. For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client. In this datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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Report Version v53.0

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 2		5	2	
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 4		1		
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 4		Yes		
Pollution Incidents to Controlled Waters					
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality	pg 4		1		
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions	pg 4		1	1	(*6)
Water Industry Act Referrals					
Groundwater Vulnerability Map	pg 6	Yes	n/a	n/a	n/a
Bedrock Aquifer Designations	pg 7	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 7	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences	pg 7		Yes	n/a	n/a
Flooding from Rivers or Sea without Defences	pg 8		Yes	n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines	pg 8		11	23	103

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites					
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)	pg 24	2			
Local Authority Landfill Coverage	pg 24	1	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Registered Landfill Sites					
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					
Geological					
BGS 1:625,000 Solid Geology	pg 25	Yes	n/a	n/a	n/a
BGS Recorded Mineral Sites	pg 25	3	3		4
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 26	Yes		n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 26	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 27		Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 27	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 27	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 28		Yes	n/a	n/a
Radon Potential - Radon Affected Areas	pg 28	Yes	n/a	n/a	n/a
Radon Potential - Radon Protection Measures	pg 28	Yes	n/a	n/a	n/a

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Industrial Land Use					
Contemporary Trade Directory Entries	pg 29	2		1	
Fuel Station Entries					
Gas Pipelines					
Underground Electrical Cables					
Sensitive Land Use					
Ancient Woodland	pg 30		1	2	13
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones					
Ramsar Sites					
Sites of Special Scientific Interest	pg 31	1	1		
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A11NW (NE)	0	1	307000 291050
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A10NE (W)	59	1	306600 291000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11NW (NE)	70	1	306950 291100
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A11NW (N)	78	1	306900 291150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A10SE (S)	119	1	306750 290700
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A10SW (W)	170	1	306450 290969
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A10SE (SW)	171	1	306700 290650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11NW (N)	212	1	306950 291300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A10SW (SW)	213	1	306450 290700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11SW (SE)	222	1	307100 290700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A10SW (SW)	224	1	306400 290750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A6NE (SW)	236	1	306550 290600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A10SW (SW)	246	1	306450 290650
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14SE (N)	255	1	306858 291400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A10SW (SW)	269	1	306350 290750
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A15SW (N)	272	1	306900 291400
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A10SW (SW)	283	1	306400 290650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A10SW (SW)	293	1	306350 290700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A10SW (SW)	336	1	306300 290700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11NE (E)	350	1	307500 291050
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A15SW (N)	365	1	306900 291500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A10SW (SW)	380	1	306250 290700

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14SE (N)	397	1	306850 291550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SE (N)	402	1	306858 291550
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A10SW (SW)	404	1	306250 290650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A15SW (N)	407	1	307000 291500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A9SE (W)	410	1	306200 290750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11NE (E)	411	1	307550 291100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A7NW (SE)	420	1	307100 290500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A9SE (W)	426	1	306200 290700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A9SE (SW)	447	1	306200 290650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A15SE (NE)	462	1	307300 291450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A9SE (W)	473	1	306150 290700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A9SE (SW)	492	1	306150 290650
1	Discharge Consents Operator: Cemex Uk Materials Limited Property Type: Extraction Of Other Minerals Location: Penstrowed Quarry, Caersws, Newtown, Powys, Sy21 5sg Authority: Natural Resources Wales Catchment Area: Severn Upper Reference: S/01/22635/T Permit Version: 1 Effective Date: 5th November 1993 Issued Date: 5th November 1993 Revocation Date: 4th March 2014 Discharge Type: Trade Discharges - Site Drainage Discharge Environment: Freshwater Stream/River Receiving Water: Trib River Severn Status: Post National Rivers Authority Legislation where issue date > 31/08/1989 Positional Accuracy: Located by supplier to within 100m	A11NW (E)	14	2	307100 291000
1	Discharge Consents Operator: Tudor Griffiths Limited Property Type: Not Supplied Location: Penstrowed Quarry, Caersws, Newtown, Powys, Sy21 5sg Authority: Natural Resources Wales Catchment Area: SEVERN - CONF AFON DULAS TO CONF R CAMLAD Reference: S/01/22635/T Permit Version: 2 Effective Date: 5th March 2014 Issued Date: 5th November 1993 Revocation Date: Not Supplied Discharge Type: Trade Discharges - Site Drainage Discharge Environment: Freshwater Stream/River Receiving Water: Trib River Severn Status: Effective Positional Accuracy: Located by supplier to within 100m	A11NW (E)	14	2	307100 291000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	<p>Discharge Consents</p> <p>Operator: Cemex Uk Materials Limited Property Type: Extraction Of Other Minerals Location: Penstrowed Quarry, Caersws, Newtown, Powys, Sy21 5sg Authority: Environment Agency, Midlands Region Catchment Area: Upper Severn Catchment (Above Montford) Reference: S/01/22635/T Permit Version: 1 Effective Date: 5th November 1993 Issued Date: 5th November 1993 Revocation Date: Not Supplied Discharge Type: Trade Effluent Discharge-Site Drainage Discharge: Freshwater Stream/River Environment: Receiving Water: Trib River Severn Status: Post National Rivers Authority Legislation where issue date > 31/08/1989 Positional Accuracy: Located by supplier to within 100m</p>	A11NW (E)	14	3	307100 291000
2	<p>Discharge Consents</p> <p>Operator: Powys County Council Property Type: Domestic Property (Single) Location: Barn At Penstrowed Hall, Caersws, Powys, Sy17 5sg Authority: Natural Resources Wales Catchment Area: Severn Upper Reference: Npswqd002940 Permit Version: 1 Effective Date: 4th July 2008 Issued Date: 4th July 2008 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: The River Severn Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A11SE (E)	204	2	307346 290905
2	<p>Discharge Consents</p> <p>Operator: Powys County Council Property Type: Domestic Property (Single) Location: Barn At Penstrowed Hall, Caersws, Powys, Powys, Sy17 5sg Authority: Environment Agency, Midlands Region Catchment Area: Upper Severn Catchment (Above Montford) Reference: Npswqd002940 Permit Version: 1 Effective Date: 4th July 2008 Issued Date: 4th July 2008 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: The River Severn Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A11SE (E)	204	3	307346 290905
3	<p>Discharge Consents</p> <p>Operator: David Morgan Property Type: Not Supplied Location: Hotel Development, Pentstrowed, Pentstrowed Authority: Natural Resources Wales Catchment Area: SEVERN - CONF AFON DULAS TO CONF R CAMLAD Reference: S/01/11426/S Permit Version: 1 Effective Date: 25th January 1989 Issued Date: 25th January 1989 Revocation Date: 28th December 2017 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: River Severn Status: Revoked Positional Accuracy: Located by supplier to within 10m</p>	A11SE (SE)	409	2	307410 290660

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	<p>Discharge Consents</p> <p>Operator: Mr David Morgan Property Type: Sewage Disposal Works - Other Location: Hotel Development, Pentstrowed, Pentstrowed Authority: Environment Agency, Midlands Region Catchment Area: Upper Severn Catchment (Above Montford) Reference: S/01/11426/S Permit Version: 1 Effective Date: 25th January 1989 Issued Date: 25th January 1989 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: River Severn Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989 Positional Accuracy: Located by supplier to within 10m</p>	A11SE (SE)	409	3	307410 290660
4	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: Tudor Griffiths Location: Penstrowed Quarry, Penstrowed, CAERSWS, Powys, SY17 5SG Authority: Powys County Council, Public Protection Department Permit Reference: PPC 9 Dated: 17th December 1993 Process Type: Local Authority Pollution Prevention and Control Description: PG3/1Blending, packing, loading and use of bulk cement Status: Permitted Positional Accuracy: Located by supplier to within 10m</p>	A11SW (E)	5	4	307042 290939
	<p>Nearest Surface Water Feature</p>	A11NW (NE)	31	-	306941 291059
	<p>River Quality</p> <p>Name: Severn R GQA Grade: River Quality A Reach: Conf. A. Cerist To Conf. Mochdre Bk Estimated Distance (km): 12.3 Flow Rate: Flow less than 20 cumecs Flow Type: River Year: 2000</p>	A11NW (NE)	245	3	307205 291291
5	<p>Water Abstractions</p> <p>Operator: Mr R H Jones Licence Number: 18/54/01/0166 Permit Version: 100 Location: The Birches Authority: Environment Agency, Midlands Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: The Birches Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 18th January 1967 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m</p>	A10SE (S)	118	3	306800 290700
6	<p>Water Abstractions</p> <p>Operator: Messrs G R & D Christmas Licence Number: 18/54/01/0213 Permit Version: 100 Location: Ysgafell Authority: Environment Agency, Midlands Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Ysgafell Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 14th March 1972 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m</p>	A11NE (E)	400	3	307500 291200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: D Evans Esq Licence Number: 18/54/01/0441 Permit Version: 100 Location: Glanhafren Hall - Well Authority: Environment Agency, Midlands Region Abstraction: Private Water Undertaking: General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Glanhafren Hall - Well Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 5th April 1968 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	1194	3	308200 290400
	Water Abstractions Operator: E O Griffiths & Co Licence Number: 18/54/01/0212 Permit Version: 100 Location: Tymawr, Caersws - Well Authority: Environment Agency, Midlands Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Tymawr, Caersws - Well Authorised Start: 01 November Authorised End: 30 April Permit Start Date: 13th October 1992 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A17SE (NW)	1271	3	305900 292100
	Water Abstractions Operator: J C & M W Suckley Licence Number: Wa/054/0001/0095 Permit Version: Not Supplied Location: Wernddu Farm, Rhydyddan, Aberhafesp, Newtown, Powys, Sy16 3hp Authority: Natural Resources Wales Abstraction: General Agriculture: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from any point within an area Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(NW)	1945	2	305609 292728
	Water Abstractions Operator: J & M Suckley Licence Number: 18/54/01/0641 Permit Version: 3 Location: River Severn At Wern Ddu And Redhouse Authority: Environment Agency, Midlands Region Abstraction: General Agriculture: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a river or stream reach, or a row of wellpoints Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Land At Red House & Ty Mawr Caersws, Wern Ddu & Redhouse Aberhafesp Authorised Start: 01 April Authorised End: 31 October Permit Start Date: 29th June 2005 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(NW)	1999	3	305590 292780

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<p>Water Abstractions</p> <p>Operator: J & M Suckley Licence Number: 18/54/01/0641 Permit Version: 2 Location: River Severn At Wern Ddu And Redhouse Authority: Environment Agency, Midlands Region Abstraction: General Agriculture: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a river or stream reach, or a row of wellpoints Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Land At Red House & Ty Mawr Caersws,Wern Ddu & Redhouse Aberhafesp Authorised Start: 01 April Authorised End: 31 October Permit Start Date: 7th May 2002 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	(NW)	1999	3	305590 292780
	<p>Water Abstractions</p> <p>Operator: J & M Suckley Licence Number: 18/54/01/0641 Permit Version: 1 Location: River Severn At Wern Ddu And Redhouse Authority: Environment Agency, Midlands Region Abstraction: General Agriculture: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a river or stream reach, or a row of wellpoints Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Land At Red House & Ty Mawr Caersws,Wern Ddu & Redhouse Aberhafesp Authorised Start: 01 April Authorised End: 31 October Permit Start Date: 14th June 2001 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	(NW)	1999	3	305590 292780
	<p>Groundwater Vulnerability Map</p> <p>Combined Classification: Secondary Bedrock Aquifer - High Vulnerability Combined Vulnerability: High Combined Aquifer: Productive Bedrock Aquifer, No Superficial Aquifer Pollutant Speed: Intermediate Bedrock Flow: Well Connected Fractures Dilution: 300-550 mm/year Baseflow Index: 40-70% Superficial Patchiness: <90% Superficial Thickness: <3m Superficial Recharge: No Data</p>	A10SE (W)	0	2	306858 290969
	<p>Groundwater Vulnerability Map</p> <p>Combined Classification: Secondary Bedrock Aquifer - High Vulnerability Combined Vulnerability: High Combined Aquifer: Productive Bedrock Aquifer, No Superficial Aquifer Pollutant Speed: Intermediate Bedrock Flow: Well Connected Fractures Dilution: 300-550 mm/year Baseflow Index: >70% Superficial Patchiness: <90% Superficial Thickness: <3m Superficial Recharge: High</p>	A11SW (E)	0	2	307000 290969

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Groundwater Vulnerability Map Combined Classification: Secondary Bedrock Aquifer - High Vulnerability Combined Vulnerability: High Combined Aquifer: Productive Bedrock Aquifer, No Superficial Aquifer Pollutant Speed: Intermediate Bedrock Flow: Well Connected Fractures Dilution: 300-550 mm/year Baseflow Index: >70% Superficial Patchiness: <90% Superficial Thickness: <3m Superficial Recharge: High	A10NE (N)	0	2	306858 291000
	Groundwater Vulnerability Map Combined Classification: Secondary Bedrock Aquifer - High Vulnerability Combined Vulnerability: High Combined Aquifer: Productive Bedrock Aquifer, Productive Superficial Aquifer Pollutant Speed: Intermediate Bedrock Flow: Well Connected Fractures Dilution: 300-550 mm/year Baseflow Index: >70% Superficial Patchiness: <90% Superficial Thickness: <3m Superficial Recharge: High	A11SW (SE)	0	2	307047 290856
	Groundwater Vulnerability Map Combined Classification: Secondary Superficial Aquifer - Medium Vulnerability Combined Vulnerability: Medium Combined Aquifer: Productive Bedrock Aquifer, Productive Superficial Aquifer Pollutant Speed: Intermediate Bedrock Flow: Well Connected Fractures Dilution: 300-550 mm/year Baseflow Index: >70% Superficial Patchiness: >90% Superficial Thickness: <3m Superficial Recharge: High	A11NW (E)	0	2	307103 291000
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - B	A10SE (W)	0	2	306858 290969
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - A	A11SW (SE)	0	2	307047 290856
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A11NW (NE)	73	2	307118 291200
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Events Boundary Accuracy: As Supplied	A11SE (E)	116	2	307267 290927
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models and Fluvial Events Boundary Accuracy: As Supplied	A11SE (E)	117	2	307266 290919
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Events Boundary Accuracy: As Supplied	A11SE (E)	117	2	307272 290957
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A11SE (E)	117	2	307271 290957

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A11SE (E)	123	2	307263 290918
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A11SE (E)	127	2	307229 290866
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Events Boundary Accuracy: As Supplied	A11SE (E)	127	2	307266 290915
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models and Fluvial Events Boundary Accuracy: As Supplied	A11NW (NE)	132	2	307192 291151
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A11NW (NE)	113	2	307209 291118
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
7	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 310.0 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A11NW (E)	25	5	307096 291011
8	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 180.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A11NW (NE)	25	5	306941 291059
9	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 651.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A11SW (SE)	76	5	307007 290793
10	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 248.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A10SE (S)	143	5	306780 290673
11	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 150.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A10SE (S)	160	5	306816 290661

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
12	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 168.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A10SE (SW)	177	5	306588 290651
13	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 39.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A10SE (SW)	177	5	306588 290651
14	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 255.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A6NE (SW)	194	5	306551 290643
15	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 492.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A6NE (SW)	194	5	306551 290643
16	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 347.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Hafren Catchment Name: Severn Primacy: 1	A11SE (E)	208	5	307336 290869
17	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 297.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Hafren Catchment Name: Severn Primacy: 1	A11SE (E)	208	5	307343 290886
18	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 143.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A11NE (NE)	278	5	307291 291251
19	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 25.6 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A6NE (S)	288	5	306750 290529
20	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 15.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A6NE (S)	302	5	306722 290518

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
21	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 6.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A6NE (S)	303	5	306722 290518
22	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 344.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Hafren Catchment Name: Severn Primacy: 1	A15SW (NE)	349	5	307211 291375
23	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 52.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A11NE (E)	366	5	307490 291137
24	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 227.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Hafren Catchment Name: Severn Primacy: 1	A15SE (NE)	366	5	307373 291329
25	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 164.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A7NE (SE)	399	5	307352 290632
26	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 117.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A14SE (N)	407	5	306752 291559
27	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 5.6 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A11NE (E)	418	5	307538 291156
28	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 1644.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A11NE (E)	423	5	307544 291155
29	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 65.1 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A7NE (SE)	428	5	307346 290597

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
30	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 148.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A10NW (W)	431	5	306271 291174
31	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 316.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A12NW (E)	438	5	307595 290996
32	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 126.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A14SW (NW)	456	5	306315 291323
33	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 184.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A7NE (SE)	464	5	307247 290493
34	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 180.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A9SE (SW)	478	5	306156 290672
35	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 96.0 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A9SE (SW)	478	5	306156 290672
36	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 112.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A15SW (NE)	489	5	307177 291511
37	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 186.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Hafren Catchment Name: Severn Primacy: 1	A7NE (SE)	491	5	307460 290595
38	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 302.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Hafren Catchment Name: Severn Primacy: 1	A15SW (NE)	498	5	307177 291511

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
39	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 3.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A10NW (NW)	500	5	306247 291282
40	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 317.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A15SE (NE)	500	5	307285 291496
41	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 131.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A5NE (SW)	509	5	306172 290577
42	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 92.5 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A14NE (N)	510	5	306776 291663
43	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 67.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A9SE (W)	510	5	306085 290857
44	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 4.6 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A12NW (E)	534	5	307688 291038
45	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 9.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A7NE (SE)	538	5	307234 290408
46	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 65.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A12NW (E)	538	5	307692 291041
47	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 19.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A12SW (E)	541	5	307672 290816

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
48	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 248.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A12SW (E)	544	5	307669 290797
49	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 75.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A7NE (SE)	547	5	307233 290399
50	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 42.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A9NE (W)	549	5	306108 291116
51	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 2.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A9SE (W)	574	5	306021 290874
52	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 41.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A9NE (W)	576	5	306067 291090
53	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 141.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A9NE (W)	591	5	306070 291131
54	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 163.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A14NE (N)	592	5	306712 291741
55	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 63.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A14NE (N)	594	5	306735 291746
56	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 19.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A12NW (E)	600	5	307750 291068

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
57	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 515.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A7SW (S)	601	5	307096 290292
58	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 3.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A8NW (SE)	602	5	307620 290595
59	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 67.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A8NW (SE)	605	5	307619 290591
60	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 13.6 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A7NW (SE)	607	5	307210 290330
61	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 283.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A12NW (E)	611	5	307759 291085
62	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 66.6 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A7NW (SE)	615	5	307201 290319
63	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 2.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A7NW (SE)	615	5	307199 290318
64	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 172.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Hafren Catchment Name: Severn Primacy: 1	A15NW (N)	615	5	306931 291765
65	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 340.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A7NW (SE)	616	5	307199 290318

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
66	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 176.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Hafren Catchment Name: Severn Primacy: 1	A15NW (N)	629	5	306931 291765
67	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 166.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Hafren Catchment Name: Severn Primacy: 1	A15NW (N)	629	5	307059 291735
68	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 258.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A5NE (SW)	630	5	306034 290574
69	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 31.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A5NE (SW)	630	5	306034 290574
70	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 315.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A14NE (N)	632	5	306563 291749
71	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 29.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A14NE (N)	643	5	306773 291797
72	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 31.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Hafren Catchment Name: Severn Primacy: 2	A14NE (N)	645	5	306782 291798
73	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 3.3 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A7NE (SE)	648	5	307484 290420
74	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 138.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A7NE (SE)	648	5	307486 290423

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
75	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 21.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A14NE (N)	649	5	306753 291801
76	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 11.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A7NE (SE)	649	5	307477 290414
77	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 55.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A8NW (SE)	655	5	307632 290530
78	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 561.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Hafren Catchment Name: Severn Primacy: 1	A8NW (SE)	655	5	307632 290530
79	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 284.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Aberhafesp Brook Catchment Name: Severn Primacy: 1	A15NW (N)	658	5	307094 291735
80	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 164.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Hafren Catchment Name: Severn Primacy: 1	A14NE (N)	675	5	306777 291829
81	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 317.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A7SW (SE)	681	5	307207 290253
82	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 6.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A8NW (SE)	690	5	307627 290475
83	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 19.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A8NW (SE)	694	5	307608 290453

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
84	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 10.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A8NW (SE)	695	5	307627 290469
85	OS Water Network Lines Watercourse Form: Marsh Watercourse Length: 3.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A9NE (W)	717	5	305951 291177
86	OS Water Network Lines Watercourse Form: Marsh Watercourse Length: 104.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A9NE (W)	721	5	305948 291178
87	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 90.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 2	A13SE (NW)	727	5	306071 291442
88	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 213.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A13SE (NW)	733	5	306142 291574
89	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 592.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A14NE (N)	736	5	306618 291870
90	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 180.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Hafren Catchment Name: Severn Primacy: 1	A14NE (N)	736	5	306618 291870
91	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 44.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A9NE (W)	774	5	305875 291145
92	OS Water Network Lines Watercourse Form: Marsh Watercourse Length: 72.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 2	A13SE (NW)	774	5	306001 291402

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
93	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 295.9 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A15NE (NE)	780	5	307392 291755
94	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 51.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A14NW (NW)	780	5	306217 291726
95	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 195.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A15NE (NE)	780	5	307392 291755
96	OS Water Network Lines Watercourse Form: Marsh Watercourse Length: 4.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A9NE (W)	792	5	305874 291189
97	OS Water Network Lines Watercourse Form: Marsh Watercourse Length: 88.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A9NE (W)	793	5	305907 291275
98	OS Water Network Lines Watercourse Form: Marsh Watercourse Length: 5.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A9NE (W)	802	5	305907 291275
99	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 471.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A9NE (W)	805	5	305906 291280
100	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 104.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A14NW (NW)	807	5	306288 291814
101	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 210.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A14NW (NW)	807	5	306288 291815

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
102	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 210.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A8SW (SE)	809	5	307605 290307
103	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 1.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A13SE (NW)	810	5	305941 291361
104	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 444.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A13SE (NW)	810	5	305941 291362
105	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 153.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A5NE (SW)	817	5	305954 290355
106	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 187.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A5NE (SW)	817	5	305954 290355
107	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 34.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A13NE (NW)	831	5	306191 291771
108	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 2.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A13NE (NW)	831	5	306193 291772
109	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 18.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A5SE (SW)	840	5	305985 290277
110	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 9.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A12NE (E)	842	5	307960 291234

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
111	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 28.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A12NE (E)	848	5	307964 291243
112	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 194.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A7SW (S)	858	5	307052 290003
113	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 125.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A7SW (S)	858	5	307052 290003
114	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 83.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A13NE (NW)	864	5	306145 291774
115	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 73.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A3NW (S)	864	5	306883 289959
116	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 14.3 Watercourse Level: Underground Permanent: True Watercourse Name: Aberhafesp Brook Catchment Name: Severn Primacy: 1	A15NW (N)	866	5	307059 291976
117	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 241.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Hafren Catchment Name: Severn Primacy: 2	A14NW (N)	871	5	306489 291977
118	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 236.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Hafren Catchment Name: Severn Primacy: 1	A14NW (N)	871	5	306489 291977
119	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 649.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Aberhafesp Brook Catchment Name: Severn Primacy: 1	A15NW (N)	881	5	307063 291989

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
120	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 242.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A6SW (SW)	884	5	306272 290005
121	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 547.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A3NW (S)	885	5	306949 289948
122	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 3.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A5SE (SW)	887	5	306173 290060
123	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 10.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A5SE (SW)	887	5	306170 290062
124	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 317.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A9SW (W)	900	5	305701 290763
125	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 318.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A13SE (NW)	903	5	305966 291619
126	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 109.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A2NW (SW)	926	5	306294 289958
127	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 310.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A15NE (NE)	927	5	307340 291921
128	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 5.3 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A13NE (NW)	928	5	306064 291783

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
129	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 27.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A13NE (NW)	933	5	306060 291787
130	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 135.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A2NW (S)	939	5	306424 289903
131	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 13.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A5SW (SW)	945	5	305847 290283
132	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 254.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A5SW (SW)	945	5	305843 290287
133	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 14.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A13NE (NW)	952	5	306079 291832
134	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 65.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A13NE (NW)	953	5	306078 291833
135	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 23.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A13NE (NW)	954	5	306065 291822
136	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 3.9 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A13NE (NW)	954	5	306068 291824
137	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 14.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A13NE (NW)	960	5	306045 291810

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
138	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 23.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A2NW (S)	960	5	306503 289870
139	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 14.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A2NW (S)	961	5	306495 289871
140	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 7.7 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A2NW (S)	965	5	306517 289863
141	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 113.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A8SW (SE)	974	5	307794 290243
142	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 4.0 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A8SW (SE)	978	5	307789 290234
143	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 105.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Severn Primacy: 1	A13NE (NW)	998	5	306013 291831

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
144	<p>Licensed Waste Management Facilities (Locations)</p> <p>Licence Number: 104165 Location: Penstrowed Quarry, Penstrowed, Caersws, SY17 5SG Operator Name: G F Grigg Ltd Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: Physical Treatment Facilities Licence Status: Issued Issued: 17th September 2012 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	A10SE (W)	0	2	306699 290954
144	<p>Licensed Waste Management Facilities (Locations)</p> <p>Licence Number: GB3632AS Location: Penstrowed Quarry, Caersws, Powys, SY17 5SG Operator Name: G F Grigg Ltd Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: Physical Treatment Facilities Licence Status: Effective Issued: 17th September 2012 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	A10SE (W)	0	2	306699 290954
	<p>Local Authority Landfill Coverage</p> <p>Name: Powys County Council - Has supplied landfill data</p>		0	6	306858 290969

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Wenlock Rocks (Undifferentiated)	A10SE (W)	0	1	306858 290969
145	BGS Recorded Mineral Sites Site Name: Penstrowed Location: Penstrowed, Newtown, Powys Source: British Geological Survey, National Geoscience Information Service Reference: 226590 Type: Opencast Status: Ceased Operator: Goetre Ltd. Operator Location: Not Supplied Periodic Type: Silurian Geology: Penstrowed Grits Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A10NE (NW)	0	1	306742 291018
146	BGS Recorded Mineral Sites Site Name: Penstrowed Location: Penstrowed, Newtown, Powys Source: British Geological Survey, National Geoscience Information Service Reference: 226591 Type: Opencast Status: Ceased Operator: Goetre Ltd. Operator Location: Not Supplied Periodic Type: Silurian Geology: Penstrowed Grits Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A10NE (NW)	0	1	306830 290986
147	BGS Recorded Mineral Sites Site Name: Penstrowed Location: Penstrowed, Newtown, Powys Source: British Geological Survey, National Geoscience Information Service Reference: 3791 Type: Opencast Status: Ceased Operator: Goetre Ltd. Operator Location: Not Supplied Periodic Type: Silurian Geology: Penstrowed Grits Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A10SE (W)	0	1	306730 290935
148	BGS Recorded Mineral Sites Site Name: Penstrowed Hall Location: Penstrowen, Newtown, Powys Source: British Geological Survey, National Geoscience Information Service Reference: 113435 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Silurian Geology: Penstrowed Grits Formation Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A11NW (NE)	75	1	307140 291089
149	BGS Recorded Mineral Sites Site Name: Penstrowed Location: Penstrowed, Newtown, Powys Source: British Geological Survey, National Geoscience Information Service Reference: 187973 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Silurian Geology: Penstrowed Grits Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A10NE (NW)	121	1	306679 291249

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
150	BGS Recorded Mineral Sites Site Name: Pen Y Garn Location: Penstrowen, Newtown, Powys Source: British Geological Survey, National Geoscience Information Service Reference: 113434 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Silurian Geology: Penstrowed Grits Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A10SW (W)	235	1	306376 290776
151	BGS Recorded Mineral Sites Site Name: Rectory Location: Aberhafesp, Newtown, Powys Source: British Geological Survey, National Geoscience Information Service Reference: 113352 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Silurian Geology: Penstrowed Grits Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A14NE (N)	521	1	306688 291665
152	BGS Recorded Mineral Sites Site Name: Penstrowed Location: Penstrowed, Newtown, Powys Source: British Geological Survey, National Geoscience Information Service Reference: 187974 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Silurian Geology: Penstrowed Grits Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A13SE (W)	772	1	305968 291331
153	BGS Recorded Mineral Sites Site Name: Birchybank Coppice Location: Aberhafesp, Newtown, Powys Source: British Geological Survey, National Geoscience Information Service Reference: 113353 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Silurian Geology: Penstrowed Grits Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A16SW (NE)	805	1	307810 291468
154	BGS Recorded Mineral Sites Site Name: Cefn Lladron Hill Location: Penstrowen, Newtown, Powys Source: British Geological Survey, National Geoscience Information Service Reference: 113433 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Silurian Geology: Penstrowed Grits Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A9SW (W)	818	1	305791 290708
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Non Coal Mining Areas of Great Britain Risk: Highly Unlikely Source: British Geological Survey, National Geoscience Information Service	A10SE (W)	0	1	306858 290969
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (W)	0	1	306858 290969
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SW (SE)	0	1	307047 290856

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	178	1	306597 290648
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10SE (W)	0	1	306858 290969
	Potential for Compressible Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11NE (NE)	126	1	307222 291123
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10SE (W)	0	1	306858 290969
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (W)	0	1	306858 290969
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11NW (NE)	40	1	306990 291054
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A11NW (NE)	80	1	306955 291109
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A10NE (W)	80	1	306589 291025
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A10NW (W)	132	1	306522 291012
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	146	1	306736 290676
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	166	1	306660 290656
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	178	1	306597 290648
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A6NE (SW)	182	1	306581 290643
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A6NE (SW)	196	1	306540 290644
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A10SW (SW)	208	1	306485 290669
	Potential for Landslide Ground Stability Hazards Hazard Potential: High Source: British Geological Survey, National Geoscience Information Service	A10SW (SW)	225	1	306460 290668
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A10SW (SW)	228	1	306432 290699
	Potential for Landslide Ground Stability Hazards Hazard Potential: High Source: British Geological Survey, National Geoscience Information Service	A6NW (SW)	235	1	306508 290612
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11SW (SE)	240	1	307109 290683
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SW (SE)	0	1	307047 290856
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10SE (W)	0	1	306858 290969

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10NE (W)	80	1	306589 291025
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11NE (NE)	126	1	307222 291123
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	146	1	306736 290676
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A6NE (SW)	182	1	306581 290643
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10SE (W)	0	1	306858 290969
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NW (NE)	21	1	306990 291054
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10NE (W)	80	1	306589 291025
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	146	1	306736 290676
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A6NE (SW)	182	1	306581 290643
	Radon Potential - Radon Affected Areas Affected Area: The property is in an Intermediate probability radon area (1 to 3% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A10NE (N)	0	1	306858 291025
	Radon Potential - Radon Affected Areas Affected Area: The property is an Intermediate probability radon area (3 to 5% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A10SE (W)	0	1	306858 290969
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A10NE (N)	0	1	306858 291025
	Radon Potential - Radon Protection Measures Protection Measure: Basic radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A10SE (W)	0	1	306858 290969

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
155	Contemporary Trade Directory Entries Name: Cemex Newtown Plant Location: Penstrowed Quarry, U2607 From Disused Quarry to Junction With A489t, Caersws, SY17 5SG Classification: Sand, Gravel & Other Aggregates Status: Active Positional Accuracy: Automatically positioned to the address	A10NE (W)	0	-	306766 291007
155	Contemporary Trade Directory Entries Name: The Tudor Griffiths Group Location: Penstrowed Quarry, Penstrowed, Caersws, Powys, SY17 5SG Classification: Concrete & Mortar Ready Mixed Status: Active Positional Accuracy: Automatically positioned to the address	A10NE (W)	0	-	306766 291007
156	Contemporary Trade Directory Entries Name: Penstrowed Vehicle Sales Location: Penstrowed, Caersws, Powys, SY17 5SG Classification: Car Dealers Status: Inactive Positional Accuracy: Automatically positioned to the address	A11SE (SE)	350	-	307303 290662

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
157	Ancient Woodland Name: Not Supplied Reference: 30930 Area(m ²): 9804.88 Type: Ancient and Semi-Natural Woodland	A11SW (S)	121	2	306900 290733
158	Ancient Woodland Name: Not Supplied Reference: 45450 Area(m ²): 8054.89 Type: Plantation on Ancient Woodland	A14SE (N)	408	2	306757 291561
159	Ancient Woodland Name: Not Supplied Reference: 30934 Area(m ²): 3833.81 Type: Ancient and Semi-Natural Woodland	A14SE (N)	484	2	306685 291627
160	Ancient Woodland Name: Not Supplied Reference: 29846 Area(m ²): 17273.35 Type: Ancient and Semi-Natural Woodland	A7SW (SE)	715	2	307207 290219
161	Ancient Woodland Name: Not Supplied Reference: 29847 Area(m ²): 5626.24 Type: Ancient and Semi-Natural Woodland	A7SE (SE)	736	2	307378 290252
162	Ancient Woodland Name: Not Supplied Reference: 29849 Area(m ²): 12160.64 Type: Ancient and Semi-Natural Woodland	A12NW (E)	739	2	307877 291148
163	Ancient Woodland Name: Not Supplied Reference: 29848 Area(m ²): 5180.46 Type: Ancient and Semi-Natural Woodland	A7SE (SE)	778	2	307498 290273
164	Ancient Woodland Name: Not Supplied Reference: 28169 Area(m ²): 63452.76 Type: Restored Ancient Woodland Site	A16SW (NE)	819	2	307834 291458
165	Ancient Woodland Name: Not Supplied Reference: 45194 Area(m ²): 4988.45 Type: Plantation on Ancient Woodland	A7SE (SE)	826	2	307456 290192
166	Ancient Woodland Name: Not Supplied Reference: 44365 Area(m ²): 58962.68 Type: Plantation on Ancient Woodland	A7SE (SE)	836	2	307465 290186
167	Ancient Woodland Name: Not Supplied Reference: 27418 Area(m ²): 4383.79 Type: Ancient and Semi-Natural Woodland	A7SE (SE)	841	2	307548 290232
168	Ancient Woodland Name: Not Supplied Reference: 27417 Area(m ²): 6413.65 Type: Ancient and Semi-Natural Woodland	A7SW (S)	845	2	306999 290001
169	Ancient Woodland Name: Not Supplied Reference: 29843 Area(m ²): 11695.72 Type: Ancient and Semi-Natural Woodland	A7SW (S)	850	2	307176 290066
170	Ancient Woodland Name: Not Supplied Reference: 29841 Area(m ²): 5031.52 Type: Ancient and Semi-Natural Woodland	A3NW (S)	900	2	306974 289938

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
171	Ancient Woodland Name: Not Supplied Reference: 29845 Area(m ²): 16498.05 Type: Ancient and Semi-Natural Woodland	A7SE (SE)	917	2	307350 290048
172	Ancient Woodland Name: Not Supplied Reference: 34514 Area(m ²): 1809.49 Type: Restored Ancient Woodland Site	A16SW (NE)	948	2	307851 291647
173	Sites of Special Scientific Interest Name: Penstrowed Quarry Multiple Areas: N Total Area (m2): 26231.7 Source: Natural Resources Wales Reference: 70432whd Designation Details: Geological Designation Date: 17th April 1986 Date Type: Notified	A10SE (SE)	0	2	306867 290955
174	Sites of Special Scientific Interest Name: Gweunydd Penstrowed Multiple Areas: Y Total Area (m2): 16744.42 Source: Natural Resources Wales Reference: 60732wep Designation Details: Biological Designation Date: 12th June 1984 Date Type: Notified	A10SE (S)	79	2	306811 290745













Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices Natural Resources Wales Powys County Council - Public Protection Department	June 2020 October 2017	Annually Annual Rolling Update
Discharge Consents Environment Agency - Welsh Region Environment Agency - Midlands Region Natural Resources Wales	August 2014 January 2023 October 2022	Quarterly Quarterly Quarterly
Enforcement and Prohibition Notices Environment Agency - Welsh Region	March 2013	
Integrated Pollution Controls Environment Agency - Welsh Region	January 2009	
Integrated Pollution Prevention And Control Environment Agency - Welsh Region Natural Resources Wales	January 2021 January 2023	Quarterly Quarterly
Local Authority Integrated Pollution Prevention And Control Powys County Council - Public Protection Department	May 2014	Variable
Local Authority Pollution Prevention and Controls Powys County Council - Public Protection Department	May 2014	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements Powys County Council - Public Protection Department	May 2014	Variable
Nearest Surface Water Feature Ordnance Survey	January 2023	
Pollution Incidents to Controlled Waters Environment Agency - Welsh Region Environment Agency - Midlands Region	December 1998 December 1999	
Prosecutions Relating to Authorised Processes Environment Agency - Welsh Region Natural Resources Wales	July 2015 July 2015	
Prosecutions Relating to Controlled Waters Environment Agency - Welsh Region Natural Resources Wales	March 2013 March 2013	
Registered Radioactive Substances Natural Resources Wales Environment Agency - Welsh Region	January 2015 June 2016	As notified
River Quality Environment Agency - Head Office	November 2001	Not Applicable
Substantiated Pollution Incident Register Environment Agency Wales - North Area Natural Resources Wales	January 2021 January 2023	Quarterly Quarterly
Water Abstractions Environment Agency - Midlands Region Environment Agency - Welsh Region Natural Resources Wales	January 2023 January 2023 January 2023	Quarterly Quarterly Quarterly
Water Industry Act Referrals Environment Agency - Welsh Region Natural Resources Wales	October 2017 October 2022	Quarterly
Groundwater Vulnerability Map Natural Resources Wales	June 2018	As notified
Bedrock Aquifer Designations Natural Resources Wales	January 2018	Annually
Superficial Aquifer Designations Natural Resources Wales	January 2018	Annually

Agency & Hydrological	Version	Update Cycle
Source Protection Zones Natural Resources Wales	July 2022	Annual Rolling Update
Extreme Flooding from Rivers or Sea without Defences Natural Resources Wales	September 2020	
Flooding from Rivers or Sea without Defences Natural Resources Wales	September 2020	
Areas Benefiting from Flood Defences Natural Resources Wales	November 2019	Quarterly
Flood Water Storage Areas Natural Resources Wales	August 2019	Quarterly
Flood Defences Natural Resources Wales	November 2019	Quarterly
OS Water Network Lines Ordnance Survey	January 2023	Quarterly
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	As notified
Waste	Version	Update Cycle
BGS Recorded Landfill Sites British Geological Survey - National Geoscience Information Service	November 2002	As notified
Historical Landfill Sites Natural Resources Wales	March 2023	As notified
Integrated Pollution Control Registered Waste Sites Environment Agency - Welsh Region	January 2009	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries) Environment Agency Wales - North Area Natural Resources Wales	January 2023 October 2021	Quarterly Quarterly
Licensed Waste Management Facilities (Locations) Natural Resources Wales Environment Agency Wales - North Area	January 2023 July 2021	Quarterly Quarterly
Local Authority Landfill Coverage Powys County Council	February 2003	Not Applicable
Local Authority Recorded Landfill Sites Powys County Council	October 2018	
Registered Landfill Sites Environment Agency Wales - North Area	March 2006	Not Applicable
Registered Waste Transfer Sites Environment Agency Wales - North Area	April 2018	
Registered Waste Treatment or Disposal Sites Environment Agency Wales - North Area	June 2015	

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH) Health and Safety Executive	March 2023	Bi-Annually
Explosive Sites Health and Safety Executive	March 2017	Annually
Notification of Installations Handling Hazardous Substances (NIHHS) Health and Safety Executive	August 2001	
Planning Hazardous Substance Enforcements Powys County Council - Planning Department	February 2016	Variable
Planning Hazardous Substance Consents Powys County Council - Planning Department	February 2016	Variable
Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	As notified
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	November 2022	Bi-Annually
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB) Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011 November 2020	As notified
Coal Mining Affected Areas The Coal Authority - Property Searches	February 2023	Annual Rolling Update
Mining Instability Ove Arup & Partners	June 1998	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	April 2020	As notified
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	September 2022	Annually
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	September 2022	Annually

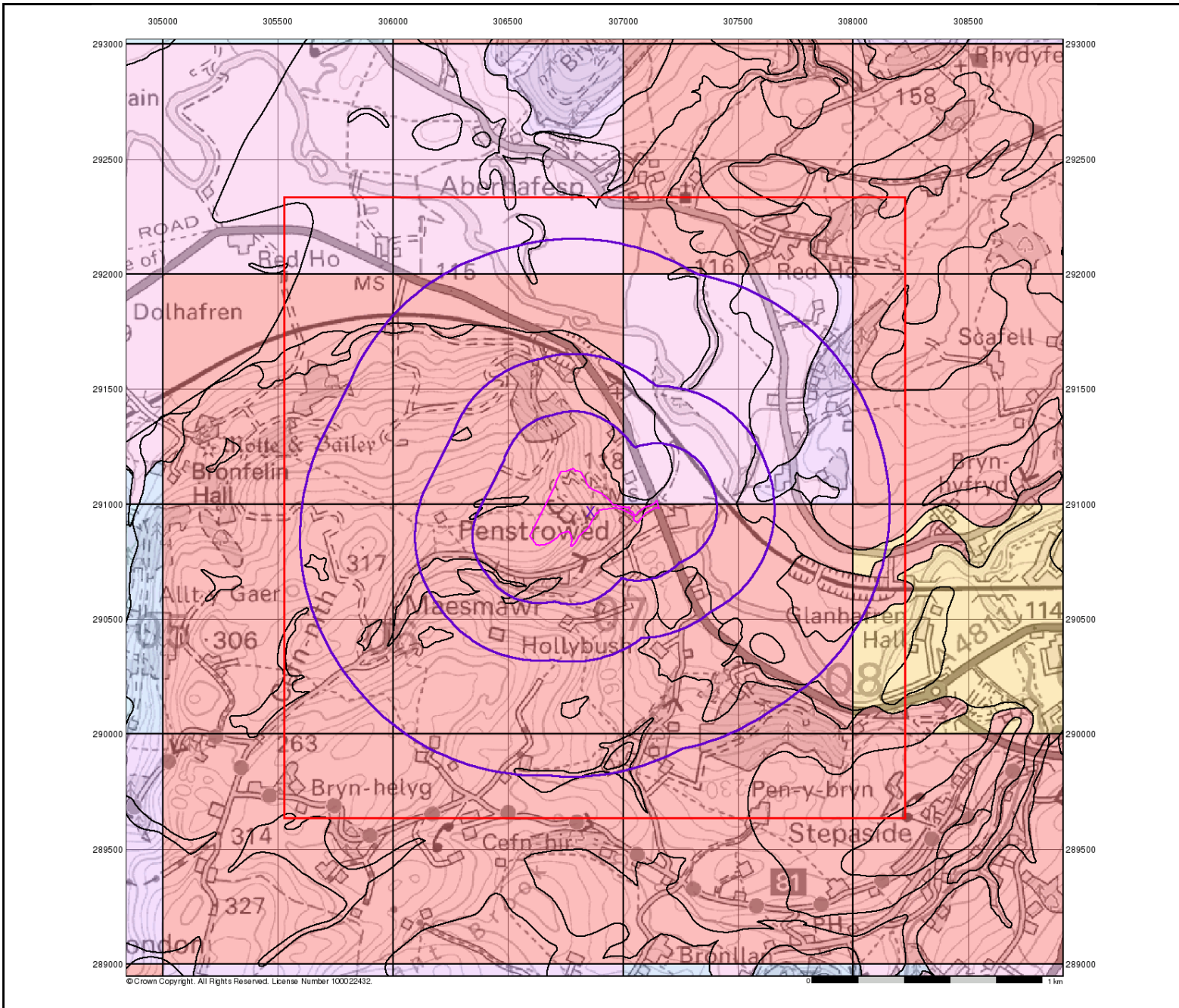
Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	January 2023	Quarterly
Fuel Station Entries Catalist Ltd - Experian	February 2023	Quarterly
Gas Pipelines National Grid	October 2021	Bi-Annually
Underground Electrical Cables National Grid	February 2023	Bi-Annually
Sensitive Land Use	Version	Update Cycle
Ancient Woodland Natural Resources Wales	September 2018	Bi-Annually
Areas of Adopted Green Belt Powys County Council	July 2022	Quarterly
Areas of Unadopted Green Belt Powys County Council	July 2022	Quarterly
Areas of Outstanding Natural Beauty Natural Resources Wales	August 2022	Bi-Annually
Environmentally Sensitive Areas The National Assembly for Wales - GI Services (Department of Planning & Countryside)	January 2017	
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Powys County Council	August 2018	Bi-Annually
Marine Nature Reserves Natural Resources Wales	August 2018	Bi-Annually
National Nature Reserves Natural Resources Wales	February 2023	Bi-Annually
National Parks Natural Resources Wales	February 2018	Annually
Nitrate Vulnerable Zones The National Assembly for Wales - GI Services (Department of Planning & Countryside) Natural Resources Wales	April 2016 March 2023	Bi-Annually
Ramsar Sites Natural Resources Wales	July 2019	Bi-Annually
Sites of Special Scientific Interest Natural Resources Wales	March 2020	Bi-Annually
Special Areas of Conservation Natural Resources Wales	August 2020	Bi-Annually
Special Protection Areas Natural Resources Wales	August 2018	Bi-Annually

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	 British Geological Survey <small>NATURAL ENVIRONMENT RESEARCH COUNCIL</small>
Centre for Ecology and Hydrology	 Centre for Ecology & Hydrology <small>NATURAL ENVIRONMENT RESEARCH COUNCIL</small>
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Stantec UK Ltd	

Contact	Name and Address	Contact Details
1	British Geological Survey - Enquiry Service British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	Natural Resources Wales Ty Cambria, 29 Newport Road, Cardiff, CF24 0TP	Telephone: 0300 065 3000 Email: enquiries@naturalresourceswales.gov.uk
3	Environment Agency - National Customer Contact Centre (NCCC) PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
4	Powys County Council - Public Protection Department Neuadd Maldwyn, Severn Road, Welshpool, Powys, SY21 7AS	Telephone: 01597 826662 Fax: 01597 826669 Website: www.powys.gov.uk
5	Ordnance Survey Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
6	Powys County Council County Hall, Llandrindod Wells, Powys, LD1 5LG	Telephone: 01597 826000 Fax: 01597 826230 Website: www.powys.gov.uk
-	Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	Landmark Information Group Limited Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / Natural Resources Wales / SEPA have a charging policy in place for enquiries.



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Groundwater Vulnerability

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

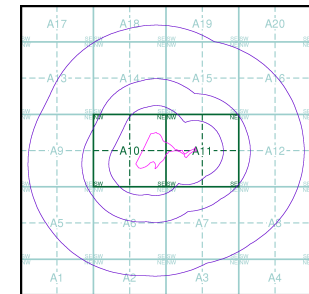
Bedrock Aquifers

- High Vulnerability, Principal Aquifer
- High Vulnerability, Secondary Aquifer
- Medium Vulnerability, Principal Aquifer
- Medium Vulnerability, Secondary Aquifer
- Low Vulnerability, Principal Aquifer
- Low Vulnerability, Secondary Aquifer
- Unproductive Aquifer
- Soluble Rock

Superficial Aquifers

- High Vulnerability, Principal Aquifer
- High Vulnerability, Secondary Aquifer
- Medium Vulnerability, Principal Aquifer
- Medium Vulnerability, Secondary Aquifer
- Low Vulnerability, Principal Aquifer
- Low Vulnerability, Secondary Aquifer

Site Sensitivity Context Map - Slice A



Order Details

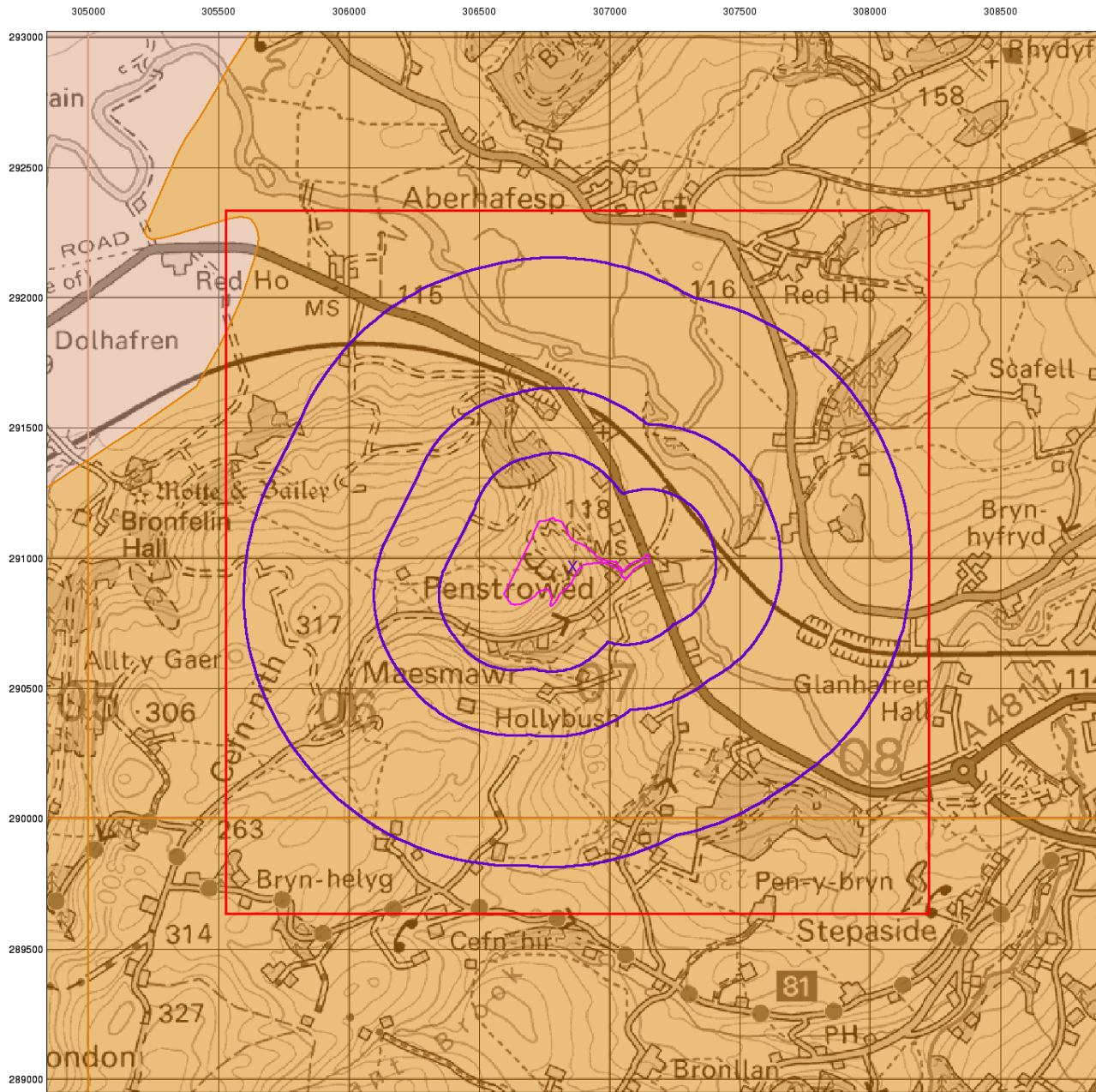
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 Customer Ref: 79011
 National Grid Reference: 306860, 290970
 Slice: A
 Site Area (Ha): 6.7
 Search Buffer (m): 1000

Site Details

Penstrowed Quarry, Penstrowed, Caersws, SY17 5SG



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0 1 km



Bedrock Aquifer Designation

General

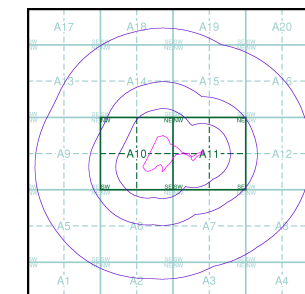
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



Order Details

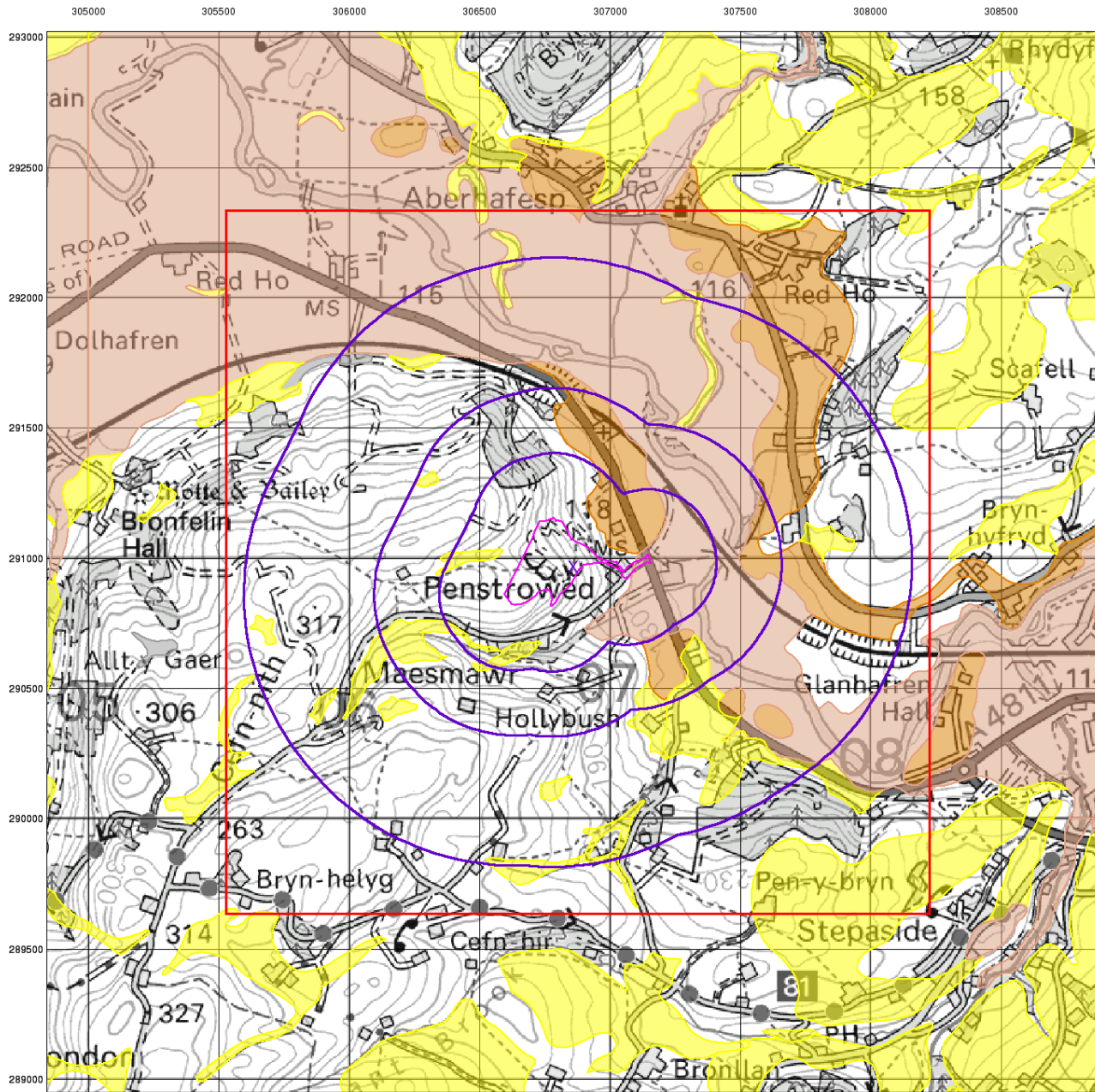
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 Search Buffer (m): 1000

Site Details

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Superficial Aquifer Designation

General

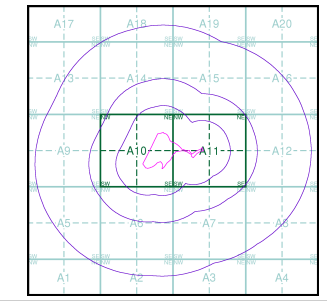
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



Order Details

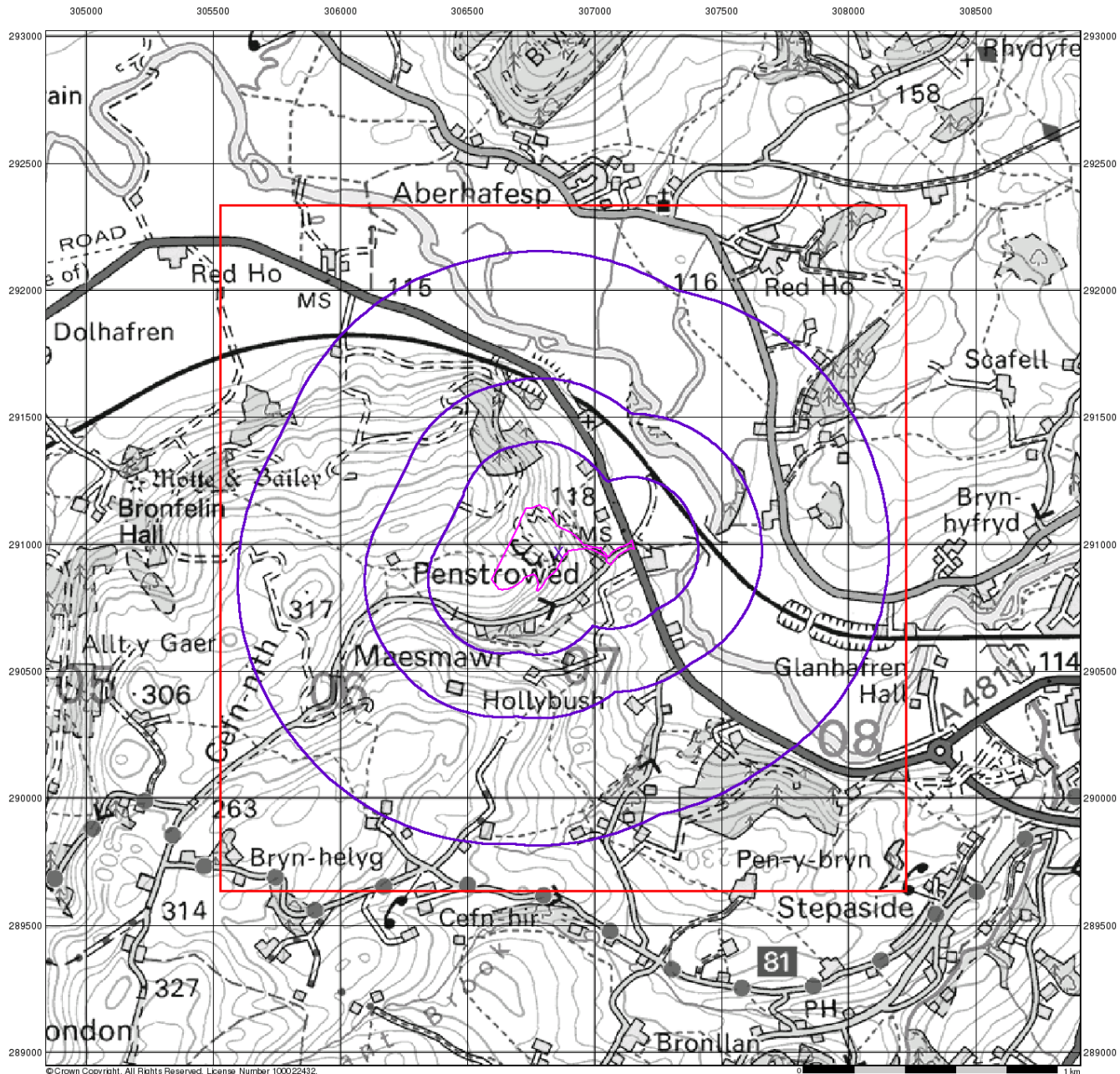
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 Site Area (Ha): 6.7
 Search Buffer (m): 1000

Site Details

Penstrowed Quarry, Penstrowed, Caersws, SY17 5SG



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Source Protection Zones

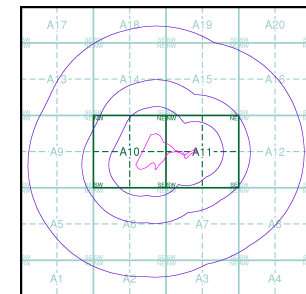
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

- Inner zone (Zone 1)
- Inner zone - subsurface activity only (Zone 1c)
- Outer zone (Zone 2)
- Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)

Site Sensitivity Context Map - Slice A

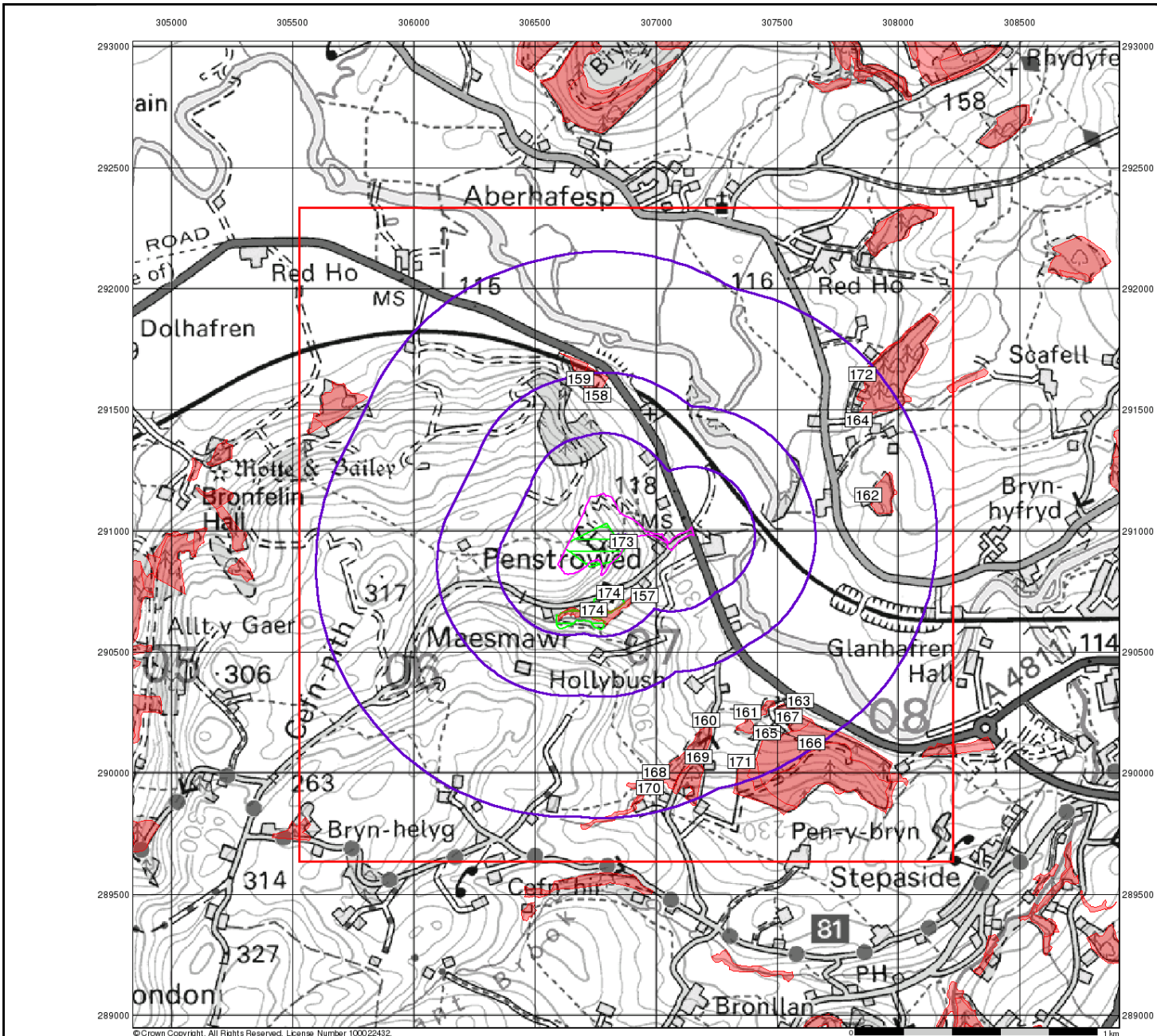


Order Details

Order Number: 308820180_1_1
 Customer Ref: 79011
 National Grid Reference: 306860, 290970
 Slice: A
 Site Area (Ha): 6.7
 Search Buffer (m): 1000

Site Details

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Sensitive Land Uses

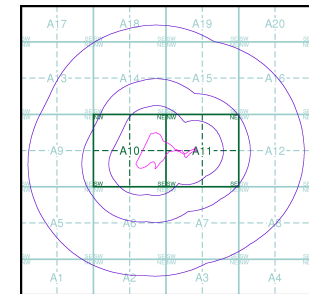
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Sensitive Land Uses

- Ancient Woodland
- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- World Heritage Sites

Site Sensitivity Context Map - Slice A

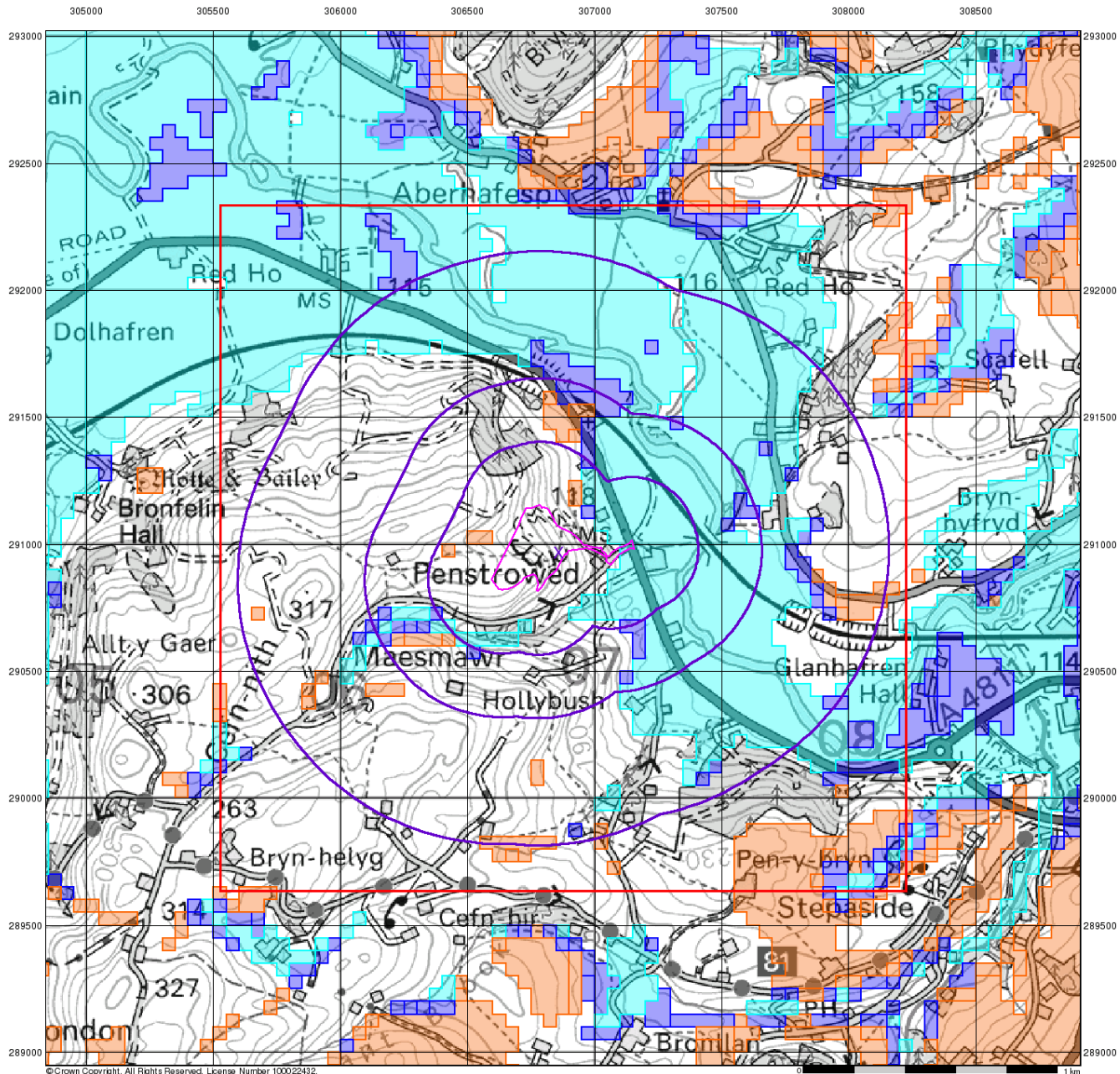


Order Details

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 Customer Ref: 79011
 National Grid Reference: 306860, 290970
 Slice: A
 Site Area (Ha): 6.7
 Search Buffer (m): 1000

Site Details

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BGS Flood GFS Data

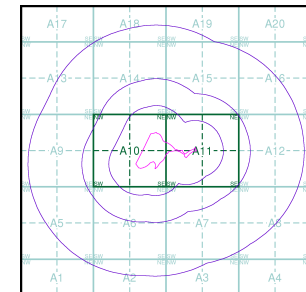
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice

Agency and Hydrological (Flood)

- Limited Potential for Groundwater Flooding to Occur
- Potential for Groundwater Flooding of Property Situated Below Ground Level
- Potential for Groundwater Flooding to Occur at Surface

Site Sensitivity Context Map - Slice A



Order Details

Order Number: 308820180_1_1
 Customer Ref: 79011
 National Grid Reference: 306860, 290970
 Slice: A
 Site Area (Ha): 6.7
 Search Buffer (m): 1000

Site Details

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Index Map

For ease of identification, your site and buffer have been split into Slices, Segments and Quadrants. These are illustrated on the Index Map opposite and explained further below.

Slice

Each slice represents a 1:10,000 plot area (2.7km x 2.7km) for your site and buffer. A large site and buffer may be made up of several slices (represented by a red outline), that are referenced by letters of the alphabet, starting from the bottom left corner of the slice "grid". This grid does not relate to National Grid lines but is designed to give best fit over the site and buffer.

Segment

A segment represents a 1:2,500 plot area. Segments that have plot files associated with them are shown in dark green, others in light blue. These are numbered from the bottom left hand corner within each slice.

Quadrant

A quadrant is a quarter of a segment. These are labelled as NW, NE, SW, SE and are referenced in the datasheet to allow features to be quickly located on plots. Therefore a feature that has a quadrant reference of A7NW will be in Slice A, Segment 7 and the NW Quadrant.

A selection of organisations who provide data within this report:



Envirocheck reports are compiled from 136 different sources of data.

Client Details

Ms J Bayliff, Geo Smart Information Limited, Suite 9-11, 1st Floor, Old Bank Buildings, Bellstone, Shrewsbury, Shropshire, SY1 1HU

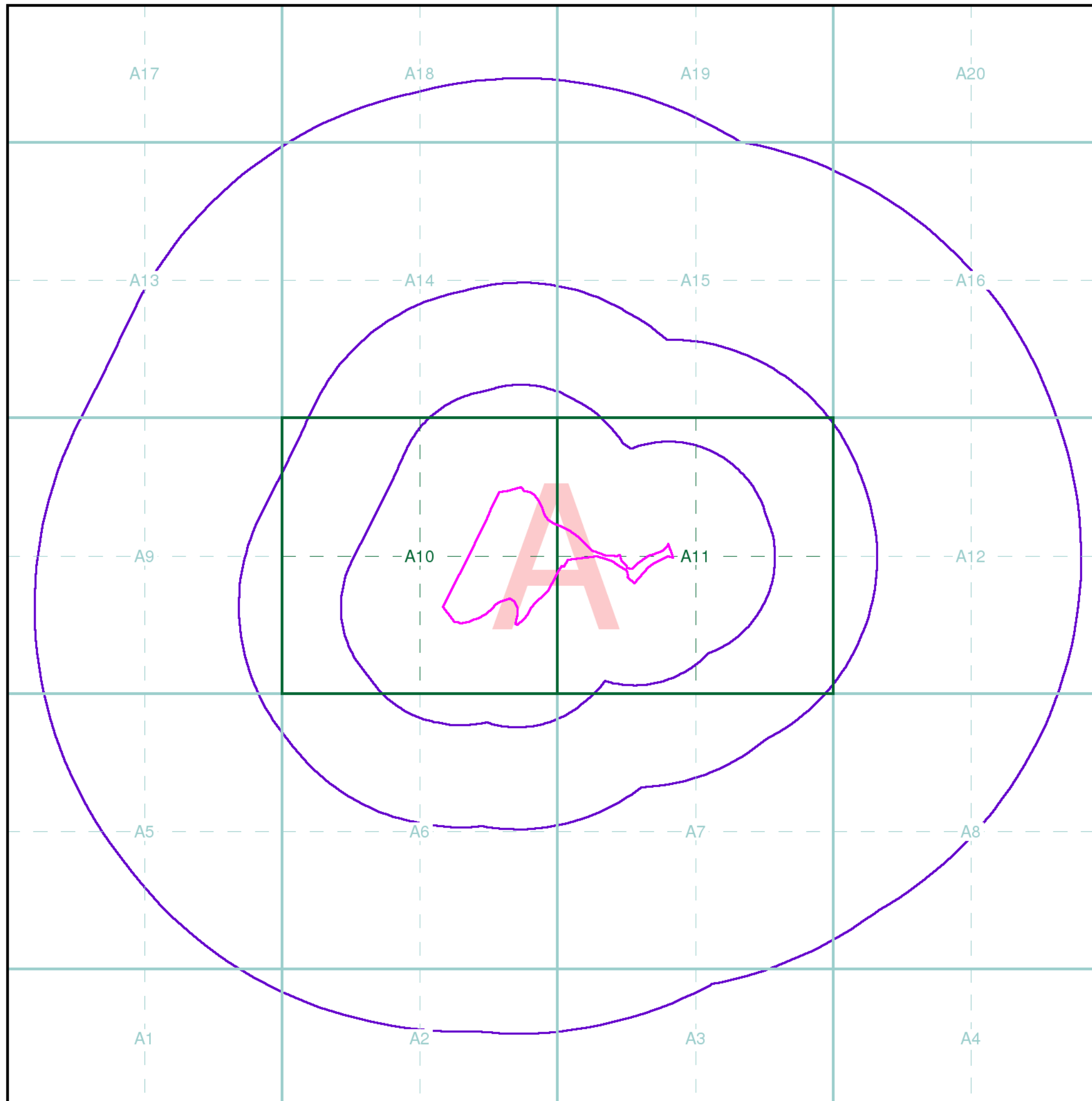
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 Search Buffer (m): 1000

Site Details

Penstrowed Quarry, Penstrowed, Caersws, SY17 5SG

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<http://www.landmarkinfo.co.uk/Terms/Show/515>



3.4 Risk assessment methodology

The method of risk evaluation adopted in this document is consistent with CIRIA C552 (2001). Hence, risk is considered to be a function of both the probability (likelihood) of contamination occurring at the study site and also the potential severity (consequence) of the environmental impacts associated with this contamination.

The classification system used to define contaminant probability, consequence and risk is described in the following tables.

Table A: Classification of probability

Classification	Definition
High likelihood	There is a contaminant linkage and an event that appears either 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 contaminant 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 contaminant 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 contaminant linkage but circumstances are such that it is improbable that an event would occur even in the long term.

Table B: Classification of consequence

Classification	Receptor	Definition	Examples
Severe	Humans	Short-term (acute) risk to human health likely to result in "significant harm" as defined in the CTL Statutory Guidance	High concentrations of cyanide on the surface of an informal recreation area
	Controlled waters	Short-term risk of pollution (note: Water Resources Act contains no scope for considering significance of pollution) of sensitive water resource	Major spillage of contaminants from site into controlled water
	Property	Catastrophic damage to buildings/property	Explosion, causing building collapse (can also equate to an acute human health risk if buildings are occupied)
	Ecology	A short-term risk to a particular ecosystem, or organism forming part of such eco-system	Potentially long term derogation of a designated site or protected species
Medium	Humans	Chronic damage to human health ("significant harm" as defined in the CTL Statutory Guidance)	Concentrations of a contaminant from a residential site exceed the site-specific assessment criteria
	Controlled waters	Pollution of sensitive water resources (note: Water Resources Act contains no scope for considering significance of pollution)	Leaching of contaminants from a site to a principal or secondary aquifer
	Property	Significant damage to crops, buildings, structures and services	Damage to building rendering it unsafe to occupy (e.g. foundation damage resulting in instability)
	Ecology	A significant change in a particular ecosystem	Death of a species within a designated nature reserve

Table B: Classification of consequence (continued)

Classification	Receptor	Definition	Examples
Mild	Humans	Contamination present although unlikely to constitute a significant chronic health risk	Concentrations of a contaminant from a public access site moderately exceed the generic assessment criteria
	Controlled waters	Pollution of non-water resources	Pollution of non-classified groundwater
	Property	Damage to sensitive buildings/structures/services	Aggressive ground conditions leading to potential for long term degradation of buried concrete
	Ecology	Damage to the environment	Localised damage to aquatic habitat causing temporary relocation of certain species
Minor	Humans	Non-permanent health effects to human health (easily prevented by means such as personal protective clothing, etc.)	The presence of contaminants at such concentrations that protective equipment is required during site works
	Controlled waters	Potential minor release of contamination to local water features	Short term or low volume release of potentially polluting material to a secondary surface water course of low existing quality
	Property	Easily reparable effects of damage to buildings, structures and services. Harm which may result in a financial loss, or expenditure to resolve	The loss of plants in a landscaping scheme. Discolouration of concrete
	Ecology	Short term, localised damage may occur; consequences are spatially and temporally limited	Short term or localised disruption to in situ flora or fauna; no lasting effects

Table C: Risk classification (comparison of consequence and probability)

		Consequence (severity)			
		Severe	Medium	Mild	Minor
Probability	High likelihood	Very high risk	High risk	Moderate risk	Low risk
	Likely	High risk	Moderate risk	Moderate/low risk	Low risk
	Low likelihood	Moderate risk	Moderate/low risk	Low risk	Very low risk
	Unlikely	Moderate/low risk	Low risk	Very low risk	Very low risk

Risk Key

Very High	High	Moderate	Moderate/Low	Low	Very Low
There is a high probability that severe harm could arise to a designated receptor from an identified hazard without appropriate remediation action	Harm is likely to arise to a designated receptor from an identified hazard at the site without appropriate remediation action	It is possible that without appropriate remediation action harm could arise to a designated receptor. It is relatively unlikely that any such harm would be severe, and if any harm were to occur it is more likely that such harm would be relatively mild	It is possible that harm could arise to a designated receptor from an identified hazard. It is likely any harm would be mild	It is possible that harm could arise to a designated receptor from an identified hazard. It is likely that, at worst if any harm was realised any effects would be mild	The presence of an identified hazard does not give rise to the potential to cause harm to a receptor

3.5 Historical land use maps

Historical Ordnance Survey maps relating to the site and its surrounding area have been provided by Landmark.

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

- Gravel Pit
- Sand Pit
- Other Pits
- Quarry
- Shingle
- Orchard
- Osiers
- Reeds
- Marsh
- Mixed Wood
- Deciduous
- Brushwood
- Fir
- Furze
- Rough Pasture
- Arrow denotes flow of water
- Trigonometrical Station
- Site of Antiquities
- Bench Mark
- Pump, Guide Post, Signal Post
- Well, Spring, Boundary Post
- 285** Surface Level
- Sketched Contour
- Instrumental Contour
- Main Roads
- Minor Roads
- Sunken Road
- Raised Road
- Road over Railway
- Railway over River
- Railway over Road
- Level Crossing
- Road over River or Canal
- Road over Stream
- Road over Stream
- County Boundary (Geographical)
- County & Civil Parish Boundary
- Administrative County & Civil Parish Boundary
- County Borough Boundary (England)
- County Burgh Boundary (Scotland)
- Rural District Boundary
- Civil Parish Boundary

Ordnance Survey Plan 1:10,000

- Chalk Pit, Clay Pit or Quarry
- Gravel Pit
- Sand Pit
- Disused Pit or Quarry
- Refuse or Slag Heap
- Lake, Loch or Pond
- Dunes
- Boulders
- Coniferous Trees
- Non-Coniferous Trees
- Orchard
- Scrub
- Coppice
- Bracken
- Heath
- Rough Grassland
- Marsh
- Reeds
- Saltings
- Building
- Glasshouse
- Direction of Flow of Water
- Shingle
- Sand
- Sloping Masonry
- Pylon
- Electricity Transmission Line
- Pole
- Cutting
- Embankment
- Standard Gauge Multiple Track
- Standard Gauge Single Track
- Siding, Tramway or Mineral Line
- Narrow Gauge
- Geographical County
- Administrative County, County Borough or County of City
- Municipal Borough, Urban or Rural District, Burgh or District Council
- Borough, Burgh or County Constituency
Shown only when not coincident with other boundaries
- Civil Parish
Shown alternately when coincidence of boundaries occurs
- BP, BS** Boundary Post or Stone
- Ch** Church
- CH** Club House
- F E Sta** Fire Engine Station
- FB** Foot Bridge
- Fn** Fountain
- GP** Guide Post
- MP** Mile Post
- MS** Mile Stone
- Pol Sta** Police Station
- PO** Post Office
- PC** Public Convenience
- PH** Public House
- SB** Signal Box
- Spr** Spring
- TCB** Telephone Call Box
- TCP** Telephone Call Post
- W** Well

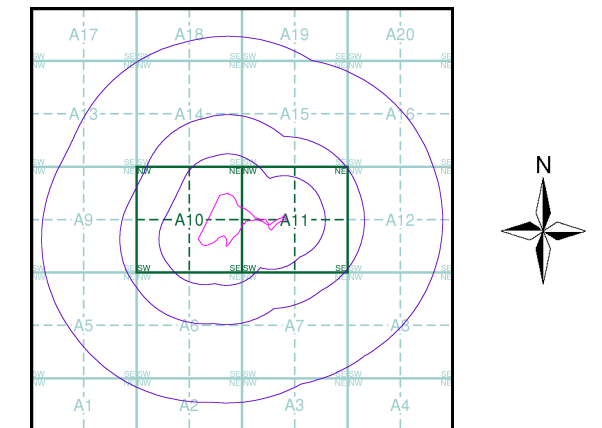
1:10,000 Raster Mapping

- Gravel Pit
- Rock
- Boulders
- Shingle
- Sand
- Slopes
- General detail
- Overhead detail
- Multi-track railway
- County boundary (England only)
- District, Unitary, Metropolitan, London Borough boundary
- Area of wooded vegetation
- Non-coniferous trees
- Coniferous trees
- Coniferous trees (scattered)
- Orchard
- Rough Grassland
- Scrub
- Water feature
- MHW(S) Mean high water (springs)
- Telephone line (where shown)
- Bench mark (where shown)
- Point feature (e.g. Guide Post or Mile Stone)
- Site of (antiquity)
- General Building
- Refuse tip or slag heap
- Rock (scattered)
- Boulders (scattered)
- Mud
- Sand Pit
- Top of cliff
- Underground detail
- Narrow gauge railway
- Single track railway
- Civil, parish or community boundary
- Constituency boundary
- Non-coniferous trees
- Coniferous trees
- Positioned tree
- Coppice or Osiers
- Heath
- Marsh, Salt Marsh or Reeds
- Flow arrows
- MLW(S) Mean low water (springs)
- Electricity transmission line (with poles)
- Triangulation station
- Pylon, flare stack or lighting tower
- Glasshouse
- Important Building

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Montgomeryshire	1:10,560	1884 - 1885	2
Montgomeryshire	1:10,560	1903	3
Montgomeryshire	1:10,560	1938 - 1953	4
Montgomeryshire	1:10,560	1953	5
Ordnance Survey Plan	1:10,000	1963	6
Ordnance Survey Plan	1:10,000	1983	7
Ordnance Survey Plan	1:10,000	1994	8
10K Raster Mapping	1:10,000	2000	9
Street View	Variable		10

Historical Map - Slice A

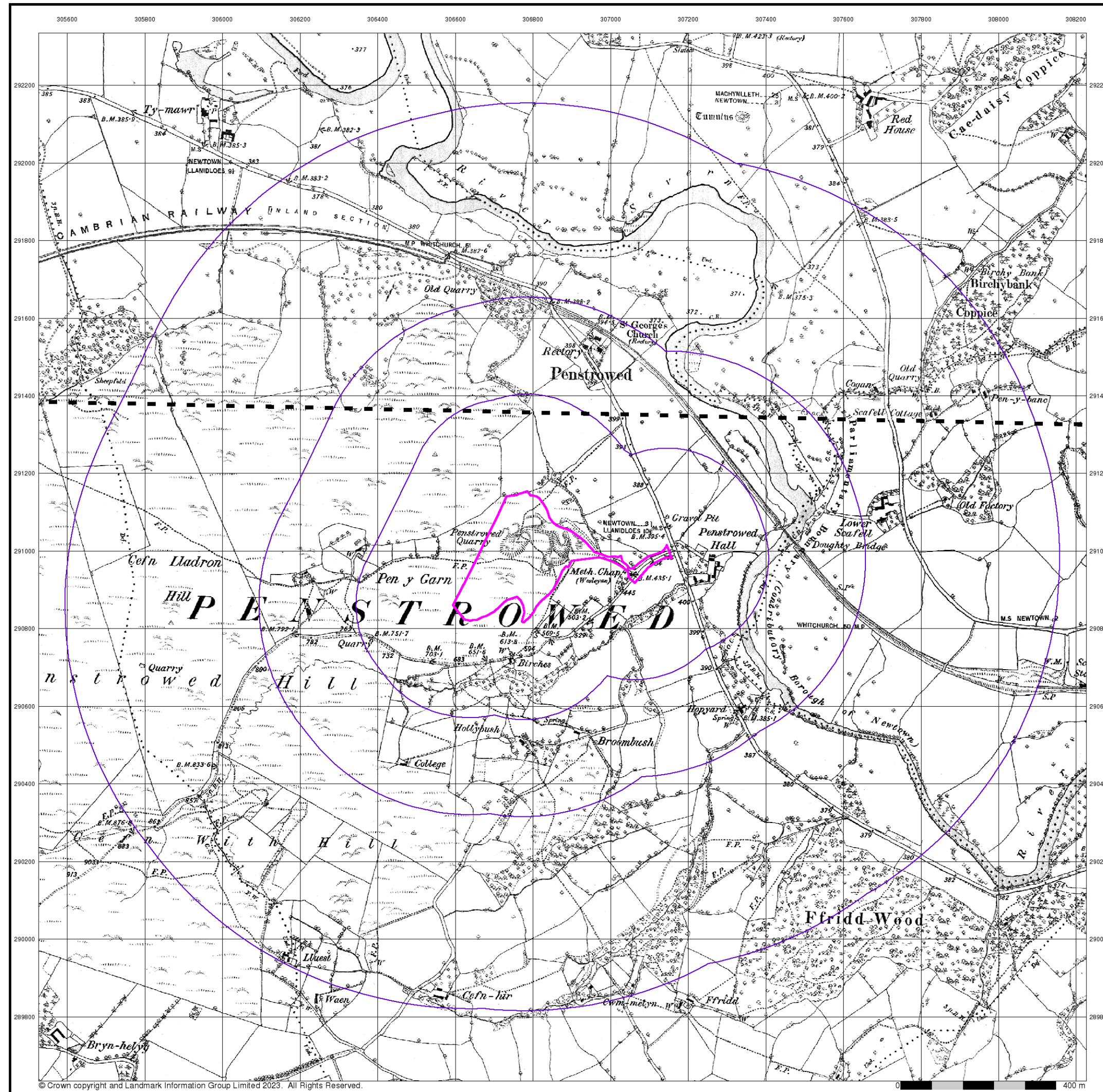


Order Details

Order Number: 308820180_1_1
 Customer Ref: 79011
 National Grid Reference: 306860, 290970
 Slice: A
 Site Area (Ha): 6.7
 Search Buffer (m): 1000

Site Details

Penstrowed Quarry, Penstrowed, Caersws, SY17 5SG



Montgomeryshire

Published 1884 - 1885

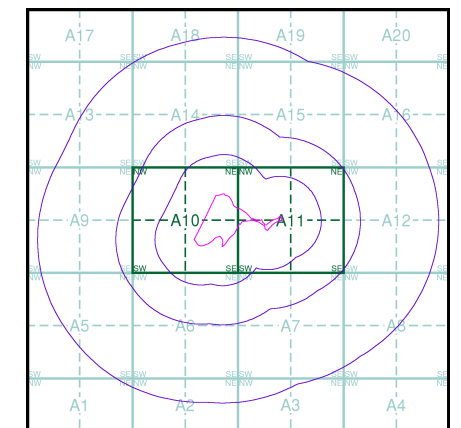
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

036SW	1885	1:10,560
043NW	1884	1:10,560

Historical Map - Slice A

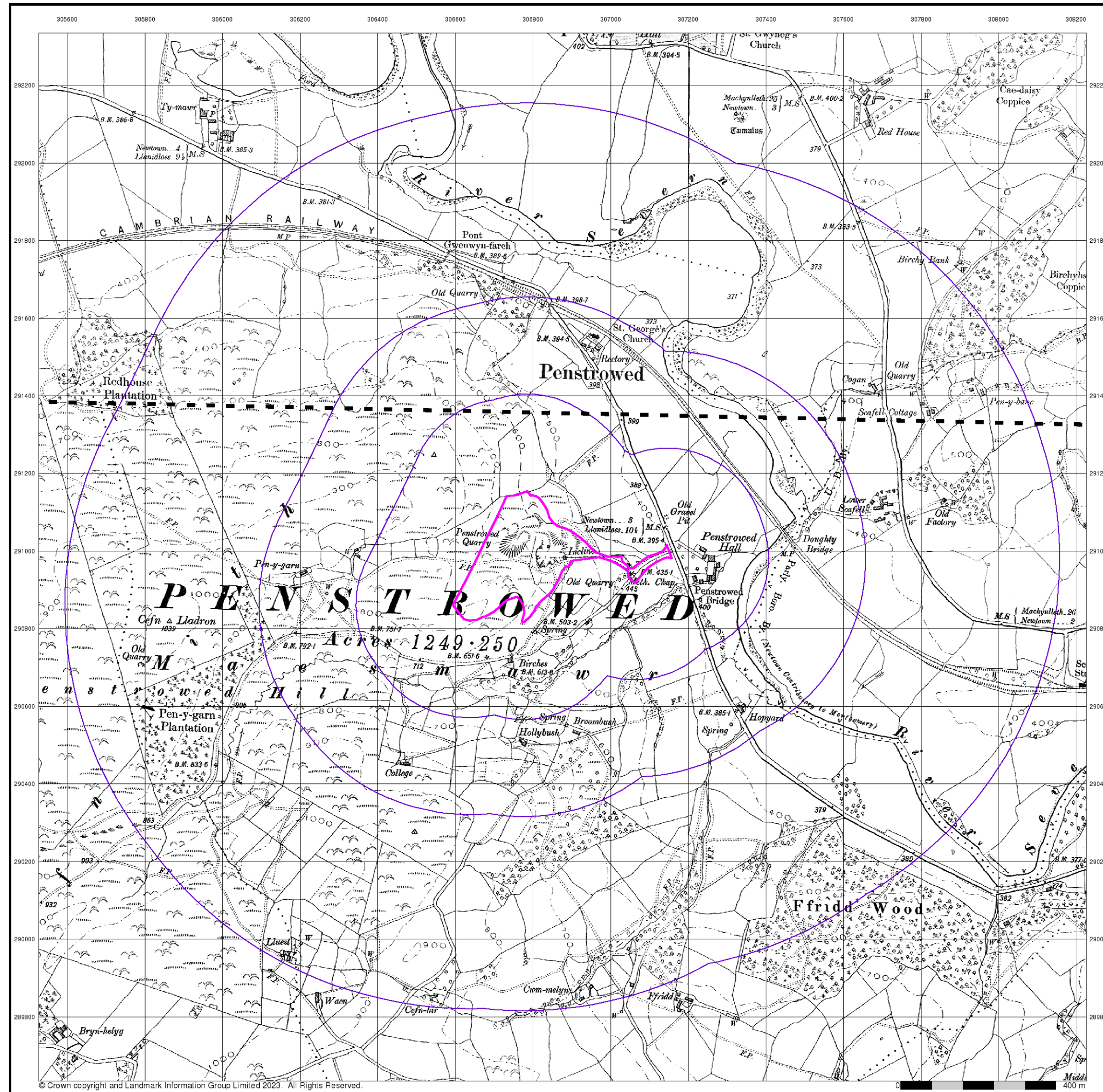


Order Details

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Site Details

Penstrowed Quarry, Penstrowed, Caersws, SY17 5SG



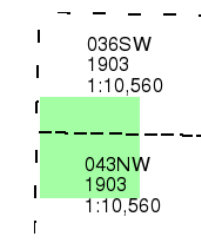
Montgomeryshire

Published 1903

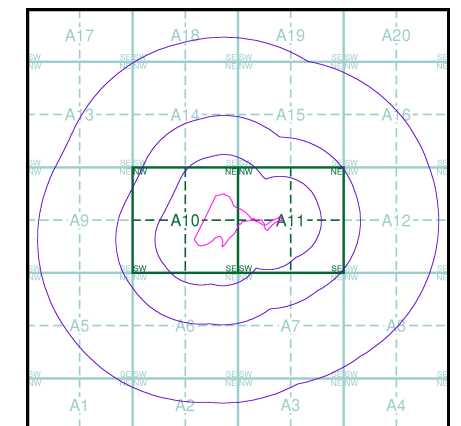
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A

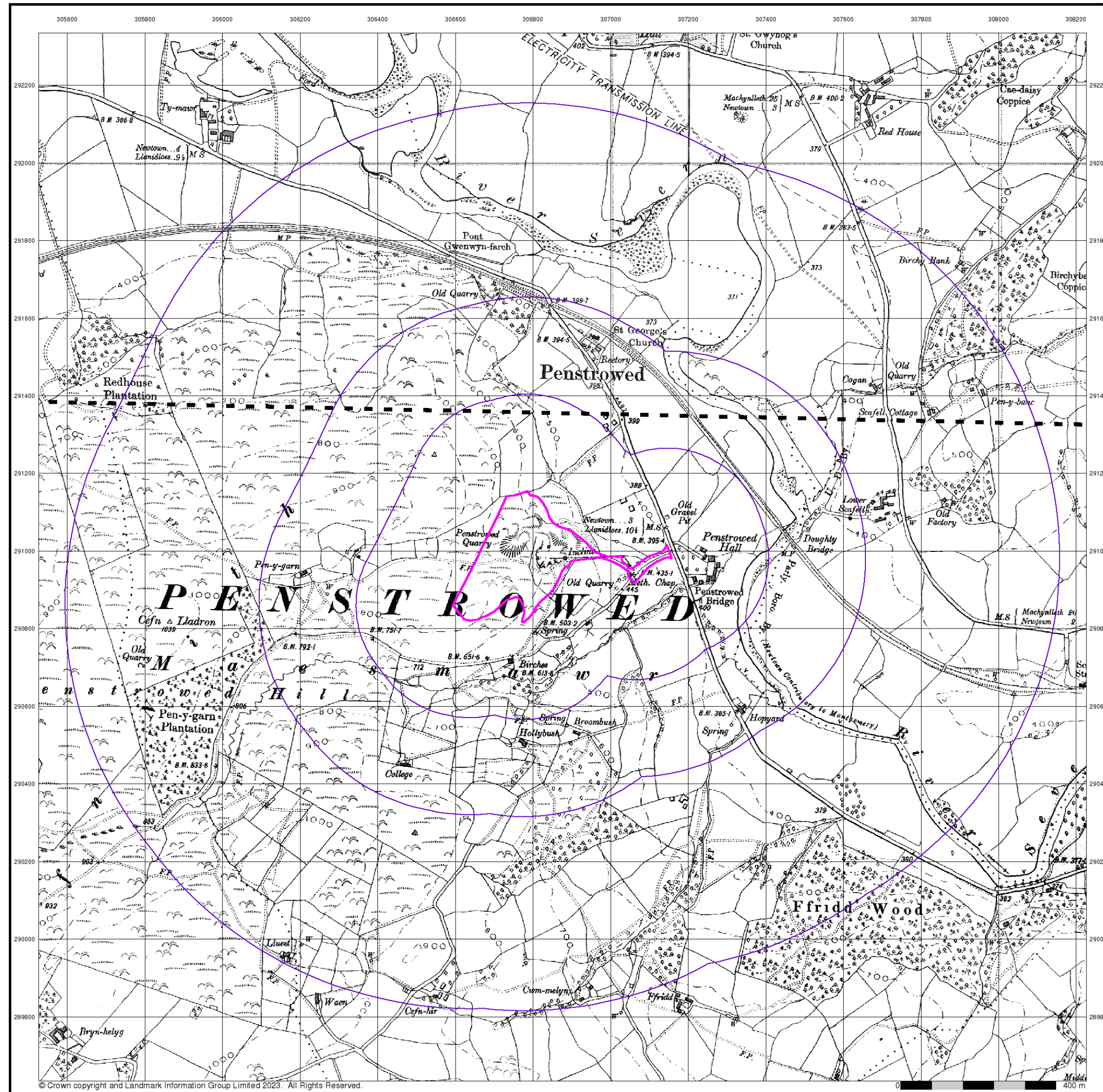


Order Details

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 National Grid Reference: 306860, 290970
 Slice: A
 Site Area (Ha): 6.7
 Search Buffer (m): 1000

Site Details

Penstrowed Quarry, Penstrowed, Caersws, SY17 5SG



Montgomeryshire

Published 1938 - 1953

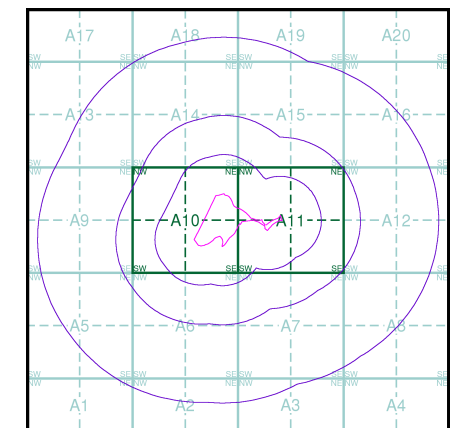
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overlaid with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

036SW	1953	1:10,560
043NW	1938	1:10,560

Historical Map - Slice A



Order Details

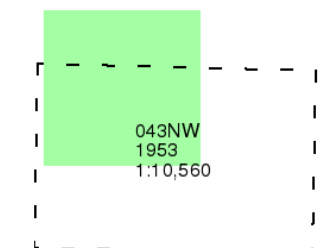
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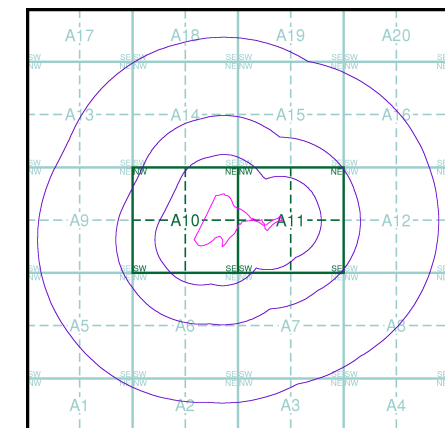
Penstrowed Quarry, Penstrowed, Caersws, SY17 5SG

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A

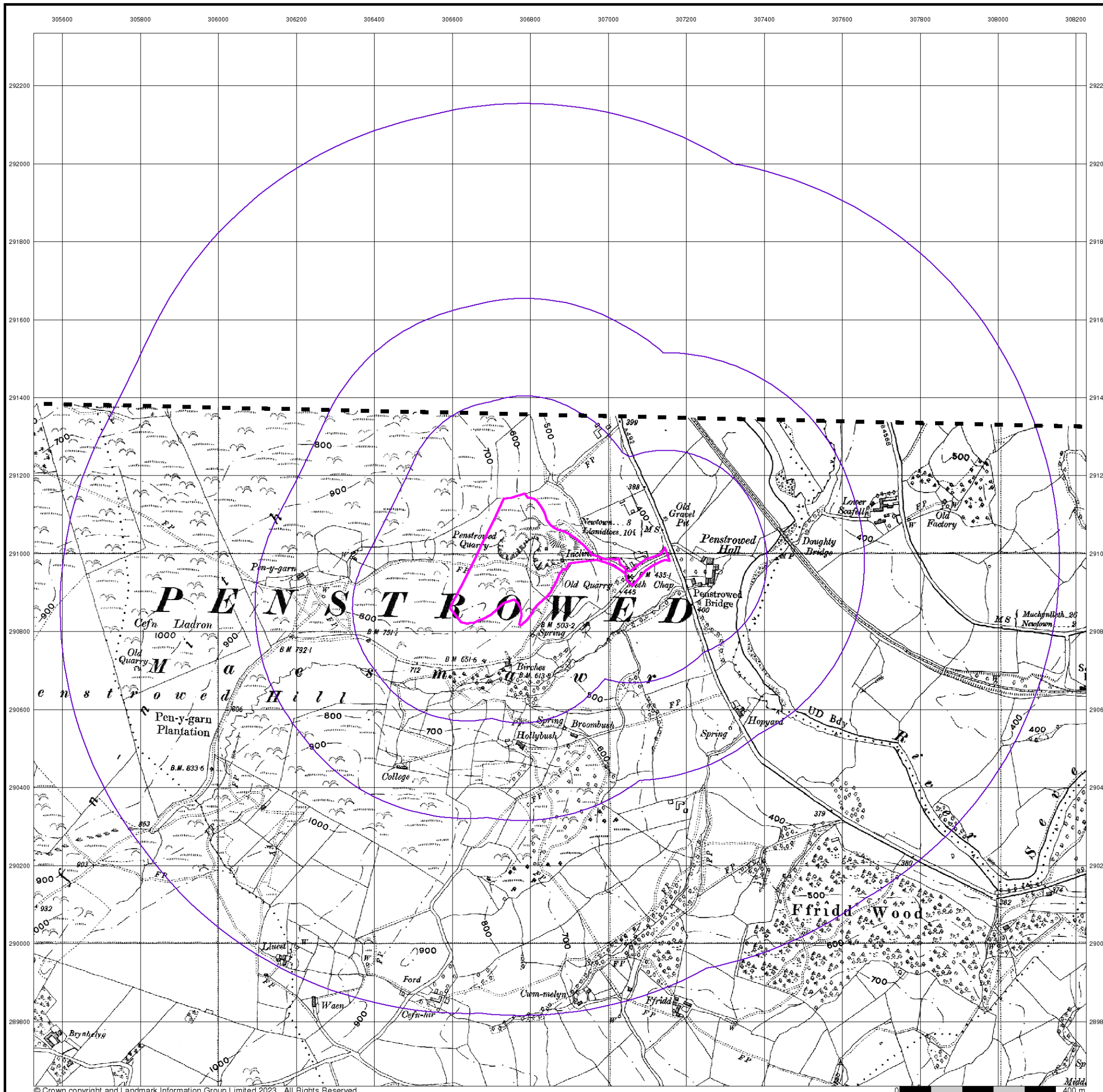


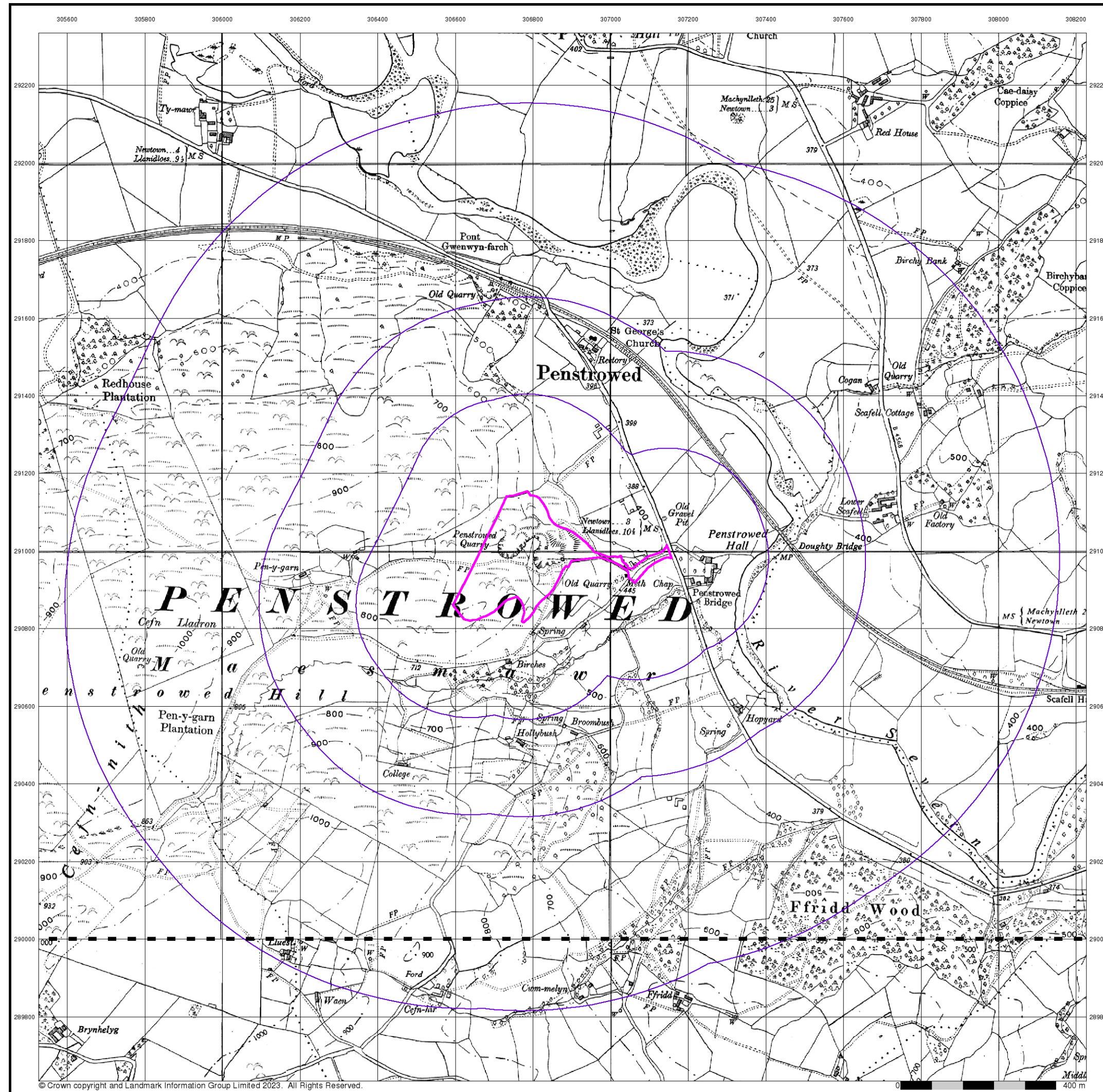
Order Details

Order Number: 308820180_1_1
 Customer Ref: 79011
 National Grid Reference: 306860, 290970
 Slice: A
 Site Area (Ha): 6.7
 Search Buffer (m): 1000

Site Details

Penstrowed Quarry, Penstrowed, Caersws, SY17 5SG





Ordnance Survey Plan

Published 1963

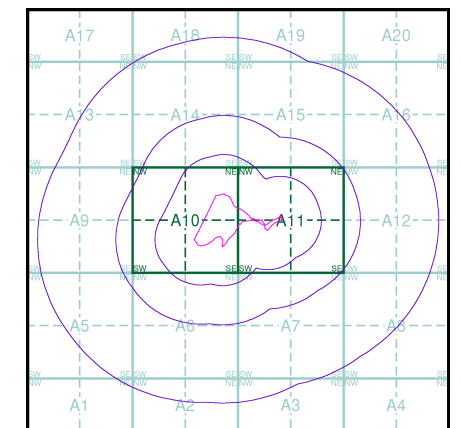
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

SO09SE	1963
1:10,560	
SO08NE	1963
1:10,560	

Historical Map - Slice A

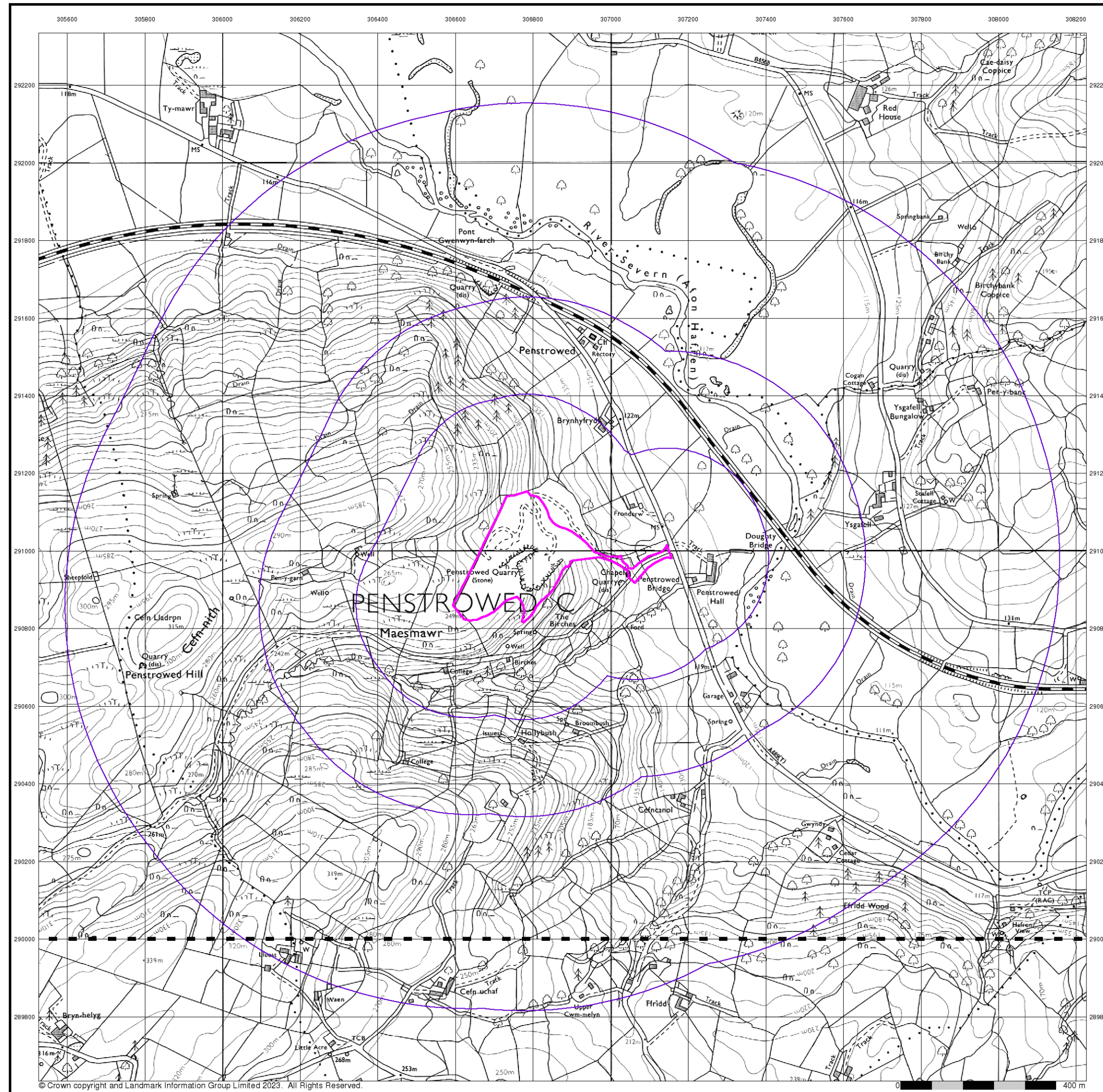


Order Details

Order Number: 308820180_1_1
 Customer Ref: 79011
 National Grid Reference: 306860, 290970
 Slice: A
 Site Area (Ha): 6.7
 Search Buffer (m): 1000

Site Details

Penstrowed Quarry, Penstrowed, Caersws, SY17 5SG



Ordnance Survey Plan

Published 1983

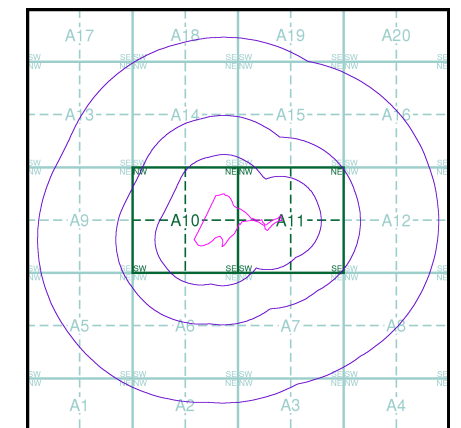
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

SO09SE	1983
1:10,000	
SO08NE	1983
1:10,000	

Historical Map - Slice A

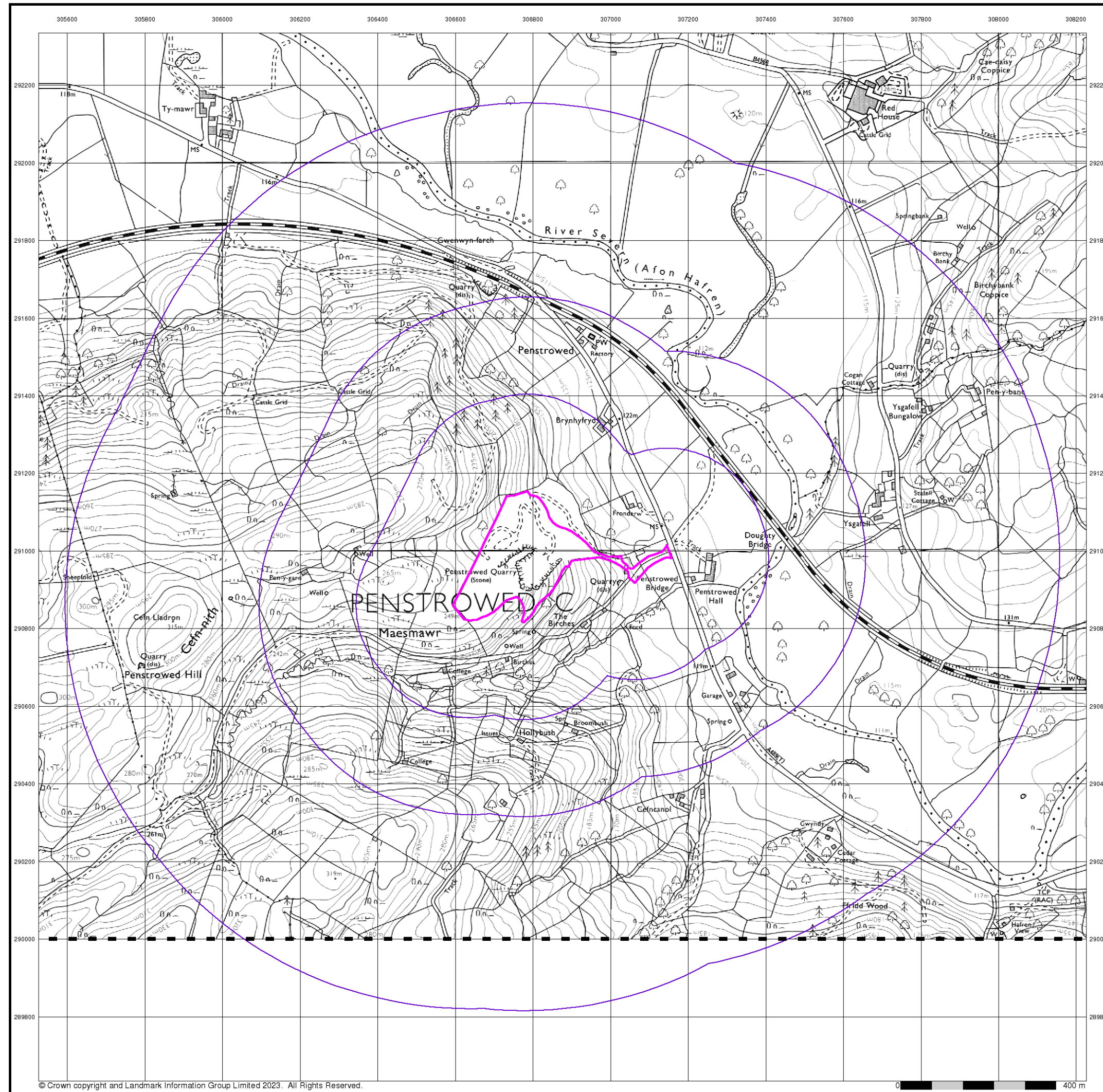


Order Details

Order Number: 308820180_1_1
 Customer Ref: 79011
 National Grid Reference: 306860, 290970
 Slice: A
 Site Area (Ha): 6.7
 Search Buffer (m): 1000

Site Details

Penstrowed Quarry, Penstrowed, Caersws, SY17 5SG



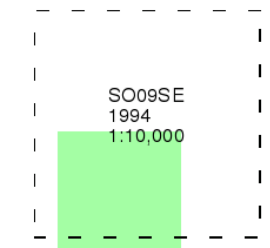
Ordnance Survey Plan

Published 1994

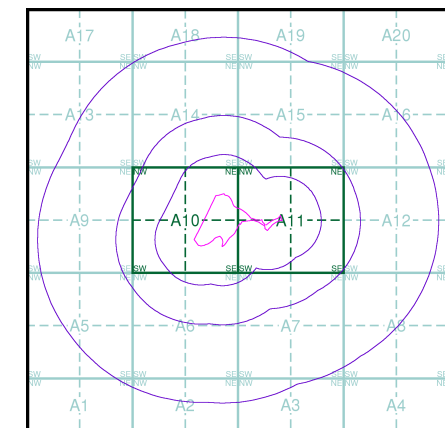
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 308820180_1_1
 Customer Ref: 79011
 National Grid Reference: 306860, 290970
 Slice: A
 Site Area (Ha): 6.7
 Search Buffer (m): 1000

Site Details

Penstrowed Quarry, Penstrowed, Caersws, SY17 5SG

10k Raster Mapping

Published 2000

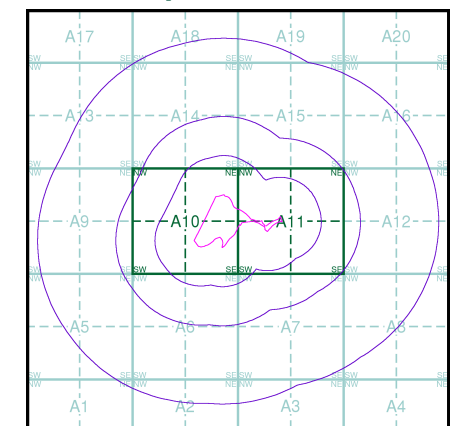
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

SO09SE	2000
1:10,000	
SO08NE	2000
1:10,000	

Historical Map - Slice A

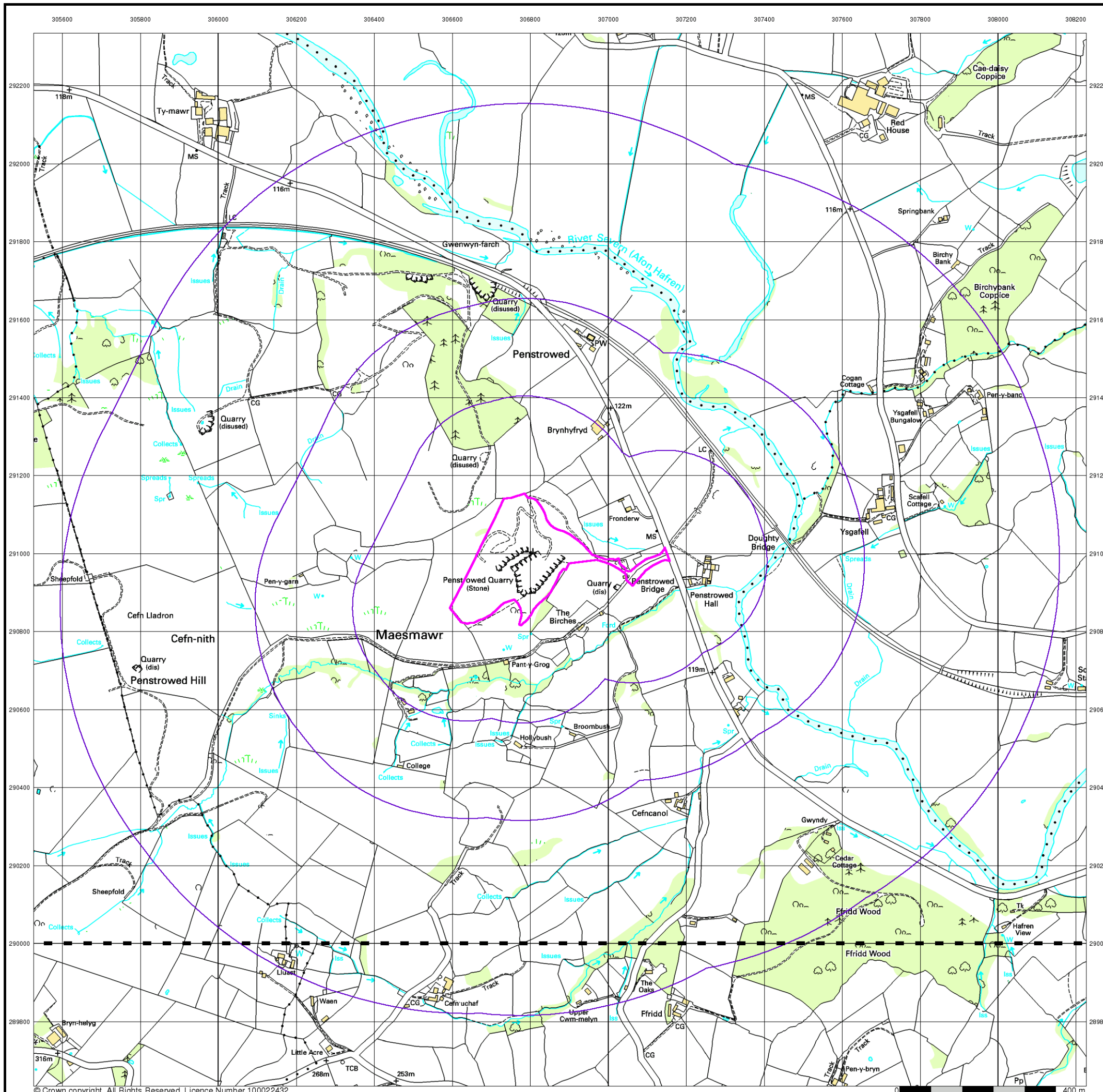


Order Details

Order Number: 308820180_1_1
 Customer Ref: 79011
 National Grid Reference: 306860, 290970
 Slice: A
 Site Area (Ha): 6.7
 Search Buffer (m): 1000

Site Details

Penstrowed Quarry, Penstrowed, Caersws, SY17 5SG



Street View

Published 2023

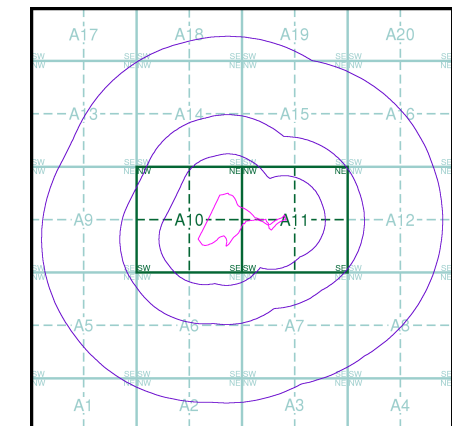
Source map scale - 1:10,000

Street View is a street-level map for the whole of Great Britain produced by the Ordnance Survey. These maps are provided at a nominal scale of 1:10,000

Map Name(s) and Date(s)



Street View Map - Slice A

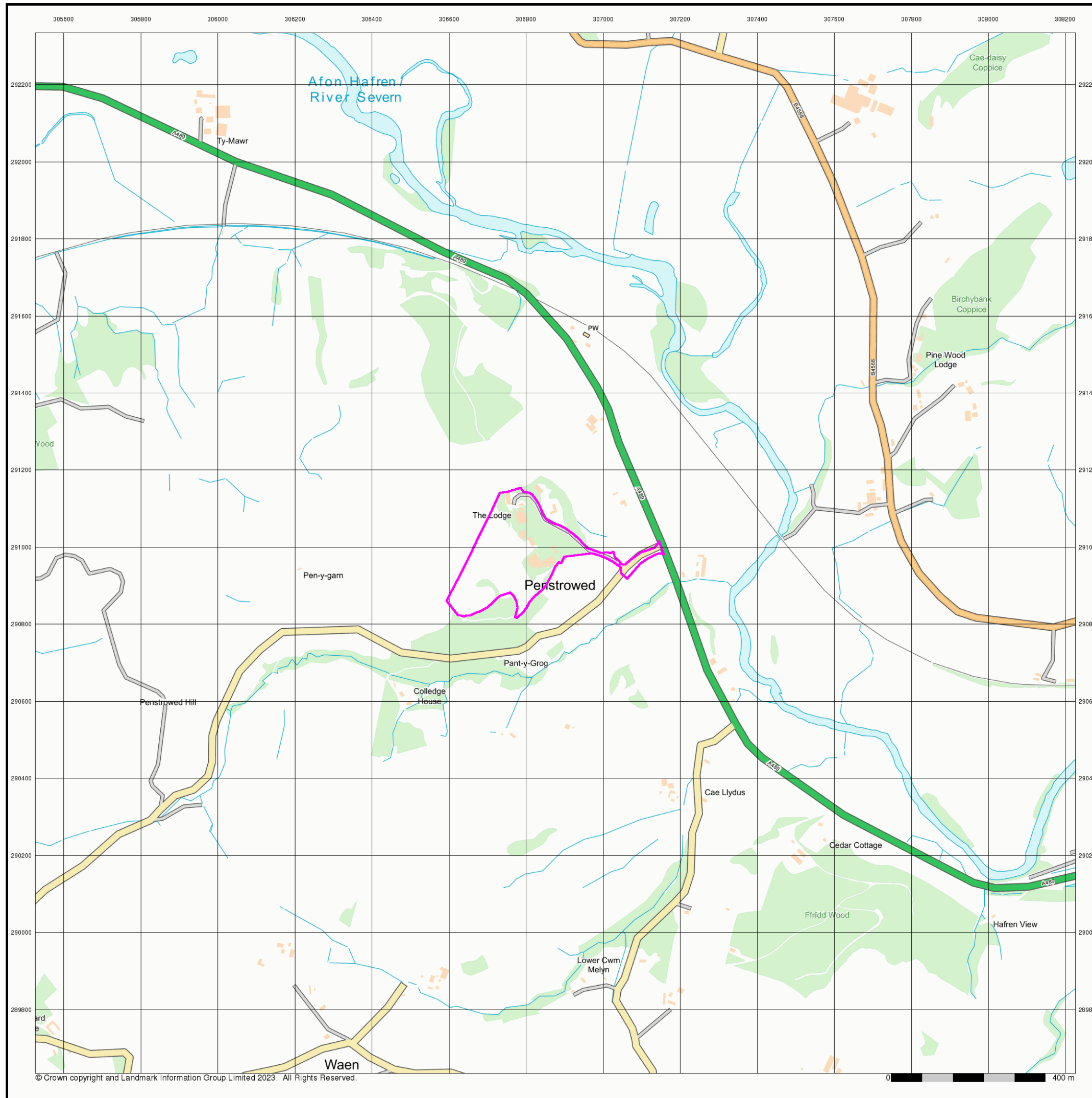


Order Details

Order Number: 308820180_1_1
 Customer Ref: 79011
 National Grid Reference: 306860, 290970
 Slice: A
 Site Area (Ha): 6.7
 Search Buffer (m): 1000

Site Details

Penstrowed Quarry, Penstrowed, Caersws, SY17 5SG



Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:2,500

Quarry **Gravel Pit** **Sand Pit**
Clay Pit **Shingle** **Refuse Heap**
Sloping Masonry **Flat Rock**
Marsh **Reeds** **Osiers**
Rough Pasture **Furze** **Wood**
Mixed Wood **Brushwood** **Orchard**
Fir **Ford** **Stepping Stones**
Ferry **Waterfall** **Lock**
Trig. Station **Altitude at Trig. Station**
B.M. 325.9 **Bench Mark** **Surface Level**
Arrow denotes flow of water **Antiquities (site of)**
Cutting **Embankment**
Railway crossing Road **Level Crossing** **Road crossing Railway**
Railway crossing River or Canal **Road over single stream** **Road over River or Canal**
County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
County Borough Boundary (England)
County Burgh Boundary (Scotland)
Co. Boro. Bdy.
Co. Burgh Bdy.
BP BS Boundary Post or Stone **P.C.B** Police Call Box
B.R. Bridle Road **P** Pump
E.P Electricity Pylon **S.P** Signal Post
F.B. Foot Bridge **SL** Sluice
F.P. Foot Path **Sp.** Spring
G.P Guide Post or Board **T.C.B** Telephone Call Box
M.S Mile Stone **Tr.** Trough
M.P M.R Mooring Post or Ring **W** Well

Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250

Inactive Quarry, Chalk Pit or Clay Pit **Active Quarry, Chalk Pit or Clay Pit**
Rock **Boulders**
Cliff **Slopes** **Top**
Roofed Building **Glazed Roof Building**
Sloping Masonry **Archway**
Non-Coniferous Tree (surveyed) **Coniferous Tree (surveyed)**
Non-Coniferous Trees (not surveyed) **Coniferous Trees (not surveyed)**
Orchard Tree **Scrub** **Bracken**
Coppice, Osier **Reeds** **Marsh, Saltings**
Rough Grassland **Heath** **Culvert**
Direction of water flow **Bench Mark** **Antiquity (site of)**
Cave Entrance **Triangulation Station** **Electricity Pylon**
Electricity Transmission Line
County Boundary (Geographical)
County & Civil Parish Boundary
Civil Parish Boundary
Admin. County or County Bor. Boundary
London Borough Boundary
Symbol marking point where boundary mereing changes
BH Beer House **P** Pillar, Pole or Post
BP, BS Boundary Post or Stone **PO** Post Office
Cn, C Capstan, Crane **PC** Public Convenience
Chy Chimney **PH** Public House
D Fn Drinking Fountain **Pp** Pump
EI P Electricity Pillar or Post **SB, S Br** Signal Box or Bridge
FAP Fire Alarm Pillar **SP, SL** Signal Post or Light
FB Foot Bridge **Spr** Spring
GP Guide Post **Tk** Tank or Track
H Hydrant or Hydraulic **TCB** Telephone Call Box
LC Level Crossing **TCP** Telephone Call Post
MH Manhole **Tr** Trough
MP Mile Post or Mooring Post **Wr Pt, Wr T** Water Point, Water Tap
MS Mile Stone **W** Well
NTL Normal Tidal Limit **Wd Pp** Wind Pump

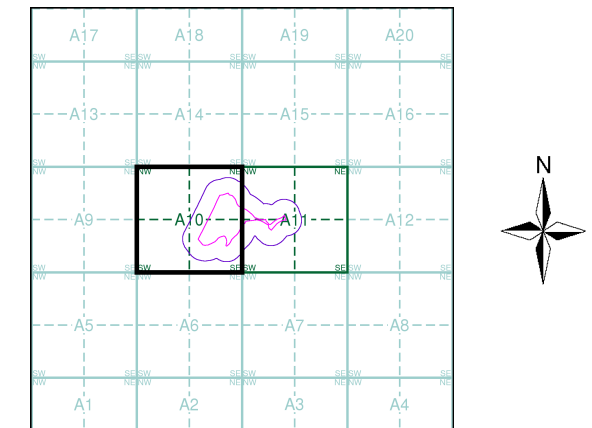
Large-Scale National Grid Data 1:2,500 and 1:1,250

Cliff **Slopes** **Top**
Rock **Rock (scattered)**
Boulders **Boulders (scattered)**
Positioned Boulder **Scree**
Non-Coniferous Tree (surveyed) **Coniferous Tree (surveyed)**
Non-Coniferous Trees (not surveyed) **Coniferous Trees (not surveyed)**
Orchard Tree **Scrub** **Bracken**
Coppice, Osier **Reeds** **Marsh, Saltings**
Rough Grassland **Heath** **Culvert**
Direction of water flow **Triangulation Station** **Antiquity (site of)**
Electricity Transmission Line **Electricity Pylon**
B.M. 231.60m Bench Mark **Buildings with Building Seed**
Roofed Building **Glazed Roof Building**
Civil parish/community boundary
District boundary
County boundary
Boundary post/stone
Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)
Bks Barracks **P** Pillar, Pole or Post
Bty Battery **PO** Post Office
Cemy Cemetery **PC** Public Convenience
Chy Chimney **Pp** Pump
Cis Cistern **Ppg Sta** Pumping Station
Dismtd Rly Dismantled Railway **PW** Place of Worship
EI Gen Sta Electricity Generating Station **Sewage Ppg Sta** Sewage Pumping Station
EI P Electricity Pole, Pillar **SB, S Br** Signal Box or Bridge
EI Sub Sta Electricity Sub Station **SP, SL** Signal Post or Light
FB Filter Bed **Spr** Spring
Fn / D Fn Fountain / Drinking Ftn. **Tk** Tank or Track
Gas Gov Gas Valve Compound **Tr** Trough
GVC Gas Governor **Wd Pp** Wind Pump
GP Guide Post **Wr Pt, Wr T** Water Point, Water Tap
MH Manhole **Wks** Works (building or area)
MP, MS Mile Post or Mile Stone **W** Well

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Montgomeryshire	1:2,500	1885	2
Montgomeryshire	1:2,500	1902	3
Ordnance Survey Plan	1:2,500	1975	4
Additional SIMs	1:2,500	1988	5
Large-Scale National Grid Data	1:2,500	1994	6
Large-Scale National Grid Data	1:2,500	1996	7

Historical Map - Segment A10



Order Details

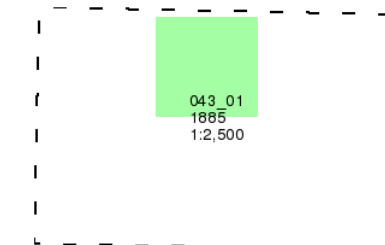
Order Number: 308820180_1_1
 Customer Ref: 79011
 National Grid Reference: 306860, 290970
 Slice: A
 Site Area (Ha): 6.7
 Search Buffer (m): 100

Site Details

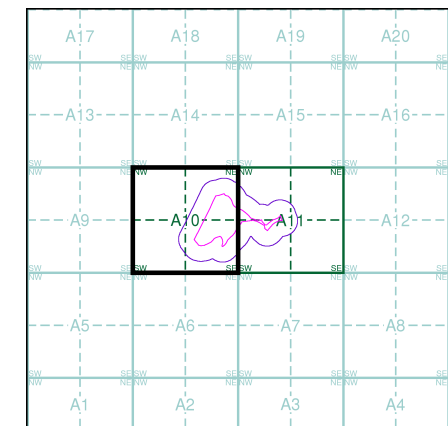
Penstrowed Quarry, Penstrowed, Caersws, SY17 5SG

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A10

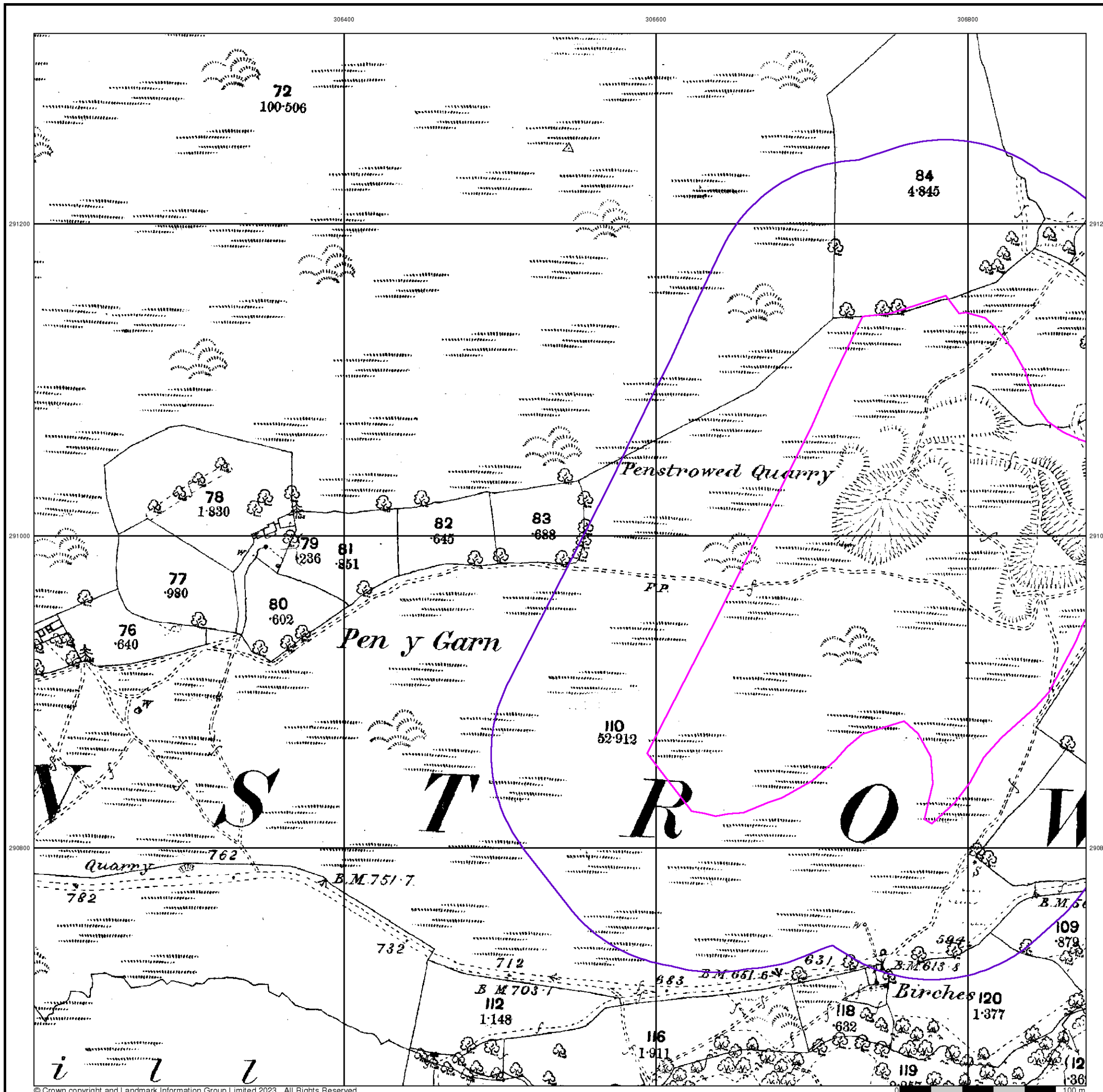


Order Details

Order Number: 308820180_1_1
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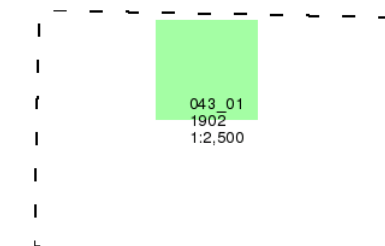
Site Details

Penstrowed Quarry, Penstrowed, Caersws, SY17 5SG

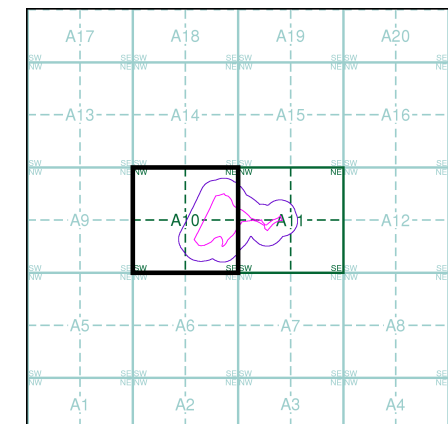


The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A10

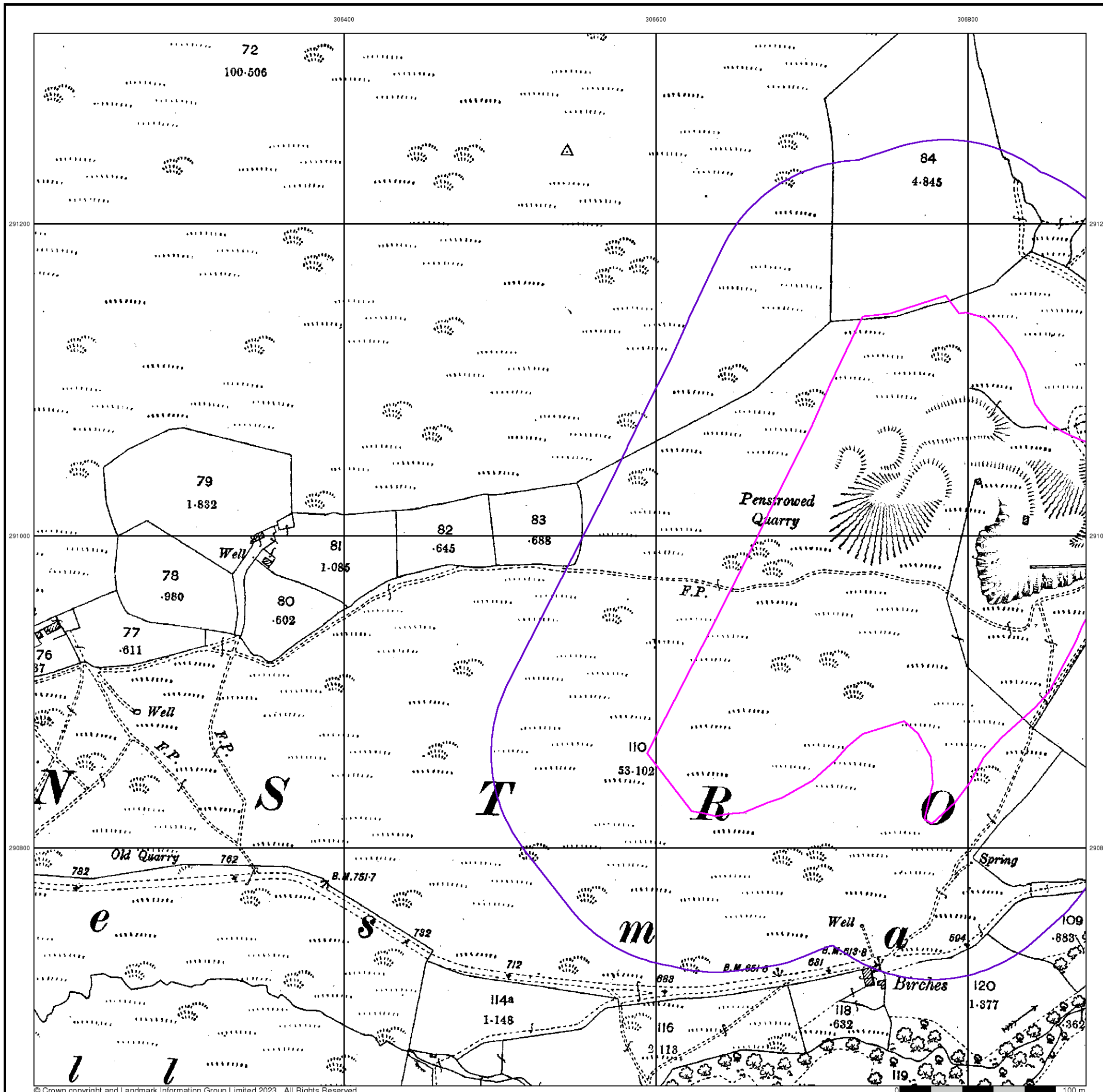


Order Details

Order Number: 308820180_1_1
 Customer Ref: 79011
 National Grid Reference: 306860, 290970
 Slice: A
 Site Area (Ha): 6.7
 Search Buffer (m): 100

Site Details

Penstrowed Quarry, Penstrowed, Caersws, SY17 5SG



Ordnance Survey Plan

Published 1975

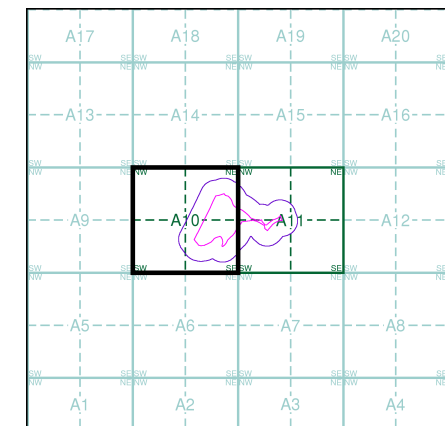
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

SO0691	1975	1:2,500
SO0690	1975	1:2,500

Historical Map - Segment A10

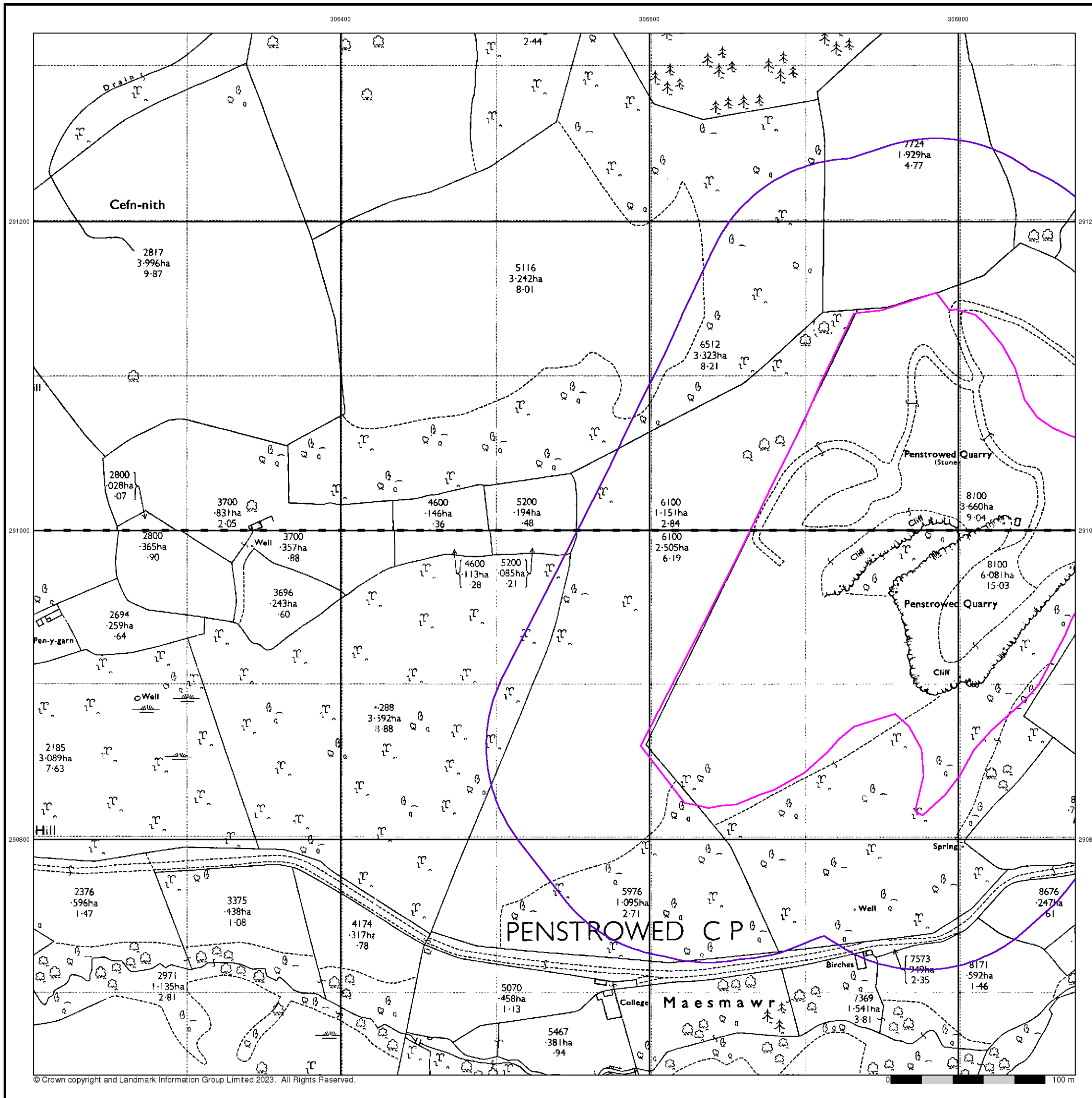


Order Details

Order Number: 308820180_1_1
 Customer Ref: 79011
 National Grid Reference: 306860, 290970
 Slice: A
 Site Area (Ha): 6.7
 Search Buffer (m): 100

Site Details

Penstrowed Quarry, Penstrowed, Caersws, SY17 5SG



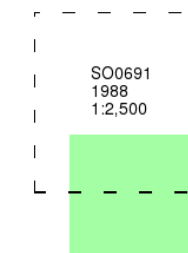
Additional SIMs

Published 1988

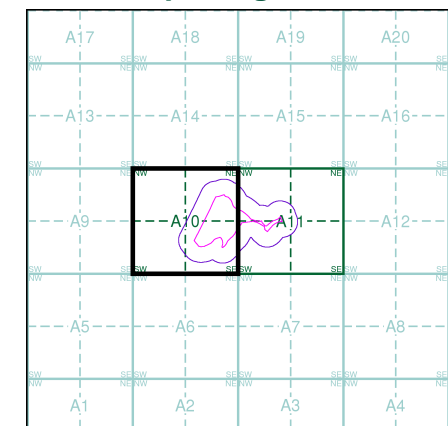
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A10

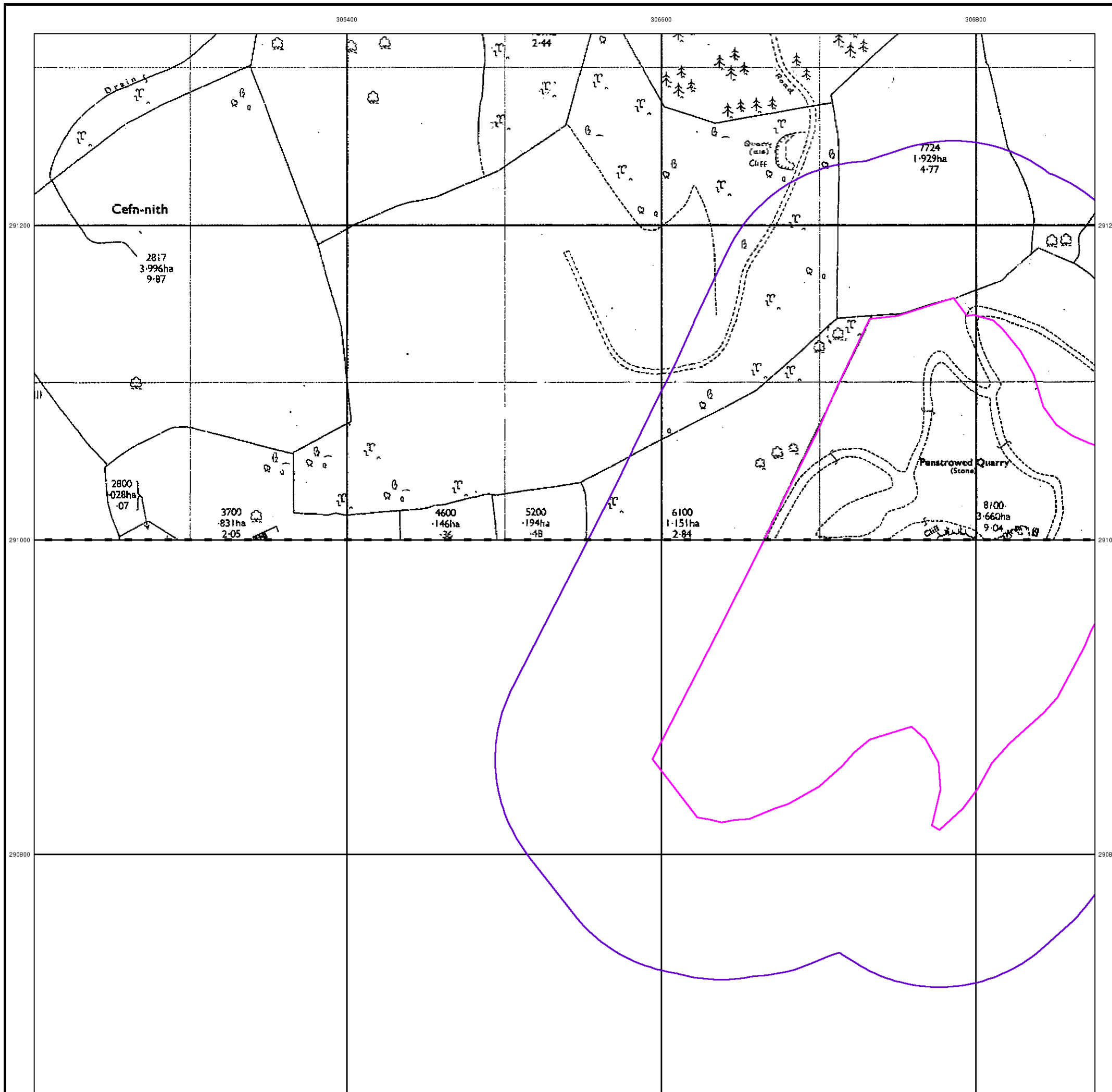


Order Details

Order Number: 308820180_1_1
 Customer Ref: 79011
 National Grid Reference: 306860, 290970
 Slice: A
 Site Area (Ha): 6.7
 Search Buffer (m): 100

Site Details

Penstrowed Quarry, Penstrowed, Caersws, SY17 5SG



Large-Scale National Grid Data

Published 1994

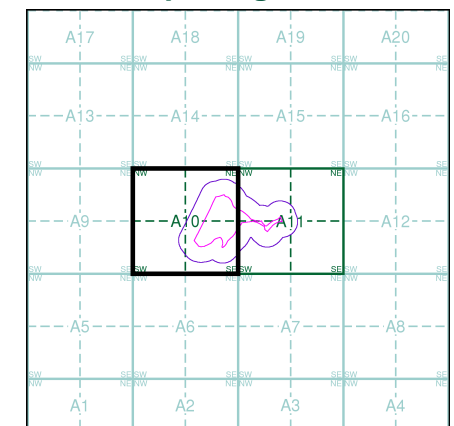
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

SO0691	1994	1:2,500
SO0690	1994	1:2,500

Historical Map - Segment A10

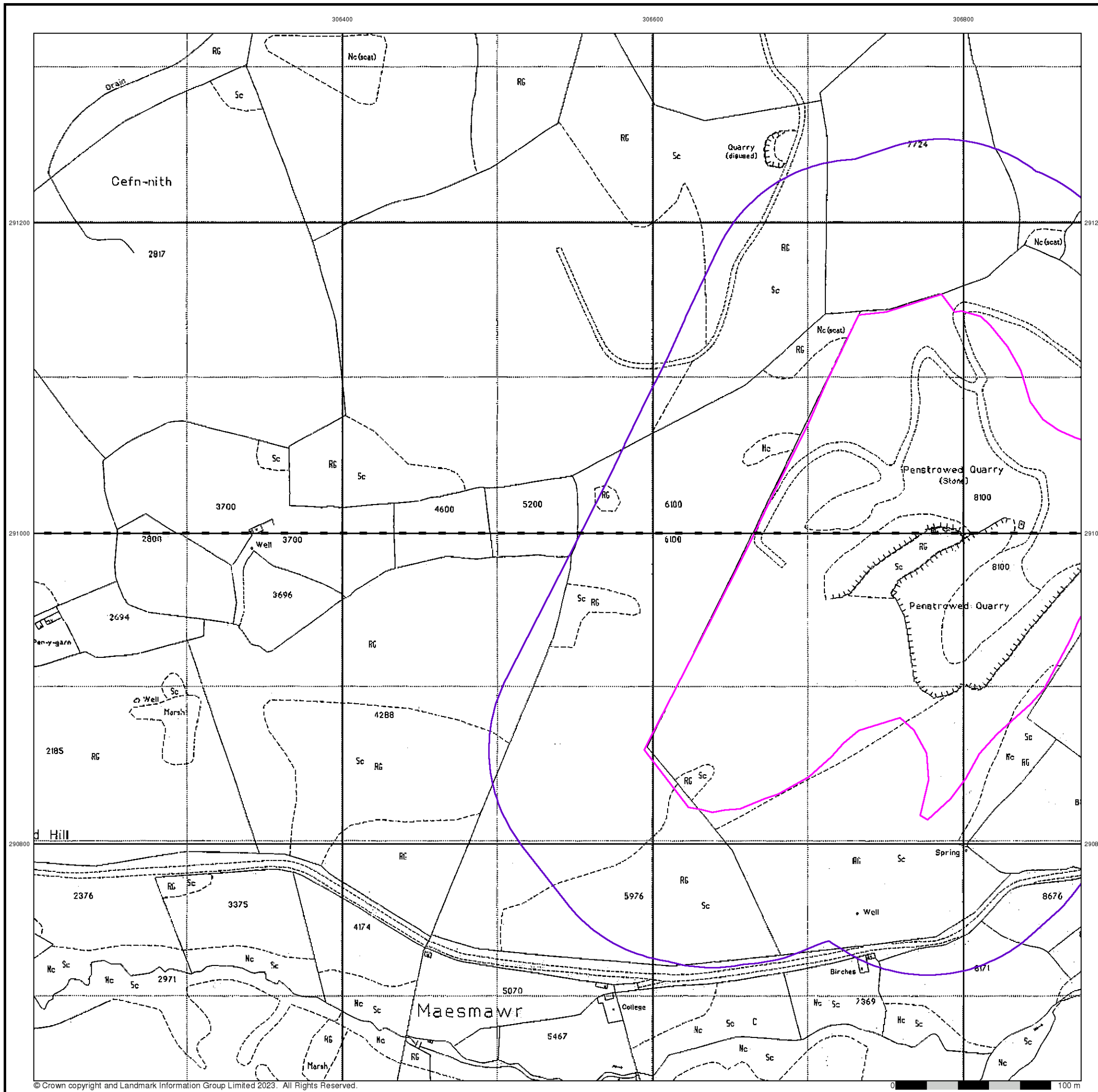


Order Details

Order Number: 308820180_1_1
 Customer Ref: 79011
 National Grid Reference: 306860, 290970
 Slice: A
 Site Area (Ha): 6.7
 Search Buffer (m): 100

Site Details

Penstrowed Quarry, Penstrowed, Caersws, SY17 5SG



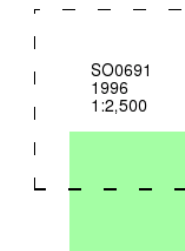
Large-Scale National Grid Data

Published 1996

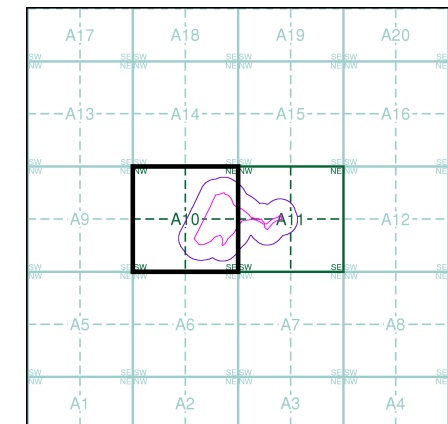
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A10

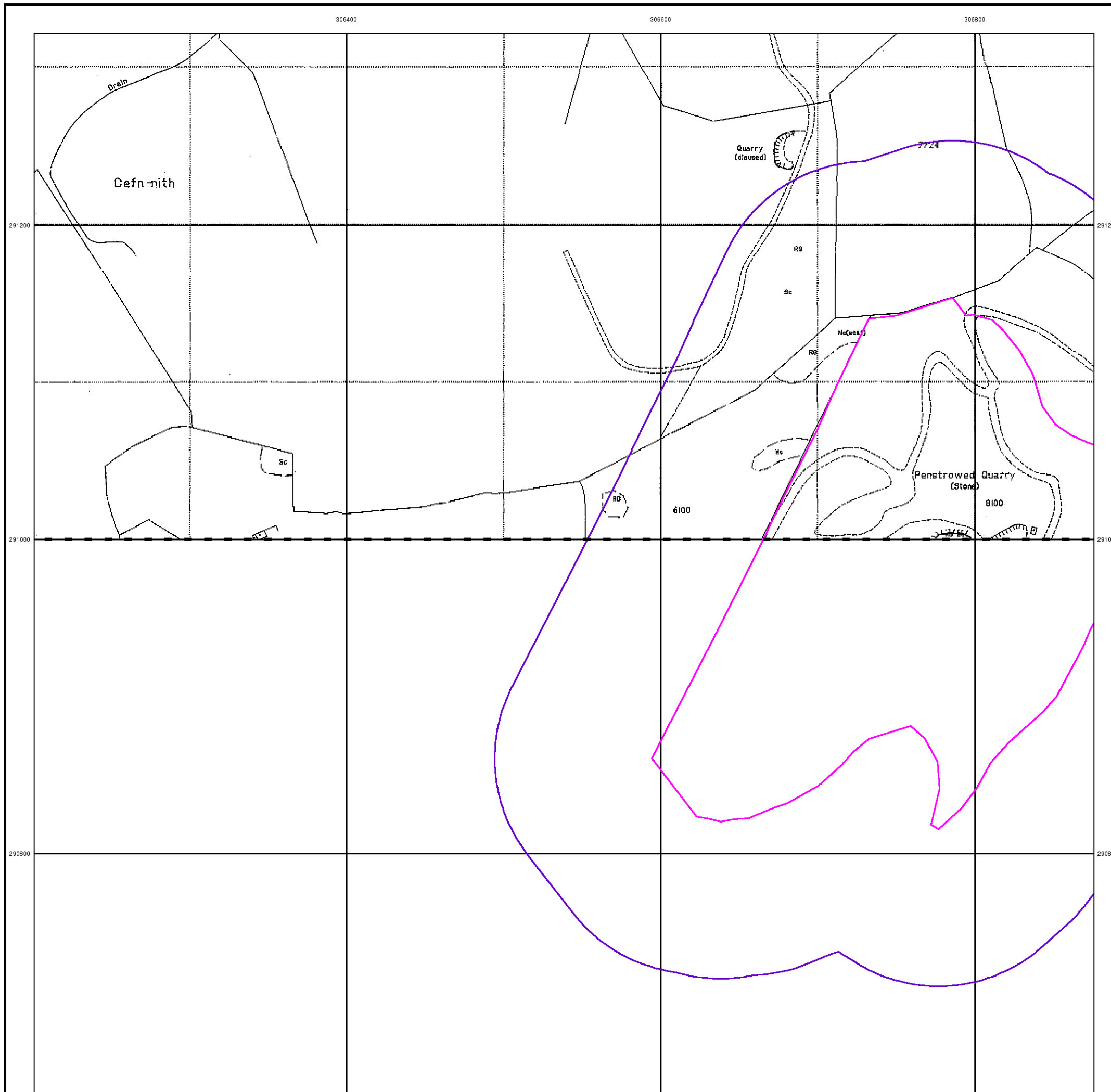


Order Details

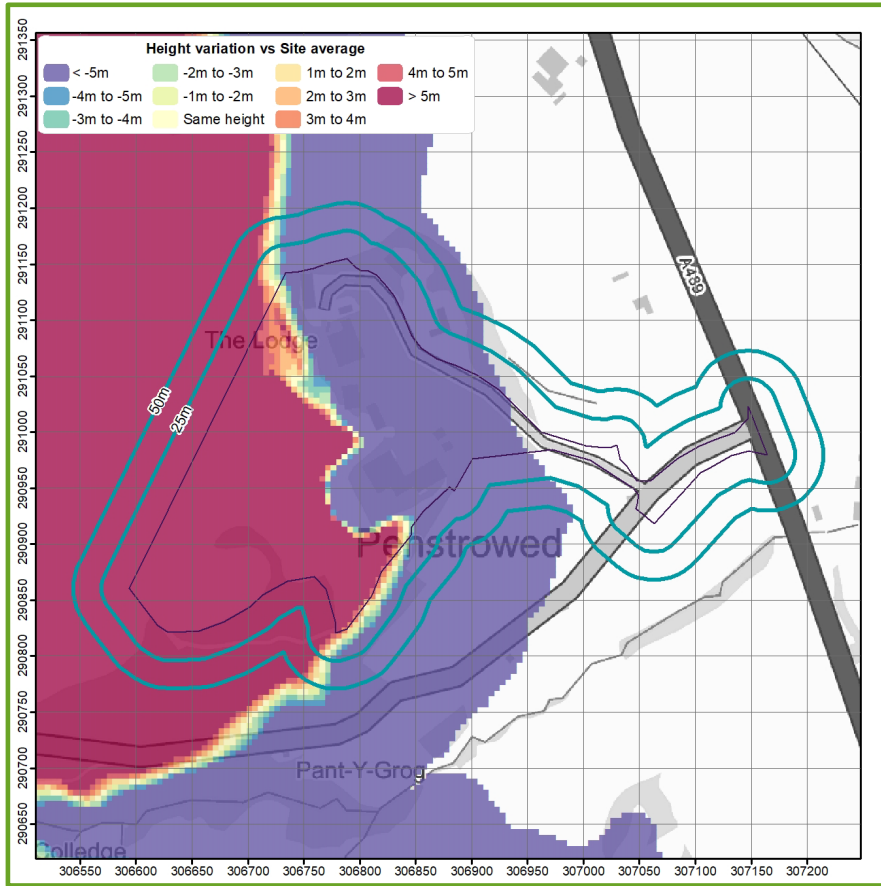
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 Site Area (Ha): 6.7
 Search Buffer (m): 100

Site Details

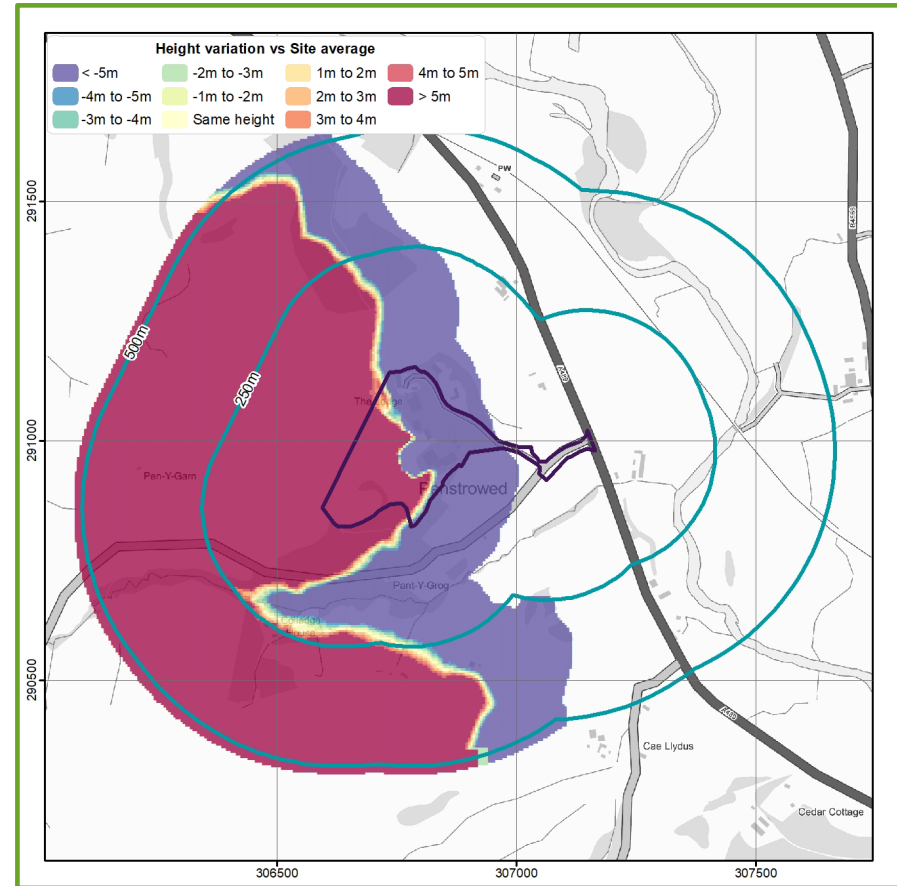
Penstrowed Quarry, Penstrowed, Caersws, SY17 5SG



3.6 Topography Maps



Contains Ordnance Survey data © Crown copyright and database right 2023
Environment Agency copyright and database rights 2023



Contains Ordnance Survey data © Crown copyright and database right 2023
Environment Agency copyright and database rights 2023

3.7 Previous site investigation

Site investigations were carried out by GroundSolve Ltd. And DETS prior to the completion of this report.



DETS

Certificate of Analysis

Certificate Number 21-02798

Issued: 16-Feb-21

Client GroundSolve Limited
Unit 1
Well House Barns
Bretton
Flintshire
FAO Adam Fenwick
CH4 0DH

Our Reference 21-02798

Client Reference 2402

Order No (not supplied)

Contract Title (not supplied)

Description 6 Soil samples.

Date Received 10-Feb-21

Date Started 10-Feb-21

Date Completed 16-Feb-21

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Adam Fenwick
Contracts Manager



2139

Summary of Chemical Analysis

Soil Samples

Our Ref 21-02798

Client Ref 2402

Contract Title

Lab No	1799681	1799682	1799683	1799684	1799685	1799686
Sample ID	TP2	TP4	TP5	TP6	TP7	TP9
Depth	0.00-1.00	0.00-0.50	0.00-1.00	0.00-1.20	0.00-1.20	0.00-0.10
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	03/02/2021	03/02/2021	03/02/2021	03/02/2021	03/02/2021	03/02/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	10	11	12	14	18	14
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.4	0.3	0.3	< 0.2	< 0.2	0.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.3	0.2	< 0.1	< 0.1	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	30	24	28	25	22	24
Chromium III	DETSC 2301*	0.15	mg/kg	30	24	28	25	22	24
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	40	49	31	37	50	36
Lead	DETSC 2301#	0.3	mg/kg	28	32	25	17	26	35
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.07	< 0.05	< 0.05	< 0.05	0.05
Nickel	DETSC 2301#	1	mg/kg	34	32	43	39	35	35
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	98	120	110	74	100	100
Inorganics									
pH	DETSC 2008#		pH	8.2	8.0	7.9	6.5	7.3	7.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Organic matter	DETSC 2002#	0.1	%	1.0	0.4	< 0.1	< 0.1	1.2	0.7
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	170	29	65	15	430	54
Sulphide	DETSC 2024*	10	mg/kg	< 10	< 10	< 10	< 10	32	< 10
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	2.3	1.7	< 0.75	< 0.75	< 0.75
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C35-C40	DETSC 3072*	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C35-C40	DETSC 3072*	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.10	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03



Summary of Chemical Analysis

Soil Samples

Our Ref 21-02798

Client Ref 2402

Contract Title

Lab No	1799681	1799682	1799683	1799684	1799685	1799686
Sample ID	TP2	TP4	TP5	TP6	TP7	TP9
Depth	0.00-1.00	0.00-0.50	0.00-1.00	0.00-1.20	0.00-1.20	0.00-0.10
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	03/02/2021	03/02/2021	03/02/2021	03/02/2021	03/02/2021	03/02/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.55	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.44	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	2.4	0.17	< 0.03	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	0.74	0.06	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	3.3	0.54	0.03	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	2.8	0.49	0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	1.1	0.22	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	1.0	0.21	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	1.0	0.28	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.47	0.10	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.90	0.23	< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.26	0.10	< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.07	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.32	0.11	< 0.03	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	15	2.5	< 0.10	< 0.10	< 0.10	< 0.10
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Asbestos Analysis

Soil Samples

Our Ref 21-02798

Client Ref 2402

Contract Title

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1799681	TP2 0.00-1.00	SOIL	NAD	none	Rebecca Burgess
1799682	TP4 0.00-0.50	SOIL	NAD	none	Rebecca Burgess
1799683	TP5 0.00-1.00	SOIL	NAD	none	Rebecca Burgess
1799684	TP6 0.00-1.20	SOIL	NAD	none	Rebecca Burgess
1799685	TP7 0.00-1.20	SOIL	NAD	none	Rebecca Burgess
1799686	TP9 0.00-0.10	SOIL	NAD	none	Rebecca Burgess

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 21-02798
 Client Ref 2402
 Contract

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1799681	TP2 0.00-1.00 SOIL	03/02/21	GJ 250ml x2, GJ 60ml x2		
1799682	TP4 0.00-0.50 SOIL	03/02/21	GJ 250ml x2, GJ 60ml x2		
1799683	TP5 0.00-1.00 SOIL	03/02/21	GJ 250ml x2, GJ 60ml x2		
1799684	TP6 0.00-1.20 SOIL	03/02/21	GJ 250ml x2, GJ 60ml x2		
1799685	TP7 0.00-1.20 SOIL	03/02/21	GJ 250ml x2, GJ 60ml x2		
1799686	TP9 0.00-0.10 SOIL	03/02/21	GJ 250ml x2, GJ 60ml x2		

Key: G-Glass J-Jar

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

22/04/2021

Chemical test results interpretation:

End Use- Public Open Space (POS (1%) SOM).

Metals & Non-Metals	BH101	BH101	BH102	BH103	BH104	BH104	Adopted Guideline (mg/kg)	Source	Exceedances
	0.20	1.50	1.2	1.5	0.2	0.7			
Arsenic	10	11.00	12.00	14.00	18.00	14.00	79	C4SL	0
Boron, Water Soluble	0.4	0.30	0.30	< 0.2	< 0.2	0.20	21000	S4UL	0
Cadmium	0.2	0.30	0.20	< 0.1	< 0.1	< 0.1	220	C4SL	0
Chromium III	30	24.00	28.00	25.00	22.00	24.00	1500	S4UL	0
Chromium, Hexavalent	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	21	C4SL	0
Copper	40	49.00	31.00	37.00	50.00	36.00	12000	S4UL	0
Lead	28	32.00	25.00	17.00	26.00	35.00	630	C4SL	0
Mercury	< 0.05	0.07	< 0.05	< 0.05	< 0.05	0.05	16	S4UL	0
Nickel	34	32.00	43.00	39.00	35.00	35.00	230	S4UL	0
Phenol - Monohydric	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	440	S4UL	0
Selenium	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1100	S4UL	0
Zinc	98	120.00	110.00	74.00	100.00	100.00	81000	S4UL	0

No exceedances encountered.

Petroleum Hydrocarbons	BH101	BH101	BH101	BH102	BH103	BH104	Adopted Guideline (mg/kg)	Source	Exceedances
	0.20	0.20	1.50	1.2	1.5	0.2			
Aliphatic C5-C6	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	570000	S4UL	0
Aliphatic C6-C8	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	600000	S4UL	0
Aliphatic C8-C10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	13000	S4UL	0
Aliphatic C10-C12	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	13000	S4UL	0
Aliphatic C12-C16	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	13000	S4UL	0
Aliphatic C16-C21	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	250000	S4UL	0
Aliphatic C21-C35	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	250000	S4UL	0
Aliphatic C35-C40	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	56000	S4UL	0
Aromatic C5-C7	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	56000	S4UL	0
Aromatic C7-C8	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	5000	S4UL	0
Aromatic C8-C10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	5000	S4UL	0
Aromatic C10-C12	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	5100	S4UL	0
Aromatic C12-C16	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	3800	S4UL	0
Aromatic C16-C21	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	3800	S4UL	0
Aromatic C21-C35	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	3800	S4UL	0

No exceedances encountered.

Polyaromatic Hydrocarbons (PAH)	BH101	BH101	BH101	BH102	BH103	BH104	Adopted Guideline (mg/kg)	Source	Exceedances
	0.20	0.20	1.50	1.2	1.5	0.2			
Acenaphthene	0.55	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	15000	S4UL	0
Acenaphthylene	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	15000	S4UL	0
Anthracene	0.74	0.06	< 0.03	< 0.03	< 0.03	< 0.03	74000	S4UL	0
Benzo(a)anthracene	1.1	0.22	< 0.03	< 0.03	< 0.03	< 0.03	29	S4UL	0
Benzo(a)pyrene	0.9	0.23	< 0.03	< 0.03	< 0.03	< 0.03	10	C4SL	0
Benzo(b)fluoranthene	1	0.28	< 0.03	< 0.03	< 0.03	< 0.03	7.1	S4UL	0
Benzo(g,h,i)perylene	0.32	0.11	< 0.03	< 0.03	< 0.03	< 0.03	640	S4UL	0
Benzo(k)fluoranthene	0.47	0.10	< 0.03	< 0.03	< 0.03	< 0.03	190	S4UL	0
Chrysene	1	0.21	< 0.03	< 0.03	< 0.03	< 0.03	57	S4UL	0
Dibenzo(a,h)anthracene	0.07	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.57	S4UL	0
Fluoranthene	3.3	0.54	0.03	< 0.03	< 0.03	< 0.03	3100	S4UL	0
Fluorene	0.44	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	9900	S4UL	0
Indeno(1,2,3-c,d)pyrene	0.26	0.10	< 0.03	< 0.03	< 0.03	< 0.03	82	S4UL	0
Naphthalene	0.1	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	4900	S4UL	0
Phenanthrene	2.4	0.17	< 0.03	< 0.03	< 0.03	< 0.03	3100	S4UL	0
Pyrene	2.8	0.49	0.03	< 0.03	< 0.03	< 0.03	7400	S4UL	0

No exceedances encountered.

Other Contaminants / Testing	BH101	BH101	BH101	BH102	BH103	BH104	Adopted Guideline (mg/kg)	Source	Exceedances
	0.20	0.20	1.50	1.2	1.5	0.2			
Organic matter	1	0.40	< 0.1	< 0.1	1.2	0.7	-	-	-
pH	8.2	8.00	7.90	6.5	7.3	7.5	-	-	-
Sulphide	< 10	< 10	< 10	< 10	32	< 10	-	-	-
Cyanide, Total	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	-	-
Sulphur (free)	< 0.75	2.30	1.70	< 0.75	< 0.75	< 0.75	-	-	-
Sulphate Aqueous Extract as SO ₄	170	29.00	65.00	15	430	54	-	-	-

In addition, no asbestos was detected.