

**Geotechnical and Geoenvironmental
Report:**

Proposed Residential Development
Land North of Llewellyn Road, Penllergaer

PREPARED FOR:
Barratt Homes

February 2021

Job No: 16300




terrafirma

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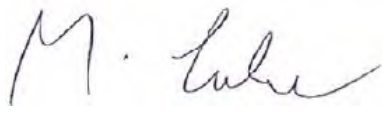

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	Name	Signature
Prepared	David Emanuel BSc (Hons), MSc, FGS, Dip.Chem, M Phil, CGeol	
Checked	Mathew Lake MEng FGS Tech IOSH	
Approved	Gwyn Lake BSc (Hons). PhD, CGeol, FGS	



Executive Summary

Site Location and Proposed Development	<i>The site comprises agricultural land centred approximately on NGR 260980 199090. The proposed development is residential.</i>
Site History	<i>Historical map reviews reveal the site has been undeveloped through its history. Coal Authority Records record opencast workings in the east of the site.</i>
Geology	<i>The Geology Map shows the site to be traversed by faults and these place the Grovesend Beds and Swansea Beds in juxtaposition. In the east of the site the Swansea Four Feet and Brynwhilach Coal Seams are conjectured to outcrop, although these have been worked out by opencast. In the west of the site the Penyscallen Coal Seam and the Loughour Little lay at shallow depth.</i>
Radon	<i>The Envirocheck Report details that the site crosses an area where Basic Radon Protection and No Radon Protection is required. Phase Specific or Plot Specific Radon Reports could clarify which plots require protection.</i>
Coal Mining Risk Assessment	<i>The Swansea Four Feet and Brynwhilach Coal Seams lie at shallow depth in the east of the site, although these have been worked out by opencast. The Penyscallen and Loughour Little Coal Seams lie at shallow depth in the west of the site. Intrusive drilling did not encounter workings in these seams.</i>
Ground Conditions	<p><i>In the west of the site natural till deposits were encountered at shallow depth, comprising soft to stiff, variably sandy, variably gravelly SILT/CLAY. Areas of soft material were encountered at shallow depth due to surface water.</i></p> <p><i>In the northeast of the site a backfilled opencast colliery is encountered, comprising variable made ground to 7.3m – 7.5m depth.</i></p>
Contamination of Concern	<i>No contaminants were detected in excess of the published Generic Assessment Criteria (GAC) for a residential setting with plant uptake.</i>
Ground Gas Risk Assessment	<i>Two rounds of Gas Monitoring were completed by issue of this report. The site was placed in Gas Characteristic Situation 1.</i>
Foundation Solution	<p><i>Traditional Mass Concrete foundations should suffice in the natural firm to stiff till for foundation 100 kN/m². Tree related soil volume change should be considered when designing foundations including suspended floorslabs.</i></p> <p><i>Two faults traverse the site and steel reinforced concrete foundations or rafts should be employed in these zones.</i></p> <p><i>We recommend re-engineering the top 2m of the former opencast to allow raft or reinforced strip foundations to be employed. Foundation loads should be based on post-earthwork testing.</i></p>

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Annex B Coal Mining Data
Annex C Risk Assessment Definitions
Annex D Trial Pit Logs
Annex E LCP Borehole Logs
Annex F Rotary Borehole Logs
Annex G Chemical Test Results
Annex H Geotechnical Test Results
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Drawings

Drawing 01 Investigatory Hole Locations
Drawing 02 Soakaway Locations

SECTION 1 Introduction and Proposed Development

1.1 Introduction

Barratt Homes (The Client) is proposing a residential development at land north of Llewlynn Road, Penllergaer.

Terra Firma (Wales) Limited have been commissioned by the Client to undertake a geoenvironmental assessment and geotechnical investigation of the site.

The main objectives of the geoenvironmental assessment programme are:

- Investigate the potential human health and environmental liabilities at the site associated with any contamination
- Provide a summary of the human health and environmental conditions at the site, together with any necessary further intrusive works and / or remediation works to render the site fit for its intended use

The main objectives of the geotechnical site investigation are:

- Investigated the type, strength and bearing characteristics of the shallow superficial and underlying solid geology
- Investigate the risk, if any, from historical shallow underground mining features
- Provide engineering foundation and floor slab recommendations for the proposed development
- Provide infiltration rates and stormwater drainage viability.
- Provide recommendations regarding any other geotechnical aspects pertaining to the development

In order to achieve the above objectives, Terra Firma (Wales) Limited carried out an assessment programme including a site walkover, a review of existing data, followed by a field investigation to collect geotechnical and geoenvironmental data from selected locations.

1.2 Limitations and Exceptions of Investigation

The Client has requested that a Geoenvironmental Site Assessment (GSA) and Geotechnical Investigation (GI) be performed to enable the outlined main objectives.

The GSA and GI were conducted, and this report has been prepared for the sole internal reliance of the Client and their design and construction team. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Terra Firma (Wales) Limited. If an unauthorised third party comes into possession of this report, they rely on it at their peril and the authors owe them no duty of care and skill. The report represents the findings and opinions of experienced geoenvironmental and geotechnical consultants. Terra Firma (Wales) Limited does not provide legal advice and the advice of lawyers may be required.

The subsurface geological profiles, any contamination and other plots are generalised by necessity and have been based on the information found at the locations of the exploratory holes and depths sampled and tested.

The investigation was limited by overhead power lines.

It was beyond the scope of this report to assess invasive plant species.

1.3 Quality Assurance

The quality and environmental aspects of the assessment and investigation comply with UKAS Accredited ISO 9001:2015 and ISO 14001:2015 standards.

SECTION 2 Review of Existing Data

1.1 Physical Setting and Current Site Use

The development site is irregular in shape and locates to the west of Coedwig Hywel Farm. The site centres on an approximate National Grid Reference of 261010 199090, occupying a plan area of approximately 5.93 Hectares.

The site comprises two large agricultural fields which we understand are used to graze cattle. The land descends to the west. The lower areas had zones of ponding surface water during the visit in October 2020. Overhead electricity cables cross the western field.

Site boundaries are defined by hedge rows/trees.

Houses locate south of the site, Ceodwig Hywel Farm locates immediately east of the site. Further fields locate north of the site and a mast locates to the northeast of the site.

The site elevation is approximately 60m AOD sloping down to the south.

The site location can be seen on **Figure 2.1**.

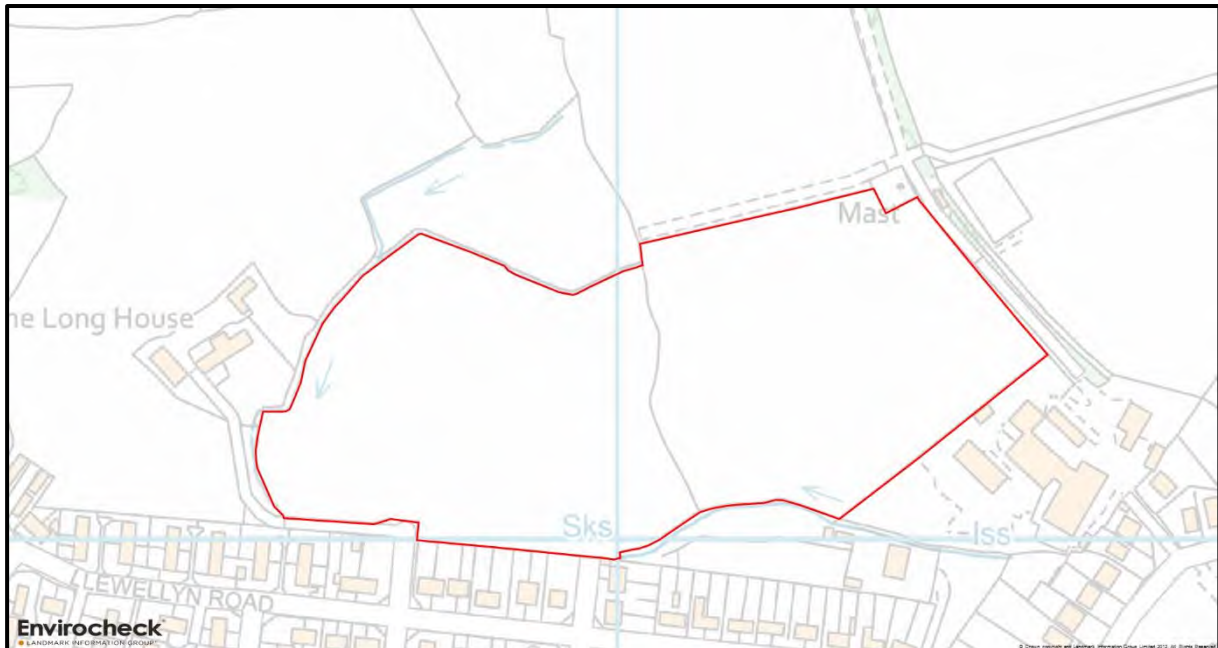


Figure 2.1 Site Location

1.2 Site History

Historical maps of the site have been obtained in an Envirocheck Report, provided by Landmark Information Group. The history plans are supplied in **Annex A** of this report, and the most relevant editions are summarised in **Table 2.1**. Distances where quoted are approximate, and any changes in-between map editions may not be recorded

Table 2.1 Historical Development from Map Information

Map Edition & Scale	Key Features on Site	Key Features off Site
1876/1880/ 1884	The site comprises a series of undeveloped fields. A stream crosses near the centre of the site.	Coedwig Hywel farm locates immediately east of the site and Gellihyll locates immediately west. Two quarries are indicated 270m south of the site. A colliery with a drift and a shaft is indicated 460m west of the site.
1889/1900/ 1901	The site remains unchanged.	The colliery is no longer indicated 460m west. Some urban development has occurred in the village of Gorseinon, southeast of the site. Gorseinon Colliery is indicated 730m southwest of the site.
1916/1921	The site remains unchanged.	Further urban expansion has occurred in Gorseinon (Penllergaer), 250m southeast of the site. Garncoch Colliery No.3 is indicated 760m south of the site.
1935/1936	The site remains unchanged.	Gorseinon Colliery, later known as Garn-Coch No.2 Colliery, is disused by this time. Further urban expansion has occurred 250m south of the site.
1949	The Aerial Photo shows the site to comprise undeveloped fields	The development of a housing estate to the south of the site has commenced.
1958/1962	The site remains unchanged.	The housing estate immediately south of the site has further expanded. Factories are indicated 350m and 769m southeast of the site.
1964	The site remains unchanged.	The surrounding area remains unchanged.
1968/1969	The site remains unchanged.	The factory to the southeast has expanded.
1980/1989	The site has been divided into two fields	Further factories have been built, 250m southwest of the site.

		The M4 Motorway has been constructed 400m northeast of the site.
1991/1995	The site remains unchanged.	The immediate surrounding area remains unchanged.
1999	The site remains unchanged.	The immediate surrounding area remains unchanged.
2000	The Aerial Photograph confirms the site to be undeveloped fields.	Housing is apparent south of the site and further fields to the north.
2003/2006/ 2009/2013/ 2016	The site remains unchanged.	An animal centre is indicated 300m north of the site.
2020	The site remains unchanged.	Solar panels are indicated 140m north of the site.

Although not indicated on the Ordnance Survey Plans, the northeast of the site was subject to Opencast Coal Extraction. This is discussed further in the Coal Mining Assessment.

1.3 Geological Setting

1.3.1 Geology

The 1:10,560 scale British Geological Survey Map of the area (Sheet SS 69 NW) was consulted for geology underlying the site. The site is shown to be underlain by rocks of the Grovesend Beds and the Swansea Beds of the Upper Coal Measures. The site is traversed north-south by the Gorseinon Fault resulting in a downthrow to the west. In the far east of the site, the Brynwhilach Two-Foot Coal Seam, and the overlying Swansea Four Feet are conjectured to outcrop near the sites southern boundary. An adit in the Swansea Four Feet is indicated immediately west of Coedwig Hywel Farm, outside the site. The area to the north of these seams is shown as 'Worked Out by Opencast'.

Further to the west, an area is indicated between the Gorseinon Fault and another fault, where the Brynwhilach Two-Foot Coal Seam, and the overlying Swansea Four Feet are conjectured to outcrop north of the site. In this area, seam contours record the Swansea Five Feet to lie at an elevation of -50ft (i.e. -15m) relative to Ordnance Datum., descending to -100ft (i.e. -30m) relative to Ordnance Datum immediately north of the site.

To the west of the Gorseinon Fault the Grovesend Beds are encountered. The Penyscallen Coal Seam is conjectured to outcrop in the southwest of the site descending eastwards. The Loughour Little Coal Seam is shown to lie 32ft (10m) below the Penyscallen Seam in the area.

An extract of the Envirocheck Geology Plan is presented in **Figure 2.2**.



Figure 2.2 Extract of Envirocheck Geology Plan

Detailed stratigraphical information is provided in **Table 2.2**.

Table 2.2 Detailed Stratigraphical Information

Strata
EAST OF UNNAMED FAULT
Drift (or Fill in Opencast Area)
Grovesend Beds (or Fill in Opencast Area)
Swansea Four Feet Coal Seam over Brynwhilach Coal Seam (absent in Opencast Area)
BETWEEN UNNAMED FAULT AND GROVESEND FAULT
Drift
Swansea Bed Sandstone
Swansea Five Feet Coal Seam
WEST OF GROVESEND FAULT
Drift
Grovesend Beds
Penyscallen Coal Seam
Grovesend Beds
Loughor Little Coal Seam

Strata to the east of the Grovesend Fault dips in an approximately northerly direction.

Superficial deposits are recorded as Boulder Clay (Till).

1.3.2 BGS Borehole Information

There are no BGS Boreholes recorded on-site.

1.3.3 Radon

The Envirocheck Report (**Annex A**) details that the site spans an area where no radon protective measures and basic radon protective measures are required for new developments on the investigation site. Phase specific or plots specific radon reports should clarify which plots require protection.

1.3.4 Mining

A Coal Authority Consultants Report and CON 29M Report were purchased for the site. The CON29M report recorded known workings in two seams at 80m to 270m depth, last worked in 1947. The reports identified that the east of the site had been mined by opencast. The reports suggest that there is a risk of unrecorded shallow mining beneath the site.

Terra Firma Wales Ltd purchased Survey 16146 from the Coal Authority. The survey revealed the extent of Opencast Workings within the Swansea Four Feet Coal Seam. The Coal Authority Survey was combined with a 1993 Ordnance Survey map (see **Figure 2.3**). The plan revealed that the workings are restricted to the east of the site.



Figure 2.3 Combined Layout and Opencast Survey

The opencast workings encountered historical workings east of the site, but none are recorded within the site.

The Geology Map suggests that the Brynwhillach Coal Seam and Swansea Four Feet Coal Seam lie at shallow depth in the east of the site and the Penyscallen Coal Seam and Loughour Little Coal Seam lie at shallow depth in the west of the site.

Base upon the above information there is a potential risk to the surface stability of areas of the site from past unrecorded shallow workings. Actions to quantify this risk are presented in the following sections.

The Coal Authority CON 29M Report and Consultants Coal Mining Report are appended in (**Annex B**).

1.4 Environmental Setting

The following sections have been compiled using the Landmark Information Group Envirocheck datasheet and maps which can be found in **Annex A**.

1.4.1 Hydrogeology

Superficial deposits beneath the site have an aquifer designation of secondary aquifer – Undifferentiated.

The bedrock deposits beneath the site have an aquifer designation of secondary aquifer – A.

Deeper groundwater flow within the underlying bedrock will be controlled by the strata dip and any fractures or bedding planes within the rock units.

The hydraulic gradient will be at its steepest during periods of heavy rainfall and aquifer recharge.

The site does not locate within a groundwater source protection zone.

1.4.2 Hydrology

Surface water flows around the boundary fo the lower (i.e. western) field. The western field was also waterlogged during the site works in November/December 2020.

The topography of the site slopes down towards to the south and west. Surface water is likely to drain in this direction.

1.4.3 Flooding

The Agency and Hydrological Flood Map does not show the site to be at risk from extreme flooding from rivers or sea.

The surface water flood map shows the south of the site to be potentially affected by surface water flooding.

1.4.4 Waste

The Envirocheck Report does not record any landfill sites within 250m of the site.

The east of the site is known to have been and opencast historically so will contain backfill.

1.4.5 Pollution

No. pollution incidents are recorded to have occurred within 250m radius of the site.

1.4.6 Sensitive Land Use

The site is not located within a sensitive land use area.

1.4.7 Industrial Land Use

There are no contemporary trade directory entries recorded within 250m of the site.

1.4.8 Infilled Land

The Envirocheck Report does not identify any potentially infilled land features within 250m of the site.

However, Coal Authority records indicate that the east of the site was opencast historically.

1.5 Archaeology

Please note that Terra Firma (Wales) Ltd are not specialists in this field and the advice of an expert should be sought.

SECTION 3 Coal Mining Risk Assessment

3.1 Underground and Opencast Mining

The Geology on the Study Site can be roughly divided into three zones from west to east, divided by faults. The sequence is detailed in **Figure 3.1**.

WEST		EAST	
SUPERFICIAL TILL		OPENCAST	REWORKED TILL
Grovesend Beds	Swansea Beds		Reworked Swansea Beds
Penyscallen Coal Seam	Swansea Five Feet (at depth)		Swansea Four Feet Coal Seam (Possibly Worked Out)
Grovesend Beds	Swansea Beds		Reworked Swansea Beds
Loughour Little Coal Seam			Brynwhillach Coal Seam (Possibly Worked Out)
Grovesend Beds			Swansea Beds

Figure 3.1 Geology and Strata Base below Ground Level

The Coal Authority Consultants Report records a mine adit entry at NGR 261259 199039, outside the site. The adit is orientated away from the site. Three seams are shown to outcrop within the site. The site is shown to contain opencast workings.

The extent of the Opencast Workings within the Swansea Four Feet is indicated in Coal Authority Survey 16146. The plan does not detail whether the Brynwhillach Seam was worked by Open Cast, however, the landowner informed us that the opencast worked two seams. We would consider there to be a risk of unrecorded workings in the west of the site where the Penyscallen Seam and Loughour Little lie at shallow depth.

3.2 Shafts & Adits

The Coal Authority Report records one known mine entry in the vicinity of the site, located beyond the site to the east.

3.3 Conclusion

There is evidence that the Swansea Four Feet was worked out by Opencast in the east of the site. The Opencast Survey does not mention the underlying Brynwhillach Seam although the land owner has informed us that the Opencast worked two seams (presumably the Swansea Four Feet and Brynwhillach).

We would consider there to be a risk of unrecorded workings in the west of the site where the Penyscallen Seam and Loughour Little lie at shallow depth.

The risk needs to be assessed by intrusive Rotary Drilling.

The outcome of the rotary drilling, and the impact of the ground conditions on foundation design is discussed in **Section 10**.

SECTION 4 Preliminary Human Health and Environmental Risk Assessment

4.1 General

The preliminary human health and environmental risk assessment is a qualitative evaluation of unacceptable risks to human health or the environment from potential 'contaminated land', based on reviewed information in preceding sections of this report.

For 'contaminated land' to exist as defined in Part 2A of the Environmental Protection Act (EPA) 1990, a Pollutant Linkage needs to be identified. Pollutant linkages are defined by having a valid 'source – pathway – receptor' as established in the preliminary conceptual site model.

For our definitions of pollution linkage and how we define risk please refer to **Annex C** which includes our classifications of consequence and probability, and risk assessment matrix.

4.2 Potential Sources of Contamination

Potential or known sources of contamination associated the sites current and historical land use are summarised in **Table 4.1**.

Table 4.1 Contamination Sources

ID	Source	Contaminant
S1	Soil Contamination due to Former Use	General Suite
S2	Groundwater Impact	General Suite
S3	Landfill gas	Methane/Carbon Dioxide/Carbon Monoxide
S4	Mine Gas	Methane/Carbon Dioxide/Carbon Monoxide
S5	Bedrock	Radon

No other significant potential on-site or off-site sources of contamination have been identified during the desk study.

4.3 Potential Pollution Pathways

Potential contaminant pathways associated with a residential with home grown produce land use are as follows.

- P1 – Direct soil and dust ingestion
- P2 – Consumption of home grown produce
- P3 – Dermal contact
- P4 – Inhalation of dust and vapours
- P5 – Vertical migration of leachates (unsaturated zone)
- P6 – Horizontal and vertical migration of contaminants (saturated zone)
- P7 – Artificial contaminant pathway (borehole, pile, excavation etc)
- P8 – Surface run-off
- P9 – Plant uptake
- P10 – Horizontal and vertical migration of ground gasses and vapours
- P11 – Direct contact with construction materials
- P12 – Inhalation of asbestos fibres

4.4 Potential Receptors

There are human and hydrological receptors to any contamination that may be present on site. Potential receptors include.

- R1 – Construction and maintenance workers
- R2 – Future site users (residents)
- R3 – Passers-by or neighbouring site users
- R4 – Groundwater (aquifer)
- R5 – Surface waters (river/lake)
- R6 – Area of public open space
- R7 – Construction materials (concrete/potable water pipes)

4.5 Preliminary Conceptual Site Model

The preliminary conceptual site model establishes potential pollutant linkages between contaminants (source), pathways and receptors, realised during the preparation of the desk study report. Where a potential pollutant linkage is identified an assessment of risk is subsequently undertaken. The preliminary conceptual site model is tabulated in Table 4.2.

Outcomes of the preliminary conceptual site model are used as a basis for the design and implementation of the site investigation, whereby areas of potential contamination can be targeted as well as investigating the wider site.

Findings of the site investigation can in turn be used to develop and refine the conceptual site model.

Table 4.2 Preliminary Conceptual Site Model

Source	Pathway	Receptor	Preliminary Risk Assessment		
			Consequence	Probability	Risk
Human Health					
Contaminated Soils S1	Direct soil and dust ingestion P1 Dermal contact P3 Inhalation of dust and vapours P4	Construction and maintenance workers R1	Medium	Low Likelihood	Medium Risk - COSHH assessment and good level of PPE/ hygiene by site workers/ staff; dust suppression measures if required. Suitably designed site investigation recommended
		Passers-by or neighbouring site users R3	Medium	Unlikely	Low Risk - Dust suppression measures if required.
		Future site users (residents) R2	Medium	Low Likelihood	Low to Medium Risk - Suitably designed site investigation recommended
Radon Gas S5	Horizontal and vertical migration of ground gasses and vapours P10	Future site users (residents) R2	Medium	Unlikely	Low Risk - Basic radon protection measures required
Landfill Gas S3		Future site users (residents) R2, Construction and maintenance workers R1	Severe	Unlikely	Low Risk –underlying clay sediments to inhibited gas migration towards site.
Ground Gas S4					
Vapours S2					
Impacted Groundwaters S2	Horizontal and vertical migration of contaminants (saturated zone) P6 Dermal contact P3	Construction and maintenance workers R1	Medium	Unlikely	Low Risk
Contaminated Soils S1	Plant uptake P9 Consumption of home grown produce P2	Future site users (residents) R2	Medium	Unlikely	Low Risk
Contaminated Soils S1	Direct Contact P11	Construction materials (water pipes) R7	Mild	Low Likelihood	Low Risk
Aggressive ground conditions - Sulphates S1		Construction materials (concrete) R7			
Aquatic Environment					
Contaminated Soils S1	Vertical migration of leachates (unsaturated zone) P5	Groundwater (aquifer) R4 Surface waters (river/lake) R5	Mild	Low Likelihood	Low Risk
	Surface run-off P8	Surface waters (river/lake) R5			

	Horizontal and vertical migration of contaminants (saturated zone) P6				
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SECTION 5 Field Investigation

5.1 Site Works

A geotechnical and geo-environmental site investigation comprising 15 No. trial pits was undertaken between 5th November and 12th November 2020. Soakaways were performed in four of the pits. Trial pit logs are presented in **Annex D**.

Fifteen Rotary Probe Boreholes and five LCP Boreholes were performed between 11th January 2021 and 15th January 2021. LCP Borehole Logs are presented in **Annex E** and Rotary Borehole Logs are presented in **Annex F**.

The fieldwork was supervised by Terra Firma (Wales) Limited, who logged the exploratory holes to the requirements of BS 5930:2015+A1:2020. The proposed locations of the exploratory holes were determined by Terra Firma (Wales) Ltd in general accordance with BS 10175:2011+A2:2017 in order to assess the findings of the preliminary conceptual site model.

Exploratory hole locations are shown on **Drawing 01**.

5.2 Ground Conditions

The ground conditions encountered by the exploratory holes can in general be summarised as shown in **Table 5.1**.

Table 5.1 Summary of Typical Ground Conditions

Depth (m)	Thickness (m)	Stratum
Eastern Site (Former Opencast Area)		
0.00 - 7.30/7.50	7.30/7.50	MADE GROUND: Very soft sandy gravelly SILT/CLAY over variable sandy gravelly SILT/CLAY with cobbles to boulders to clayey sandy GRAVEL to BOULDERS .
7.30/7.50 - >8.20	-	MUDSTONE
East of Grovesend Fault (Outside Opencast Area)		
0.00 - 3.20/8.50	3.20/8.50	Soft, becoming firm to stiff, variably sandy gravelly SILT/CLAY with cobbles and boulders.
3.20/8.50 - >30.00	-	MUDSTONE AND SANDSTONE (Coal absent except thin coal (0.2m) in RP14).
West of Grovesend Fault		
0.00 - 6.50/10.50	6.50/10.50	Soft, becoming firm to stiff, variably sandy gravelly SILT/CLAY with cobbles and boulders.
3.20/8.50 - >30.00	-	MUDSTONE AND SANDSTONE and two COAL SEAMS

5.3 Groundwater

Groundwater information recorded during trial pitting is summarised in Table 5.2.

Table 5.2 Groundwater Summary

Location	Depth (m)	Details
TP05	2.55	Minor water ingress
TP06	2.90	Minor water ingress
TP07	2.30	Minor water ingress
TP11	0.00	Surface water
SA02	1.00	Minor water ingress
SA03	1.00	Minor water ingress

5.4 Stability and Obstructions

Trial pits were generally stable during excavation.

5.5 Installation Well Construction

Gas well locations were selected to target the former opencast area and to also provide data for the general area.

Gas installation well construction details are summarised in **Table 5.3**.

Table 5.3 Installation Well Summary

Location	Response Zone		Stratum
	From (m)	To (m)	
BH01	1.0	8.2	In former Opencast Area
BH03	1.0	5.5	In former Opencast Area
BH05	1.0	6.0	Close to Opencast Area
RP01	1.0	2.0	West end of Site
RP15	1.0	5.0	Close to farm building

5.6 Laboratory Chemical Testing

5.6.1 Sampling Strategy

Soil sampling locations were selected on a non-targeted basis to characterise the site.

Sample locations, depths and analytical suites are summarised in **Table 5.4**:

Table 5.4 Sample Locations, Depths and Targets

Location	Depth (m)	Analytical suite
TP01	0.2	General suite including asbestos
TP02	0.4	General suite including asbestos
TP03	0.4	General suite including asbestos
TP04	0.2	General suite including asbestos
TP05	0.2	General suite including asbestos
TP06	0.4	General suite including asbestos
TP07	0.2	General suite including asbestos
TP08	0.2	General suite including asbestos
TP09	0.2	General suite including asbestos
TP10	0.1	General suite including asbestos
TP11	0.2	General suite including asbestos
BH01	1.0	General suite including asbestos and WAC Analysis
BH02	1.0	General suite including asbestos and WAC Analysis
BH03	1.0	General suite including asbestos and WAC Analysis

5.6.2 Soil Laboratory Analysis

During the site investigation works soil samples were taken and despatched to the accredited laboratories of Eurofins Chemtest for laboratory chemical testing. Soil samples were tested for the following determinands.

Table 5.5 Soil Laboratory Analysis

Metals & Metalloids	In-Organics	Organics	Others
Arsenic	Cyanide	Phenols	pH (acidity)
Cadmium	Sulphate	Speciated PAH	Asbestos
Chromium III		Petroleum Hydrocarbons CWG	
Chromium VI			
Copper			
Lead			
Mercury			
Nickel			
Selenium			
Zinc			

The results are discussed in detail in **SECTION 6** and the laboratory test results certificates may be found in **Annex G**.

5.7 Soil Property Testing

5.7.1 In-situ Permeability Testing

During the site investigation 4 No. trial pit soakaway test was undertaken in SA1 to SA4 and carried out in general accordance with BRE DG 365:2016.

Water was not observed to move over a period of five hours and it was concluded that soakaways were not an effective means of surface disposal.

5.7.2 Laboratory Geotechnical Testing

A schedule of laboratory tests was prepared by Terra Firma Wales Ltd and samples were despatched to the accredited laboratories of GSTL/Apex Testing Solutions. A summary of the testing carried out is presented in Table 5.6.

Table 5.6 Summary of Geotechnical Testing

Geotechnical Test	Standard (BS1377:1990)	No. Tested
Moisture Content	Part 2, Clause 3.2	7
4 Point Liquid and Plastic Limit	Part 2, Clause 4.3 & 5.3	7
PSD Wet Sieve Method	Part 2, Clause 9.2	2
Dry Den/MC (2.5kg Rammer Method 1 Litre Mould)	Part 4, Clause 4.3	2

The test results are presented in **Annex H** and discussed in **SECTION 7** of this report.

SECTION 6 Evaluation of Geoenvironmental Analytical Results

6.1 Assessment Methodology

Comparison of the analytical results has been made with the 2015 Suitable 4 Use Levels (S4UL) provided by Land Quality Management (LQM) Limited and the Chartered Institute of Environmental Health (CIEH) or provisional Category 4 Screening Levels (pC4SL). Where S4UL or C4SL values are not available, reference has been made to Soil Guideline Values (SGV) sourced from the now withdrawn Environment Agency Contaminated Land Exposure Assessment (CLEA).

Soil leachate and groundwater analytical results have been compared with available published guidelines in the Water Framework Direction (Standards and Classification) Directions (England and Wales) 2015 and Drinking Water Directive (98/83/EC).

Sulphate results have been compared to guidelines presented in British Research Establishment (BRE SD1:2015). Sulphate levels need only be considered for buried concrete risk assessment and are not human health related.

Soils subjected to a UK Water Industry Research (UKWIR) suite of testing have been compared with guidelines set out in UKWIR Guidance for the Selection of Water Supply Pipes to be Used in Brownfield Sites (Ref 10/WM/03/21).

6.2 Soil Test Results

A summary of the chemical test results which include the regulatory soil guideline values used in a residential setting with plant uptake are given in the following tables. The complete results can be found in **Annex F**.

6.2.1 Inorganics & Miscellaneous

Fourteen samples were tested for a standard suite of inorganics, pH and organic matter. The summarised results are in **Table 6.1**.

Table 6.1 Summary of Soil Chemical Test Results – Inorganics & Miscellaneous

Substance	Threshold Value (mg/kg)	Source	Measured Concentrations (mg/kg)		Number of Exceedances
			Minimum	Maximum	
Arsenic	37	LQM/CIEH	9.4	27	0
Cadmium	11	LQM/CIEH	0.17	0.99	0
Chromium III	910	LQM/CIEH	9.3	26	0
Chromium VI	6	LQM/CIEH	<0.5	<0.5	0
Copper	2400	LQM/CIEH	20	41	0
Lead	200	pC4SL	15	45	0
Mercury (inorganic)	40	LQM/CIEH	0.05	0.11	0
Nickel	180	LQM/CIEH	15	28	0
Selenium	250	LQM/CIEH	0.41	0.89	0
Zinc	3700	LQM/CIEH	46	110	0
Cyanide	-	-	<0.5	<0.5	-
Boron	290	LQM/CIEH	<0.40	0.51	0
Sulphate (%)	0.24	BRE	0.021	0.062	0
Organic Matter (%)	-	-	1.4	3.6	-
pH	-	-	5.8	7.5	-

Notes:
- No available guideline

6.2.2 Organics

Fourteen samples were tested for speciated polycyclic aromatic hydrocarbons. The summarised results are in **Table 6.2**.

Table 6.2 Summary of Soil Chemical Test Results – Speciated Polycyclic Aromatic Hydrocarbons

Substance	Threshold Value (mg/kg)	Source	Measured Concentrations (mg/kg)		Number of Exceedances
			Minimum	Maximum	
Naphthalene	2.3	LQM/CIEH	<0.01	<0.01	0
Acenaphthylene	170	LQM/CIEH	<0.01	<0.01	0
Acenaphthene	210	LQM/CIEH	<0.01	<0.01	0
Fluorene	170	LQM/CIEH	<0.01	<0.01	0
Phenanthrene	95	LQM/CIEH	<0.01	<0.01	0
Anthracene	2400	LQM/CIEH	<0.01	<0.01	0
Fluoranthene	280	LQM/CIEH	<0.01	0.29	0
Pyrene	620	LQM/CIEH	<0.01	0.28	0
Benzo(a)anthracene	7.2	LQM/CIEH	<0.01	<0.01	0
Chrysene	15	LQM/CIEH	<0.01	<0.01	0
Benzo(b)fluoranthene	2.6	LQM/CIEH	<0.01	<0.01	0
Benzo(k)fluoranthene	77	LQM/CIEH	<0.01	<0.01	0
Benzo(a)pyrene	2.2	LQM/CIEH	<0.01	<0.01	0
Indeno(123cd)pyrene	27	LQM/CIEH	<0.01	<0.01	0
Dibenzo(ah)anthracene	0.24	LQM/CIEH	<0.01	<0.01	0
Benzo(ghi)perylene	320	LQM/CIEH	<0.01	<0.01	0
Total PAH	-	-	<0.10	<0.10	-

Notes:
 Thresholds based on 1.0% soil organic matter
 - No available guidelines

Fourteen samples were tested for petroleum hydrocarbon. The summarised results are shown in **Table 6.3**.

Table 6.3 Summary of Soil Chemical Test Results – Petroleum Hydrocarbons

Substance	Threshold Value (mg/kg)	Source	Measured Concentrations (mg/kg)		Number of Exceedances
			Minimum	Maximum	
Aliphatic					
PH C5 – C6 Ali	42	LQM/CIEH	<1.0	<1.0	0
PH C6 – C8 Ali	100	LQM/CIEH	<1.0	<1.0	0
PH C8 – C10 Ali	27	LQM/CIEH	<1.0	<1.0	0
PH C10 – C12 Ali	130	LQM/CIEH	<1.0	<1.0	0
PH C12 – C16 Ali	1100	LQM/CIEH	<1.0	<1.0	0
PH C16 – C21 Ali	65000*	LQM/CIEH	<1.0	<1.0	0
PH C21 – C35 Ali	65000*	LQM/CIEH	<1.0	<1.0	0
PH C35 – C44 Ali	65000	LQM/CIEH	<1.0	<1.0	0
Aromatic					
PH C5 – C7 Arom	70	LQM/CIEH	<1.0	<1.0	0
PH C7 – C8 Arom	130	LQM/CIEH	<1.0	<1.0	0
PH C8 – C10 Arom	34	LQM/CIEH	<1.0	<1.0	0
PH C10 – C12 Arom	74	LQM/CIEH	<1.0	<1.0	0
PH C12 – C16 Arom	140	LQM/CIEH	<1.0	<1.0	0
PH C16 – C21 Arom	260	LQM/CIEH	<1.0	<1.0	0
PH C21 – C35 Arom	1100	LQM/CIEH	<1.0	<1.0	0
PH C35 – C44 Arom	1100	LQM/CIEH	<1.0	<1.0	0
Notes:					
PH – Petroleum Hydrocarbon					
Ali – Aliphatic					
Arom – Aromatic					
Thresholds based on 1.0% soil organic matter					
* – Ali C16-21 and C21-C35 based on criteria for Ali EC >16-35					

6.2.3 Asbestos Testing

Fourteen soil samples were scheduled for asbestos screening. Asbestos was not detected.

SECTION 7 Geotechnical Testing Results

Geotechnical testing results are summarised in the following sections and presented in their entirety in **Annex H**.

7.1 Plasticity & Moisture Content Testing

During the investigation seven samples of the shallow clay material was taken and submitted for plasticity testing. The test results are summarised in Table 7.1.

Table 7.1 Plasticity & Moisture Content Test Results

Location	Depth (m)	Laboratory Principal Soil Type	Moisture Content (%)	Plasticity Index (%)	Passing 425µm Sieve (%)	Modified Plasticity Index (%)	Volume Change Potential
BH01	0.2 – 3.2	Sandy gravelly CLAY	18	17	70	11.9	Low
BH02	1.0	Slightly gravelly sandy CLAY	18.7	17	79	13.4	Low
TP05	1.0	CLAY	31.1	16	100	16	Low
TP06	1.0	CLAY	33.3	28	100	28	Medium
TP07	0.5	CLAY	39.1	22	100	22	Medium
TP08	1.0	CLAY	29.2	17	100	17	Low
TP10	0.5	CLAY	29.9	25	100	25	Medium

In line with the NHBC (Chapter 4.2), the modified plasticity index for each sample was calculated. For design purposes the soils on site should be assumed to have a medium volume change potential.

7.2 Compaction Testing

Two samples of the opencast backfill were subject to compaction testing using a 2.5kg rammer. The results are summarised in **Table 7.2**.

Table 7.2 Compaction Testing Summary

Location	Depth (m)	Initial Moisture Content (%)	Maximum Dry Density (Mg/m ³)	Optimum Moisture Content (%)
BH01	0.2 – 3.2	18.0	1.80	14.2
BH02	1.0	29.4	1.64	18.7

SECTION 8 Ground Gas Risk Assessment

8.1 Gas Risk Characterisation

Due to the presence of former Opencast Workings gas monitoring wells were installed in LCP Boreholes BH01, BH03 and BH05. In addition, gas wells were installed in Rotary Boreholes BH01 and BH15 to assess the broader site.

Two rounds of gas monitoring had been performed by the date of issue of this report. Gas Monitoring data is presented in **Annex H**.

8.1.1 Gas Source

The former opencast workings could potentially pose a source of gas.

8.1.2 Gas Migration Pathways

Gas migration from backfilled opencast workings and shallow coal seams would be via fractures within the bedrock. Shallow groundwater can serve to reduce emissions from submerged coal and the presence of a low permeability superficial cover can also reduce vertical and lateral migration.

8.1.3 Potential Receptors

Future occupants are considered potential receptors for the gas.

8.1.4 Driving Forces

Worked coal seams are considered to be the likely source of mine related gas. The diffusion of gas from undisturbed coal seam is considered unlikely and gas emissions from worked seams are opposed by hydrostatic pressure of groundwater. Emission rates should also decrease with time after the disturbance of the seam.

8.2 Volatile Gasses

Soil chemical testing did not identify Volatile Organic Compounds (VOCs) at concentrations in excess of their corresponding GACs.

8.3 Gas Screening Value

Five ground gas monitoring wells were installed in January 2021. Installation details are shown on the relevant log.

Two rounds of gas monitoring have been carried out to date. The installations were tested for carbon dioxide, methane, oxygen, carbon monoxide and hydrogen sulphide using a Gas Analyser GA2000/5000.

The following gas concentrations have been recorded.

Table 8.1 Measured Gas Concentration Summary

Gas	Minimum (% V/V)	Maximum (% V/V)
Methane	0.0	0.4
Carbon Dioxide	0.1	2.6
Oxygen	11.4	20.1

Methane levels peaked at 0.4% V/V. Carbon dioxide levels varied between 0.1% and 2.6% V/V. Oxygen concentrations varied between 11.4% and 20.1% V/V.

The gas flow rate from the boreholes was also assessed, flow was not detected and the monitor has a detection limit of 0.1 l/hr.

Based on a flow rate of 0.1 l/hr (detection limit) and the highest recorded carbon dioxide concentration of 2.6%, a gas screening value of 0.0026 l/hr is calculated, as follows:

$$0.026 \times 0.1 = 0.0026 \text{ l/hr}$$

When this result is compared with Table 8.5 of CIRIA report C665, the site is classified as 'Gas Characteristic Situation 1' (CS1).

Upon completion of the full six rounds of monitoring the recommendation will be reviewed in a letter report and if necessary amended.

The results to date are presented in **Annex I**.

SECTION 9 Quantitative Risk Assessment

9.1 Contaminants of Concern

Soil chemical testing did not detect any determinants at concentrations in excess of the published Generic Assessment Criteria (GAC) for those determinants in a Residential Setting with Plant Uptake. In respect to the Human Health of future site users, the site can be considered as suitable for its proposed end use.

9.2 Pollutant Linkages

The algorithms used to derive the GACs consider potential pathways between the shallow soils and future site users. In the absence of concentrations exceeding the GACs it can be considered that the site is suitable for its proposed end use in relation to Human Health of future site occupiers.

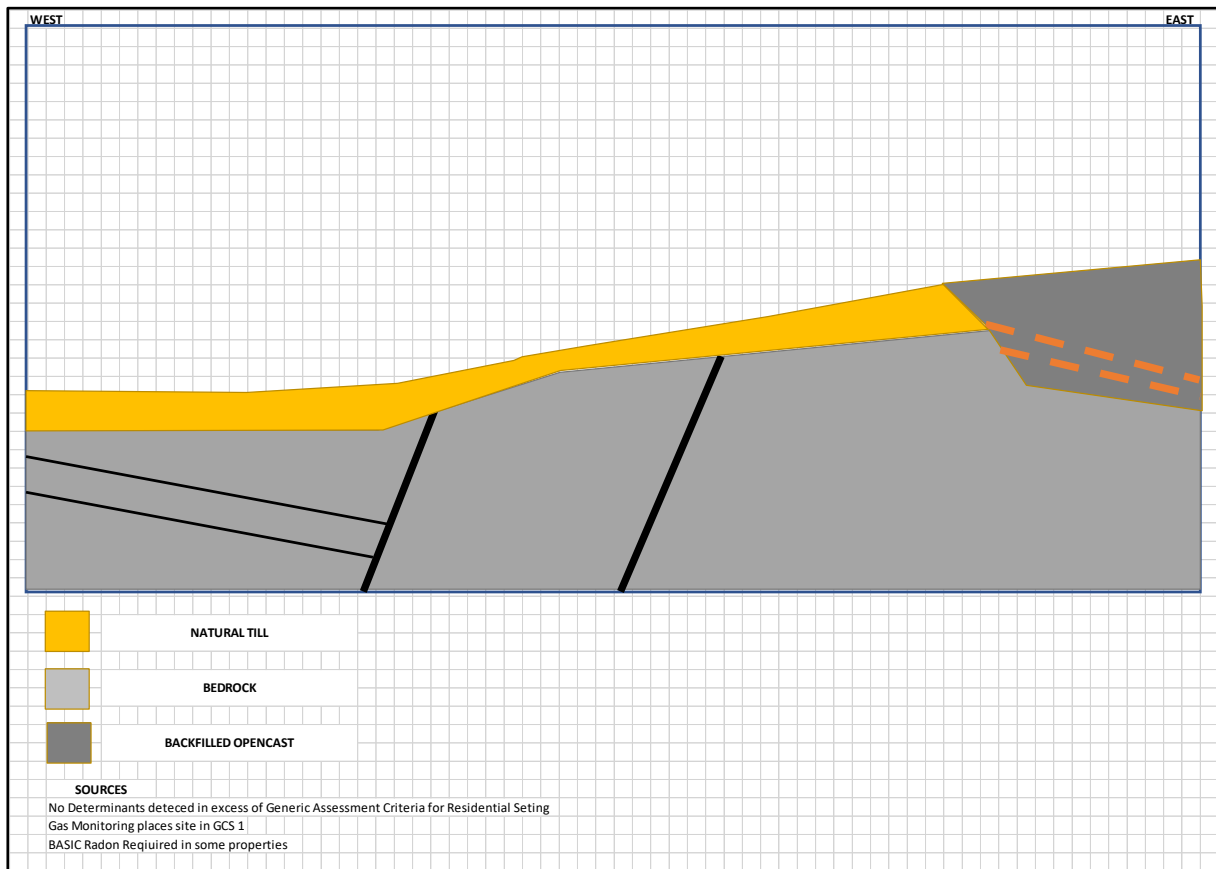


Figure 9.1 Refined Illustrative Conceptual Site Model (Not to Scale)

9.3 Mitigation and Remedial Measures

9.3.1 Human Health

9.3.1.1 Contaminated Soils

Soil chemical testing did not detect any determinants at concentrations in excess of the published Generic Assessment Criteria (GAC) for those determinants in a Residential Setting with Plant Uptake. In respect to the Human Health of future site users, the site can be considered as suitable for its proposed end use.

As good practice, construction workers should adhere to good site management, COSHH, good standards of hygiene and appropriate health & safety on site, with personal protection equipment (PPE) and dust suppression where appropriate.

All imported soils should be validated as clean and suitable for use in accordance with 'Requirements for the Chemical Testing of Imported Soils for Various End Uses and Validation Cover Systems'.

For proposed new supply water pipes, the UK Water Industry Research publication 'Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites (Report 10/WM/03/21)' should be consulted.

In accordance with EC Regulation 1272/2008 and Environment Agency Guidance WM3 soils destined for off-site disposal should be classified on the basis of their hazard phrases prior to disposal. Soils are classified as a mirror entry waste and should be classified on the basis of their specific chemical properties.

9.3.1.2 Ground Gas/Radon

To mitigate against the risk to future site users from radon gas, Basic Protection Measures will be required in parts of the site. Phase Specific or Plots Specific Radon Reports will be necessary to identify which plots require protection. Reference should be made to guidance publication BR 211:2015 for further details on required protection elements. Verification of the installed protection measures is highly recommended. Terra Firma Wales Ltd. offer a comprehensive ground gas protection system verification service.

9.3.2 Aquatic Environment

Soil chemical testing did not identify any evidence of significant contamination and we would therefore conclude the risk to the aquatic environment to be minimal.

During the construction period, there is a risk to the environment/adjacent sites from de-watering, digging foundations, moving contaminated soil, drainage misconnections, discharges to local surface waters or the ground, runoff from construction materials and/or exposed ground, wheel washings and oil or chemical spills.

The risk is considered to be negligible as any adverse effects will be easily preventable by due diligence to good construction practise and housekeeping in preventing surface runoff and the spillage of materials.

The basic measures that should be taken are as follows:

- Prepare a drainage plan and mark the manholes to prevent pollutants accidentally reaching the surface water sewers;
- Carry out any activities that could cause pollution in a designated, bunded area, away from rivers or boreholes. Where possible it should drain to the foul sewer;
- Use settlement ponds to remove silty water;
- Store all oils and chemicals in a fully bunded area to prevent leaks or spills;
- Get advice on whether you need an environmental permit and apply in good time

SECTION 10 Engineering Recommendations

10.1 Conclusion of Intrusive Coal Mining Risk Assessment

In the west of the site (Zone 1), two coal seams were encountered at shallow depth. These seams were encountered intact and there was no evidence of these having been worked.

In the centre of the site (Zone 3) no coal seams were encountered within 30m of the surface.

In the East of the site evidence of backfilled opencast workings were encountered. Beyond the former opencast no coal seams were encountered with the exception of one very thin seam encountered in RP14.

Terra Firma Wales Ltd have not identified any subsidence risk associated with shallow underground workings. We recommend re-engineering of the ground in the vicinity of the former opencast

10.2 Preparation of Site

Areas of vegetation including all roots should be stripped and removed from beneath the proposed development site.

Allowances should be made for any temporary/permanent support works to any existing adjacent structure necessary as a result of the proposed works.

Contingencies should be made for the protection/diversion of any underground/overhead services present beneath/above the site brought about as a result of the proposed works.

Any reduced levels should be brought up to the required levels with suitable inert mainly granular materials. Department of Transport (DTp) type 2 sub-base or similar should be used and compacted in layers to the requirements of the Specification for Highway Works.

Allowances should also be made for the excavation of any soft spots/areas and their replacement with well compacted imported granular materials.

In accordance with EC Regulation 1272/2008 and Environment Agency Guidance WM3 soils and other materials destined for off-site disposal should be classified on the basis of their hazard phrases prior to disposal. Soils are classified as a mirror entry waste and should be classified on the basis of their specific chemical properties.

10.3 Site Zonation

For the purpose of Foundation Design the site has been divided into zones, based on the ground conditions encountered. These zones can be summarised as follows;

Zone 1. – Natural Till over Grovesend Bed with unworked Penyscallen Coal Seam and Loughour Little Coal Seam.

Zone 2 – Grovesend Fault Zone

Zone 3 – Natural Till over Swansea Beds

Zone 4 - Unnamed Fault Zone

Zone 5 – Former Opencast Site.

The Zones and the Proposed Site Layout are presented in **Figure 10.1**.

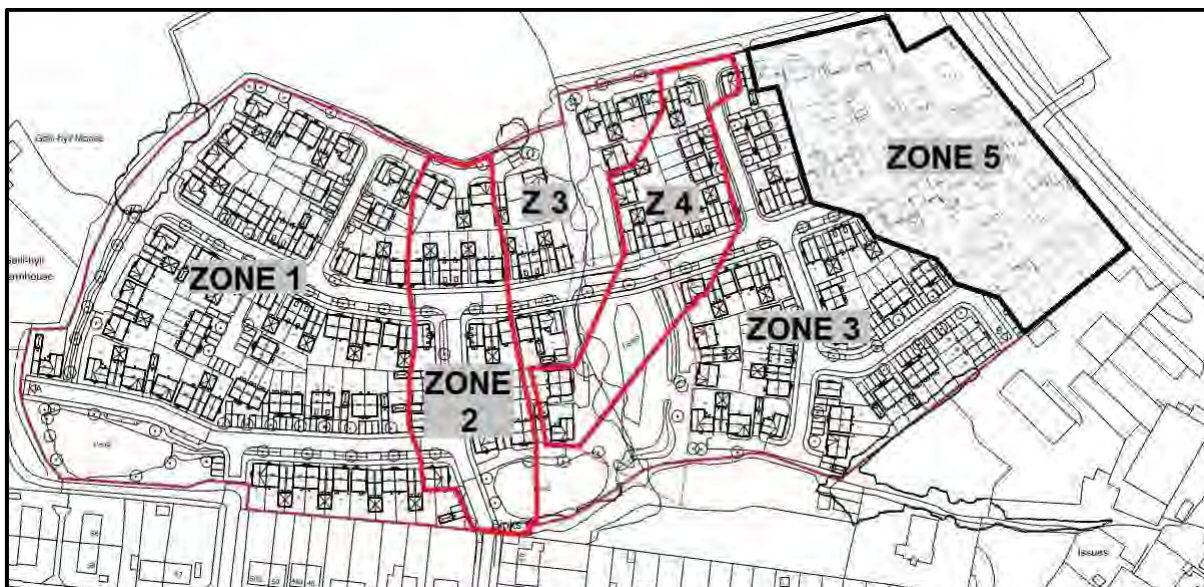


Figure 10.1 Foundation Zones and Proposed Layout (Not to Scale)

10.4 Foundation and Floor Slab Solution

Beneath the majority of the site natural Till was encountered at relatively shallow depth and was typically firm to stiff. Where such material are encountered and faults are absent (**Zones 1 and 3**) traditional mass concrete strip foundations should be suitable for foundation loads of 100 kN/m² at which intensity total settlement should not exceed 30mm and differential settlement should not result in structural distortion in excess of 1:750. Ground floor slabs should be designed as suspended upon the till.

In the vicinity of the faults (**Zones 2 and 4**) foundation loads of 100 kN/m² can be employed although additional steel reinforcement should be included within the concrete (i.e. steel reinforced concrete strip foundations). Ground floor slabs should be designed as suspended upon the till.

In the northeast of the site (**Zone 5**), loose/soft zones were encountered within the backfill of the former opencast. We would recommend that in this zone the ground be excavated to a depth 2.0m below foundation depth and replaced at Optimum Moisture Content in thin compacted layers in accordance with Series 600 of the Specification for Highway Works. Upon completion of the reengineering of the ground it should be suitable for reinforced concrete

raft/reinforced strip foundations with foundation loads of 50 kN/m². A granular control layer should be employed beneath raft foundations due to the soil volume change potential of cohesive fill.

The extent of the former opencast is presented in **Figure 2.3**.

Cohesive materials recorded a Modified Plasticity Index ranging from 11.9% to 28%. Reference should be made to Chapter 4.2 of NHBC Guidance when building within influencing distance of trees.

Allowances should be made for the removal of any 'soft spots' and their replacement with well-compacted granular materials. Department of Transport (DoT) Type 2 materials or similar could be used and should be compacted in layers to the specification for Highway Works.

All foundation formations should be inspected by a suitably qualified Engineer before being concreted.

10.5 Excavations and Formations

Most of the shallow excavations will be possible with normal soil excavating machinery.

Shallow perched water was encountered in the lower field during the investigation. Any water inflows together with rainwater infiltration should be dealt with by conventional pumping techniques. However, it should be noted that during times of heavy rainfall a higher water table will be encountered.

The sides of any excavations deeper than 1.20m, or shallower if unstable, should be supported by planking and strutting or other proprietary means.

The sub-formations/formations are likely to be susceptible to loosening, softening and deterioration by exposure to weather (rain, frost and drying conditions), the action of water (flood water or removal of groundwater) and site traffic.

Formations should never be left unprotected and continuously exposed to rain causing degradation, or left exposed/uncovered overnight, unless permitted by a qualified engineer.

Construction plant and other vehicular traffic should not be operated on unprotected formations.

As a minimum the formation/excavation surfaces must be protected by blinding concrete immediately after exposure.

Allowances should be made for the removal of soft spots/areas and their replacement with well compacted granular materials.

Allowances should also be made for special precautions to prevent formation deterioration in addition to the above.

10.6 Protection of Buried Concrete

When the results are compared with Table C1 & C2 of BRE Digest 1:2005, it indicates that buried concrete should generally conform to Class DA-1 AC-1.

10.7 Access Roads and Car Parking Areas

Ten CBR Tests were performed using a TRL Probe. The test results are presented in **Annex J**.

Allowances should be made for the removal of any 'soft spots/areas' and their replacement with well-compacted granular materials as previously described.

10.8 Storm Water Drainage

During the site investigation four soakaway test was undertaken in general accordance with BRE DG 365:2016. The soakaway test was carried out in trial pits SA01 to SA04 as instructed by Barratt Homes.

Groundwater was observed within SA02 during excavation and shallow groundwater was also observed SA03 and SA04 during trial pitting in the vicinity. In addition to shallow groundwater, all soakaway tests recorded insufficient infiltration.

Alternative means of storm water disposal will be necessary at the site.

10.9 Reuse of Site Won Material

Two samples of shallow backfill materials from the former opencast were subjected to dry density and moisture content relationship testing. The cohesive material was seen to have an Optimum Moisture Content of 14.2% to 18.7%.

The Coal Authority should be informed of any re-engineering works involving the former opencast and we would recommend that a Material Management Plan be prepared for the reuse of materials.

SECTION 11 Waste Classification of Soil

Soil samples were collected and submitted to the UKAS and MCERT Accredited laboratories of Eurofin Chemtest and subject to the Terra Firma Wales Ltd waste suite and asbestos screening. Selected samples were also subject to Waste Acceptance Criteria (WAC) testing.

Soil test results are presented in **Annex F**.

On the basis of the soil chemical test results, the soil was classified based on the identified hazard as defined in accordance with waste classification algorithms detailed in Environment Agency publication WM3 (V.1.1., 2018).

Representative compounds were selected for the detected elements for waste classification. Where necessary, appropriate factors were employed to account for discrepancies between elemental and molecular concentrations.

Total Petroleum Hydrocarbons (TPH) were not detected during TPHCWG analysis.

Asbestos was not detected during screening.

A summary of the soil classification is presented in Table 11.1.

Table 11.1 Summary of Classification

Sample Location	Depth (m)	Waste Classification	EWC Code	Additional Comments
TP01	0.2	Non Hazardous	17 05 04	
TP02	0.4	Non Hazardous	17 05 04	
TP03	0.4	Non Hazardous	17 05 04	
TP04	0.2	Non Hazardous	17 05 04	
TP05	0.2	Non Hazardous	17 05 04	
TP06	0.4	Non Hazardous	17 05 04	
TP07	0.2	Non Hazardous	17 05 04	
TP08	0.2	Non Hazardous	17 05 04	
TP09	0.2	Non Hazardous	17 05 04	
TP10	0.1	Non Hazardous	17 05 04	
TP11	0.2	Non Hazardous	17 05 04	
BH01	1.0	Non Hazardous	17 05 04	
BH02	1.0	Non Hazardous	17 05 04	
BH03	1.0	Non Hazardous	17 05 04	

Three samples were also submitted for WAC analysis. An appraisal of the WAC results for made ground and natural soil is presented in Table 11.2.

Table 11.2 Summary of WAC Testing

Sample Location	Depth (m)	Comments
BH01	1.0	Satisfies Inert Criteria
BH02	1.0	Satisfies Inert Criteria
BH03	1.0	Satisfies Inert Criteria

The classifications do not include an assessment of invasive plant species. If anomalous materials are encountered during excavation the classification should be revisited.

It should be noted that the receiving landfill sites and Natural Resources Wales have ultimate authority in deciding whether a waste may be accepted, regardless of its classification.

**ANNEX A
Envirocheck Report**

Envirocheck[®] Report:

Datasheet

Order Details:

Order Number:

264127625_1_1

Customer Reference:

16300

National Grid Reference:

261010, 199090

Slice:

A

Site Area (Ha):

5.93

Search Buffer (m):

1000

Site Details:

Site at 260980, 199090

Client Details:

Mr D Emanuel
Terra Firma (Wales) Ltd
5 Deryn Court
Wharfdale Road
Pentwyn
Cardiff
CF23 7HB

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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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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 3			2	12
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 6			1	3
Local Authority Pollution Prevention and Control Enforcements	pg 7				1
Nearest Surface Water Feature	pg 7	Yes			
Pollution Incidents to Controlled Waters	pg 7			3	5
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality					
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions	pg 8				(*8)
Water Industry Act Referrals					
Groundwater Vulnerability Map	pg 10	Yes	n/a	n/a	n/a
Bedrock Aquifer Designations	pg 11	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 11	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				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 11	6	3	21	117

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	pg 29			1	
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)	pg 29				6
Local Authority Landfill Coverage	pg 30	1	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Potentially Infilled Land (Non-Water)	pg 30			3	5
Potentially Infilled Land (Water)	pg 31		1	1	10
Registered Landfill Sites	pg 32			1	
Registered Waste Transfer Sites	pg 32				2
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)	pg 34			1	3
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)	pg 34				2
Planning Hazardous Substance Consents	pg 34				2
Planning Hazardous Substance Enforcements					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 35	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 35	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 38			2	3
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas	pg 39	Yes	n/a	n/a	n/a
Mining Instability	pg 39	Yes	n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 39	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 39	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 39	Yes		n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 39	Yes		n/a	n/a
Radon Potential - Radon Affected Areas	pg 40	Yes	n/a	n/a	n/a
Radon Potential - Radon Protection Measures	pg 40	Yes	n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 41			17	73
Fuel Station Entries	pg 49			1	
Points of Interest - Commercial Services	pg 49			10	6
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 50		1	5	9
Points of Interest - Public Infrastructure	pg 52			5	1
Points of Interest - Recreational and Environmental	pg 52		2	1	
Gas Pipelines					
Underground Electrical Cables					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland	pg 53			2	18
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					
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 of Property Situated Below Ground Level	A13SW (W)	0	1	261000 199089
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SW (W)	0	1	261014 199089
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SW (S)	0	1	261000 199050
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NW (W)	0	1	260850 199100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (W)	0	1	260800 199089
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (E)	0	1	261150 199089
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (E)	0	1	261150 199100
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (E)	0	1	261200 199100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (W)	0	1	260950 199100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (E)	0	1	261100 199100
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SW (S)	0	1	261014 199000
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NW (NW)	0	1	260950 199150
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (NE)	0	1	261100 199150
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (NE)	6	1	261100 199200
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NW (NW)	9	1	260950 199200
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SE (E)	12	1	261250 199089
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SW (S)	39	1	261014 198950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (E)	49	1	261250 199050
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (W)	99	1	260700 199050
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (E)	112	1	261350 199089
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14NW (E)	162	1	261400 199100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (W)	254	1	260550 199100

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	A12NE (W)	284	1	260550 199200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (S)	289	1	261000 198700
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SE (N)	306	1	261100 199500
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12NE (W)	352	1	260500 199250
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SE (NE)	361	1	261350 199500
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12NE (NW)	362	1	260600 199400
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14SW (E)	362	1	261600 199089
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SE (NE)	384	1	261300 199550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (S)	389	1	261014 198600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (W)	396	1	260450 199250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A18SE (NE)	405	1	261350 199550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SE (N)	406	1	261100 199600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A19SW (NE)	430	1	261400 199550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SE (NE)	432	1	261300 199600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A17SE (NW)	438	1	260600 199500
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SE (NE)	450	1	261350 199600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A18SE (N)	456	1	261100 199650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A19SW (NE)	456	1	261500 199500
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A19SW (NE)	459	1	261450 199550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (SW)	467	1	260750 198550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SE (NE)	468	1	261250 199650
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A17SE (NW)	469	1	260550 199500

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	A18SW (N)	482	1	260850 199650
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A19SW (NE)	491	1	261500 199550
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A17SE (NW)	493	1	260650 199600
1	Discharge Consents Operator: Rspca Llys Nini Property Type: Kennels Location: Llys Nini Animal Centre, R S P C A, Penllergaer, Swansea, Sa4 9wb Authority: Natural Resources Wales Catchment Area: LLIW - HEADWATERS TO CONFLUENCE WITH LLAN Reference: Bb3592hk Permit Version: 1 Effective Date: 16th January 2020 Issued Date: 16th January 2020 Revocation Date: Not Supplied Discharge Type: Sewage And Trade Combined - Unspecified Discharge: Not Supplied Environment: Receiving Water: Ditch Leading To Afon Lliw Via Perforated Pipe Status: Effective Positional Accuracy: Located by supplier to within 10m	A18SW (N)	422	2	260916 199590
2	Discharge Consents Operator: Jones G Property Type: Domestic Property (Single) Location: Penllergaer Mountain House Off Gors, Mountain House Off Gorseinon Roa, Off Gorseinon Road Authority: Natural Resources Wales Catchment Area: River Loughor Reference: Bp0023501 Permit Version: 1 Effective Date: 21st July 1986 Issued Date: 21st July 1986 Revocation Date: 10th October 1994 Discharge Type: Unspecified Discharge: Not Supplied Environment: Receiving Water: To Land Status: Consent expired Positional Accuracy: Located by supplier to within 10m	A8NW (S)	461	2	260860 198540
3	Discharge Consents Operator: Mr D B Williams Property Type: Domestic Property (Single) Location: Gelliorgan Farm Penllergaer Nr Swa, Penllergaer Nr Swansea Authority: Natural Resources Wales Catchment Area: Not Given Reference: BM0004001 Permit Version: 1 Effective Date: 19th December 1979 Issued Date: 19th December 1979 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge: Into Land Environment: Receiving Water: To Land Status: New Consent, by Application (Water Resources Act 1991, Section 88) Positional Accuracy: Located by supplier to within 100m	A12NW (W)	590	2	260260 199300
4	Discharge Consents Operator: Jenkins David Edward Lyn Property Type: Domestic Property (Single) Location: Swansea Oaklands Penllergaer Authority: Natural Resources Wales Catchment Area: River Loughor Reference: Bp0050701 Permit Version: 1 Effective Date: 12th August 1987 Issued Date: 12th August 1987 Revocation Date: 16th May 1994 Discharge Type: Unspecified Discharge: Not Supplied Environment: Receiving Water: To Land Status: Consent expired Positional Accuracy: Located by supplier to within 10m	A14NE (E)	682	2	261920 199130

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	<p>Discharge Consents</p> <p>Operator: 3m United Kingdom Plc Property Type: Trade (Unknown/Other) Location: 3m Uk Plc Gorseinon Road Penllergae, Gorseinon Road, Penllergaer, Swansea, Sa4 9gd Authority: Natural Resources Wales Catchment Area: River Loughor Reference: Bc0017103 Permit Version: 1 Effective Date: 26th February 1970 Issued Date: 26th February 1970 Revocation Date: 29th December 2009 Discharge Type: Unspecified Discharge: Freshwater Stream/River Environment: Receiving Water: Afon Lliw Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 100m</p>	A7NW (SW)	688	2	260200 198700
6	<p>Discharge Consents</p> <p>Operator: Perry D G Property Type: Undefined Or Other Location: 1 North Lodge Old Llangyfelach Rd P, Old Llangyfelach Rd Penllergaer Authority: Natural Resources Wales Catchment Area: River Loughor Reference: Bp0022701 Permit Version: 1 Effective Date: 1st August 1986 Issued Date: 1st August 1986 Revocation Date: 16th September 1994 Discharge Type: Unspecified Discharge: Not Supplied Environment: Receiving Water: To Land Status: Consent expired Positional Accuracy: Located by supplier to within 10m</p>	A14NE (E)	732	2	261970 199120
6	<p>Discharge Consents</p> <p>Operator: Dowling A & LI Property Type: Undefined Or Other Location: Penllergaer Plot 2 North Lodge Authority: Natural Resources Wales Catchment Area: River Loughor Reference: Bp0024101 Permit Version: 1 Effective Date: 1st August 1986 Issued Date: 1st August 1986 Revocation Date: 11th July 1994 Discharge Type: Unspecified Discharge: Not Supplied Environment: Receiving Water: To Land Status: Consent expired Positional Accuracy: Located by supplier to within 10m</p>	A14NE (E)	733	2	261970 199150
7	<p>Discharge Consents</p> <p>Operator: 3m United Kingdom Plc Property Type: Office/Data Proc Equip Manufacture Location: Outlet\Aeration Pond 3m Uk Gorseinon, 3m Uk Gorseinon Authority: Natural Resources Wales Catchment Area: River Loughor Reference: Bc0017101 Permit Version: 1 Effective Date: 9th September 1974 Issued Date: 9th September 1974 Revocation Date: 22nd December 1995 Discharge Type: Trade Effluent Discharge: Not Supplied Environment: Receiving Water: Unnamed Trib Of Penllergaer Status: Consent expired Positional Accuracy: Located by supplier to within 10m</p>	A7NW (SW)	755	2	260150 198650

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
7	<p>Discharge Consents</p> <p>Operator: 3m United Kingdom Plc Property Type: Office/Data Proc Equip Manufacture Location: Outlet/Aeration Pond 3m Uk Gorsein, 3m Uk Gorseinon Authority: Natural Resources Wales Catchment Area: River Loughor Reference: BC0017102 Permit Version: 1 Effective Date: 26th February 1970 Issued Date: 26th February 1970 Revocation Date: 29th December 2009 Discharge Type: Trade Effluent Discharge: Freshwater Stream/River Environment: Receiving Water: Unnamed Trib Penllergaer Trib. Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 100m</p>	A7NW (SW)	755	2	260150 198650
8	<p>Discharge Consents</p> <p>Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Gorseinon Factory Cso, Gorseinon 3m Factory, S123 To Gelligynore, Gorseinon, Swansea, Sa4 9gd Authority: Natural Resources Wales Catchment Area: LLIW - HEADWATERS TO CONFLUENCE WITH LLAN Reference: Bp0305001 Permit Version: 2 Effective Date: 29th August 2019 Issued Date: 29th August 2019 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Un-Named Tributary Of The Afon Lliw Status: Effective Positional Accuracy: Located by supplier to within 10m</p>	A7NW (SW)	813	2	260190 198492
8	<p>Discharge Consents</p> <p>Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Gorseinon 1 (S123) 3m¿S Cso, Combined Sewer Overflow, Gorseinon, Swansea Authority: Natural Resources Wales Catchment Area: LLIW - HEADWATERS TO CONFLUENCE WITH LLAN Reference: Bp0305001 Permit Version: 1 Effective Date: 31st March 2003 Issued Date: 31st March 2003 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Trib Of The Afon Lliw Status: Effective Positional Accuracy: Located by supplier to within 10m</p>	A7NW (SW)	813	2	260190 198492
8	<p>Discharge Consents</p> <p>Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Gorseinon 1 (S123) 3m¿S Cso, Combined Sewer Overflow, Gorseinon, Swansea Authority: Natural Resources Wales Catchment Area: LLIW - HEADWATERS TO CONFLUENCE WITH LLAN Reference: Bp0305001 Permit Version: 1 Effective Date: 31st March 2003 Issued Date: 31st March 2003 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Trib Of The Afon Lliw Status: Effective Positional Accuracy: Located by supplier to within 10m</p>	A7NW (SW)	813	2	260190 198492

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
8	<p>Discharge Consents</p> <p>Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Kingsbridge Cso Gorseinon Swansea, Combined Sewer Overflow, Kingsbridge, Gorseinon Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Bp0305001 Permit Version: 1 Effective Date: 31st March 2003 Issued Date: 31st March 2003 Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge: Freshwater Stream/River Environment: Receiving Water: Trib Of The Afon Lliw 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>	A7NW (SW)	813	2	260190 198492
8	<p>Discharge Consents</p> <p>Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Swo. 3m Factory Gorseinon S123 Authority: Natural Resources Wales Catchment Area: River Loughor Reference: BW2302101 Permit Version: 1 Effective Date: 20th October 1989 Issued Date: 20th October 1989 Revocation Date: 31st March 2003 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge: Not Supplied Environment: Receiving Water: River Lliw Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 100m</p>	A7NW (SW)	839	2	260150 198500
9	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: Total Uk Ltd. Cross Service Station Location: Swansea Road, Penllergaer, Swansea, West Glamorgan, SA4 1AQ Authority: City and County of Swansea, Environmental Health Department Permit Reference: NOT GIVEN Dated: Not Supplied Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station Status: Authorised Positional Accuracy: Automatically positioned to the address</p>	A14SW (E)	463	3	261687 198990
10	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: 3m Uk Plc Location: Gorseinon Road, Penllergaer, SWANSEA, West Glamorgan, SA4 1GD Authority: City and County of Swansea, Environmental Health Department Permit Reference: Epa/9/92 Dated: 2nd October 1997 Process Type: Local Authority Pollution Prevention and Control Description: PG6/23 Coating of metal and plastic Status: Transferred to LAIPPC Positional Accuracy: Automatically positioned to the address</p>	A7NW (SW)	720	3	260232 198589
10	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: 3m Uk Plc Location: Gorseinon Road, SWANSEA, West Glamorgan, SA4 1GD Authority: City and County of Swansea, Environmental Health Department Permit Reference: Epa/9/92 Dated: 23rd August 1994 Process Type: Local Authority Pollution Prevention and Control Description: PG6/10 Coating manufacturing Status: Transferred to LAIPPC Positional Accuracy: Automatically positioned to the address</p>	A7NW (SW)	720	3	260232 198589
11	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: Sinclair Garages Ltd Location: Gorseinon Road, Penllergaer, Swansea, SA4 9GW Authority: City and County of Swansea, Environmental Health Department Permit Reference: Sinclair 09/04 Dated: 19th August 1996 Process Type: Local Authority Pollution Prevention and Control Description: PG6/34 Respraying of road vehicles Status: Permitted Positional Accuracy: Manually positioned to the address or location</p>	A7NE (SW)	721	3	260393 198427

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
12	Local Authority Pollution Prevention and Control Enforcements Location: Gorseinon Road, Swansea, West Glamorgan, Sa4 1gd Type: Air Pollution Control Enforcement Notice Reference: EPA/9/92 Date Issued: 2nd October 1997 Enforcement Date: Not Supplied Details: Not Supplied Positional Accuracy: Manually positioned to the road within the address or location	A7NW (SW)	720	3	260232 198589
	Nearest Surface Water Feature	A13NW (NW)	0	-	260867 199153
13	Pollution Incidents to Controlled Waters Property Type: Not Given Location: 1 Talbot Road, Penlleger Authority: Environment Agency, Welsh Region Pollutant: Oils - Diesel (Including Agricultural) Note: Unknown; Groundwater Incident Date: 7th August 1998 Incident Reference: 36458 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (SW)	253	4	260850 198750
14	Pollution Incidents to Controlled Waters Property Type: Warehouses Location: Old Inn, Swansea Road, PENLLERGAER Authority: Environment Agency, Welsh Region Pollutant: Unknown Note: Not Supplied Incident Date: 7th September 1995 Incident Reference: 25941 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Leakage Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A14SW (E)	376	4	261600 199000
15	Pollution Incidents to Controlled Waters Property Type: Road (Lost Load) Location: Location Description Not Available Authority: Environment Agency, Welsh Region Pollutant: Miscellaneous - Fire water / Foam Note: Accidental Spillage/Leakage Incident Date: 31st March 1995 Incident Reference: 23157 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Spillage Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (NE)	392	4	261500 199400
16	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Between Pickfords And Days, GORSEINON Authority: Environment Agency, Welsh Region Pollutant: Oils - Petrol Note: Not Supplied Incident Date: 27th July 1996 Incident Reference: 29353 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8SE (S)	697	4	261100 198300
17	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Waste Metal Skip On Site Authority: Environment Agency, Welsh Region Pollutant: Chemicals - Paints / Dyes Note: River Lliw; Leakage Incident Date: 22nd December 1997 Incident Reference: 34385 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Accidental Spillage/Leakage Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NW (SW)	699	4	260250 198600

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
18	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Road (Lost Load) Location: Penlleger Pond, Behind B And Q, SWANSEA Authority: Environment Agency, Welsh Region Pollutant: Algae Note: Vandalism Incident Date: 21st May 1996 Incident Reference: 28681 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Direct Discharge Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m</p>	A7SE (SW)	871	4	260500 198200
18	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Not Given Location: Penlleger Pond, Beginning Of Nant Celyn Estate Authority: Environment Agency, Welsh Region Pollutant: Algae Note: Vandalism Incident Date: 21st May 1996 Incident Reference: 28681 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Direct Discharge Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m</p>	A7SE (SW)	876	4	260500 198195
19	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Not Given Location: GORSEINON Authority: Environment Agency, Welsh Region Pollutant: Mud/Clay/Soil Note: Not Supplied Incident Date: 7th June 1991 Incident Reference: 882 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m</p>	A11SE (W)	1000	4	259800 199000
	<p>Water Abstractions</p> <p>Operator: Ymddiriedolaeth Penlleger - The Penlleger Trust Licence Number: Wa/059/0004/003 Permit Version: Not Supplied Location: Not Supplied Authority: Natural Resources Wales Abstraction: Impounding Abstraction Type: Not Supplied Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 January Authorised End: 31 December Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	A15SE (E)	1245	2	262475 198957
	<p>Water Abstractions</p> <p>Operator: British Steel Plc Licence Number: 22/59/4/0053 Permit Version: 100 Location: River Lliw At Point C Authority: Environment Agency, Welsh Region Abstraction: Metal: General Use Relating To Secondary Category (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Mill Leat Of River Lliw Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 4th January 2001 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	A6SW (SW)	1630	4	259400 198200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<p>Water Abstractions</p> <p>Operator: British Steel Plc Licence Number: 22/59/4/0053 Permit Version: Not Supplied Location: Location Description Not Available Authority: Environment Agency, Welsh Region Abstraction: Metal: General Use Relating To Secondary Category (Medium Loss) Abstraction Type: Not Supplied Source: Surface Daily Rate (m3): 249 Yearly Rate (m3): 90920 Details: River Lliw At Point C 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 100m</p>	A6SW (SW)	1630	4	259400 198200
	<p>Water Abstractions</p> <p>Operator: Reggie Street Licence Number: 22/59/4/0070 Permit Version: 103 Location: Afon Lliw Authority: Environment Agency, Welsh Region Abstraction: Aquaculture: Fish Farm/Cress Pond Throughflow Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 19th June 2012 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	(N)	1694	4	261349 200876
	<p>Water Abstractions</p> <p>Operator: Mr & Mrs D & J Alexander Licence Number: 22/59/4/0070 Permit Version: 102 Location: Afon Lliw Authority: Environment Agency, Welsh Region Abstraction: Aquaculture: Fish Farm/Cress Pond Throughflow Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 27th March 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	(N)	1718	4	261350 200900
	<p>Water Abstractions</p> <p>Operator: Mr & Mrs D & J Alexander Licence Number: 22/59/4/0070 Permit Version: 101 Location: Afon Lliw Authority: Environment Agency, Welsh Region Abstraction: Aquaculture: Fish Farm/Cress Pond Throughflow Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2007 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	(N)	1718	4	261350 200900

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<p>Water Abstractions</p> <p>Operator: Messrs D Rudman Licence Number: 22/59/4/0070 Permit Version: 100 Location: Afon Lliw Authority: Environment Agency, Welsh Region Abstraction: Aquaculture: Fish Farm/Cress Pond Throughflow Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Afon Lliw Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 30th July 1992 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m</p>	(N)	1718	4	261350 200900
	<p>Water Abstractions</p> <p>Operator: Bellway Homes (Wales Division) Licence Number: 22/59/4/0087 Permit Version: 1 Location: Afon Llan, Penllergaer, Swansea Authority: Natural Resources Wales Abstraction: Amenity: Lake And Pond Throughflow Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Pond At Penllergaer Park, Community Of Llchwyr, Swansea. Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	(SE)	1845	2	262780 198090
	<p>Groundwater Vulnerability Map</p> <p>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: >550 mm/year Baseflow Index: <40% Superficial: >90% Patchiness: <3m Superficial Thickness: High Superficial Recharge:</p>	A13SW (W)	0	2	261000 199089
	<p>Groundwater Vulnerability Map</p> <p>Combined Classification: Secondary Superficial Aquifer - Low Vulnerability Combined Vulnerability: Low Combined Aquifer: Productive Bedrock Aquifer, Productive Superficial Aquifer Pollutant Speed: Low Bedrock Flow: Well Connected Fractures Dilution: >550 mm/year Baseflow Index: <40% Superficial: >90% Patchiness: 3-10m Superficial Thickness: Medium Superficial Recharge:</p>	A13SW (S)	0	2	261000 199000

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, Productive Superficial Aquifer Pollutant Speed: Intermediate Bedrock Flow: Well Connected Fractures Dilution: >550 mm/year Baseflow Index: >70% Superficial Patchiness: <90% Superficial Thickness: <3m Superficial Recharge: Medium	A13SW (W)	0	2	261014 199089
	Groundwater Vulnerability Map Combined Classification: Secondary Superficial Aquifer - Medium Vulnerability Combined Vulnerability: Medium Combined Aquifer: Productive Bedrock Aquifer, Productive Superficial Aquifer Pollutant Speed: High Bedrock Flow: Well Connected Fractures Dilution: >550 mm/year Baseflow Index: <40% Superficial Patchiness: <90% Superficial Thickness: 3-10m Superficial Recharge: Medium	A13SW (S)	0	2	261014 199000
	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: >550 mm/year Baseflow Index: >70% Superficial Patchiness: <90% Superficial Thickness: <3m Superficial Recharge: Medium	A13NE (NE)	0	2	261134 199163
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - A	A13SW (W)	0	2	261014 199089
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	A13SW (W)	0	2	261014 199089
	Extreme Flooding from Rivers or Sea without Defences None				
	Flooding from Rivers or Sea without Defences None				
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
20	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 185.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A13SW (S)	0	5	260993 198987

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
21	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 159.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A13NW (NW)	0	5	260954 199223
22	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 162.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A13NW (NW)	0	5	260987 199142
23	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 5.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A13SW (S)	0	5	260998 198989
24	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 236.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A13SE (SE)	0	5	261051 199014
25	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 175.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A13NW (NW)	0	5	260867 199153
26	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 224.9 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A13SW (W)	4	5	260809 199013
27	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 24.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SE (SW)	227	5	260609 198912
28	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 8.7 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SE (SW)	247	5	260599 198890
29	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 12.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SE (SW)	254	5	260595 198882

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
30	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 70.0 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SE (SW)	266	5	260587 198873
31	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 160.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SE (SW)	335	5	260539 198822
32	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 64.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SE (W)	382	5	260435 198927
33	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 313.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8NE (SE)	410	5	261270 198626
34	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 304.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8NE (SE)	413	5	261269 198626
35	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 235.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8NE (SE)	413	5	261269 198626
36	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 8.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18SW (NW)	429	5	260688 199548
37	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 3.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18SW (NW)	435	5	260691 199556
38	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 24.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18SW (NW)	437	5	260692 199558

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
39	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 169.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8NE (S)	444	5	261153 198569
40	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 9.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SE (W)	446	5	260373 198911
41	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 3.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18SW (NW)	448	5	260705 199578
42	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 95.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A12SE (W)	450	5	260374 198896
43	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 233.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18SW (NW)	451	5	260705 199581
44	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 14.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SE (W)	456	5	260364 198908
45	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 3.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18SW (NW)	460	5	260740 199604
46	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 1.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18SW (NW)	462	5	260740 199607
47	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 426.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18SW (NW)	463	5	260739 199607

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
48	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 82.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SE (SW)	468	5	260386 198819
49	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 70.1 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SE (W)	470	5	260350 198905
50	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 216.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A9NW (SE)	515	5	261405 198581
51	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 516.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18SE (N)	523	5	261102 199716
52	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: Loughor Primacy: 1	A9NW (SE)	526	5	261508 198645
53	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 64.8 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SW (W)	535	5	260305 198837
54	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 145.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18SE (N)	540	5	261122 199734
55	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 106.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SW (W)	540	5	260281 198892
56	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 1.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A8NE (S)	564	5	261085 198432

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
57	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 31.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8NE (S)	564	5	261085 198432
58	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 159.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18NE (N)	581	5	261195 199774
59	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 83.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8NE (S)	582	5	261111 198418
60	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 71.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8NE (S)	585	5	261253 198441
61	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 77.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SW (W)	595	5	260247 198821
62	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 368.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A9NW (SE)	599	5	261447 198508
63	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 4.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A9NW (SE)	599	5	261451 198511
64	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 328.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18NW (N)	600	5	260909 199769
65	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 48.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SW (W)	632	5	260197 198849

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
66	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 82.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7NW (SW)	645	5	260224 198748
67	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 55.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18NE (N)	648	5	261217 199838
68	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 5.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SE (S)	650	5	261083 198345
69	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 37.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SE (S)	650	5	261083 198345
70	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 190.6 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SE (S)	651	5	261078 198343
71	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 185.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SE (SE)	653	5	261336 198394
72	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 154.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7NW (SW)	658	5	260215 198735
73	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 9.7 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SW (W)	659	5	260180 198816
74	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 53.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SW (W)	659	5	260180 198816

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
75	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 45.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SW (W)	664	5	260151 198900
76	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 22.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SW (W)	667	5	260171 198818
77	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 277.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18NE (N)	672	5	261078 199863
78	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 61.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SW (W)	672	5	260142 198901
79	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 27.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SW (W)	674	5	260151 198855
80	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 15.1 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SE (S)	676	5	261137 198328
81	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 110.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SW (W)	682	5	260152 198828
82	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 22.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SE (S)	684	5	261125 198318
83	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 75.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SE (S)	684	5	261104 198314

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
84	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 121.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A12SW (W)	688	5	260142 198839
85	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 198.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SW (W)	688	5	260142 198839
86	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 323.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18NW (N)	696	5	260974 199870
87	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 15.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SE (S)	711	5	261157 198296
88	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 30.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SE (S)	711	5	261157 198296
89	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 81.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7NW (SW)	721	5	260154 198717
90	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 330.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SW (S)	722	5	260901 198273
91	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 315.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A8SW (S)	725	5	260961 198265
92	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 2.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SE (S)	733	5	261175 198278

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
93	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 208.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SE (S)	735	5	261177 198276
94	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 121.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7NW (SW)	750	5	260276 198491
95	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 730.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17SW (NW)	760	5	260266 199627
96	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 49.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7NW (SW)	766	5	260143 198640
97	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: Loughor Primacy: 1	A7NW (SW)	766	5	260143 198640
98	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 138.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7NW (SW)	771	5	260145 198627
99	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 88.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12NW (W)	773	5	260040 199195
100	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 74.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12NW (W)	779	5	260023 199116
101	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 74.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12NW (W)	788	5	260017 199149

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
102	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 56.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A14NE (E)	791	5	262014 199257
103	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 184.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SE (S)	792	5	261330 198248
104	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 59.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7NW (SW)	803	5	260095 198652
105	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 188.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18NE (N)	811	5	261117 200005
106	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 287.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12NW (W)	811	5	260039 199343
107	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 13.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A15NW (E)	825	5	262062 199143
108	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 72.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A15NW (E)	828	5	262065 199156
109	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 4.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17NE (NW)	828	5	260641 199959
110	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 300.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A15NW (E)	828	5	262065 199156

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
111	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 7.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17NE (NW)	832	5	260638 199962
112	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 46.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A11SE (W)	835	5	259964 199069
113	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 115.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7SE (SW)	835	5	260578 198211
114	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 59.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17NE (NW)	836	5	260643 199968
115	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 10.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7SE (SW)	836	5	260576 198211
116	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 394.2 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7SE (SW)	839	5	260566 198211
117	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 37.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7NW (SW)	841	5	260154 198492
118	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 611.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17NW (NW)	843	5	260319 199797
119	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 40.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A11NE (W)	843	5	259963 199158

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
120	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 76.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A11NE (W)	852	5	259950 199120
121	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 183.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7NW (SW)	858	5	260039 198640
122	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 3.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18NW (N)	868	5	260682 200012
123	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 82.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18NW (N)	869	5	260684 200014
124	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 155.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17SW (NW)	872	5	260093 199577
125	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 1.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A11SE (W)	873	5	259926 199045
126	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 1.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A11SE (W)	873	5	259926 199045
127	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 88.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A11SE (W)	874	5	259925 199044
128	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 493.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7SE (S)	874	5	260673 198149

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
129	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 203.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A19NE (NE)	877	5	261724 199867
130	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 192.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18NW (N)	886	5	260752 200044
131	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 215.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A15NW (E)	886	5	262120 199191
132	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 511.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A18NE (N)	888	5	261306 200067
133	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 25.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SE (S)	890	5	261265 198133
134	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 84.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18NW (N)	897	5	260958 200072
135	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 424.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SE (S)	899	5	261286 198128
136	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 60.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A15SW (E)	900	5	262105 198861
137	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 2.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A11SE (W)	906	5	259897 198960

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
138	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 7.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A11SE (W)	908	5	259896 198959
139	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 237.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A11SE (W)	912	5	259892 198952
140	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 240.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A11SE (W)	912	5	259892 198952
141	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 53.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A15SW (E)	915	5	262151 199036
142	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 22.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A23SE (N)	925	5	261176 200119
143	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 32.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A23SE (N)	936	5	261165 200130
144	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 9.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7SW (SW)	943	5	260127 198367
145	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 53.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7SW (SW)	947	5	260118 198370
146	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: Loughor Primacy: 1	A7SW (SW)	947	5	260119 198369

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
147	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 3.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7SW (SW)	948	5	260139 198348
148	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 225.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7SW (SW)	949	5	260135 198349
149	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 110.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A23SE (N)	956	5	261131 200151
150	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 30.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A20SW (E)	959	5	262132 199450
151	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 142.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A19NW (NE)	966	5	261612 200047
152	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 138.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A19NW (NE)	968	5	261608 200051
153	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 116.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A23SW (N)	973	5	260913 200142
154	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 19.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A23SE (N)	987	5	261023 200176
155	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 13.9 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A23SE (N)	987	5	261042 200176

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
156	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 3.7 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7SW (SW)	990	5	260066 198364
157	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 79.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A16SE (NW)	990	5	259954 199579
158	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: Loughor Primacy: 2	A23SE (N)	990	5	261056 200180
159	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 6.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A23SE (N)	991	5	261071 200183
160	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 62.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7SW (SW)	993	5	260062 198364
161	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 38.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A6NE (W)	994	5	259859 198719
162	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 62.0 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A6NE (W)	994	5	259859 198719
163	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 275.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17NE (NW)	996	5	260521 200094
164	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 25.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A19NE (NE)	996	5	261732 200010

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
165	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 303.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A20SW (E)	997	5	262152 199501
166	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 51.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A11SE (W)	998	5	259801 199045

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
167	<p>Historical Landfill Sites</p> <p>Licence Holder: Not Supplied Location: Penllergear Name: Llys Nini Farm Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD14471 First Input Date: 31st December 1992 Last Input Date: 31st December 1994 Specified Waste: Deposited Waste included Inert Waste Type: EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 6855/0026 BGS Ref: Not Supplied Other Ref: Not Supplied</p>	A18SW (N)	387	2	260956 199551
168	<p>Licensed Waste Management Facilities (Locations)</p> <p>Licence Number: QP3095FY Location: 3M U K Special Waste Store, Penllergaer, Swansea, Swansea, SA4 1GD Operator Name: 3M U K Plc Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: In-house Storage Facilities Licence Status: Expired Issued: 21st March 1990 Last Modified: Not Supplied Expires: 17th September 1999 Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 100m</p>	A7NE (SW)	519	2	260400 198700
168	<p>Licensed Waste Management Facilities (Locations)</p> <p>Licence Number: 34023 Location: Gorseinon Road, Penllergaer, Swansea, SA4 1GD Operator Name: 3M U K Plc Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: In-house Storage Facilities Licence Status: Expired Issued: 21st March 1990 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 100m</p>	A7NE (SW)	519	2	260400 198700
169	<p>Licensed Waste Management Facilities (Locations)</p> <p>Licence Number: NB3331RA Location: Trojan Electronics Ltd, Gorseinon, Swansea, Swansea, SA4 9WG Operator Name: Trojan Electronics Limited Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: WEEE treatment facility Licence Status: Surrendered Issued: 5th March 2013 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 8th July 2015 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	A8SW (S)	704	2	260698 198318

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
170	<p>Licensed Waste Management Facilities (Locations)</p> <p>Licence Number: FP3098FV Location: Garngoch Civic Amenity Site, Garngoch Ind Est, Llansamlet, Swansea, SA4 9WF Operator Name: City And County Of Swansea Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: Household, Commercial And Industrial Transfer Stations Licence Status: Expired Issued: 23rd March 1999 Last Modified: Not Supplied Expires: 9th July 2013 Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	A7SE (SW)	833	2	260556 198220
171	<p>Licensed Waste Management Facilities (Locations)</p> <p>Licence Number: 900062 Location: Unit 6/7 Gorseinon Business Park, Gorseinon Rd, Gorseinon, Swansea, SA4 4DQ Operator Name: Phoenix Asbestos Recovery Ltd Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: Asbestos Waste Transfer Station Licence Status: Issued Issued: 17th July 2014 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 100m</p>	A6NE (SW)	899	2	260005 198616
171	<p>Licensed Waste Management Facilities (Locations)</p> <p>Licence Number: QB3997TU Location: Phoenix House, Gorseinon, Swansea, Swansea, SA4 4DQ Operator Name: Phoenix Asbestos Recovery Ltd Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: Asbestos Waste Transfer Station Licence Status: Effective Issued: 17th July 2014 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>	A6NE (SW)	899	2	260005 198616
	<p>Local Authority Landfill Coverage</p> <p>Name: City and County of Swansea - Has no landfill data to supply</p>		0	3	261014 199089
172	<p>Potentially Infilled Land (Non-Water)</p> <p>Bearing Ref: S Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995</p>	A8NE (S)	278	-	261055 198717
173	<p>Potentially Infilled Land (Non-Water)</p> <p>Bearing Ref: S Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995</p>	A8NE (S)	302	-	261089 198702
174	<p>Potentially Infilled Land (Non-Water)</p> <p>Bearing Ref: W Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995</p>	A12SE (W)	451	-	260350 199009
175	<p>Potentially Infilled Land (Non-Water)</p> <p>Bearing Ref: SW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995</p>	A7NE (SW)	591	-	260590 198465
176	<p>Potentially Infilled Land (Non-Water)</p> <p>Bearing Ref: S Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995</p>	A8SE (S)	646	-	261082 198349

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
177	Potentially Infilled Land (Non-Water) Bearing Ref: N Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995	A18NW (N)	688	-	260972 198861
178	Potentially Infilled Land (Non-Water) Bearing Ref: N Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995	A18NW (N)	804	-	260905 199974
179	Potentially Infilled Land (Non-Water) Bearing Ref: SE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995	A9SW (SE)	821	-	261373 198230
180	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1921	A14SW (E)	249	-	261478 199036
181	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1884	A8NW (SW)	320	-	260707 198711
182	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1921	A8SW (S)	685	-	260882 198312
183	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1884	A8SW (S)	697	-	260976 198292
184	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1884	A8SW (S)	735	-	260808 198270
185	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1884	A7SE (SW)	788	-	260611 198249
186	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A9NE (E)	851	-	262010 198744
187	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A8SE (S)	898	-	261254 198123
188	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1884	A7SW (SW)	922	-	260164 198359
189	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1884	A3NW (S)	970	-	261011 198014
190	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1951	A11NE (W)	985	-	259866 199376
191	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1884	A3NW (S)	997	-	260720 198017

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
192	<p>Registered Landfill Sites</p> <p>Licence Holder: D R Walker Licence Reference: 3/92 Site Location: Llys Nini Farm, Penllergaer, SWANSEA, West Glamorgan, SA4 1WE Licence Easting: 261000 Licence Northing: 199650 Operator Location: As Site Address Authority: Environment Agency Wales, South West Area Site Category: Landfill Max Input Rate: Undefined Waste Source: No known restriction on source of waste Restrictions: Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st December 1992 Preceded By: Not Given Licence: Superseded By: Not Given Licence: Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Brickwork, Stone, Silica, Glass Topsoil, Subsoil Prohibited Waste: Waste N.O.S.</p>	A18SW (N)	477	4	261000 199650
193	<p>Registered Waste Transfer Sites</p> <p>Licence Holder: 3 M United Kingdom Plc Licence Reference: 1/90 Site Location: Gorseinon Road, Penllergaer, SWANSEA, West Glamorgan, SA4 1GD Operator Location: As Site Address Authority: Environment Agency Wales, South West Area Site Category: Storage Max Input Rate: Large (Equal to or greater than 75,000 and less than 250,000 tonnes per year) Waste Source: Waste produced/controlled by licence holder Restrictions: Licence Status: Site exempt from licenceExempt Dated: 21st March 1990 Preceded By: Not Given Licence: Superseded By: Not Given Licence: Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Activator Decontaminant Aldehydes And Ketones Contaminated Rubbish Empty Used Containers (Ex On Site) Halogenated Cleaning Cmpds Hot Melt Adhesives (Prod.On Site) Isocyanates Latex, Latex/Rubber Sol'Ns/Susp'Ns Misc.Reject Raw Mat'ls & Proc.Mixes Mixed Organic Compounds Mixed Organic Compounds Containing Printing Industry Wastes Sodium/Potassium Oxides/Hydroxides Used Filter Materials And</p>	A7NW (SW)	659	4	260300 198600

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
194	<p>Registered Waste Transfer Sites</p> <p>Licence Holder: Swansea City Waste Disposal Co Ltd Licence Reference: SWW 170L Site Location: Phoenix Way, Garngoch Industrial Estate, Penllergaer, SWANSEA, West Glamorgan, SA7 9EH Operator Location: Ferryboat Close, Enterprise Zone, SWANSEA, West Glamorgan, SA6 8QN Authority: Environment Agency Wales, South West Area Site Category: Civic Amenity Max Input Rate: Very Small (Less than 10,000 tonnes per year) Waste Source: No known restriction on source of waste Restrictions: Licence Status: Operational as far as is known Dated: 23rd March 1999 Preceded By: Not Given Licence: Superseded By: Not Given Licence: Positional Accuracy: Manually positioned within the geographical locality Boundary Quality: Not Supplied Authorised Waste: General Household Waste Max.Storage In Licence Max.Waste Permitted By Licence Prohibited Waste: Percussive/Explosive/Similar Waste Spec.Waste (Epa'90:S62/1996 Regs) Other Than As Household Waste Sub'S Control. Radioactive Subs Act'60 Waste In Seal Ed Drums Waste N.O.S. Wastes In C.P.L. Dangerous Subs.Act '84</p>	A7SE (SW)	779	4	260500 198300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
195	<p>Control of Major Accident Hazards Sites (COMAH)</p> <p>Name: British Gas Location: Gorseinon Road, Penllergaer, SWANSEA, West Glamorgan, SA4 Reference: Not Supplied Type: Lower Tier Status: Record Ceased To Be Supplied Under COMAH Regulations Positional Accuracy: Manually positioned to the road within the address or location</p>	A8NW (SW)	488	6	260750 198529
196	<p>Control of Major Accident Hazards Sites (COMAH)</p> <p>Name: Brisco Williams & Sons Limited Location: Gorseinon Road, SWANSEA, West Glamorgan, SA4 1GG Reference: Not Supplied Type: Lower Tier Status: Record Ceased To Be Supplied Under COMAH Regulations Positional Accuracy: Automatically positioned to the address</p>	A7NE (SW)	613	6	260544 198462
197	<p>Control of Major Accident Hazards Sites (COMAH)</p> <p>Name: 3M (UK) PLC Location: Gorseinon Road, Penllergaer, SWANSEA, West Glamorgan, SA4 1GD Reference: Not Supplied Type: Lower Tier Status: Record Ceased To Be Supplied Under COMAH Regulations Positional Accuracy: Automatically positioned to the address</p>	A7NW (SW)	720	6	260232 198589
197	<p>Control of Major Accident Hazards Sites (COMAH)</p> <p>Name: 3m United Kingdom Plc Location: Gorseinon Road, Penllergaer, Swansea, SA4 9GD Reference: Not Supplied Type: Lower Tier Status: Active Positional Accuracy: Automatically positioned to the address</p>	A7NW (SW)	720	6	260232 198589
198	<p>Notification of Installations Handling Hazardous Substances (NIHHS)</p> <p>Name: Brisco Williams & Sons Ltd. Location: Gorseinon Road, Penllergaer, Swansea, West Glamorgan, SA4 1GG Status: Not Active Positional Accuracy: Automatically positioned to the address</p>	A7NE (SW)	613	6	260544 198462
199	<p>Notification of Installations Handling Hazardous Substances (NIHHS)</p> <p>Name: 3M (UK) PLC Location: Gorseinon Road, Penllergaer, SWANSEA, West Glamorgan, SA4 1GD Status: Not Active Positional Accuracy: Automatically positioned to the address</p>	A7NW (SW)	723	6	260232 198584
200	<p>Planning Hazardous Substance Consents</p> <p>Name: 3m Uk Plc Location: Gorseinon Road, Penllergaer, SWANSEA, West Glamorgan, SA4 1 Authority: City and County of Swansea, Planning Department Application Ref: Hs 1/92 Hazardous Substance: Part C, Flammable Substance (Not in Parts A&B), Liquefied petroleum gas held at >1.4 bar where amount held is greater than or equal to 25 tonnes Maximum Quantity: 25 Application date: Not Supplied Decision: Deemed consent granted between June 1992 and November 1992 Positional Accuracy: Manually positioned to the address or location</p>	A7NE (SW)	580	7	260419 198588
201	<p>Planning Hazardous Substance Consents</p> <p>Name: Brisco Williams Gas Ltd Location: Gorseinon Road, Penllergaer, SWANSEA, West Glamorgan, SA4 9GG Authority: City and County of Swansea, Planning Department Application Ref: Hs 4/92 Hazardous Substance: Part C, Flammable Substance (Not in Parts A&B), Liquefied petroleum gas held at >1.4 bar where amount held is greater than or equal to 25 tonnes Maximum Quantity: 200 Application date: Not Supplied Decision: Deemed consent granted between June 1992 and November 1992 Positional Accuracy: Automatically positioned to the address</p>	A7NE (SW)	614	7	260544 198462

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: South Wales Upper Coal Measures Formation	A13SW (W)	0	1	261014 199089
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A13SW (W)	0	1	260981 199082
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NE (NE)	0	1	261134 199163
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SW (W)	0	1	261014 199089
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A13SE (E)	0	1	261071 199089
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NW (NW)	153	1	260767 199269
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: 1.8 - 2.2 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A18SE (N)	306	1	261114 199500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<p>BGS Estimated Soil Chemistry</p> <p>Source: British Geological Survey, National Geoscience Information Service</p> <p>Soil Sample Type: Sediment</p> <p>Arsenic 25 - 35 mg/kg</p> <p>Concentration:</p> <p>Cadmium 1.8 - 2.2 mg/kg</p> <p>Concentration:</p> <p>Chromium 60 - 90 mg/kg</p> <p>Concentration:</p> <p>Lead Concentration: <100 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A18SE (N)	306	1	261144 199500
	<p>BGS Estimated Soil Chemistry</p> <p>Source: British Geological Survey, National Geoscience Information Service</p> <p>Soil Sample Type: Sediment</p> <p>Arsenic 25 - 35 mg/kg</p> <p>Concentration:</p> <p>Cadmium 1.8 - 2.2 mg/kg</p> <p>Concentration:</p> <p>Chromium 60 - 90 mg/kg</p> <p>Concentration:</p> <p>Lead Concentration: <100 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A18SW (N)	307	1	261014 199500
	<p>BGS Estimated Soil Chemistry</p> <p>Source: British Geological Survey, National Geoscience Information Service</p> <p>Soil Sample Type: Sediment</p> <p>Arsenic 25 - 35 mg/kg</p> <p>Concentration:</p> <p>Cadmium 2.2 - 3.0 mg/kg</p> <p>Concentration:</p> <p>Chromium 60 - 90 mg/kg</p> <p>Concentration:</p> <p>Lead Concentration: <100 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A18SW (N)	331	1	260896 199500
	<p>BGS Estimated Soil Chemistry</p> <p>Source: British Geological Survey, National Geoscience Information Service</p> <p>Soil Sample Type: Sediment</p> <p>Arsenic 25 - 35 mg/kg</p> <p>Concentration:</p> <p>Cadmium 2.2 - 3.0 mg/kg</p> <p>Concentration:</p> <p>Chromium 60 - 90 mg/kg</p> <p>Concentration:</p> <p>Lead Concentration: <100 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A18SW (N)	331	1	261000 199500
	<p>BGS Estimated Soil Chemistry</p> <p>Source: British Geological Survey, National Geoscience Information Service</p> <p>Soil Sample Type: Sediment</p> <p>Arsenic 25 - 35 mg/kg</p> <p>Concentration:</p> <p>Cadmium 2.2 - 3.0 mg/kg</p> <p>Concentration:</p> <p>Chromium 60 - 90 mg/kg</p> <p>Concentration:</p> <p>Lead Concentration: <100 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A18SW (NW)	339	1	260816 199500
	<p>BGS Estimated Soil Chemistry</p> <p>Source: British Geological Survey, National Geoscience Information Service</p> <p>Soil Sample Type: Sediment</p> <p>Arsenic 25 - 35 mg/kg</p> <p>Concentration:</p> <p>Cadmium <1.8 mg/kg</p> <p>Concentration:</p> <p>Chromium 60 - 90 mg/kg</p> <p>Concentration:</p> <p>Lead Concentration: <100 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A14NW (E)	420	1	261642 199217

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 25 - 35 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel 15 - 30 mg/kg Concentration:	A12NW (W)	711	1	260136 199316
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 25 - 35 mg/kg Concentration: Cadmium 2.2 - 3.0 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel 15 - 30 mg/kg Concentration:	A17SW (NW)	722	1	260275 199574
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 25 - 35 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel 15 - 30 mg/kg Concentration:	A14NE (E)	735	1	261944 199308
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 25 - 35 mg/kg Concentration: Cadmium 1.8 - 2.2 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel 15 - 30 mg/kg Concentration:	A19SE (NE)	767	1	261846 199571
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 25 - 35 mg/kg Concentration: Cadmium 1.8 - 2.2 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel 15 - 30 mg/kg Concentration:	A18NW (N)	806	1	261014 200000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 25 - 35 mg/kg Concentration: Cadmium 2.2 - 3.0 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel 30 - 45 mg/kg Concentration:	A19SE (NE)	859	1	262000 199500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 25 - 35 mg/kg Concentration: Cadmium 2.2 - 3.0 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel 15 - 30 mg/kg Concentration:	A19SE (NE)	928	1	262000 199632
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 25 - 35 mg/kg Concentration: Cadmium 2.2 - 3.0 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel 15 - 30 mg/kg Concentration:	A20SW (E)	958	1	262110 199500
202	BGS Recorded Mineral Sites Site Name: Llwyn-Yr-Eos Location: Gorseinon, Swansea, West Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 153944 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Swansea Member Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A8NE (S)	274	1	261057 198722
203	BGS Recorded Mineral Sites Site Name: Llwyn-Yr-Eos Location: Gorseinon, Swansea, West Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 153945 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Swansea Member Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A8NE (S)	339	1	261097 198665
204	BGS Recorded Mineral Sites Site Name: St. Davids Colliery Location: Gorseinon, Swansea, West Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 153917 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Grovesend Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A18NW (N)	795	1	260913 199964
205	BGS Recorded Mineral Sites Site Name: Garngoch No.3 Location: Penllergaer, Gorseinon, West Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 188597 Type: Underground Status: Ceased Operator: Individual'S Name Withheld Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Grovesend Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A8SE (S)	870	1	261182 198139

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
205	BGS Recorded Mineral Sites Site Name: Garngoch No.3 Location: Penllergaer, Gorseinon, West Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 188598 Type: Underground Status: Ceased Operator: Individual'S Name Withheld Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Grovesend Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A8SE (S)	895	1	261190 198115
	BGS Measured Urban Soil Chemistry No data available				
	BGS Urban Soil Chemistry Averages No data available				
	Coal Mining Affected Areas Description: In an area which may be affected by coal mining activity. It is recommended that a coal mining report is obtained from the Coal Authority. Contact details are included in the Useful Contacts section of this report.	A13SW (W)	0	8	261014 199089
	Mining Instability Mining Evidence: Inconclusive Coal Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	A13SW (W)	0	-	261014 199089
	Non Coal Mining Areas of Great Britain No Hazard				
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	1	261014 199089
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	1	261014 199089
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	1	261014 199089
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	261102 199130
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	1	261014 199089
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	142	1	260775 199266
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	1	261014 199089
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	261102 199130
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	142	1	260775 199266
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (S)	221	1	261109 198785
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	1	261014 199089
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (S)	221	1	261109 198785

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<p>Radon Potential - Radon Affected Areas</p> <p>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).</p> <p>Source: British Geological Survey, National Geoscience Information Service</p>	A13NE (E)	0	1	261073 199101
	<p>Radon Potential - Radon Affected Areas</p> <p>Affected Area: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level).</p> <p>Source: British Geological Survey, National Geoscience Information Service</p>	A13SW (W)	0	1	261014 199089
	<p>Radon Potential - Radon Protection Measures</p> <p>Protection Measure: Basic radon protective measures are necessary in the construction of new dwellings or extensions</p> <p>Source: British Geological Survey, National Geoscience Information Service</p>	A13NE (E)	0	1	261073 199101
	<p>Radon Potential - Radon Protection Measures</p> <p>Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions</p> <p>Source: British Geological Survey, National Geoscience Information Service</p>	A13SW (W)	0	1	261014 199089

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
206	<p>Contemporary Trade Directory Entries</p> <p>Name: Advanced Pine Stripping Location: 98, Gorseinon Road, Penllergaer, Swansea, West Glamorgan, SA4 9AB Classification: Paint & Varnish Stripping Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NE (S)	274	-	261109 198739
207	<p>Contemporary Trade Directory Entries</p> <p>Name: Dampshield Location: 1, Gelli Hyll Road, Penllergaer, SWANSEA, SA4 9WE Classification: Damp & Dry Rot Control Status: Active Positional Accuracy: Automatically positioned to the address</p>	A8NW (SW)	372	-	260805 198637
208	<p>Contemporary Trade Directory Entries</p> <p>Name: A L M Grwp Ltd Location: 7, Gorseinon Road, Penllergaer, Swansea, SA4 9AE Classification: Electrical Engineers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A14SW (E)	382	-	261589 198952
209	<p>Contemporary Trade Directory Entries</p> <p>Name: Bespoke Ironwork Location: 150, Gorseinon Road, Penllergaer, Swansea, SA4 9AA Classification: Wrought Ironwork Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	425	-	260849 198577
210	<p>Contemporary Trade Directory Entries</p> <p>Name: Esso Location: 4, Swansea Road, Penllergaer, Swansea, SA4 9AQ Classification: Petrol Filling Stations Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14SW (E)	429	-	261642 198958
210	<p>Contemporary Trade Directory Entries</p> <p>Name: Esso Location: 4, Swansea Road, Penllergaer, Swansea, SA4 9AQ Classification: Petrol Filling Stations Status: Active Positional Accuracy: Automatically positioned to the address</p>	A14SW (E)	430	-	261643 198958
211	<p>Contemporary Trade Directory Entries</p> <p>Name: Cross Service Station Location: 4, Swansea Road, Penllergaer, Swansea, SA4 9AQ Classification: Petrol Filling Stations Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14SW (E)	462	-	261687 198990
211	<p>Contemporary Trade Directory Entries</p> <p>Name: Hughes & Williams Location: Cross Garage Swansea Road, Penllergaer, Swansea, West Glamorgan, SA4 9AQ Classification: Garage Services Status: Active Positional Accuracy: Manually positioned to the address or location</p>	A14SE (E)	471	-	261699 199004
212	<p>Contemporary Trade Directory Entries</p> <p>Name: Silver Roadways (Swansea) Ltd Location: Gorseinon Rd, Penllergaer, Swansea, West Glamorgan, SA4 1GJ Classification: Road Haulage Services Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A8NW (S)	471	-	260794 198539
212	<p>Contemporary Trade Directory Entries</p> <p>Name: City Recycle Location: Gorseinon Rd, Penllergaer, Swansea, West Glamorgan, SA4 9GE Classification: Recycling Centres Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A8NW (SW)	479	-	260776 198534
212	<p>Contemporary Trade Directory Entries</p> <p>Name: Western Recycling Ltd Location: Unit 3, Stone House, Gorseinon Road, Penllergaer, Swansea, SA4 1GE Classification: Recycling Centres Status: Inactive Positional Accuracy: Automatically positioned in the proximity of the address</p>	A8NW (S)	493	-	260795 198516

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
213	<p>Contemporary Trade Directory Entries</p> <p>Name: Gorseinon Tyre & Service Centre Ltd Location: Old Brisco Yard, Gorseinon Road, Penllergaer, Swansea, West Glamorgan, SA4 9GE Classification: Tyre Dealers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	474	-	260870 198526
213	<p>Contemporary Trade Directory Entries</p> <p>Name: Continental Caravans Location: Gorseinon Road, Penllergaer, Swansea, SA4 9GE Classification: Caravan Dealers & Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	475	-	260860 198526
213	<p>Contemporary Trade Directory Entries</p> <p>Name: Penllergaer M O T Centre Ltd Location: City One Buildings, Gorseinon Road, Penllergaer, Swansea, SA4 9GE Classification: Mot Testing Centres Status: Active Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	475	-	260860 198526
213	<p>Contemporary Trade Directory Entries</p> <p>Name: Graham Hopkins Motors Location: Unit 6, Medway Workshops, Gorseinon Road, Penllergaer, Swansea, SA4 9GE Classification: Garage Services Status: Active Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	498	-	260893 198500
213	<p>Contemporary Trade Directory Entries</p> <p>Name: K & S Packaging Location: Unit 3, Medway Workshops, Gorseinon Road, Penllergaer, Swansea, West Glamorgan, SA4 9GE Classification: Packaging Materials Manufacturers & Suppliers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	503	-	260868 198497
213	<p>Contemporary Trade Directory Entries</p> <p>Name: Steve'S Motor Repairs Location: Unit 2, Medway Workshops, Gorseinon Road, Penllergaer, Swansea, SA4 9GE Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	507	-	260858 198494
213	<p>Contemporary Trade Directory Entries</p> <p>Name: Rtec Tyres & Exhausts Location: Unit 2 Stone House, Gorseinon Road, Penllergaer, Swansea, West Glamorgan, SA4 9GE Classification: Tyre Dealers Status: Active Positional Accuracy: Manually positioned to the address or location</p>	A8NW (S)	510	-	260858 198491
214	<p>Contemporary Trade Directory Entries</p> <p>Name: Pennys Recovery Location: 10, Swansea Road, Penllergaer, Swansea, SA4 9AQ Classification: Salvage Dealers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A14SW (E)	482	-	261682 198914
215	<p>Contemporary Trade Directory Entries</p> <p>Name: Gorseinon House Location: 999 Gorseinon Rd, Penllergaer, Swansea, West Glamorgan, SA4 9GE Classification: Tyre Dealers Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A8NW (SW)	489	-	260746 198528
216	<p>Contemporary Trade Directory Entries</p> <p>Name: Welsh Boxes Location: Pleasant Road, Gorseinon, Swansea, West Glamorgan, SA4 9WH Classification: Case Manufacturers Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A12SW (W)	516	-	260291 198953
216	<p>Contemporary Trade Directory Entries</p> <p>Name: Packability Location: Pleasant Road, Gorseinon, Swansea, West Glamorgan, SA4 9WH Classification: Packaging Materials Manufacturers & Suppliers Status: Active Positional Accuracy: Manually positioned within the geographical locality</p>	A12SW (W)	516	-	260291 198953

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
217	<p>Contemporary Trade Directory Entries</p> <p>Name: Swift Tyres Location: Gorseinon Rd, Penllergaer, Swansea, West Glamorgan, SA4 1GE Classification: Tyre Dealers Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A7NE (SW)	520	-	260673 198512
218	<p>Contemporary Trade Directory Entries</p> <p>Name: Aditel Marine Electronics Location: 3, Pleasant Road, Gorseinon, Swansea, SA4 9WH Classification: Marine Electrical & Electronic Equipment Manufacturers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A12SW (W)	522	-	260304 198877
218	<p>Contemporary Trade Directory Entries</p> <p>Name: Welsh Boxes Location: 2, Pleasant Road, Gorseinon, Swansea, SA4 9WH Classification: Boxes & Cartons Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A12SW (W)	524	-	260307 198862
219	<p>Contemporary Trade Directory Entries</p> <p>Name: Solray Location: Phoenix Way, Garngoch Industrial Estate, Gorseinon, Swansea, West Glamorgan, SA4 9WF Classification: Heating Equipment - Sales & Service Status: Active Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	552	-	260889 198446
219	<p>Contemporary Trade Directory Entries</p> <p>Name: Comyn Ching & Co Solray Ltd Location: Phoenix Way, Gorseinon, Swansea, SA4 9WF Classification: Central Heating Supplies & Equipment Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	570	-	260899 198426
220	<p>Contemporary Trade Directory Entries</p> <p>Name: Williams Location: Gorseinon Rd, Penllergaer, Swansea, West Glamorgan, SA4 9GE Classification: Road Haulage Services Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A8NW (SW)	553	-	260723 198467
221	<p>Contemporary Trade Directory Entries</p> <p>Name: Trade Tyres Swansea Location: Unit 2 Stone House, Gorseinon Road, Penllergaer, Swansea, West Glamorgan, SA4 9GE Classification: Tyre Dealers Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A7NE (SW)	592	-	260582 198468
221	<p>Contemporary Trade Directory Entries</p> <p>Name: Sunny Haven Caravan Distributors Ltd Location: Gorseinon Road, Penllergaer, Swansea, SA4 9GE Classification: Caravan Dealers & Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7NE (SW)	592	-	260582 198468
221	<p>Contemporary Trade Directory Entries</p> <p>Name: Penllergaer Tyres & Exhaust Centre Location: Gorseinon Road, Penllergaer, Swansea, West Glamorgan, SA4 9GE Classification: Tyre Dealers Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A7NE (SW)	592	-	260582 198468
221	<p>Contemporary Trade Directory Entries</p> <p>Name: Brisco Williams Gas Ltd Location: Gorseinon Road, Penllergaer, Swansea, SA4 9GG Classification: Fireplaces & Mantelpieces Status: Active Positional Accuracy: Automatically positioned to the address</p>	A7NE (SW)	614	-	260544 198462
221	<p>Contemporary Trade Directory Entries</p> <p>Name: Brisco Williams (Gas) Ltd Location: Gorseinon Road, Penllergaer, Swansea, SA4 9GG Classification: Gas Appliances - Sales & Service Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7NE (SW)	614	-	260544 198462

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
222	<p>Contemporary Trade Directory Entries</p> <p>Name: The Oat-So-Good Company Ltd Location: Llwyn y Graig, Gorseinon, Swansea, SA4 9WG Classification: Food Products - Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8SW (SW)	606	-	260713 198415
223	<p>Contemporary Trade Directory Entries</p> <p>Name: Isaac Motors Location: Unit 6b, Llwyn y Graig, Gorseinon, Swansea, SA4 9WG Classification: Car Dealers - Used Status: Active Positional Accuracy: Automatically positioned to the address</p>	A7SE (SW)	647	-	260601 198401
224	<p>Contemporary Trade Directory Entries</p> <p>Name: Decadent Vapours Location: Unit 12, Llwyn y Graig, Gorseinon, Swansea, SA4 9WG Classification: Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8SW (S)	647	-	260761 198366
224	<p>Contemporary Trade Directory Entries</p> <p>Name: Source 4 Me Location: Unit 11, Llwyn y Graig, Gorseinon, Swansea, SA4 9WG Classification: Builders' Merchants Status: Active Positional Accuracy: Automatically positioned to the address</p>	A8SW (S)	656	-	260740 198361
224	<p>Contemporary Trade Directory Entries</p> <p>Name: Tericom Ltd Location: Unit 10, Llwyn y Graig, Gorseinon, Swansea, West Glamorgan, SA4 9WG Classification: Electronic Component Manufacturers & Distributors Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8SW (S)	663	-	260742 198353
224	<p>Contemporary Trade Directory Entries</p> <p>Name: Trojan Electronics Ltd Location: Unit 10-11, Llwyn y Graig, Gorseinon, Swansea, SA4 9WG Classification: Electronic Equipment - Manufacturers & Assemblers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8SW (S)	663	-	260742 198353
224	<p>Contemporary Trade Directory Entries</p> <p>Name: Trojan Electronics Ltd Location: Unit 10 +11, Llwyn y Graig, Garngoch Ind Est/Gorseinon, Swansea, West Glamorgan, SA4 9WG Classification: Electronic Equipment - Manufacturers & Assemblers Status: Inactive Positional Accuracy: Manually positioned to the address or location</p>	A8SW (S)	670	-	260722 198349
225	<p>Contemporary Trade Directory Entries</p> <p>Name: Steve'S Motor Repairs Location: Gorseinon Rd, Penllergaer, Swansea, West Glamorgan, SA4 9GE Classification: Garage Services Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A7NE (SW)	649	-	260442 198481
225	<p>Contemporary Trade Directory Entries</p> <p>Name: D W W Fencing Ltd Location: Gorseinon Rd, Penllergaer, Swansea, West Glamorgan, SA4 1GE Classification: Fencing Manufacturers Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A7NE (SW)	662	-	260436 198469
226	<p>Contemporary Trade Directory Entries</p> <p>Name: Gavin Electrical Engineering Ltd Location: Unit A, Kestrel Way, Gorseinon, Swansea, SA4 9WN Classification: Electrical Engineers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A8SW (S)	652	-	260862 198348
227	<p>Contemporary Trade Directory Entries</p> <p>Name: Securahome Location: Unit C1-C2, Kestrel Way, Gorseinon, Swansea, SA4 9WN Classification: PVC-U Products - Manufacturers & Suppliers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A8SW (S)	656	-	260797 198350

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
228	<p>Contemporary Trade Directory Entries</p> <p>Name: L K Q Coatings Ltd Location: Unit 8 Llwyn Y Graig, Gorseinon, Swansea, West Glamorgan, SA4 9WG Classification: Car Paint & Lacquer Manufacturers & Suppliers Status: Active Positional Accuracy: Manually positioned within the geographical locality</p>	A8SW (SW)	665	-	260707 198356
228	<p>Contemporary Trade Directory Entries</p> <p>Name: Air Cooling Technologies Location: Unit 1, Llwyn y Graig, Gorseinon, Swansea, SA4 9WG Classification: Air Conditioning & Refrigeration Contractors Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7SE (SW)	666	-	260670 198362
228	<p>Contemporary Trade Directory Entries</p> <p>Name: Tericom Ltd Location: Unit 1, Llwyn y Graig, Gorseinon, Swansea, SA4 9WG Classification: Electronic Component Manufacturers & Distributors Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7SE (SW)	666	-	260670 198362
228	<p>Contemporary Trade Directory Entries</p> <p>Name: Trojan Electronics Ltd Location: Unit 1, Llwyn y Graig, Gorseinon, Swansea, SA4 9WG Classification: Electronic Component Manufacturers & Distributors Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7SE (SW)	666	-	260670 198362
228	<p>Contemporary Trade Directory Entries</p> <p>Name: Ultra Air Group Ltd Location: Unit 1, Llwyn y Graig, Garngoch Industrial Estate, Gorseinon, Swansea, West Glamorgan, SA4 9WG Classification: Air Compressors Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7SE (SW)	666	-	260670 198362
228	<p>Contemporary Trade Directory Entries</p> <p>Name: Rainbow International Location: Unit 2, Llwyn y Graig, Gorseinon, Swansea, SA4 9WG Classification: Carpet, Curtain & Upholstery Cleaners Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7SE (SW)	683	-	260673 198344
228	<p>Contemporary Trade Directory Entries</p> <p>Name: Applied Products Location: Unit 3, Llwyn Y Graig, Gorseinon, Swansea, SA4 9WG Classification: Window Film Manufacturers and Dealers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A7SE (SW)	701	-	260676 198325
229	<p>Contemporary Trade Directory Entries</p> <p>Name: Phoenix Tyre & Service Centre Location: Unit 16 Phoenix Way, Garngoch Industrial Estate, Gorseinon, Swansea, West Glamorgan, SA4 9WF Classification: Tyre Dealers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7SE (SW)	696	-	260521 198381
230	<p>Contemporary Trade Directory Entries</p> <p>Name: Sinclair Van Centre Location: Gorseinon Road, Penllergaer, Swansea, SA4 9GW Classification: Commercial Vehicle Dealers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A7NE (SW)	721	-	260393 198427
230	<p>Contemporary Trade Directory Entries</p> <p>Name: Sinclair Volkswagen Ltd Location: Gorseinon Road, Penllergaer, Swansea, SA4 9GW Classification: Car Dealers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7NE (SW)	721	-	260393 198427
230	<p>Contemporary Trade Directory Entries</p> <p>Name: Sinclair Audi Location: Gorseinon Road, Penllergaer, Swansea, SA4 9GW Classification: Car Dealers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7NE (SW)	721	-	260393 198427

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
230	<p>Contemporary Trade Directory Entries</p> <p>Name: Sinclair Garages Ltd Location: Gorseinon Road, Penllergaer, Swansea, West Glamorgan, SA4 9GW Classification: Car Dealers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7NE (SW)	721	-	260393 198427
230	<p>Contemporary Trade Directory Entries</p> <p>Name: Sinclair Skoda Location: Gorseinon Road, Penllergaer, Swansea, West Glamorgan, SA4 9GW Classification: Car Dealers Status: Active Positional Accuracy: Manually positioned within the geographical locality</p>	A7NE (SW)	721	-	260393 198427
231	<p>Contemporary Trade Directory Entries</p> <p>Name: N G S Swansea Ltd Location: Unit 1b Stone House, Gorseinon Road, Penllergaer, Swansea, West Glamorgan, SA4 9GE Classification: Garage Services Status: Active Positional Accuracy: Manually positioned to the road within the address or location</p>	A7NW (SW)	742	-	260318 198461
231	<p>Contemporary Trade Directory Entries</p> <p>Name: Penllergaer Car Sales Location: Gorseinon Road, Penllergaer, Swansea, SA4 9GE Classification: Car Dealers - Used Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7NW (SW)	763	-	260320 198431
231	<p>Contemporary Trade Directory Entries</p> <p>Name: G L C Autos Location: Gorseinon Road, Penllergaer, SWANSEA, SA4 9GE Classification: Car Dealers - Used Status: Active Positional Accuracy: Automatically positioned to the address</p>	A7NW (SW)	763	-	260320 198431
232	<p>Contemporary Trade Directory Entries</p> <p>Name: Flawless Location: Unit 8-10, Phoenix Way, Garngoch Ind Est/Gorseinon, Swansea, West Glamorgan, SA4 1WF Classification: Clothing & Fabrics - Manufacturers Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A8SW (S)	752	-	260746 198262
233	<p>Contemporary Trade Directory Entries</p> <p>Name: Fluid Sealing Products (Wales) Ltd Location: Phoenix Way, Garngoch Ind Est, Gorseinon, Swansea, West Glamorgan, SA4 9WF Classification: Pumps - Sales, Servicing & Repairs Status: Inactive Positional Accuracy: Manually positioned to the address or location</p>	A7SE (SW)	760	-	260671 198266
233	<p>Contemporary Trade Directory Entries</p> <p>Name: John Glen Garage Doors Ltd Location: Glen House, Phoenix Way, Gorseinon, Swansea, SA4 9WF Classification: Gate Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7SE (SW)	760	-	260671 198266
233	<p>Contemporary Trade Directory Entries</p> <p>Name: Clean Up (UK) Ltd Location: Unit 9, Phoenix Way, Garngoch Ind Estate, Swansea, West Glamorgan, SA4 1WF Classification: Cleaning Materials & Equipment Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A8SW (S)	768	-	260690 198254
233	<p>Contemporary Trade Directory Entries</p> <p>Name: Direct Contract Services Location: Unit 8, The Workshops, Phoenix Way, Garngoch Ind Est/Gorseinon, Swansea, West Glamorgan, SA4 1WF Classification: Cleaning Services - Commercial Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A7SE (SW)	792	-	260636 198241
234	<p>Contemporary Trade Directory Entries</p> <p>Name: Ditch Witch UK Location: Phoenix Way, Garngoch Industrial Estate, Gorseinon, Swansea, West Glamorgan, SA4 9WF Classification: Drilling & Boring Equipment & Supplies Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7SE (SW)	793	-	260577 198256

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
235	<p>Contemporary Trade Directory Entries</p> <p>Name: Excel Repair Centre Ltd Location: Brunel House, 995, Gorseinon Road, Penllergaer, Swansea, SA4 9RU Classification: Car Breakdown & Recovery Services Status: Active Positional Accuracy: Automatically positioned to the address</p>	A7NW (SW)	805	-	260262 198427
235	<p>Contemporary Trade Directory Entries</p> <p>Name: K & S Packing Location: Brunel House, Gorseinon Road, Penllergaer, Swansea, West Glamorgan, SA4 9RU Classification: Packaging Materials Manufacturers & Suppliers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7NW (SW)	805	-	260262 198427
236	<p>Contemporary Trade Directory Entries</p> <p>Name: Cleversticks Location: 30, Druidstone Way, Penllergaer, Swansea, SA4 9AF Classification: Toys, Games & Sporting Goods - Manufacturers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A14SE (E)	808	-	261989 198804
237	<p>Contemporary Trade Directory Entries</p> <p>Name: Ccb Supplies Ltd Location: Phoenix Way, Gorseinon, Swansea, SA4 9WF Classification: Cleaning Materials & Equipment Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7SE (S)	828	-	260678 198196
238	<p>Contemporary Trade Directory Entries</p> <p>Name: Arc Fabrications Location: Unit 4, Gorseinon Road, Gorseinon, Swansea, SA4 4DQ Classification: Metal Workers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7NW (SW)	846	-	260110 198542
239	<p>Contemporary Trade Directory Entries</p> <p>Name: Casey'S Ltd Location: Gorseinon Road, Gorseinon, Swansea, SA4 4DQ Classification: Builders' Merchants Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7NW (SW)	877	-	260041 198595
240	<p>Contemporary Trade Directory Entries</p> <p>Name: T D Williams (Brynamman) Ltd Location: Phoenix Way, Gorseinon, Swansea, SA4 1GZ Classification: Road Haulage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7SE (SW)	887	-	260410 198223
240	<p>Contemporary Trade Directory Entries</p> <p>Name: Re-Manufacturing Services Ltd Location: Phoenix Way, Gorseinon, Swansea, SA4 9WF Classification: Pumps - Sales, Servicing & Repairs Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7SE (SW)	899	-	260444 198193
241	<p>Contemporary Trade Directory Entries</p> <p>Name: Cross Fireplace Centre Location: Gorseinon Road, Penllergaer, Swansea, SA4 9GE Classification: Fireplaces & Mantelpieces Status: Active Positional Accuracy: Automatically positioned to the address</p>	A7SW (SW)	890	-	260155 198414
241	<p>Contemporary Trade Directory Entries</p> <p>Name: Cross-Core Engineering Ltd Location: Gorseinon Road, Penllergaer, Swansea, SA4 9GE Classification: Engineers - General Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7SW (SW)	890	-	260155 198414
241	<p>Contemporary Trade Directory Entries</p> <p>Name: Cross Engineering Swansea Ltd Location: Garngoch Industrial Estate, Penllergaer, Swansea, West Glamorgan, SA4 9GE Classification: Precision Engineers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A7SW (SW)	890	-	260155 198414

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
242	<p>Contemporary Trade Directory Entries</p> <p>Name: D M G Systems Ltd Location: 5, Clos ty Mawr, Penllergaer, Swansea, West Glamorgan, SA4 9DA Classification: Electrical Engineers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A9NE (SE)	895	-	261969 198586
243	<p>Contemporary Trade Directory Entries</p> <p>Name: Sunnyside Autos Gorseinon Ltd Location: Phoenix Way, Gorseinon, Swansea, SA4 9WF Classification: Garage Services Status: Active Positional Accuracy: Automatically positioned to the address</p>	A7SE (SW)	920	-	260483 198154
243	<p>Contemporary Trade Directory Entries</p> <p>Name: Garngoch Car Sales Location: 4 Phoenix Way, Gorseinon, Swansea, West Glamorgan, SA4 9WF Classification: Car Dealers - Used Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A7SE (SW)	923	-	260486 198150
243	<p>Contemporary Trade Directory Entries</p> <p>Name: S P D Campers Location: Unit 1 Phoenix Way, Gorseinon, Swansea, West Glamorgan, SA4 9WF Classification: Caravans - Servicing & Repairs Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A7SE (SW)	923	-	260486 198150
243	<p>Contemporary Trade Directory Entries</p> <p>Name: Gorseinon Building & Fencing Supplies Location: Phoenix Way, Gorseinon, Swansea, SA4 9WF Classification: Builders' Merchants Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7SE (SW)	923	-	260486 198150
243	<p>Contemporary Trade Directory Entries</p> <p>Name: Fixing Solutions Location: Phoenix Way, Gorseinon, Swansea, SA4 9WF Classification: Nuts, Bolts & Fixings Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7SE (SW)	929	-	260499 198139
243	<p>Contemporary Trade Directory Entries</p> <p>Name: First Cleaning Solutions Ltd Location: Phoenix Way, Gorseinon, Swansea, SA4 9WF Classification: Cleaning Services - Domestic Status: Active Positional Accuracy: Automatically positioned to the address</p>	A7SE (SW)	929	-	260502 198138
244	<p>Contemporary Trade Directory Entries</p> <p>Name: Gorseinon Car Sales Location: Unit B, Junction 47 Retail Park, Gorseinon Road, Gorseinon, Swansea, SA4 4DQ Classification: Car Dealers - Used Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7NW (SW)	922	-	260025 198535
244	<p>Contemporary Trade Directory Entries</p> <p>Name: Cross Marble & Stone Location: Gorseinon Road, Gorseinon, Swansea, West Glamorgan, SA4 4DQ Classification: Fireplaces & Mantelpieces Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A6NE (SW)	948	-	259999 198527
244	<p>Contemporary Trade Directory Entries</p> <p>Name: Gorseinon Motor Company Location: Unit A, Junction 47 Retail Park, Gorseinon Road, Gorseinon, Swansea, SA4 4DQ Classification: Car Dealers - Used Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A6NE (SW)	948	-	259998 198528
245	<p>Contemporary Trade Directory Entries</p> <p>Name: Kelleher Location: Unit 14, The Workshops, Phoenix Way, Garngoch Industrial Estate, Gorseinon, Swansea, West Glamorgan, SA4 9WF Classification: Wrought Ironwork Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7SE (SW)	971	-	260445 198115

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
245	Contemporary Trade Directory Entries Name: Anthony Grant Location: Unit 1, The Workshops, Phoenix Way, Gorseinon, Swansea, West Glamorgan, SA4 9WF Classification: Wrought Ironwork Status: Inactive Positional Accuracy: Automatically positioned to the address	A7SE (SW)	971	-	260445 198115
245	Contemporary Trade Directory Entries Name: M D L Copiers Location: Unit 13, The Workshops, Phoenix Way, Gorseinon, Swansea, West Glamorgan, SA4 9WF Classification: Photocopiers Status: Inactive Positional Accuracy: Automatically positioned to the address	A7SE (SW)	971	-	260445 198115
246	Fuel Station Entries Name: Rss Cross Location: 4, Swansea Road Gorseinon Road, Penllergaer, Swansea, Swansea, SA4 9AQ Brand: Esso Premises Type: Petrol Station Status: Open Positional Accuracy: Automatically positioned to the address	A14SW (E)	462	-	261687 198990
247	Points of Interest - Commercial Services Name: Matthews Commercial Services Ltd Location: 9 Orchard Grove, Penllergaer, Swansea, SA4 9AD Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location	A8NE (S)	356	9	261160 198658
248	Points of Interest - Commercial Services Name: Hughes & Williams Location: Cross Garage Swansea Road, Penllergaer, Swansea, SA4 9AQ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14SE (E)	471	9	261699 199004
249	Points of Interest - Commercial Services Name: The Car Spa Location: City One Buildings, Gorseinon Road, Penllergaer, Swansea, SA4 9GE Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A8NW (S)	475	9	260860 198526
249	Points of Interest - Commercial Services Name: Platinum Custom Conversions Location: City One Buildings, Gorseinon Road, Penllergaer, Swansea, SA4 9GE Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8NW (S)	475	9	260860 198526
249	Points of Interest - Commercial Services Name: Gorseinon Tyre & Service Centre Ltd Location: Old Brisco Yard, Gorseinon Road, Penllergaer, Swansea, SA4 9GE Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8NW (S)	475	9	260869 198525
249	Points of Interest - Commercial Services Name: Penllergaer M O T Centre Ltd Location: City One Buildings, Gorseinon Road, Penllergaer, Swansea, SA4 9GE Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8NW (S)	475	9	260860 198526
249	Points of Interest - Commercial Services Name: City Recycle Location: Unit 8 Medway Workshops, Gorseinon Road, Penllergaer, Swansea, SA4 9GE Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location	A8NW (S)	496	9	260850 198505
249	Points of Interest - Commercial Services Name: Graham Hopkins Location: Unit 6 Medway Workshops, Gorseinon Road, Penllergaer, Swansea, SA4 9GE Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8NW (S)	498	9	260894 198500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
249	<p>Points of Interest - Commercial Services</p> <p>Name: Graham Hopkins Motors Location: Unit 6 Medway Workshops, Gorseinon Road, Penllergaer, Swansea, SA4 9GE Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location</p>	A8NW (S)	498	9	260894 198499
250	<p>Points of Interest - Commercial Services</p> <p>Name: Pennys Recovery Location: 10 Swansea Road, Penllergaer, Swansea, SA4 9AQ Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to address or location</p>	A14SW (E)	483	9	261684 198917
251	<p>Points of Interest - Commercial Services</p> <p>Name: Gorseinon Tyre Co Ltd Location: Gorseinon Road, Penllergaer, Swansea, SA4 9GE Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location</p>	A8NW (S)	504	9	260793 198506
252	<p>Points of Interest - Commercial Services</p> <p>Name: Sinclair Garages Ltd Location: Gorseinon Road, Penllergaer, Swansea, SA4 9GW Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location</p>	A7NE (SW)	721	9	260393 198427
253	<p>Points of Interest - Commercial Services</p> <p>Name: Sunnyside Autos Ltd Location: Phoenix Way, Gorseinon, Swansea, SA4 9WF Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location</p>	A7SE (SW)	923	9	260486 198150
253	<p>Points of Interest - Commercial Services</p> <p>Name: Sunnyside Autos Gorseinon Ltd Location: Phoenix Way, Gorseinon, Swansea, SA4 9WF Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location</p>	A7SE (SW)	923	9	260485 198150
253	<p>Points of Interest - Commercial Services</p> <p>Name: Kelleher Location: Unit 14 The Workshops, Phoenix Way, Garngoch Industrial Estate, Gorseinon, Swansea, SA4 9WF Category: Construction Services Class Code: Metalworkers Including Blacksmiths Positional Accuracy: Positioned to address or location</p>	A7SE (SW)	971	9	260445 198115
253	<p>Points of Interest - Commercial Services</p> <p>Name: Kelleher Wrought Ironwork Location: Unit 14 The Workshops, Phoenix Way, Gorseinon, Swansea, SA4 9WF Category: Construction Services Class Code: Metalworkers Including Blacksmiths Positional Accuracy: Positioned to address or location</p>	A7SE (SW)	971	9	260445 198115
254	<p>Points of Interest - Manufacturing and Production</p> <p>Name: RSPCA Llys Nini Solar Park Location: SA4 Category: Industrial Features Class Code: Energy Production Positional Accuracy: Positioned to an adjacent address or location</p>	A13NW (N)	236	9	261000 199403
255	<p>Points of Interest - Manufacturing and Production</p> <p>Name: Tank Location: SA4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location</p>	A7NE (SW)	384	9	260667 198658
255	<p>Points of Interest - Manufacturing and Production</p> <p>Name: Tank Location: SA4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location</p>	A8NW (SW)	386	9	260690 198647

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
255	Points of Interest - Manufacturing and Production Name: Tank Location: SA4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A8NW (SW)	411	9	260685 198622
256	Points of Interest - Manufacturing and Production Name: Tank Location: SA4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A7NE (SW)	470	9	260436 198733
257	Points of Interest - Manufacturing and Production Name: Medway Workshops Location: SA4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NW (S)	492	9	260872 198508
258	Points of Interest - Manufacturing and Production Name: Tank Location: SA4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	574	9	260282 198791
258	Points of Interest - Manufacturing and Production Name: Tank Location: SA4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	594	9	260261 198791
259	Points of Interest - Manufacturing and Production Name: Tank Location: SA4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A7NE (SW)	578	9	260356 198660
259	Points of Interest - Manufacturing and Production Name: Factory Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A7NE (SW)	611	9	260375 198588
259	Points of Interest - Manufacturing and Production Name: Factory Location: SA4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to address or location	A7NE (SW)	625	9	260357 198586
260	Points of Interest - Manufacturing and Production Name: Factory Location: SA4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A7NW (SW)	850	9	260097 198555
261	Points of Interest - Manufacturing and Production Name: Garngoch Industrial Estate Location: SA4 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A7SE (SW)	940	9	260529 198117
261	Points of Interest - Manufacturing and Production Name: The Workshops Location: SA4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A7SE (SW)	967	9	260444 198119
262	Points of Interest - Manufacturing and Production Name: Factory Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A6NE (SW)	962	9	259971 198546

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
263	Points of Interest - Public Infrastructure Name: Esso Location: 4 Swansea Road, Penllergaer, Swansea, SA4 9AQ Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A14SW (E)	430	9	261643 198958
263	Points of Interest - Public Infrastructure Name: Cross Service Station Location: Cross Service Station 4, Swansea Road, Penllergaer, Swansea, SA4 9AQ Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A14SW (E)	462	9	261687 198990
263	Points of Interest - Public Infrastructure Name: Esso Location: Cross Service Station 4, Swansea Road, Penllergaer, Swansea, SA4 9AQ Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A14SW (E)	462	9	261687 198990
263	Points of Interest - Public Infrastructure Name: Cross Service Station Location: 4 Swansea Road, Penllergaer, Swansea, SA4 9AQ Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A14SW (E)	462	9	261687 198990
263	Points of Interest - Public Infrastructure Name: Rss Cross Location: Cross Service Station, 4, Swansea Road, Penllergaer, Swansea, SA4 9AQ Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A14SW (E)	462	9	261686 198990
264	Points of Interest - Public Infrastructure Name: Dam Location: SA4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	677	9	260160 198818
265	Points of Interest - Recreational and Environmental Name: Playground Location: Gorseinon Road, SA4 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A13SE (SE)	193	9	261343 198940
265	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A13SE (SE)	205	9	261336 198918
266	Points of Interest - Recreational and Environmental Name: Play Area Location: SA4 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A14NW (NE)	463	9	261613 199375

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
267	Ancient Woodland Name: Not Supplied Reference: 1564 Area(m ²): 5230.09 Type: Restored Ancient Woodland Site	A14NW (NE)	367	2	261512 199347
268	Ancient Woodland Name: Not Supplied Reference: 1565 Area(m ²): 9937.4 Type: Restored Ancient Woodland Site	A18SW (NW)	454	2	260794 199613
269	Ancient Woodland Name: Not Supplied Reference: 1566 Area(m ²): 13943 Type: Restored Ancient Woodland Site	A17SE (NW)	607	2	260550 199672
270	Ancient Woodland Name: Not Supplied Reference: 1559 Area(m ²): 3953.01 Type: Ancient and Semi-Natural Woodland	A18NE (N)	691	2	261287 199870
271	Ancient Woodland Name: Not Supplied Reference: 1556 Area(m ²): 6024.94 Type: Ancient and Semi-Natural Woodland	A17SE (NW)	712	2	260489 199758
272	Ancient Woodland Name: Not Supplied Reference: 1557 Area(m ²): 6886.51 Type: Ancient and Semi-Natural Woodland	A19NW (NE)	721	2	261551 199799
273	Ancient Woodland Name: Not Supplied Reference: 2800 Area(m ²): 5433.53 Type: Restored Ancient Woodland Site	A14NE (E)	727	2	261965 199123
274	Ancient Woodland Name: Not Supplied Reference: 1548 Area(m ²): 7949.7 Type: Ancient and Semi-Natural Woodland	A19SE (NE)	788	2	261733 199738
275	Ancient Woodland Name: Not Supplied Reference: 1551 Area(m ²): 10763.85 Type: Ancient and Semi-Natural Woodland	A17SW (NW)	808	2	260127 199512
276	Ancient Woodland Name: Not Supplied Reference: 1549 Area(m ²): 21355.28 Type: Ancient and Semi-Natural Woodland	A19NW (NE)	838	2	261418 200012
277	Ancient Woodland Name: Not Supplied Reference: 1554 Area(m ²): 2044.36 Type: Ancient and Semi-Natural Woodland	A19NW (NE)	838	2	261508 199955
278	Ancient Woodland Name: Not Supplied Reference: 1552 Area(m ²): 5254.99 Type: Ancient and Semi-Natural Woodland	A17NW (NW)	841	2	260327 199802
279	Ancient Woodland Name: Not Supplied Reference: 2801 Area(m ²): 15876.21 Type: Restored Ancient Woodland Site	A15NW (E)	848	2	262079 199216
280	Ancient Woodland Name: Not Supplied Reference: 2799 Area(m ²): 4160.83 Type: Restored Ancient Woodland Site	A15SW (E)	848	2	262083 199039

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
281	Ancient Woodland Name: Not Supplied Reference: 50339 Area(m ²): 1782.22 Type: Ancient Woodland Site of Unknown Category	A17SW (W)	860	2	260043 199472
282	Ancient Woodland Name: Not Supplied Reference: 1562 Area(m ²): 24356.25 Type: Ancient and Semi-Natural Woodland	A18NE (N)	888	2	261291 200069
283	Ancient Woodland Name: Not Supplied Reference: 2797 Area(m ²): 2693.36 Type: Ancient and Semi-Natural Woodland	A15SW (E)	904	2	262138 199020
284	Ancient Woodland Name: Not Supplied Reference: 1561 Area(m ²): 18219.12 Type: Ancient and Semi-Natural Woodland	A19NE (NE)	912	2	261776 199867
285	Ancient Woodland Name: Not Supplied Reference: 1553 Area(m ²): 1768.65 Type: Ancient and Semi-Natural Woodland	A19NW (NE)	922	2	261684 199952
286	Ancient Woodland Name: Not Supplied Reference: 1558 Area(m ²): 8242.66 Type: Ancient and Semi-Natural Woodland	A19NE (NE)	935	2	261902 199768

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices City and County of Swansea - Environmental Health Department Natural Resources Wales Carmarthenshire County Council - Environmental Health Department	January 2015 June 2020 October 2014	Annual Rolling Update Annually Annual Rolling Update
Discharge Consents Environment Agency - Welsh Region Natural Resources Wales	August 2014 July 2020	Quarterly Quarterly
Enforcement and Prohibition Notices Environment Agency - Welsh Region	March 2013	Annual Rolling Update
Integrated Pollution Controls Environment Agency - Welsh Region	October 2008	Variable
Integrated Pollution Prevention And Control Environment Agency - Welsh Region Natural Resources Wales	July 2020 July 2020	Quarterly Quarterly
Local Authority Integrated Pollution Prevention And Control Swansea Bay Port Health Authority City and County of Swansea - Environmental Health Department Carmarthenshire County Council - Environmental Health Department	April 2014 June 2014 March 2015	Variable Variable Variable
Local Authority Pollution Prevention and Controls Swansea Bay Port Health Authority City and County of Swansea - Environmental Health Department Carmarthenshire County Council - Environmental Health Department	April 2014 June 2014 March 2015	Annually Annual Rolling Update Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements Swansea Bay Port Health Authority City and County of Swansea - Environmental Health Department Carmarthenshire County Council - Environmental Health Department	April 2014 June 2014 September 2013	Variable Variable Variable
Nearest Surface Water Feature Ordnance Survey	August 2020	
Pollution Incidents to Controlled Waters Environment Agency - Welsh Region	December 1998	Not Applicable
Prosecutions Relating to Authorised Processes Environment Agency - Welsh Region Natural Resources Wales	March 2013 March 2013	Annual Rolling Update Annual Rolling Update
Prosecutions Relating to Controlled Waters Environment Agency - Welsh Region Natural Resources Wales	March 2013 March 2013	Annual Rolling Update Annual Rolling Update
Registered Radioactive Substances Natural Resources Wales Environment Agency - Welsh Region	January 2015 June 2016	Annually
Substantiated Pollution Incident Register Environment Agency Wales - South West Area Natural Resources Wales	July 2020 July 2020	Quarterly Quarterly
Water Abstractions Environment Agency - Welsh Region Natural Resources Wales	July 2020 July 2020	Quarterly Quarterly
Water Industry Act Referrals Natural Resources Wales Environment Agency - Welsh Region	July 2020 October 2017	Quarterly Quarterly
Groundwater Vulnerability Map Natural Resources Wales	June 2018	As notified
Bedrock Aquifer Designations Natural Resources Wales	January 2018	Annually


Agency & Hydrological	Version	Update Cycle
Superficial Aquifer Designations Natural Resources Wales	January 2018	Annually
Source Protection Zones Natural Resources Wales	November 2016	Annual Rolling Update
Extreme Flooding from Rivers or Sea without Defences Natural Resources Wales	August 2018	Quarterly
Flooding from Rivers or Sea without Defences Natural Resources Wales	September 2020	Quarterly
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	June 2020	Quarterly
Surface Water 1 in 30 year Flood Extent Natural Resources Wales	October 2013	Annually
Surface Water 1 in 100 year Flood Extent Natural Resources Wales	October 2013	Annually
Surface Water 1 in 1000 year Flood Extent Natural Resources Wales	October 2013	Annually
Surface Water Suitability Natural Resources Wales	October 2013	Annually
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	Annually

Waste	Version	Update Cycle
BGS Recorded Landfill Sites British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites Natural Resources Wales	July 2017	Quarterly
Integrated Pollution Control Registered Waste Sites Environment Agency - Welsh Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries) Environment Agency Wales - South West Area Natural Resources Wales	July 2020 July 2020	Quarterly Quarterly
Licensed Waste Management Facilities (Locations) Environment Agency Wales - South West Area Natural Resources Wales	July 2020 July 2020	Quarterly Quarterly
Local Authority Landfill Coverage Carmarthenshire County Council City and County of Swansea - Environmental Health Department	May 2000 May 2000	Not Applicable Not Applicable
Local Authority Recorded Landfill Sites Carmarthenshire County Council City and County of Swansea - Environmental Health Department	May 2000 May 2000	Not Applicable Not Applicable
Potentially Infilled Land (Non-Water) Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water) Landmark Information Group Limited	December 1999	Not Applicable
Registered Landfill Sites Environment Agency Wales - South West Area	March 2003	Not Applicable
Registered Waste Transfer Sites Environment Agency Wales - South West Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites Environment Agency Wales - South West Area	March 2003	Not Applicable
Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH) Health and Safety Executive	April 2018	Bi-Annually
Explosive Sites Health and Safety Executive	March 2017	Annually
Notification of Installations Handling Hazardous Substances (NIHHS) Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements Carmarthenshire County Council - Area Planning Office (East Area) Carmarthenshire County Council - Area Planning Office (South Area) Carmarthenshire County Council - Environment Department (West Area) City and County of Swansea - Planning Department	February 2016 February 2016 February 2016 January 2016	Variable Variable Variable Variable
Planning Hazardous Substance Consents Carmarthenshire County Council - Area Planning Office (East Area) Carmarthenshire County Council - Area Planning Office (South Area) Carmarthenshire County Council - Environment Department (West Area) City and County of Swansea - Planning Department	February 2016 February 2016 February 2016 January 2016	Variable Variable Variable Variable

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Estimated Soil Chemistry British Geological Survey - National Geoscience Information Service	October 2015	Annually
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	June 2020	Bi-Annually
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	Annual Rolling Update
Mining Instability Ove Arup & Partners	October 2000	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	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	Annually
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	Annually
Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	July 2020	Quarterly
Fuel Station Entries Catalist Ltd - Experian	September 2020	Quarterly
Gas Pipelines National Grid	September 2020	
Points of Interest - Commercial Services PointX	September 2020	Quarterly
Points of Interest - Education and Health PointX	September 2020	Quarterly
Points of Interest - Manufacturing and Production PointX	September 2020	Quarterly
Points of Interest - Public Infrastructure PointX	September 2020	Quarterly
Points of Interest - Recreational and Environmental PointX	September 2020	Quarterly
Underground Electrical Cables National Grid	August 2020	

Sensitive Land Use	Version	Update Cycle
Ancient Woodland Natural Resources Wales	August 2018	Bi-Annually
Areas of Adopted Green Belt Carmarthenshire County Council City and County of Swansea	June 2020 June 2020	As notified As notified
Areas of Unadopted Green Belt Carmarthenshire County Council City and County of Swansea	June 2020 June 2020	As notified As notified
Areas of Outstanding Natural Beauty Natural Resources Wales	June 2019	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 Carmarthenshire County Council City and County of Swansea	August 2018 August 2018	Bi-Annually Bi-Annually
Marine Nature Reserves Natural Resources Wales	August 2018	Bi-Annually
National Nature Reserves Natural Resources Wales	June 2019	Bi-Annually
National Parks Natural Resources Wales	August 2018	Annually
Nitrate Vulnerable Zones Natural Resources Wales The National Assembly for Wales - GI Services (Department of Planning & Countryside)	July 2019 October 2005	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

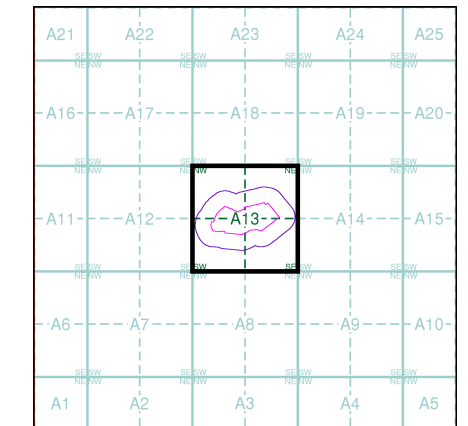
Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	 <p>British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL</p>
Centre for Ecology and Hydrology	 <p>Centre for Ecology & Hydrology NATURAL ENVIRONMENT RESEARCH COUNCIL</p>
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	City and County of Swansea - Environmental Health Department The Guildhall, Swansea, West Glamorgan, SA1 4PE	Telephone: 01792 636000 extn 5651 Fax: 01792 635719
4	Environment Agency - National Customer Contact Centre (NCCC) PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.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	Health and Safety Executive 5S.2 Redgrave Court, Merton Road, Bootle, L20 7HS	Website: www.hse.gov.uk
7	City and County of Swansea - Planning Department The Guildhall, Swansea, West Glamorgan, SA1 4PE	Telephone: 01792 636000 Fax: 01792 635709
8	The Coal Authority - Property Searches 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG	Telephone: 0345 762 6848 Fax: 01623 637 338 Email: groundstability@coal.gov.uk Website: www2.groundstability.com
9	PointX 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.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.

- General**
- Specified Site
 - Specified Buffer(s)
 - Bearing Reference Point
 - Map ID
 - Several of Type at Location
 - Pylon
 - Overhead Transmission Line
- Agency and Hydrological**
- Contaminated Land Register Entry or Notice (Location)
 - Contaminated Land Register Entry or Notice
 - Discharge Consent
 - Enforcement or Prohibition Notice
 - Integrated Pollution Control
 - Integrated Pollution Prevention Control
 - Local Authority Integrated Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control Enforcement
 - Local Authority Pollution Prevention and Control Enforcement
 - Pollution Incident to Controlled Waters
 - Prosecution Relating to Authorised Processes
 - Prosecution Relating to Controlled Waters
 - Registered Radioactive Substance
 - River Network or Water Feature
 - River Quality Sampling Point
 - Substantiated Pollution Incident Register
 - Water Abstraction
 - Water Industry Act Referral
- Waste**
- BGS Recorded Landfill Site (Location)
 - BGS Recorded Landfill Site
 - EA Historic Landfill (Buffered Point)
 - EA Historic Landfill (Polygon)
 - Integrated Pollution Control Registered Waste Site
 - Licensed Waste Management Facility (Landfill Boundary)
 - Licensed Waste Management Facility (Location)
 - Local Authority Recorded Landfill Site (Location)
 - Local Authority Recorded Landfill Site
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Registered Landfill Site
 - Registered Landfill Site (Location)
 - Registered Landfill Site (Point Buffered to 100m)
 - Registered Landfill Site (Point Buffered to 250m)
 - Registered Waste Transfer Site (Location)
 - Registered Waste Transfer Site
 - Registered Waste Treatment or Disposal Site (Location)
 - Registered Waste Treatment or Disposal Site
- Hazardous Substances**
- COMAH Site
 - Explosive Site
 - NIHHS Site
 - Planning Hazardous Substance Consent
 - Planning Hazardous Substance Enforcement
- Geological**
- BGS Recorded Mineral Site

Site Sensitivity Map - Segment A13

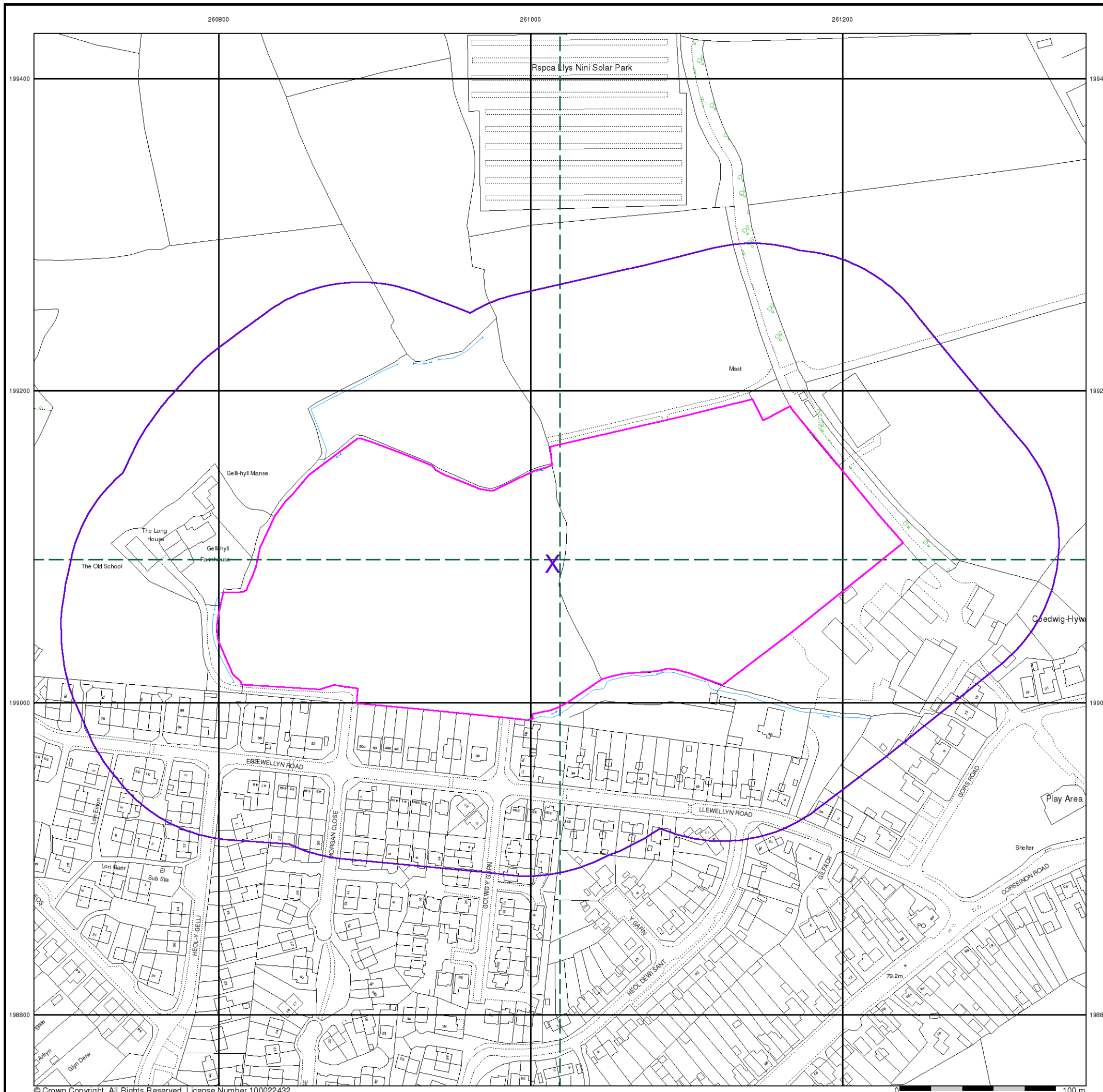


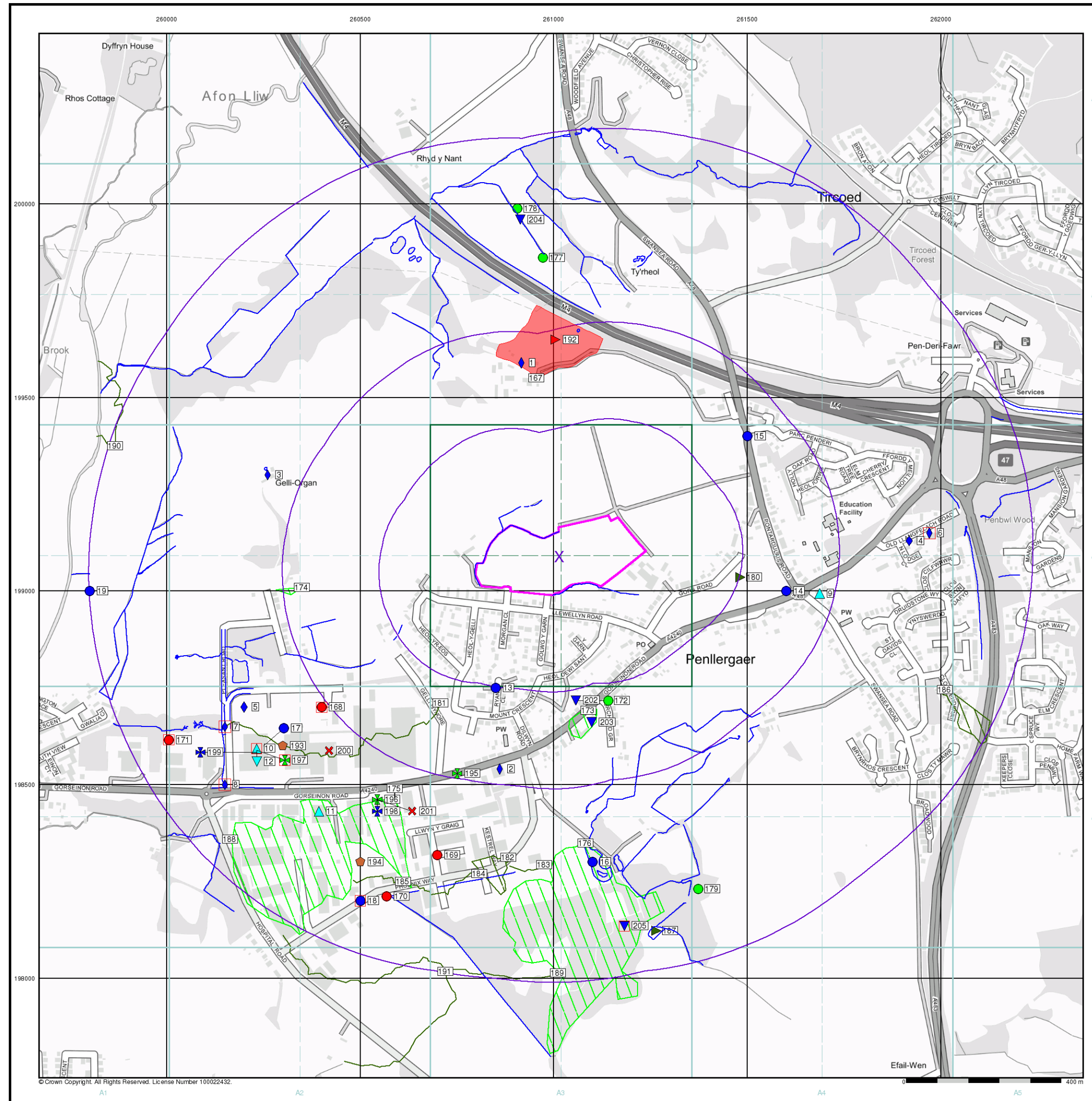
Order Details

Order Number: 264127625_1_1
 Customer Ref: 16300
 National Grid Reference: 261010, 199090
 Slice: A
 Site Area (Ha): 5.93
 Plot Buffer (m): 100

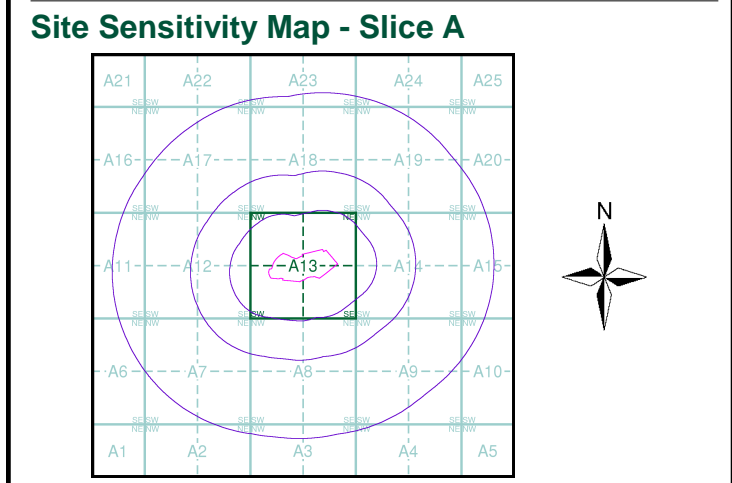
Site Details

Site at 260980, 199090





- General**
- Specified Site
 - Specified Buffer(s)
 - Bearing Reference Point
 - Map ID
- Agency and Hydrological**
- Contaminated Land Register Entry or Notice (Location)
 - Contaminated Land Register Entry or Notice
 - Discharge Consent
 - Enforcement or Prohibition Notice
 - Integrated Pollution Control
 - Integrated Pollution Prevention Control
 - Local Authority Integrated Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control Enforcement
 - Pollution Incident to Controlled Waters
 - Prosecution Relating to Authorised Processes
 - Prosecution Relating to Controlled Waters
 - Registered Radioactive Substance
 - River Network or Water Feature
 - River Quality Sampling Point
 - Substantiated Pollution Incident Register
 - Water Abstraction
 - Water Industry Act Referral
- Waste**
- BGS Recorded Landfill Site (Location)
 - BGS Recorded Landfill Site
 - EA Historic Landfill (Buffered Point)
 - EA Historic Landfill (Polygon)
 - Integrated Pollution Control Registered Waste Site
 - Licensed Waste Management Facility (Landfill Boundary)
 - Licensed Waste Management Facility (Location)
 - Local Authority Recorded Landfill Site (Location)
 - Local Authority Recorded Landfill Site
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Registered Landfill Site (Location)
 - Registered Landfill Site (Point Buffered to 100m)
 - Registered Landfill Site (Point Buffered to 250m)
 - Registered Waste Transfer Site (Location)
 - Registered Waste Transfer Site
 - Registered Waste Treatment or Disposal Site (Location)
 - Registered Waste Treatment or Disposal Site
- Hazardous Substances**
- COMAH Site
 - Explosive Site
 - NIHHS Site
 - Planning Hazardous Substance Consent
 - Planning Hazardous Substance Enforcement
- Geological**
- BGS Recorded Mineral Site

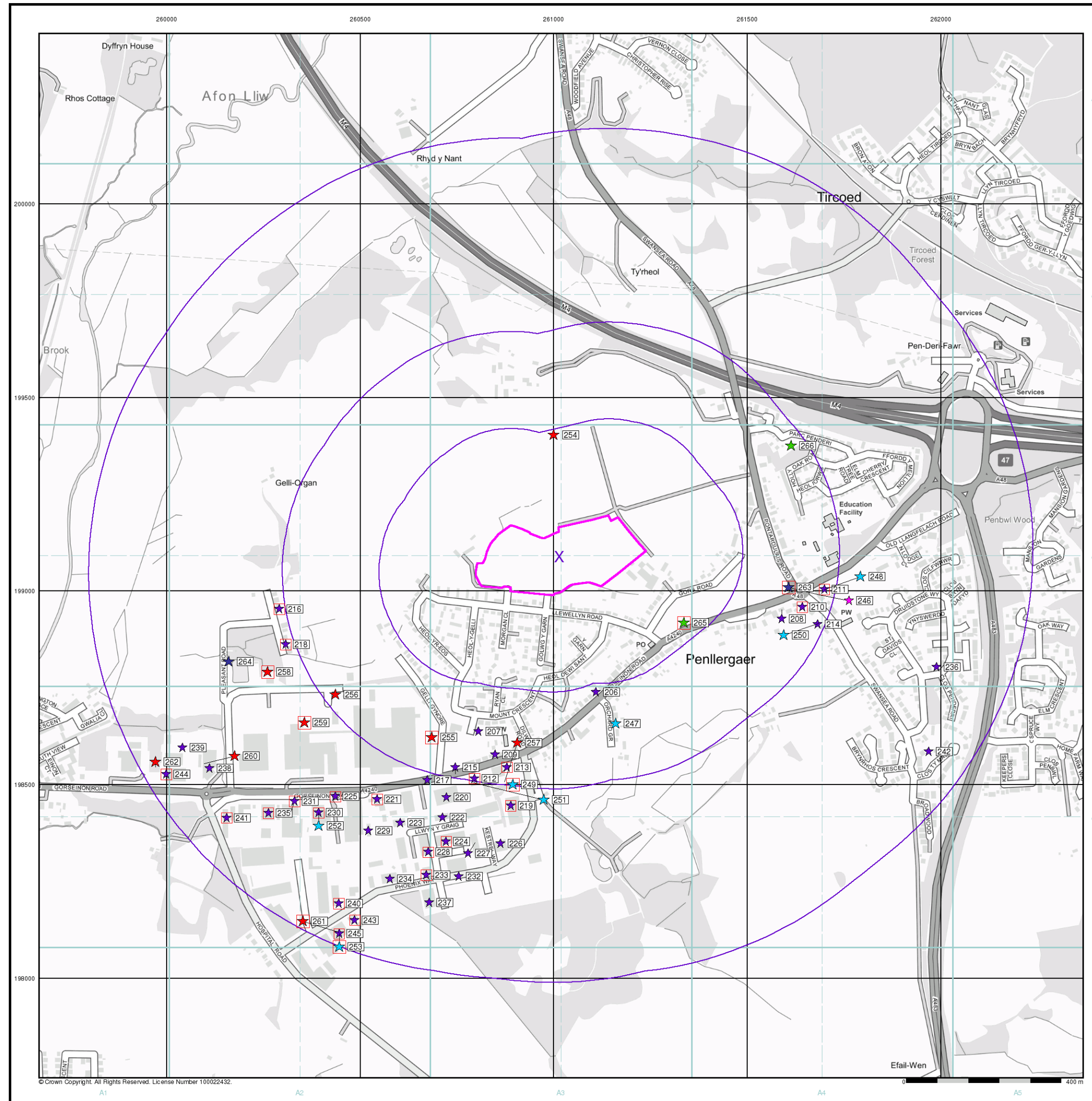
















Order Details

Order Number: 264127625_1_1
 Customer Ref: 16300
 National Grid Reference: 261010, 199090
 Slice: A
 Site Area (Ha): 5.93
 Search Buffer (m): 1000

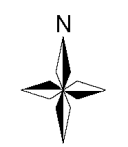
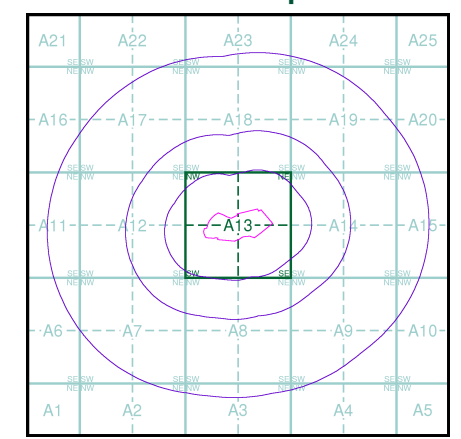
Site Details

Site at 260980, 199090



- General**
-  Specified Site
 -  Specified Buffer(s)
 -  Bearing Reference Point
 -  Slice
 -  Map ID
- Industrial Land Use**
-  Contemporary Trade Directory Entry
 -  Fuel Station Entry
 -  Gas Pipeline
 -  Points of Interest - Commercial Services
 -  Points of Interest - Education and Health
 -  Points of Interest - Manufacturing and Production
 -  Points of Interest - Public Infrastructure
 -  Points of Interest - Recreational and Environmental
 -  Underground Electrical Cables

Industrial Land Use Map - Slice A






Order Details






Order Number: 264127625_1_1
 Customer Ref: 16300
 National Grid Reference: 261010, 199090
 Slice: A
 Site Area (Ha): 5.93
 Search Buffer (m): 1000

Site Details
 Site at 260980, 199090

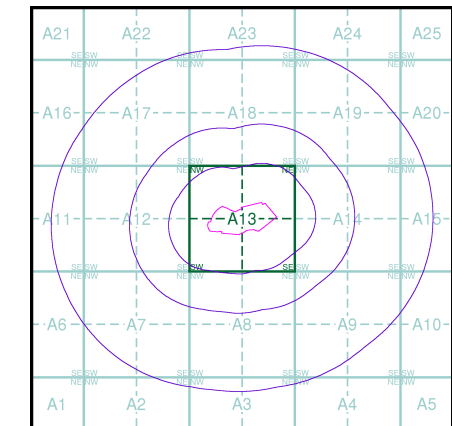
General

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

Agency and Hydrological (Flood)

-  Extreme Flooding from Rivers or Sea without Defences (Zone 2)
-  Flooding from Rivers or Sea without Defences (Zone 3)
-  Area Benefiting from Flood Defence
-  Flood Water Storage Areas
-  Flood Defence

Flood Map - Slice A

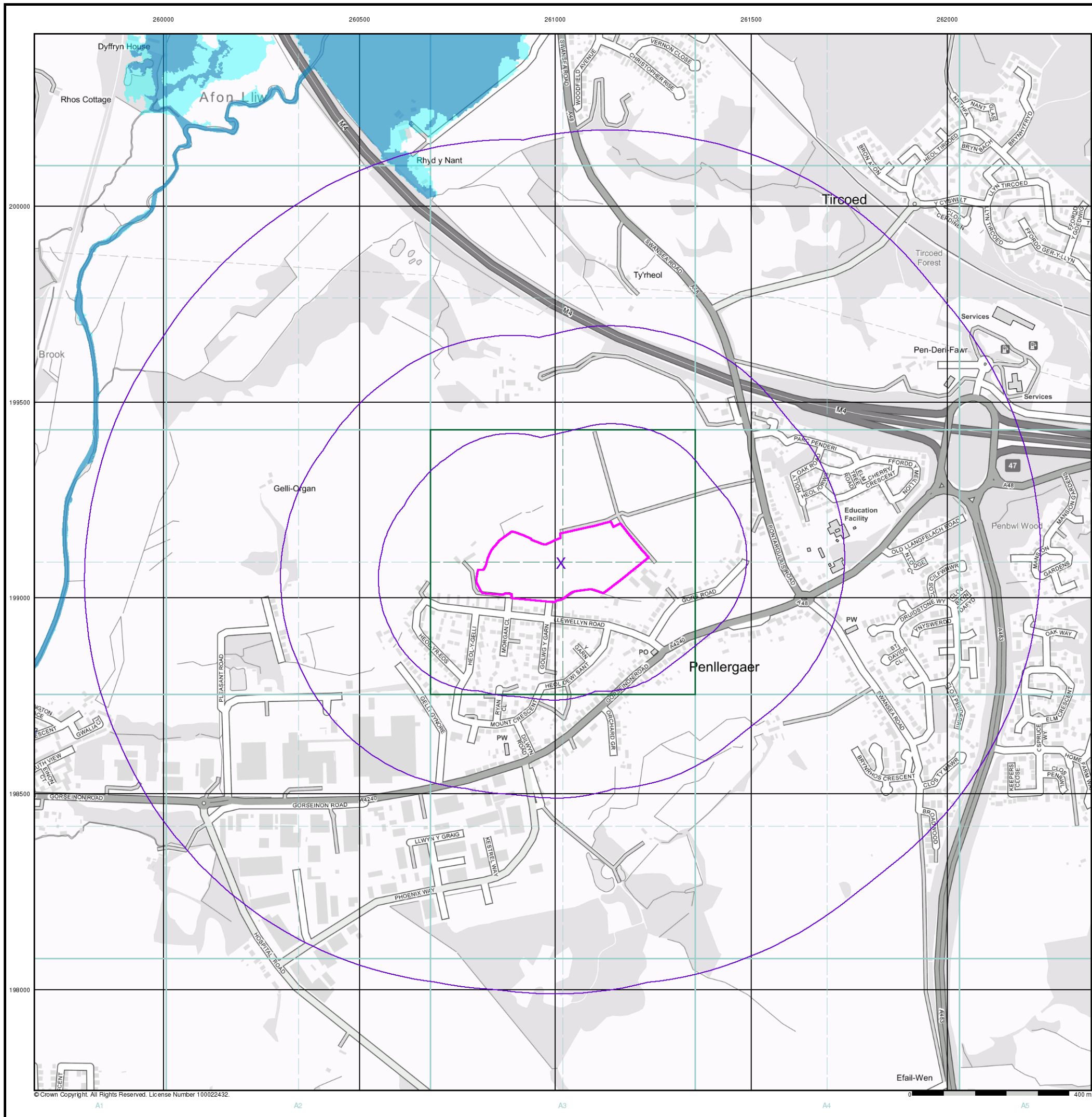


Order Details

Order Number: 264127625_1_1
 Customer Ref: 16300
 National Grid Reference: 261010, 199090
 Slice: A
 Site Area (Ha): 5.93
 Search Buffer (m): 1000






Site Details

Site at 260980, 199090








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General

-  Specified Site
-  Specified Buffer(s)
-  Bearing Reference Point
-  Map ID
-  Several of Type at Location

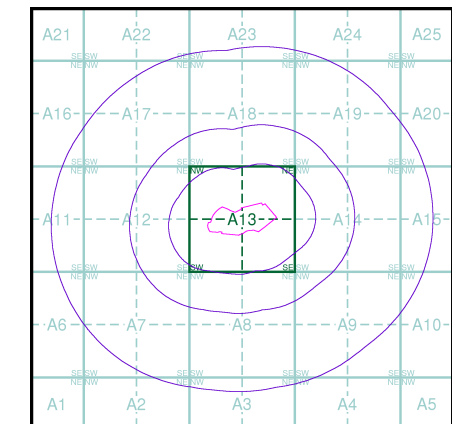
Agency and Hydrological (Boreholes)

-  BGS Borehole Depth 0 - 10m
-  BGS Borehole Depth 10 - 30m
-  BGS Borehole Depth 30m +
-  Confidential
-  Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice A

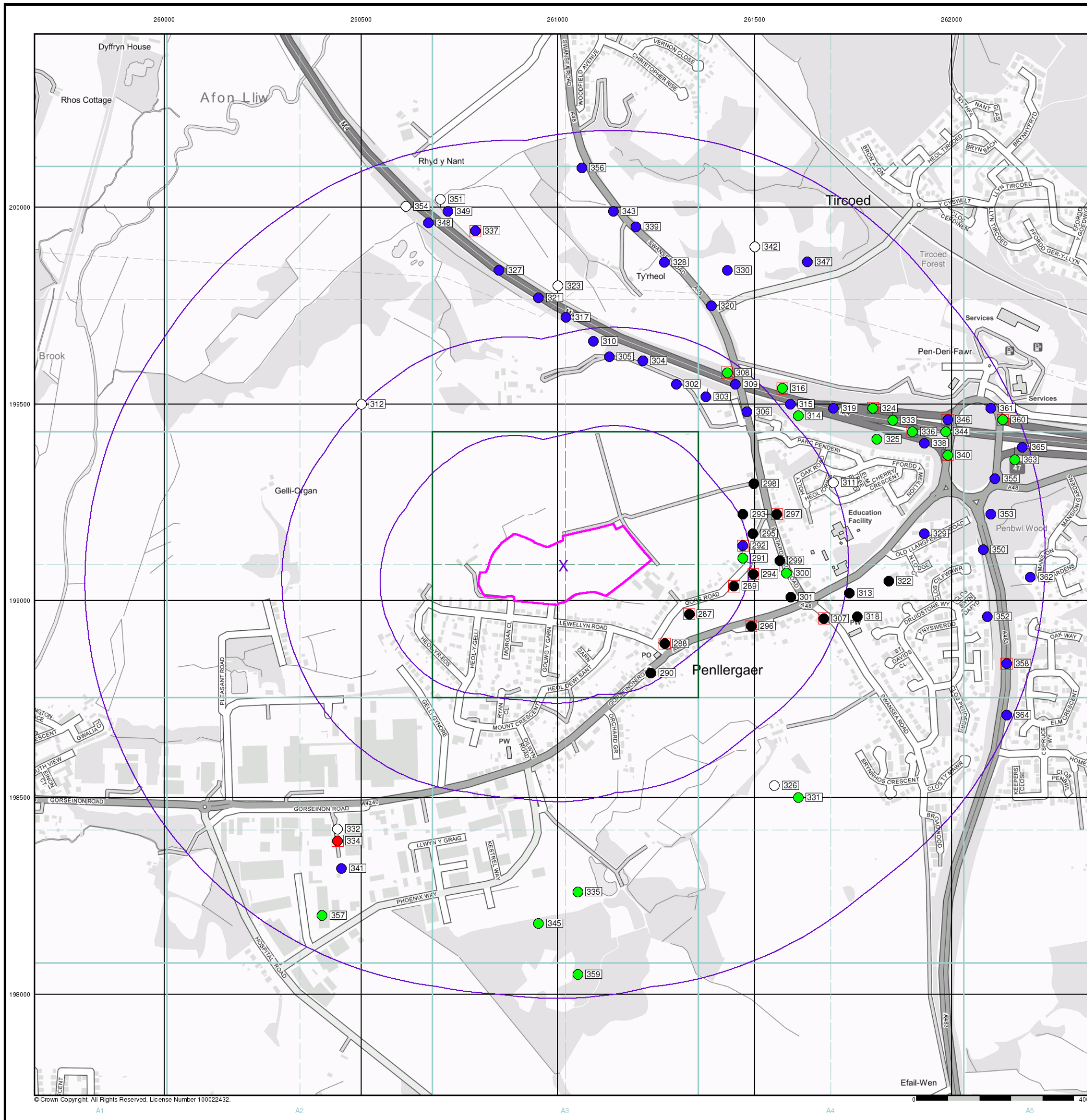


Order Details

Order Number: 264127625_1_1
 Customer Ref: 16300
 National Grid Reference: 261010, 199090
 Slice: A
 Site Area (Ha): 5.93
 Search Buffer (m): 1000

Site Details

Site at 260980, 199090



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Geotechnical & Geoenvironmental Specialists

General

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

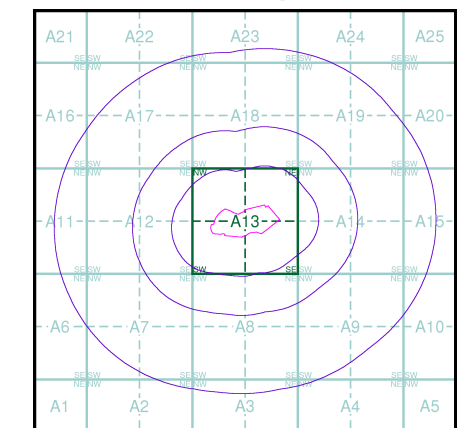
OS Water Network Data

- | | | | |
|--|--------------|--|-------------------------|
| | Canal | | Drain |
| | Reservoir | | Other |
| | Foreshore | | Lake |
| | Marsh | | Transfer |
| | Tidal River | | Lock Or Flight Of Locks |
| | Inland River | | Sea |

Contours (height in meters)

- Standard Contour Mean Low Water
- Master Contour Mean High Water
- Spot Height 167.3

OS Water Network Map - Slice A



Order Details

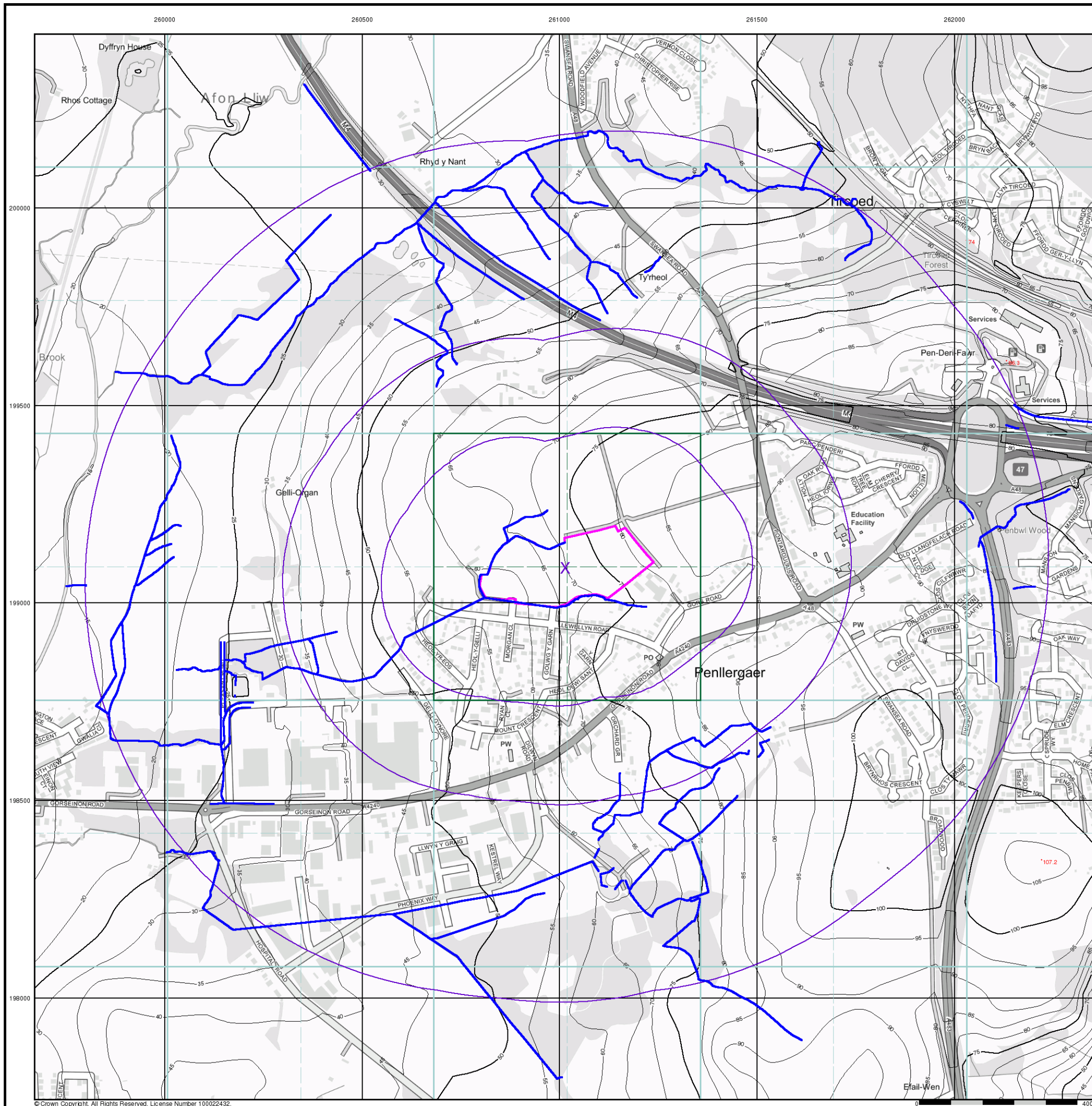
Order Number: 264127625_1_1
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Site Details

Site at 260980, 199090






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General

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

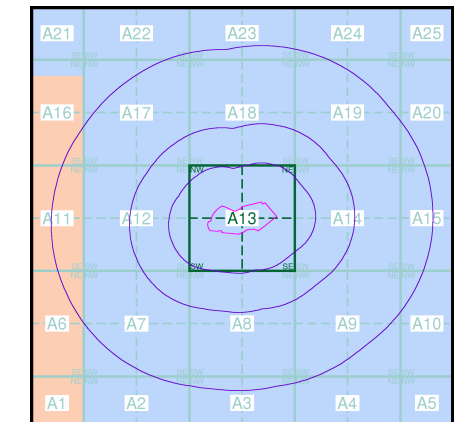
Risk of Flooding from Surface Water

-  High - 30 Year Return
-  Medium - 100 Year Return
-  Low - 1000 Year Return

Suitability

- See the suitability map below
-  National to county
 -  County to town
 -  Town to street
 -  Street to parcels of land
 -  Property

EANRW Suitability Map - Slice A

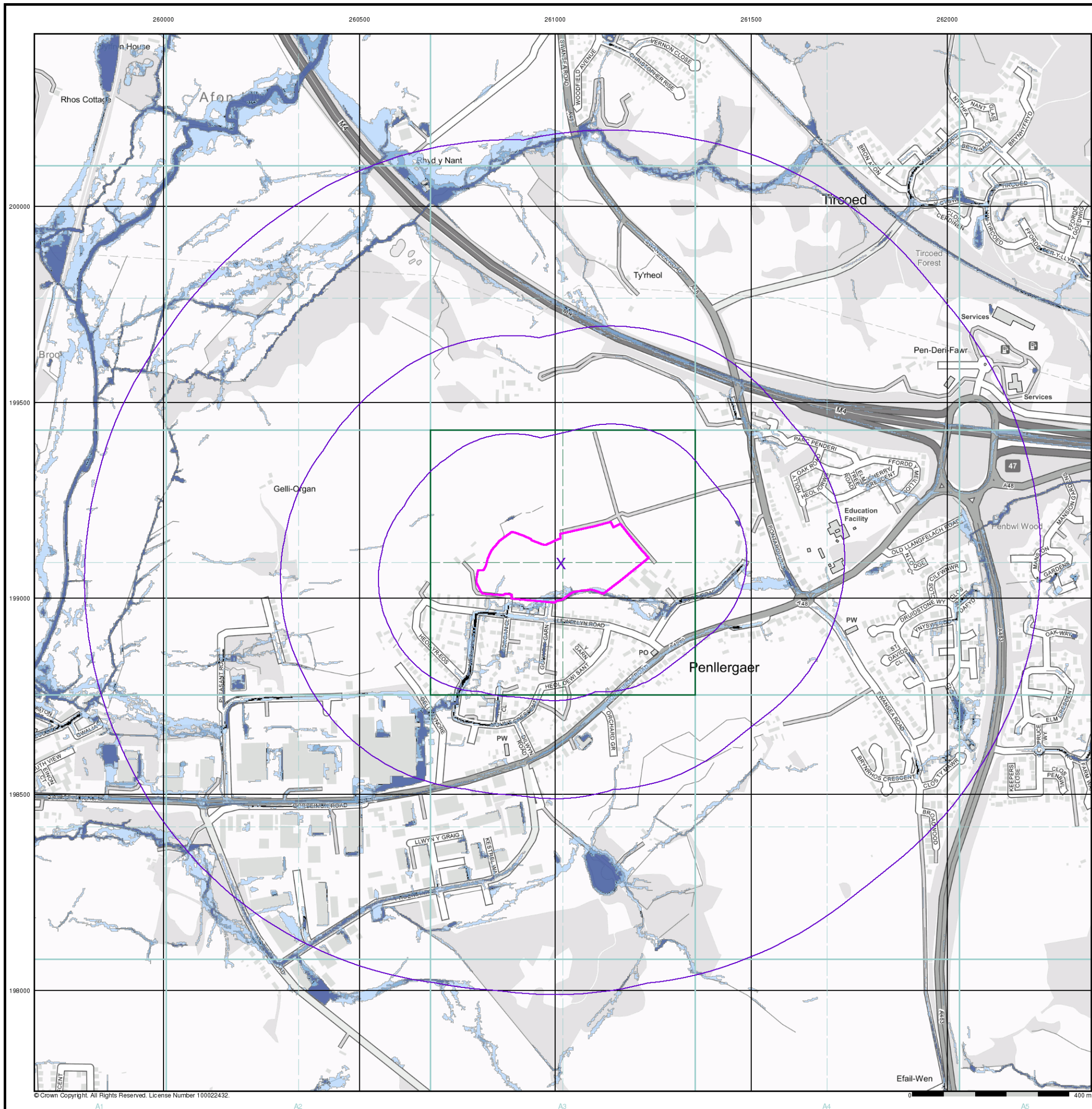


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Site Details

Site at 260980, 199090



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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

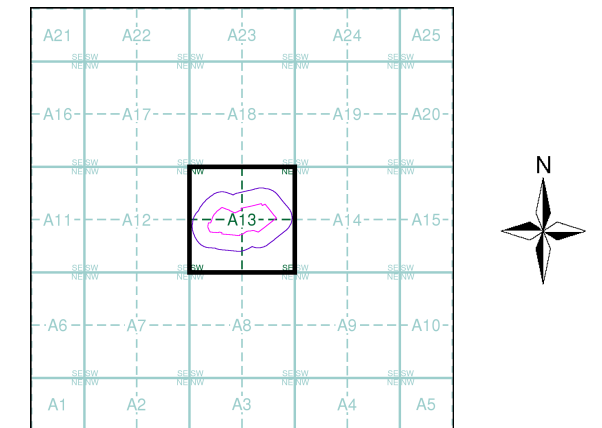


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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Glamorganshire	1:2,500	1876 - 1880	2
Glamorganshire	1:2,500	1898	3
Glamorganshire	1:2,500	1916	4
Glamorganshire	1:2,500	1935 - 1936	5
Ordnance Survey Plan	1:2,500	1959	6
Ordnance Survey Plan	1:2,500	1971 - 1982	7
Additional SIMs	1:2,500	1978 - 1988	8
Additional SIMs	1:2,500	1988 - 1991	9
Additional SIMs	1:2,500	1992	10
Large-Scale National Grid Data	1:2,500	1993	11
Large-Scale National Grid Data	1:2,500	1993 - 1994	12
Large-Scale National Grid Data	1:2,500	1996	13
Historical Aerial Photography	1:2,500	2000	14

Historical Map - Segment A13



Order Details

Order Number: 264127625_1_1
 Customer Ref: 16300
 National Grid Reference: 261010, 199090
 Slice: A
 Site Area (Ha): 5.93
 Search Buffer (m): 100

Site Details

Site at 260980, 199090



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Glamorganshire

Published 1876 - 1880

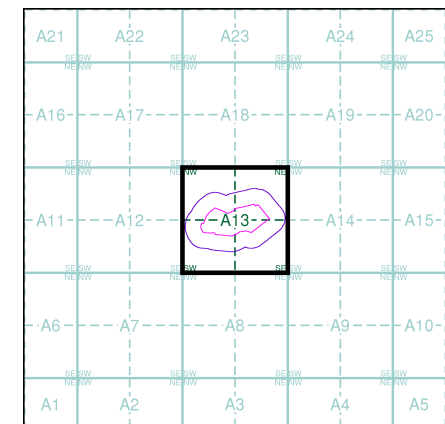
Source map scale - 1:2,500

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)

014_07	1876	1:2,500
014_11	1880	1:2,500

Historical Map - Segment A13



Order Details

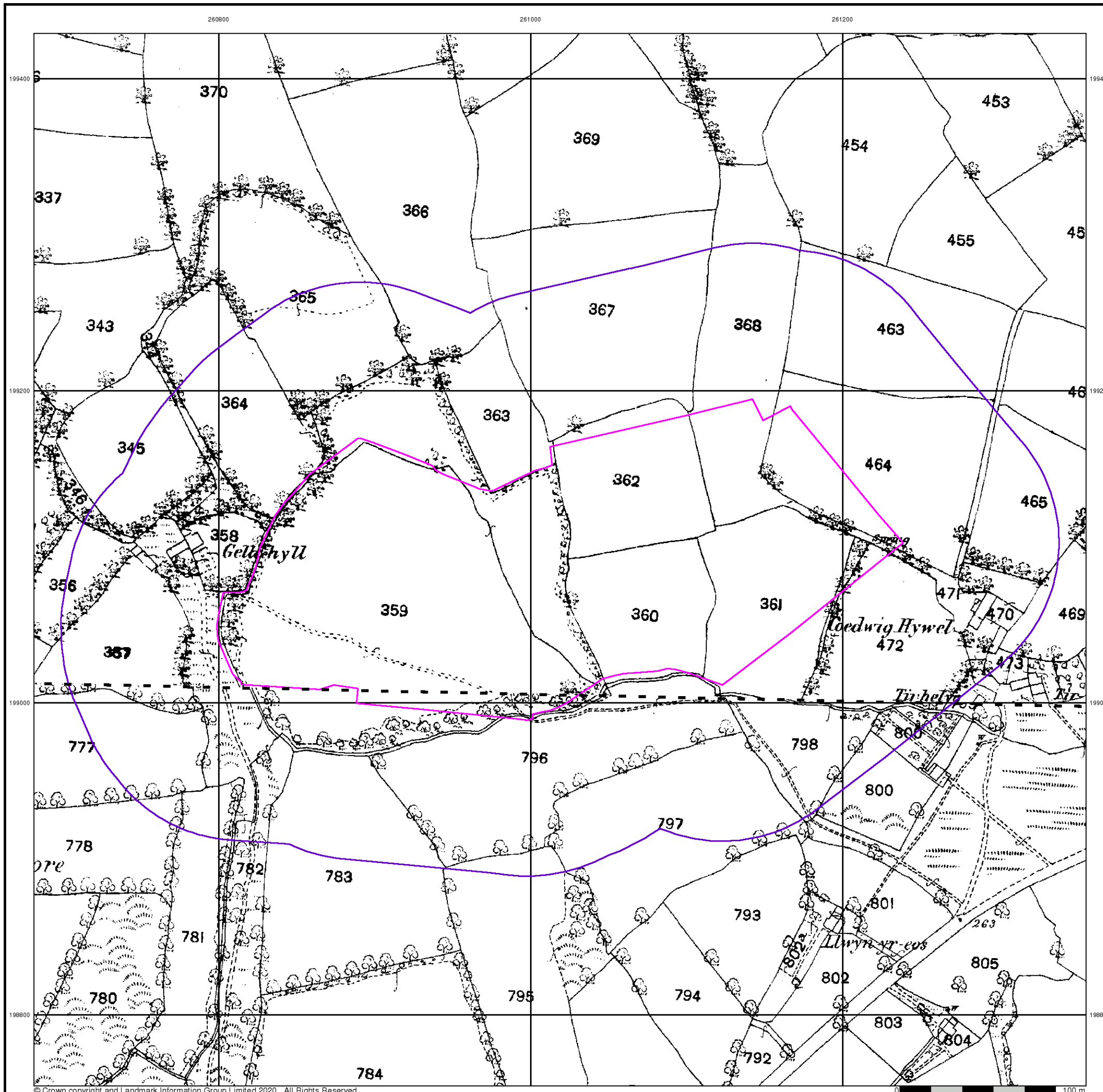
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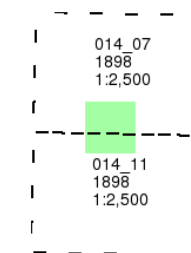
Glamorganshire

Published 1898

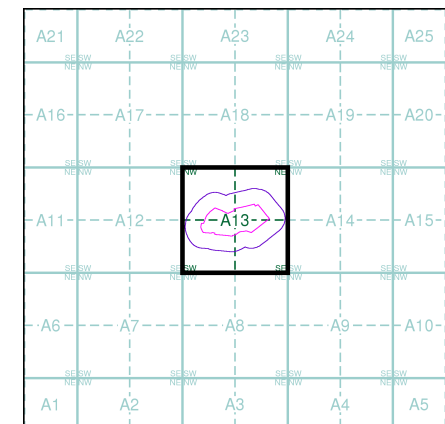
Source map scale - 1:2,500

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)



Historical Map - Segment A13



Order Details

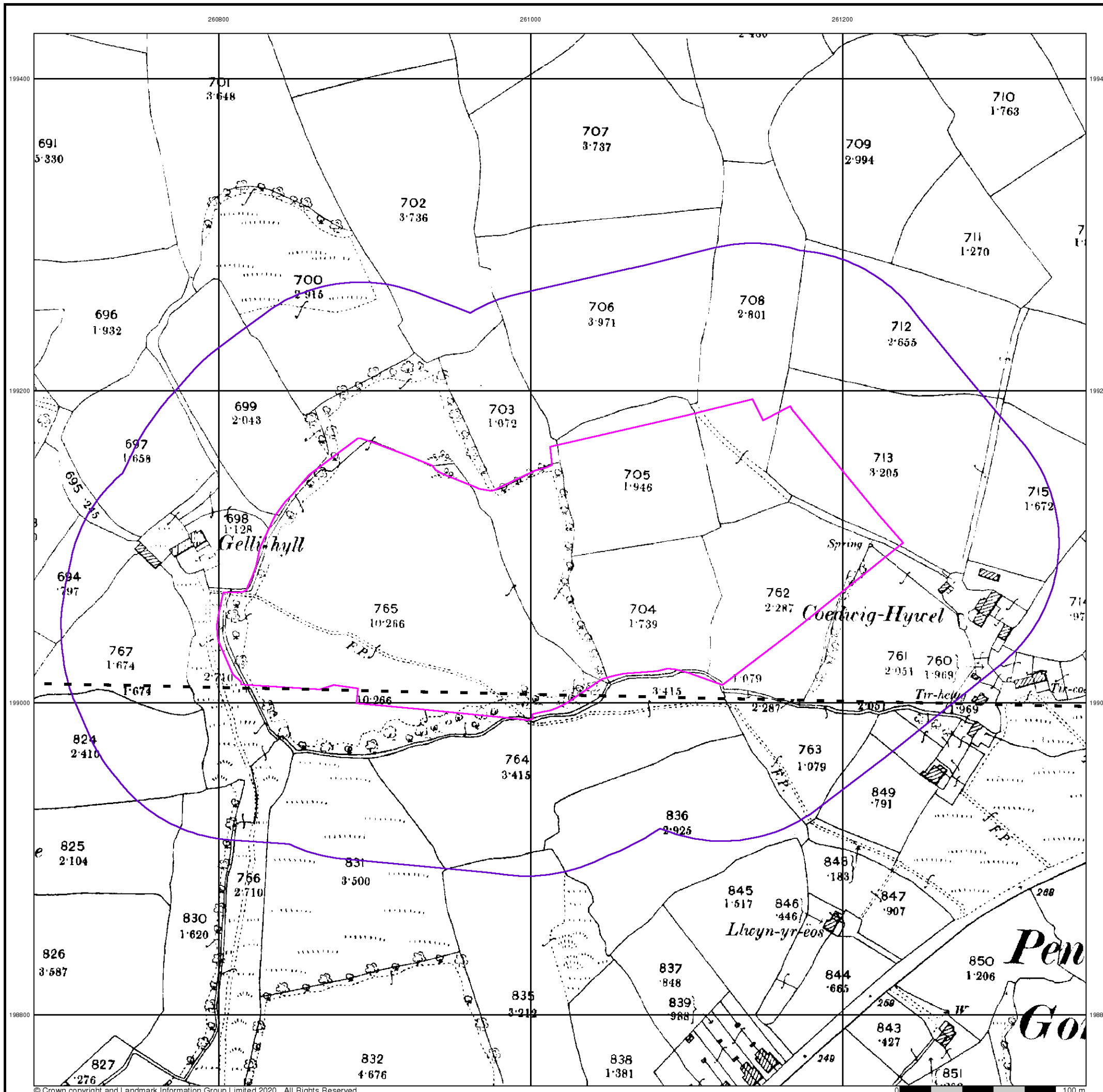
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Slice: A
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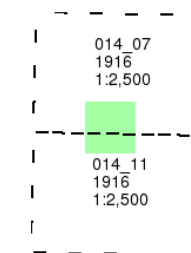
Glamorganshire

Published 1916

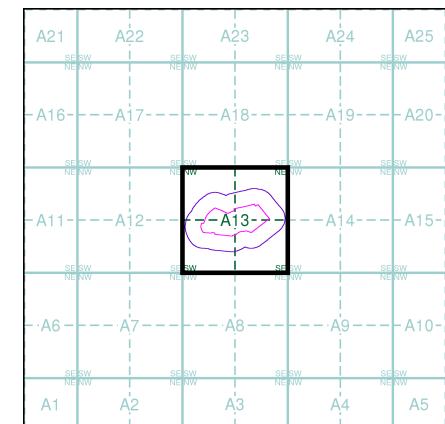
Source map scale - 1:2,500

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)



Historical Map - Segment A13



Order Details

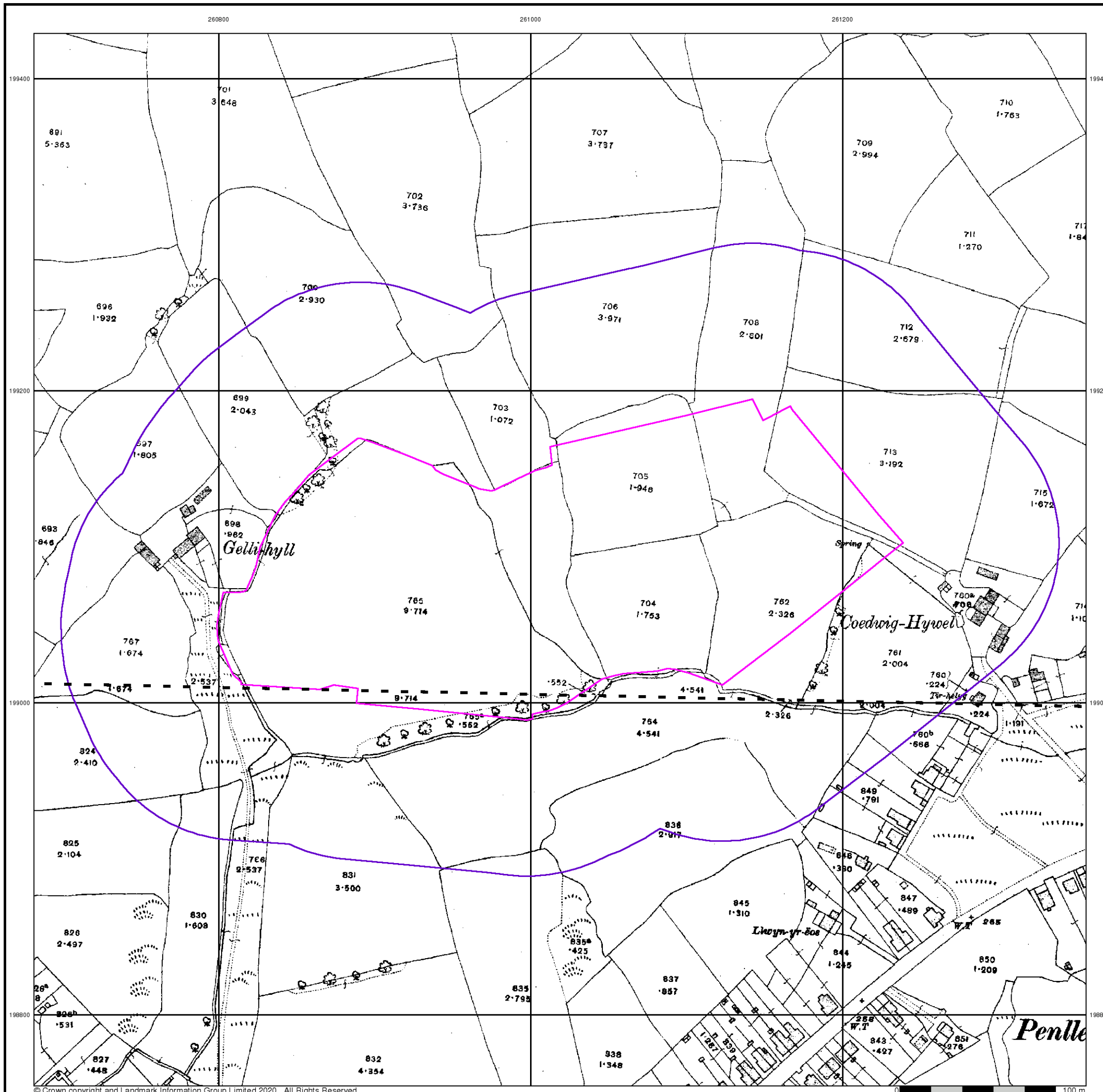
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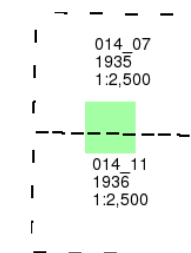
Glamorganshire

Published 1935 - 1936

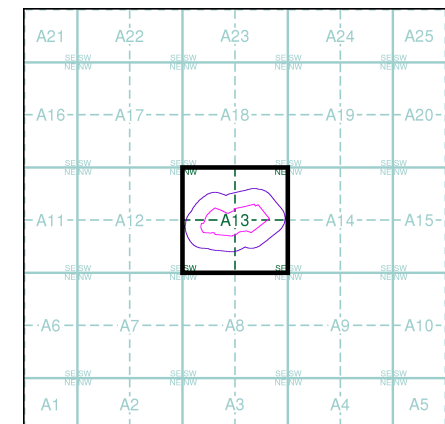
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered 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 A13



Order Details

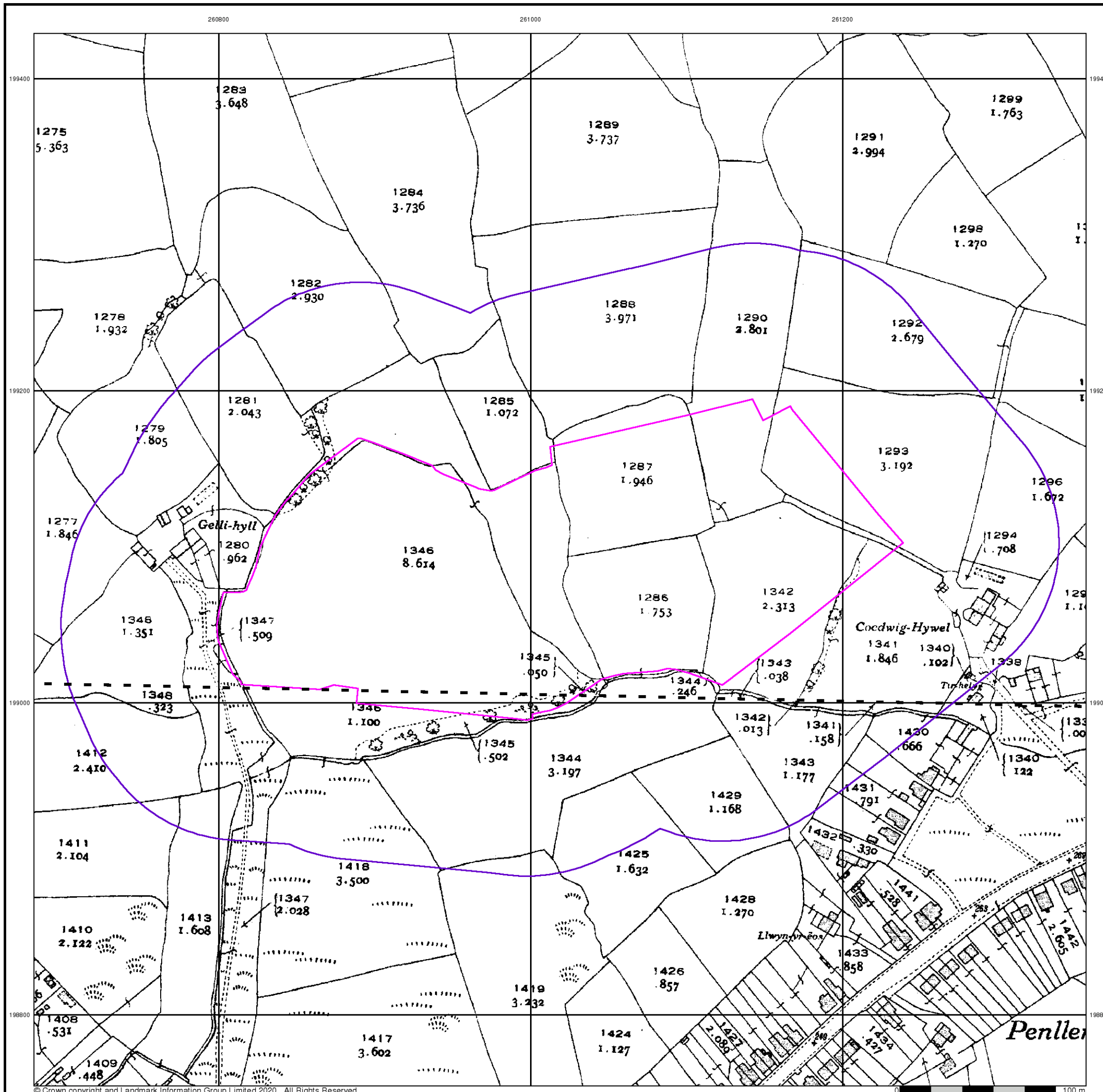
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Ordnance Survey Plan

Published 1959

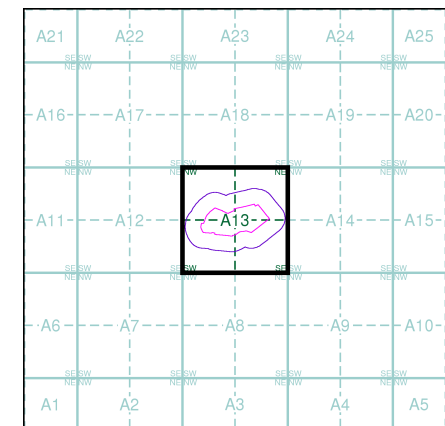
Source map scale - 1:2,500

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)

SS6099 1959 1:2,500	SS6199 1959 1:2,500
SS6098 1959 1:2,500	SS6198 1959 1:2,500

Historical Map - Segment A13



Order Details

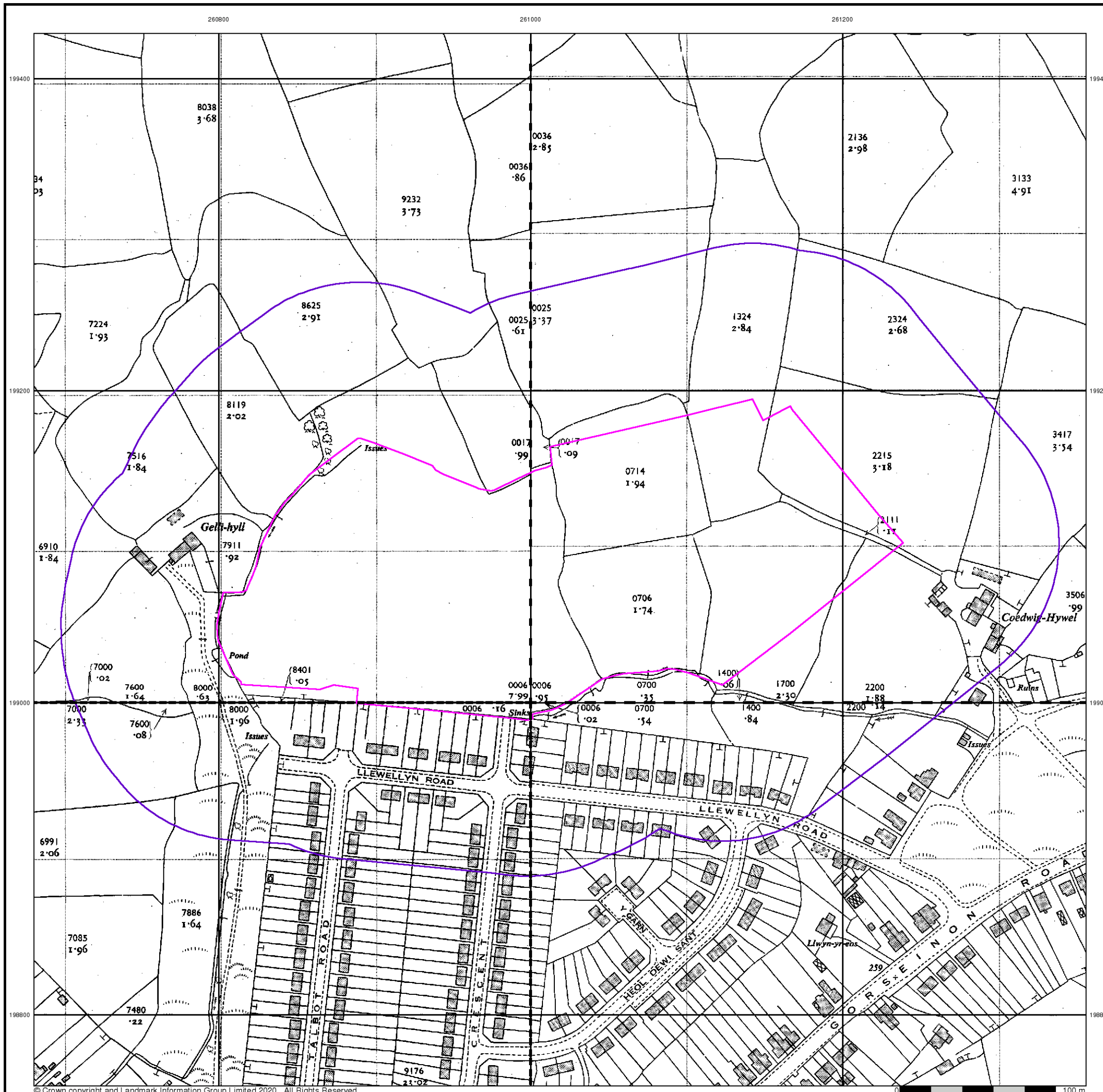
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Site Details

Site at 260980, 199090



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Ordnance Survey Plan

Published 1971 - 1982

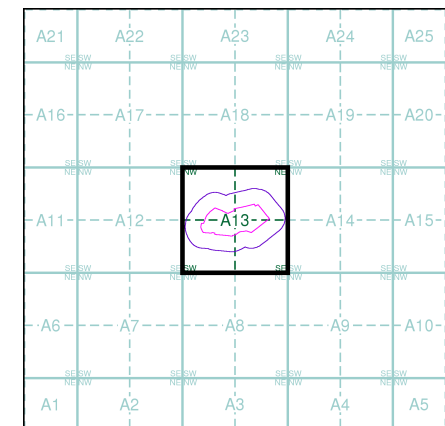
Source map scale - 1:2,500

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)

SS6099 1982 12,500	SS6199 1982 12,500
SS6098 1971 12,500	SS6198 1971 12,500

Historical Map - Segment A13



Order Details

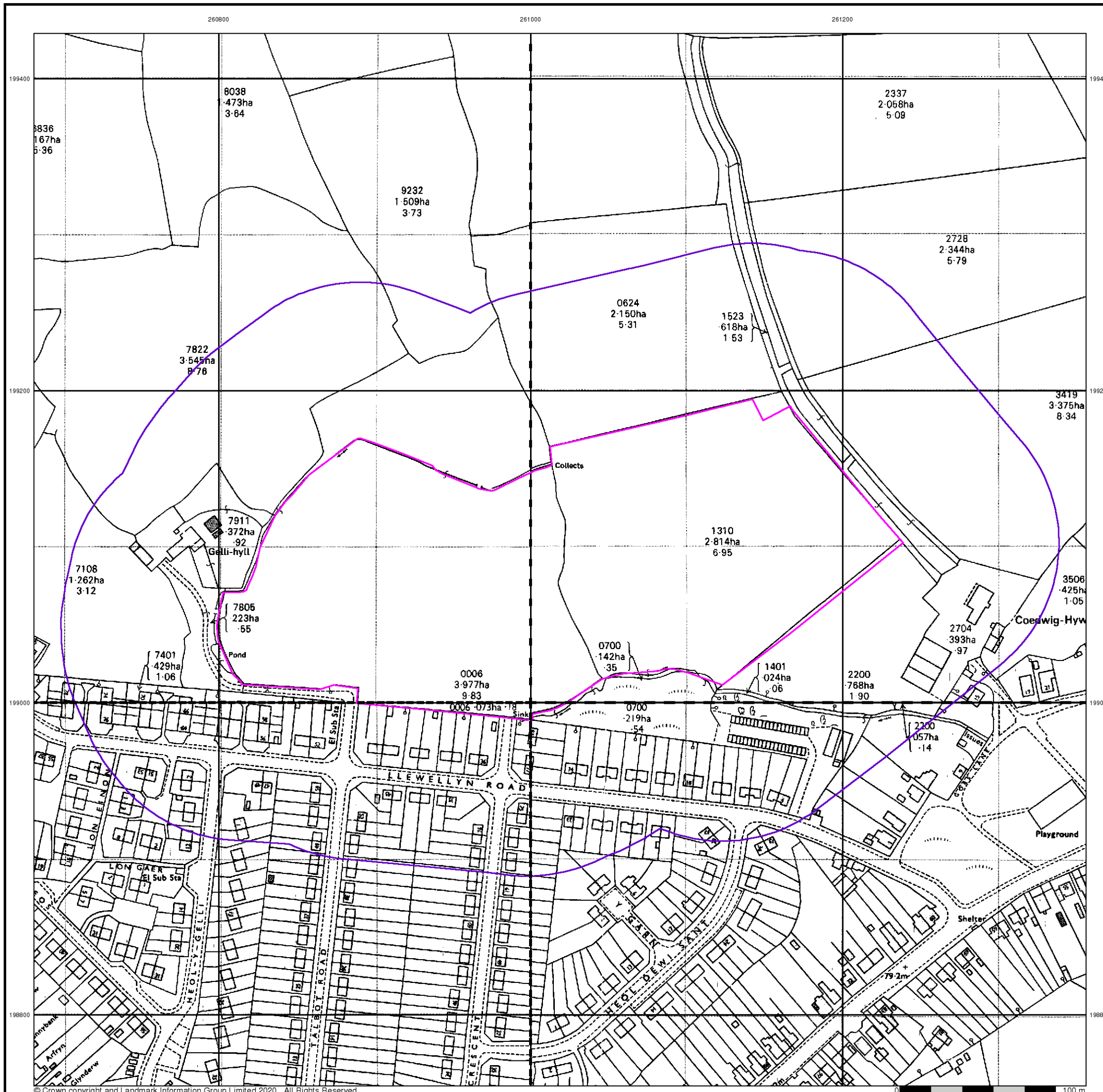
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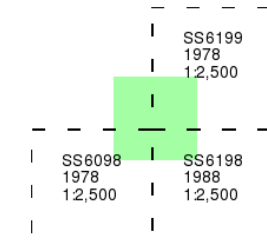
Additional SIMs

Published 1978 - 1988

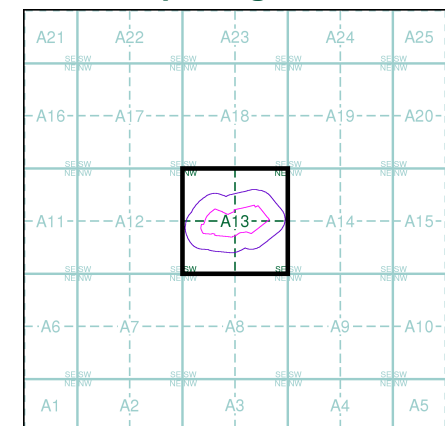
Source map scale - 1:2,500

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 A13



Order Details

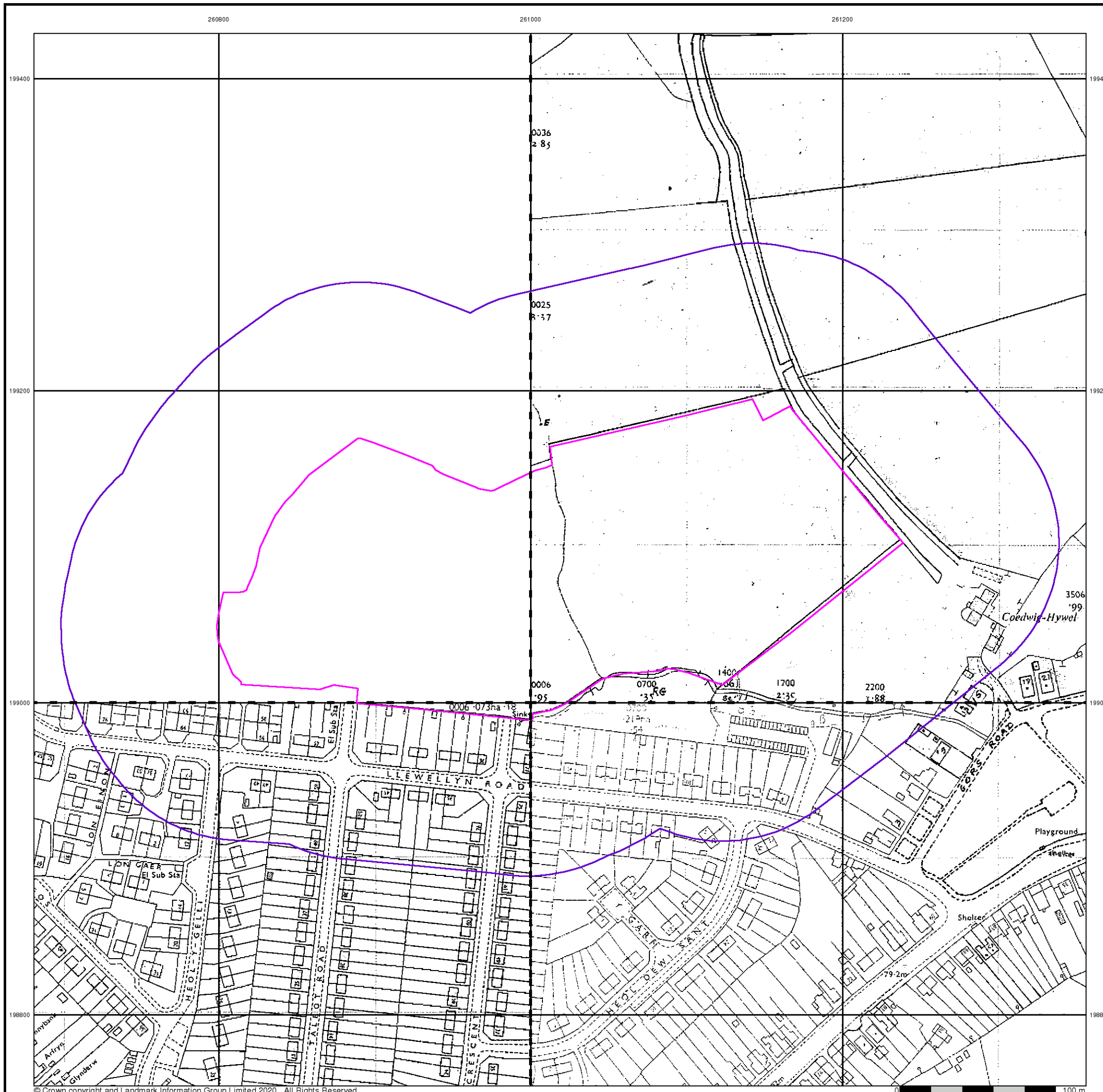
Order Number: 264127625_1_1
 Customer Ref: 16300
 National Grid Reference: 261010, 199090
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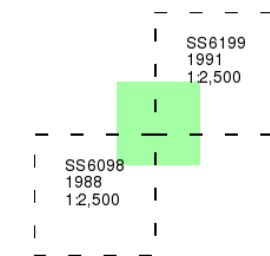
Additional SIMs

Published 1988 - 1991

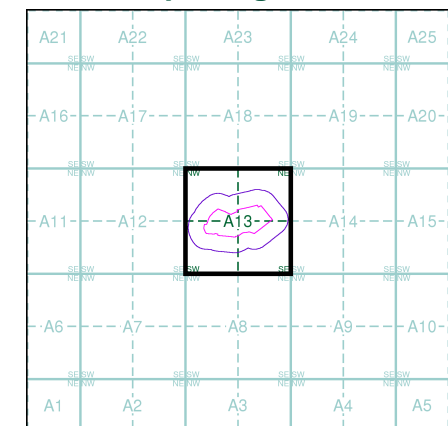
Source map scale - 1:2,500

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 A13



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Site at 260980, 199090



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Geotechnical & Geoenvironmental Specialists

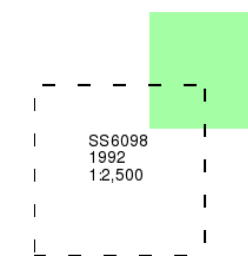
Additional SIMs

Published 1992

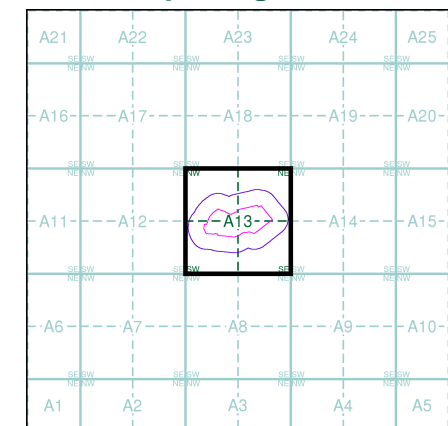
Source map scale - 1:2,500

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 A13



Order Details

Order Number: 264127625_1_1
Customer Ref: 16300
National Grid Reference: 261010, 199090
Slice: A
Site Area (Ha): 5.93
Search Buffer (m): 100

Site Details

Site at 260980, 199090



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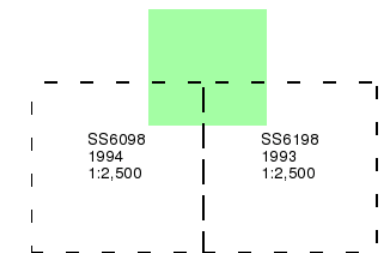
Large-Scale National Grid Data

Published 1993 - 1994

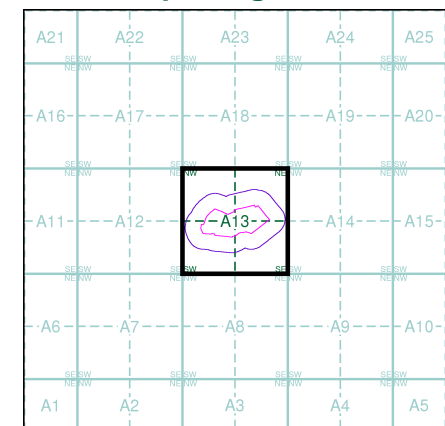
Source map scale - 1:2,500

'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)



Historical Map - Segment A13



Order Details

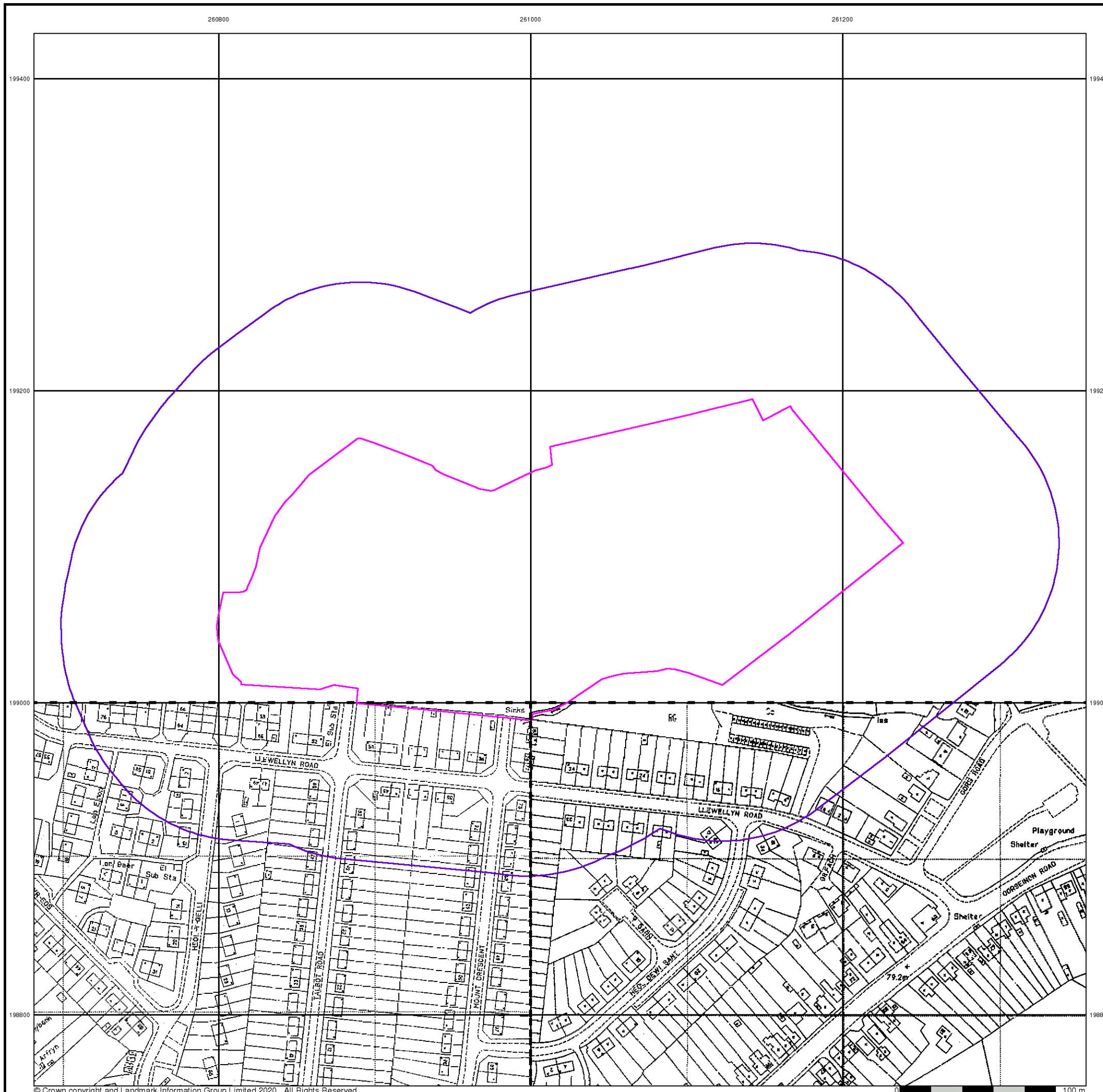
Order Number: 264127625_1_1
Customer Ref: 16300
National Grid Reference: 261010, 199090
Slice: A
Site Area (Ha): 5.93
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Site Details

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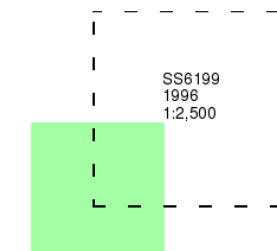
Large-Scale National Grid Data

Published 1996

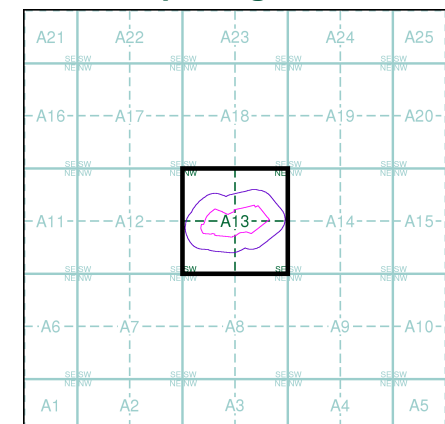
Source map scale - 1:2,500

'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 A13



Order Details

Order Number: 264127625_1_1
Customer Ref: 16300
National Grid Reference: 261010, 199090
Slice: A
Site Area (Ha): 5.93
Search Buffer (m): 100

Site Details

Site at 260980, 199090



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260800 261000 261200



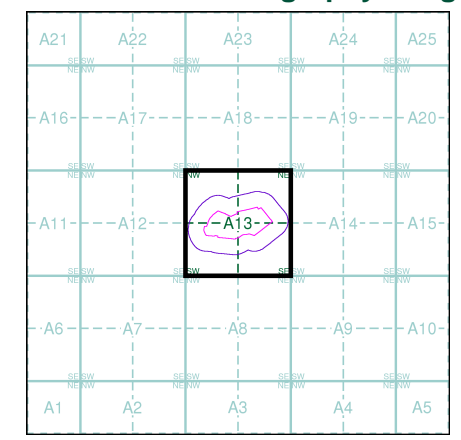
Geotechnical & Geoenvironmental Specialists

Historical Aerial Photography

Published 2000

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A13



Order Details

Order Number: 264127625_1_1
Customer Ref: 16300
National Grid Reference: 261010, 199090
Slice: A
Site Area (Ha): 5.93
Search Buffer (m): 100

Site Details

Site at 260980, 199090



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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
- 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 (scattered)
- 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

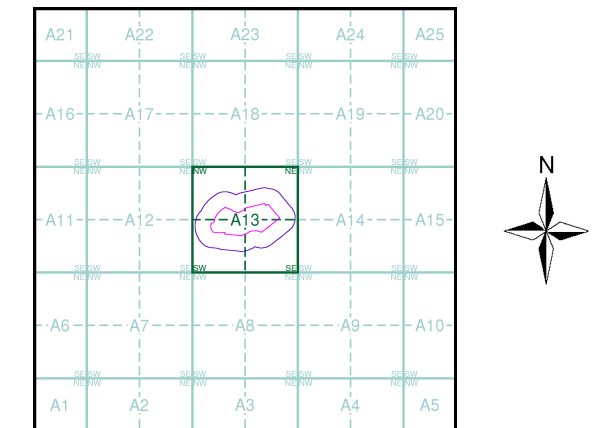


Geotechnical & Geoenvironmental Specialists

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Glamorganshire	1:10,560	1884	3
Carmarthenshire	1:10,560	1889	4
Glamorganshire	1:10,560	1900 - 1901	5
Carmarthenshire	1:10,560	1907 - 1908	6
Glamorganshire	1:10,560	1921	7
Carmarthenshire	1:10,560	1921	8
Glamorganshire	1:10,560	1935 - 1936	9
Carmarthenshire	1:10,560	1935 - 1936	10
Carmarthenshire	1:10,560	1938	11
Glamorganshire	1:10,560	1938 - 1951	12
Historical Aerial Photography	1:10,560	1949	13
Glamorganshire	1:10,560	1951	14
Carmarthenshire	1:10,560	1951	15
Ordnance Survey Plan	1:10,000	1964	16
Ordnance Survey Plan	1:10,000	1968 - 1969	17
Ordnance Survey Plan	1:10,000	1974	18
Swansea	1:10,000	1976	19
Ordnance Survey Plan	1:10,000	1980 - 1989	20
Ordnance Survey Plan	1:10,000	1991 - 1995	21
10K Raster Mapping	1:10,000	1999	22
10K Raster Mapping	1:10,000	2006	23
VectorMap Local	1:10,000	2020	24

Historical Map - Slice A



Order Details

Order Number: 264127625_1_1
 Customer Ref: 16300
 National Grid Reference: 261010, 199090
 Slice: A
 Site Area (Ha): 5.93
 Search Buffer (m): 1000

Site Details

Site at 260980, 199090



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Russian Military Mapping Legends

1:5,000 and 1:10,000 mapping

a. Not drawn to scale b. Drawn to scale

	Government and Administrative Buildings		Military and Industrial Buildings
	Military and Communication Areas		Subway Entrance
	Fireproof Building		Prominent Fireproof Building
	Non-fireproof Building		Non-fireproof Building (non-dwelling)
	Factory, mill, and flour mill, with chimneys		Factory, mill, and flour mill, without chimneys
	Power Station, drawn to scale		Hydroelectric Power Station
	Radio Station, drawn to scale		Telephone Station, drawn to scale
	Abandoned Open-pit Mine or Quarry		Open-pit Salt Mine
	Pit		Oil Deposit or Well
	Oil Seepage		Natural Gas Tank
	Tailings Pile		Fuel Storage Tanks
	Bench Mark		Drill Hole
	Burial Mound		Triangulation Point on Burial Mound
	Single-track Railroad		Double-track Railroad
	Small Bridge		Pipe (Culvert)
	Tunnel		Railroad and Station Building
	Coniferous Forest		Deciduous Forest
	Mixed Forest		Lawns
	Citrus Orchard		Wet Ground
	Scattered Vegetation		

243,8 Values for prominent elevations
186.0 Numbers for spot elevations, depth soundings, contour lines, etc.
0,2 Velocity of the current, width of river bed, depth of river
180/12 Fractional terms: length and capacity of bridges; depth of fords and condition of the river bottom; height of forest and the diameter of trees

Russian Alphabet (For reference and phonetic interpretation of map text)

А а (A)	З з (Z)	П п (P)	Ч ч (CH)
Б б (B)	И и (I)	Р р (R)	Ш ш (SH)
В в (V)	Й й (Y)	С с (S)	Щ щ (SHCH)
Г г (G)	К к (K)	Т т (T)	Ъ (-)
Д д (D)	Л л (L)	У у (U)	Ы (Y)
Е е (E)	М м (M)	Ф ф (F)	Ь (')
Ё ё (YO)	Н н (N)	Х х (KH)	Э э (E)
Ж ж (ZH)	О о (O)	Ц ц (TS)	Ю ю (YU or IU)
			Я я (YA or IA)

1:25,000 mapping

a. Not drawn to scale b. Drawn to scale

	Government and Administrative Buildings		Military and Industrial Buildings
	Military and Communication Areas		Subway Entrance
	Partly Demolished Buildings		Demolished Buildings
	Built-Up Area with Fireproof Buildings Predominant		Built-Up Area with Non-Fireproof Buildings Predominant
	Individual Fireproof Building		Prominent Industrial Building
	Individual Dwelling, Fireproof		Ruins of an Individual Dwelling
	Factory or Mill Chimney		Factory or Mill with Chimney
	Factory or Mill without Chimney		Mine or Open Pit Mine
	Operating Shaft or Mine		Non-Operating Shaft or Mine
	Salt Mine		Tailings Pile
	Pit		Gas Pump or Service Station
	Fuel Storage or Natural Gas Tank		Oil or Natural Gas Derrick
	Small Hydroelectric Power Station		Power Station
	Transformer Station		Cemetery
	Burial Mound (height in metres)		Triangulation Point on Burial Mound
	Triangulation Point		Bench Mark
	Bench Mark (monumented)		Telegraph Office
	Telephone Station		Radio Station
	Radio Tower		Airfield or Seaplane Base
	Landing Strip		Cut
	Fill		Km Post
	Plantings		Width of Road
	Steep Grade		Highway under Construction
	Improved Dirt Road (former truck road)		Small Bridge
	Pipe (Culvert)		Tunnel
	Dismantled Railroad		Double-track Railroad with First Class Station
	Railroad Under Construction		Shore Embankment
	River or Ditch with Embankment		Water Gauge
	Direction and velocity of current		Water Level Mark
	Well		Spring
	Water Reservoir or Rain Water Pit		Isobath with value
	Contour Line and Value		Half Contour Line
	Spot Elevation Value		Coniferous
	Deciduous		Mixed
	Scrub		

Key to Numbers on Mapping

SS69NW_Swansea

No.	Description
34	Factory (Steel Rolling)
67	Post Office

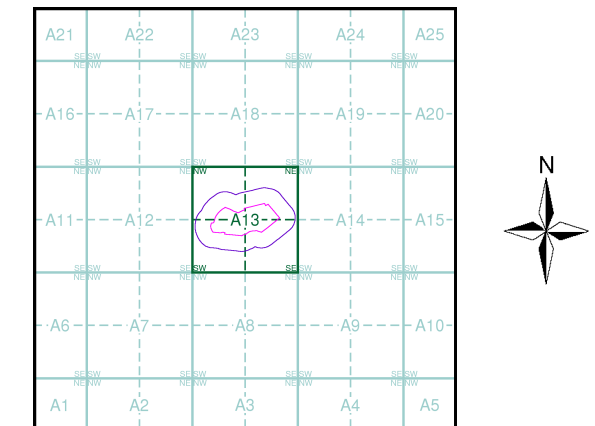


Geotechnical & Geoenvironmental Specialists

Historical Mapping & Photography included:

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Glamorganshire	1:10,560	1884	3
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Carmarthenshire	1:10,560	1907 - 1908	6
Glamorganshire	1:10,560	1921	7
Carmarthenshire	1:10,560	1921	8
Glamorganshire	1:10,560	1935 - 1936	9
Carmarthenshire	1:10,560	1935 - 1936	10
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Swansea	1:10,000	1976	19
Ordnance Survey Plan	1:10,000	1980 - 1989	20
Ordnance Survey Plan	1:10,000	1991 - 1995	21
10K Raster Mapping	1:10,000	1999	22
10K Raster Mapping	1:10,000	2006	23
VectorMap Local	1:10,000	2020	24

Russian Map - Slice A



Order Details

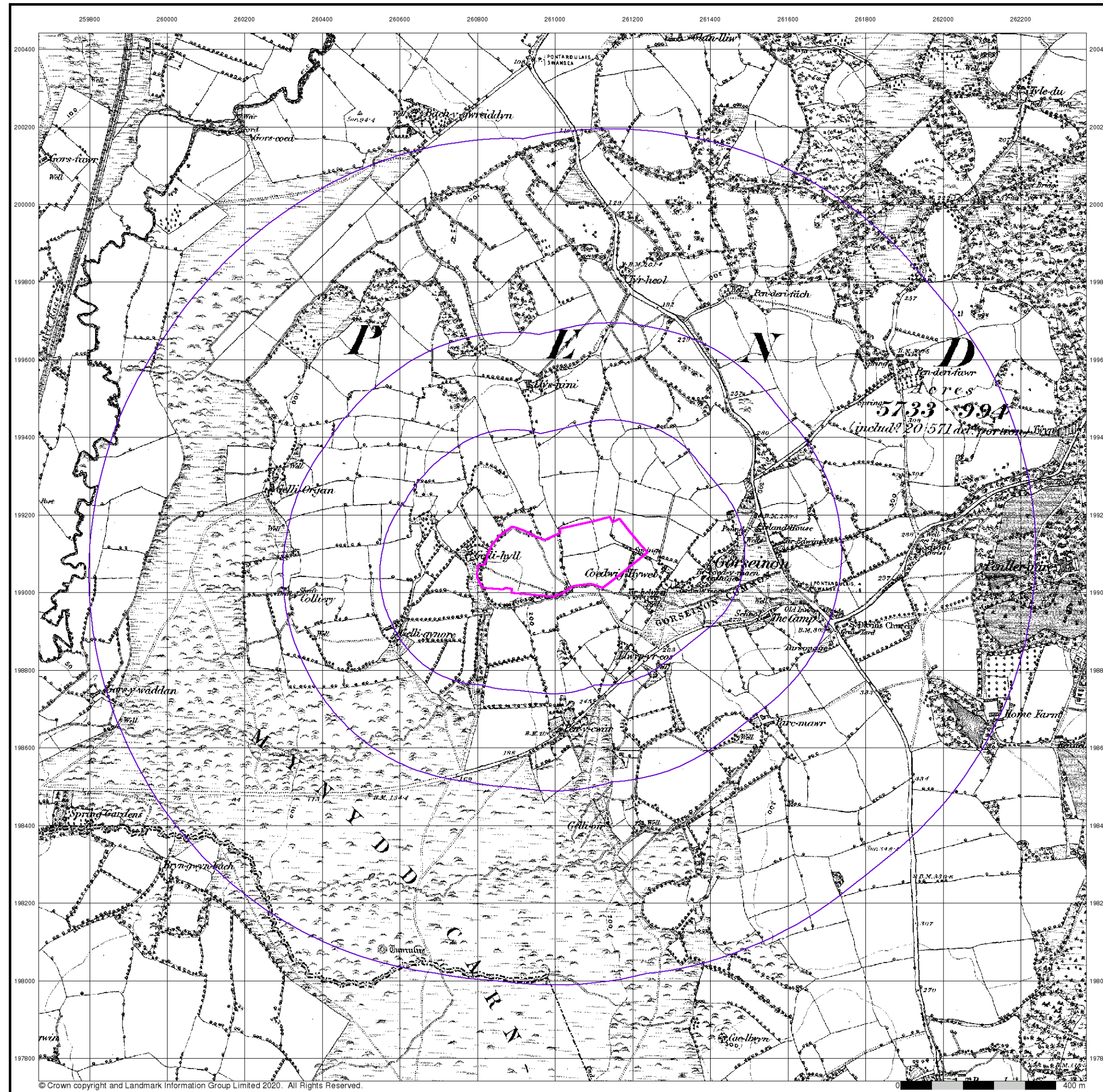
Order Number: 264127625_1_1
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 Site Area (Ha): 5.93
 Search Buffer (m): 1000

Site Details

Site at 260980, 199090



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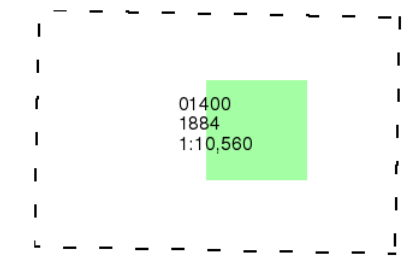
Glamorganshire

Published 1884

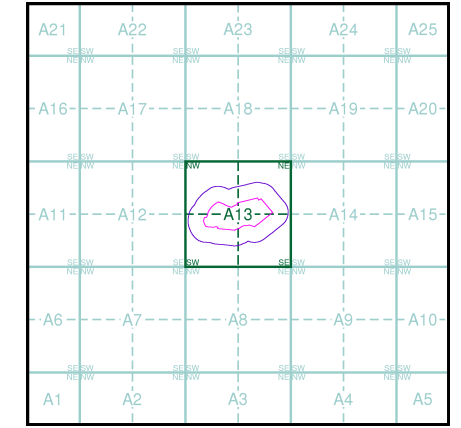
Source map scale - 1:10,560

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

Order Number: 264127625_1_1
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 National Grid Reference: 261010, 199090
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Geotechnical & Geoenvironmental Specialists

Carmarthenshire

Published 1889

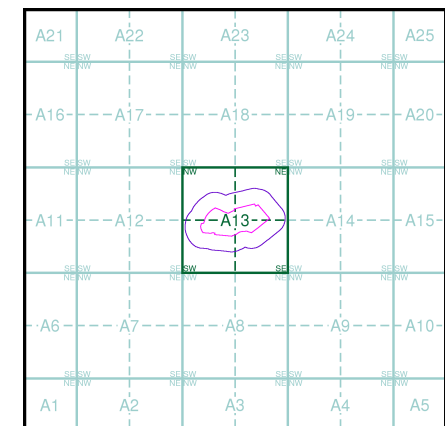
Source map scale - 1:10,560

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)

059NW 1889 1:10,560	
059SW 1889 1:10,560	

Historical Map - Slice A



Order Details

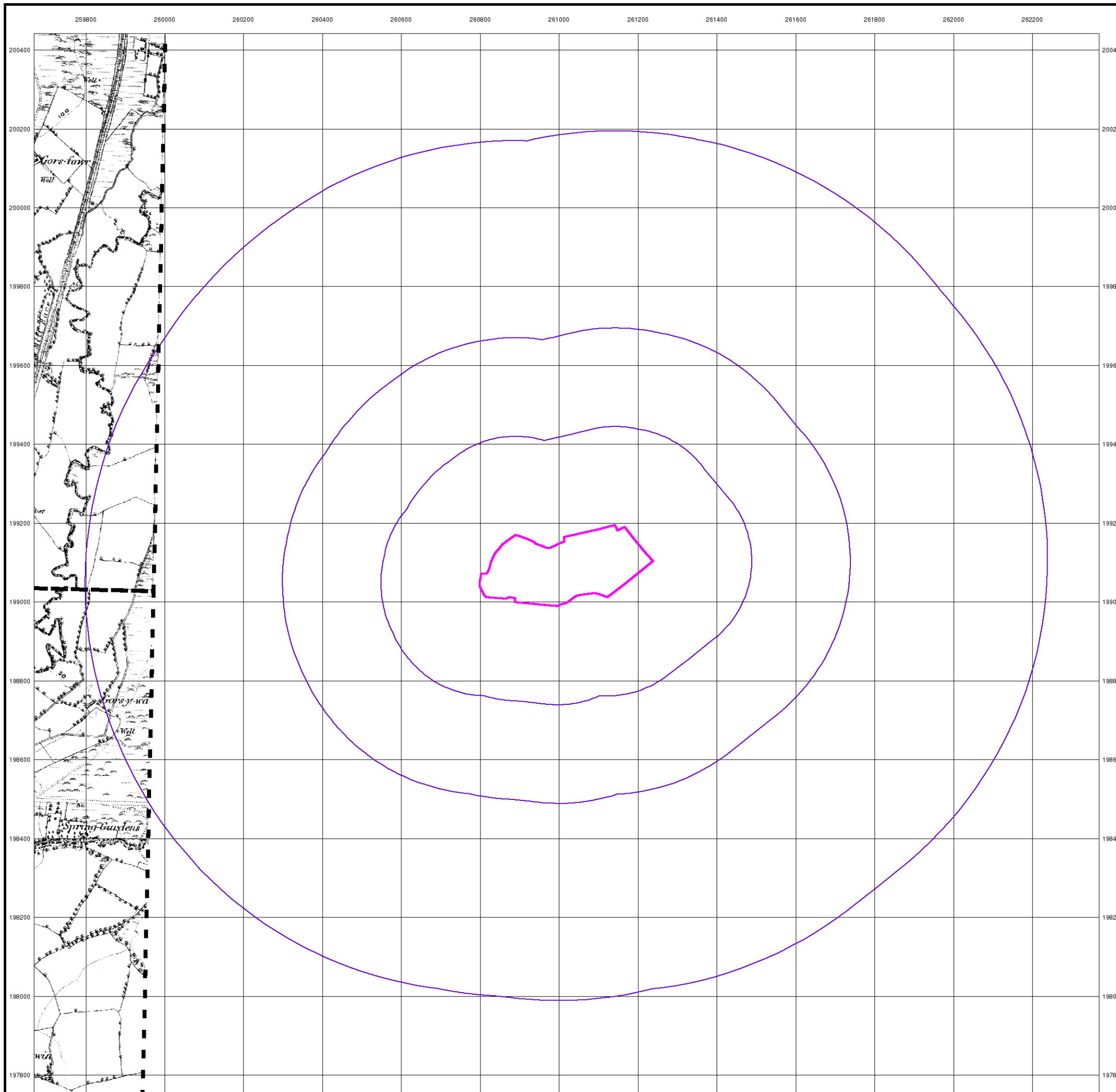
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 Slice: A
 Site Area (Ha): 5.93
 Search Buffer (m): 1000

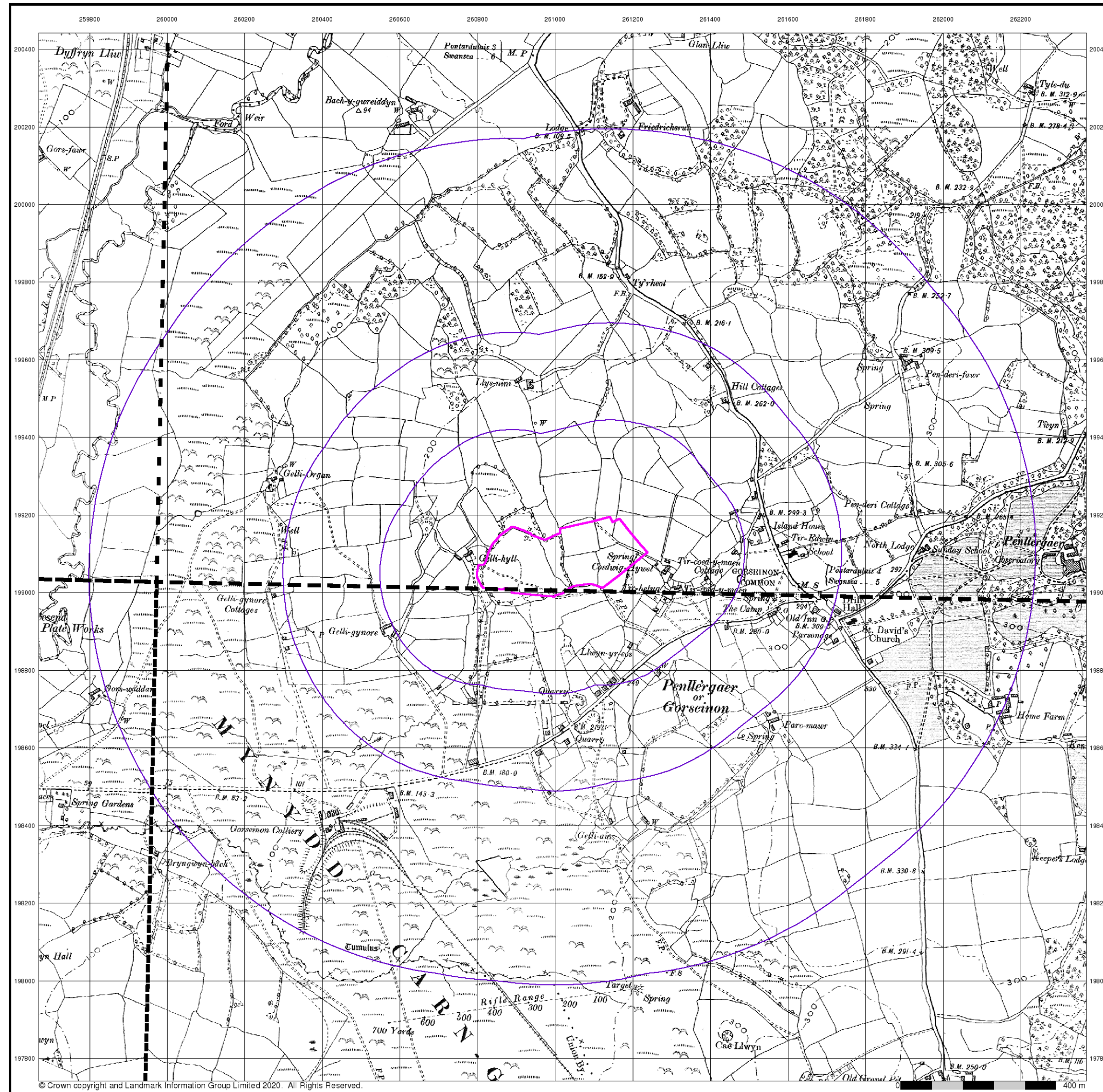
Site Details

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Geotechnical & Geoenvironmental Specialists

Glamorganshire

Published 1900 - 1901

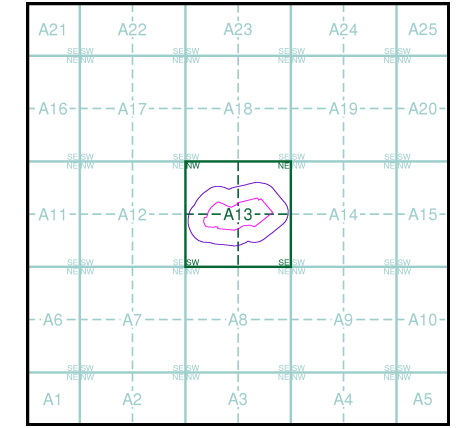
Source map scale - 1:10,560

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)

014NW 1901 1:10,560	014NE 1900 1:10,560
014SW 1900 1:10,560	014SE 1900 1:10,560

Historical Map - Slice A



Order Details

Order Number: 264127625_1_1
 Customer Ref: 16300
 National Grid Reference: 261010, 199090
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Geotechnical & Geoenvironmental Specialists

Carmarthenshire

Published 1907 - 1908

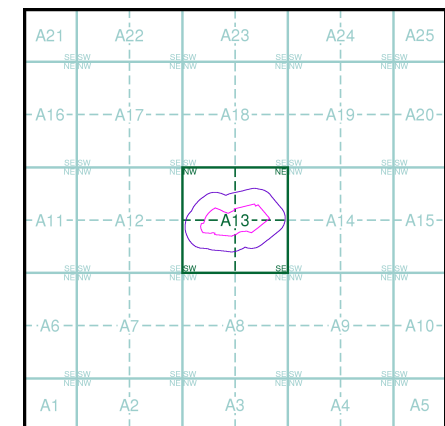
Source map scale - 1:10,560

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)

059NW	1908	1:10,560
059SW	1907	1:10,560

Historical Map - Slice A



Order Details

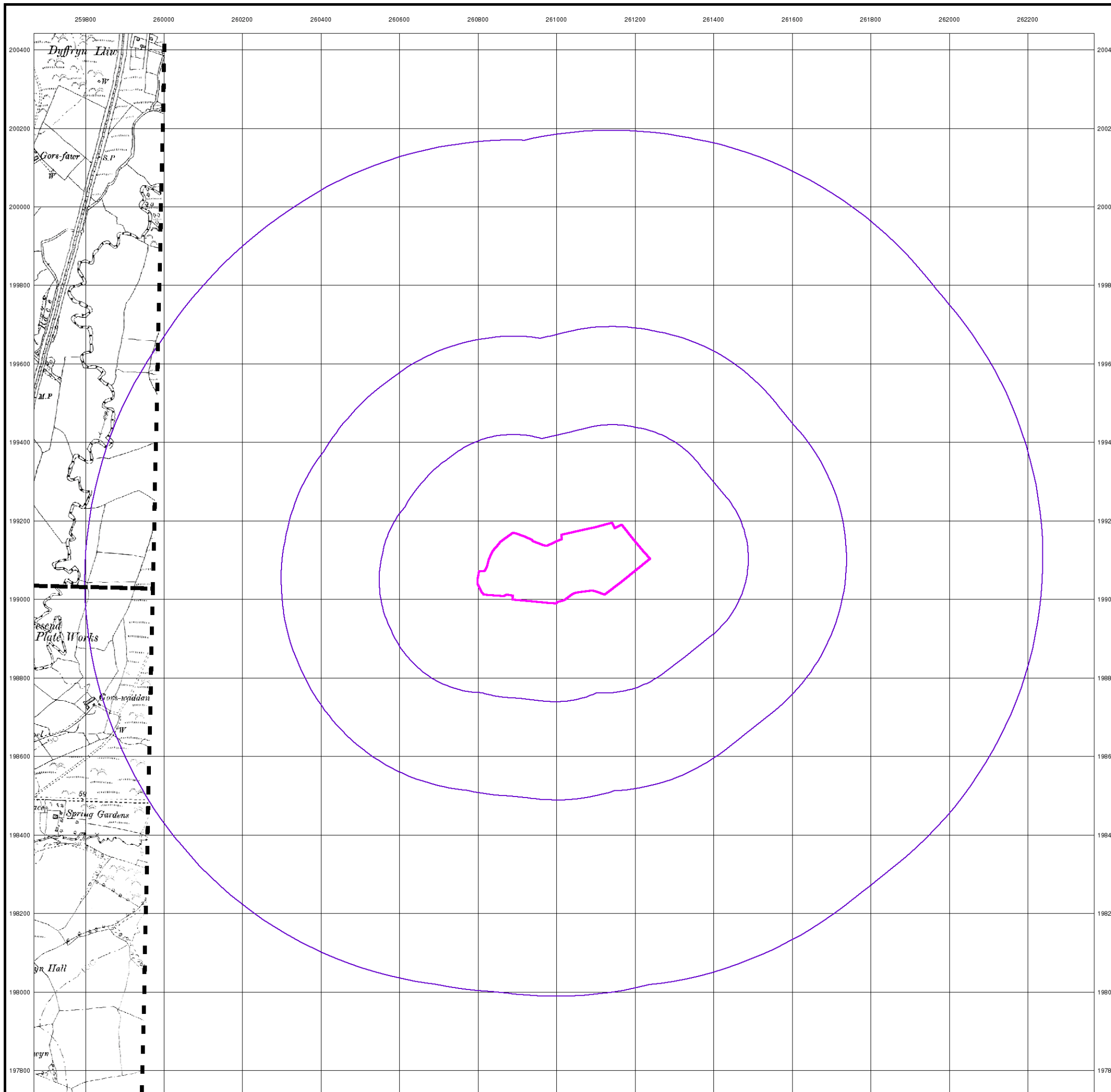
Order Number: 264127625_1_1
 Customer Ref: 16300
 National Grid Reference: 261010, 199090
 Slice: A
 Site Area (Ha): 5.93
 Search Buffer (m): 1000

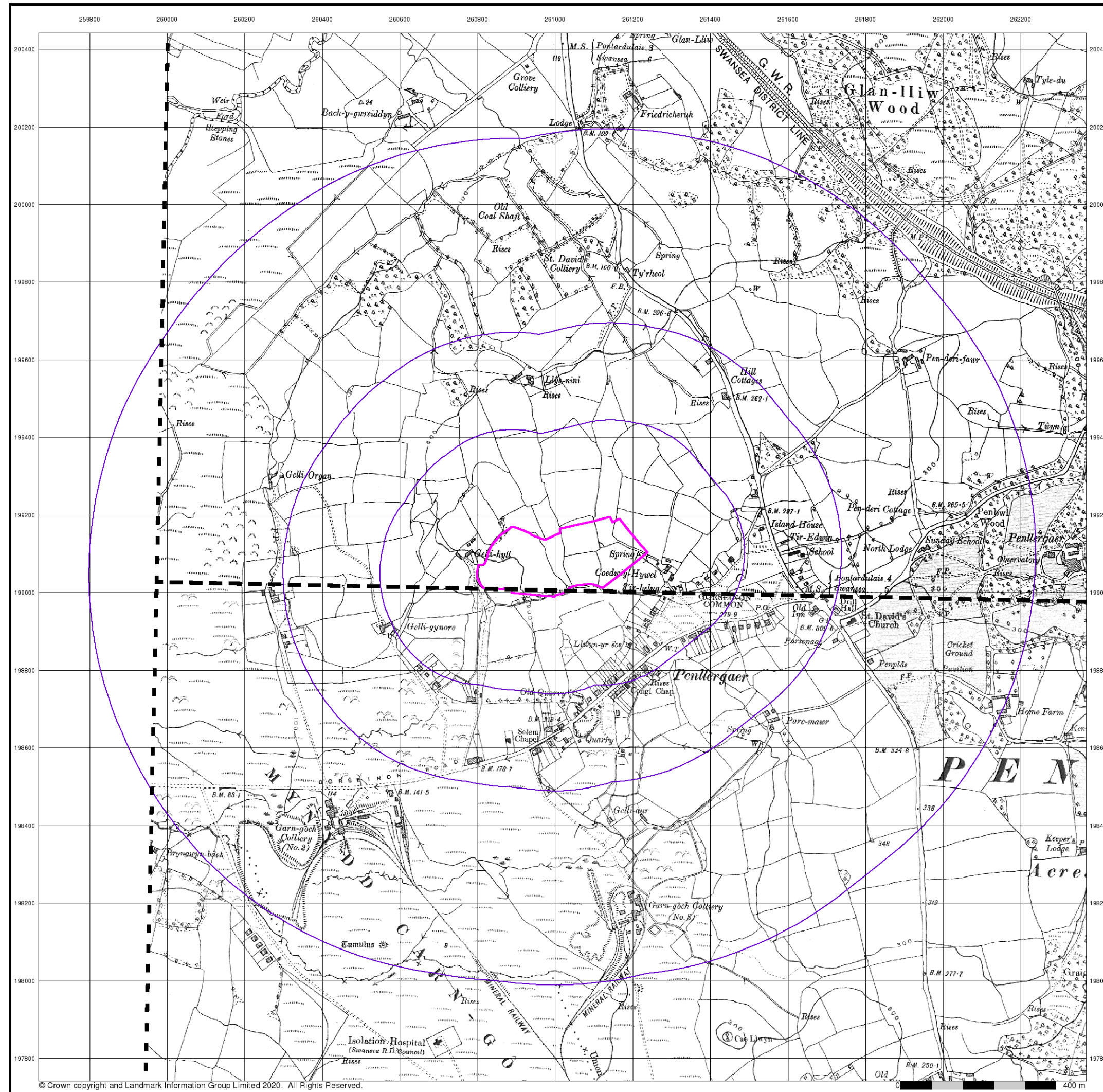
Site Details

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Geotechnical & Geoenvironmental Specialists

Glamorganshire

Published 1921

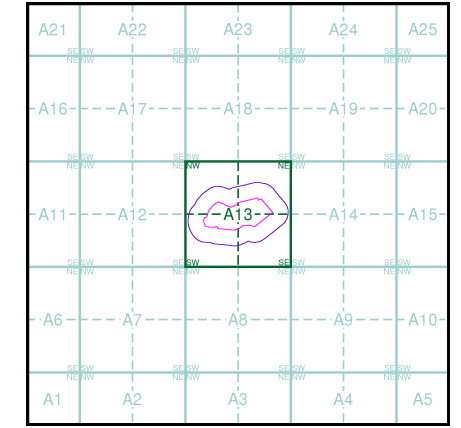
Source map scale - 1:10,560

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)

014NE	1921
1:10,560	
014SE	1921
1:10,560	

Historical Map - Slice A



Order Details

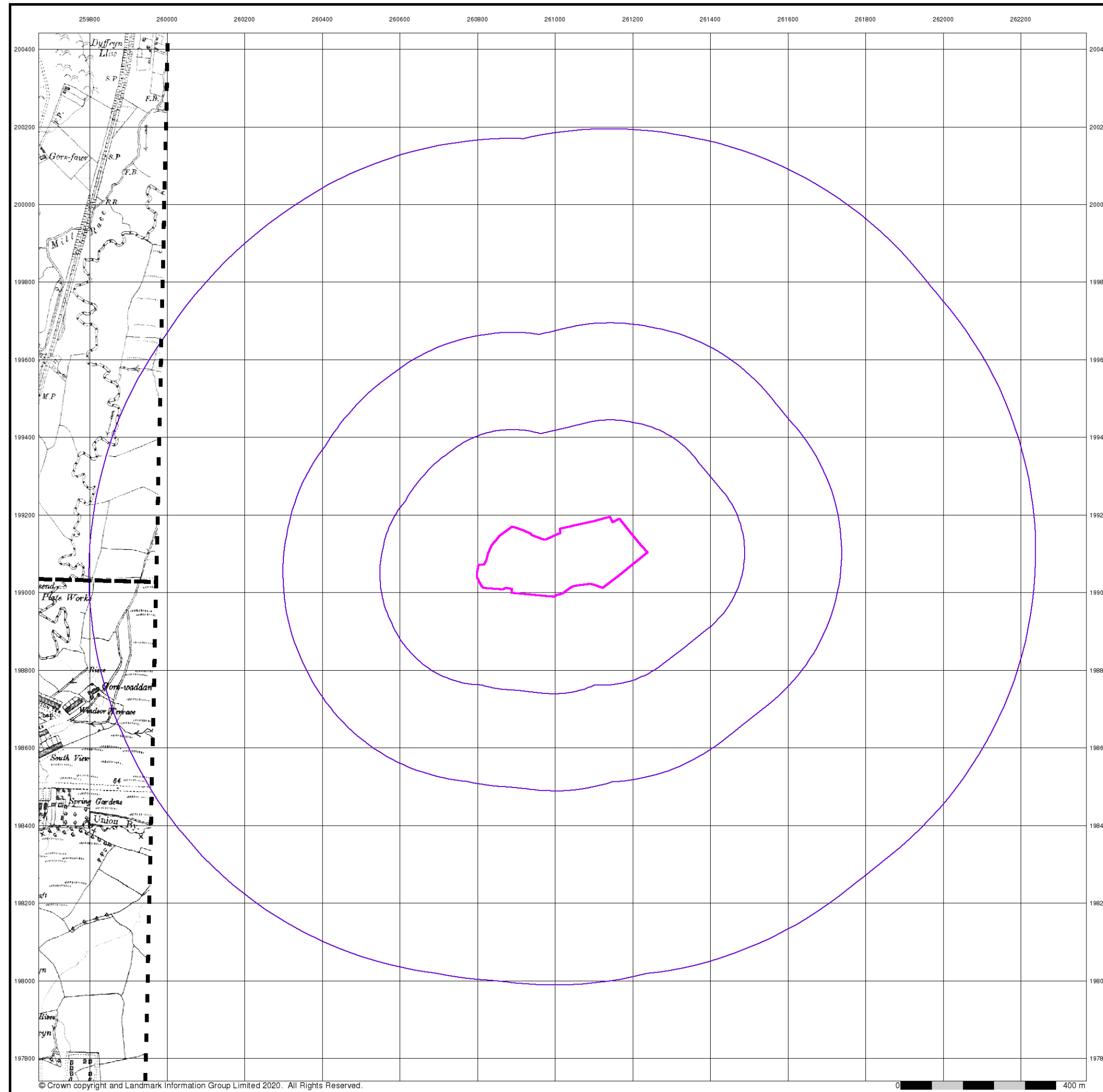
Order Number: 264127625_1_1
 Customer Ref: 16300
 National Grid Reference: 261010, 199090
 Slice: A
 Site Area (Ha): 5.93
 Search Buffer (m): 1000

Site Details

Site at 260980, 199090



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Geotechnical & Geoenvironmental Specialists

Carmarthenshire

Published 1921

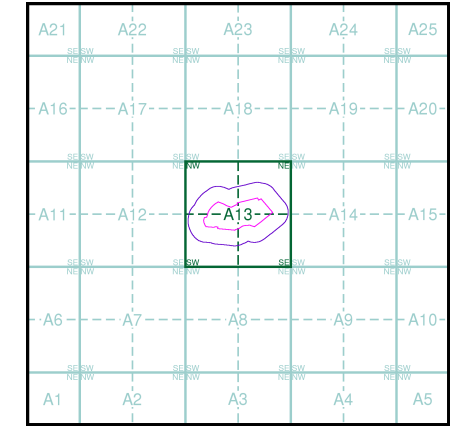
Source map scale - 1:10,560

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)

059NW	1921	1:10,560
059SW	1921	1:10,560

Historical Map - Slice A



Order Details

Order Number: 264127625_1_1
 Customer Ref: 16300
 National Grid Reference: 261010, 199090
 Slice: A
 Site Area (Ha): 5.93
 Search Buffer (m): 1000

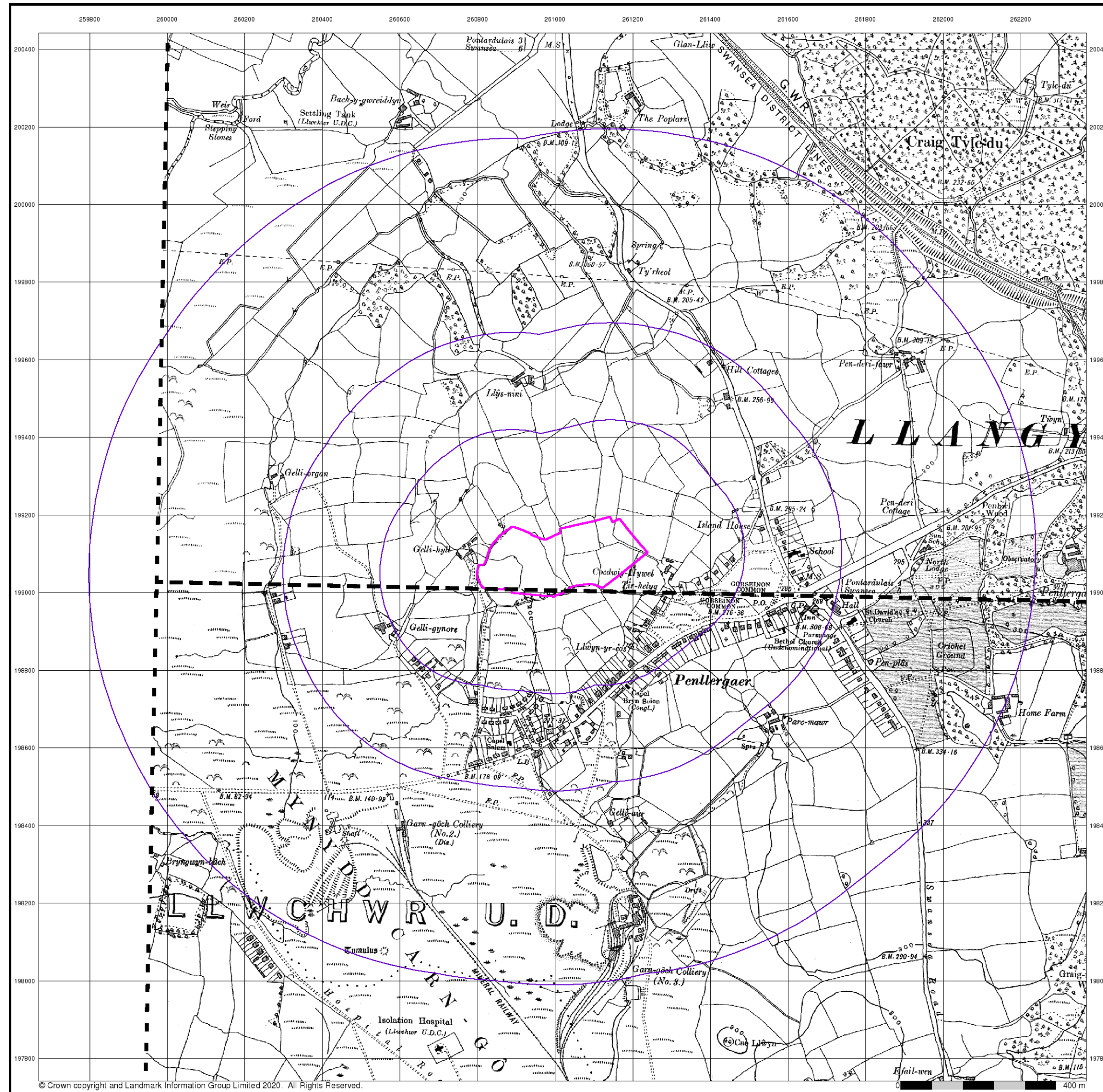
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Geotechnical & Geoenvironmental Specialists

Glamorganshire

Published 1935 - 1936

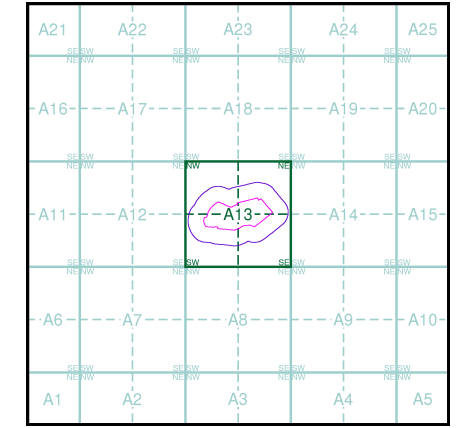
Source map scale - 1:10,560

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)

014NE	1935	1:10,560
014SE	1936	1:10,560

Historical Map - Slice A



Order Details

Order Number: 264127625_1_1
 Customer Ref: 16300
 National Grid Reference: 261010, 199090
 Slice: A
 Site Area (Ha): 5.93
 Search Buffer (m): 1000

Site Details

Site at 260980, 199090



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Geotechnical & Geoenvironmental Specialists

Carmarthenshire

Published 1935 - 1936

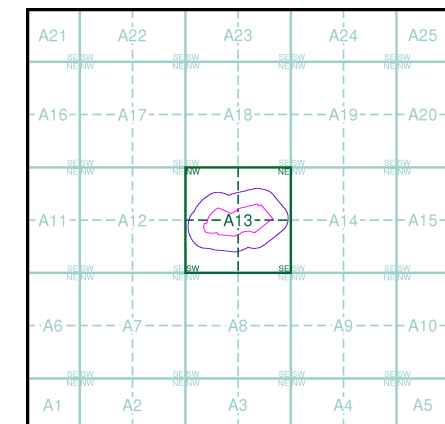
Source map scale - 1:10,560

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)

059NW 1935 1:10,560	
059SW 1936 1:10,560	

Historical Map - Slice A



Order Details

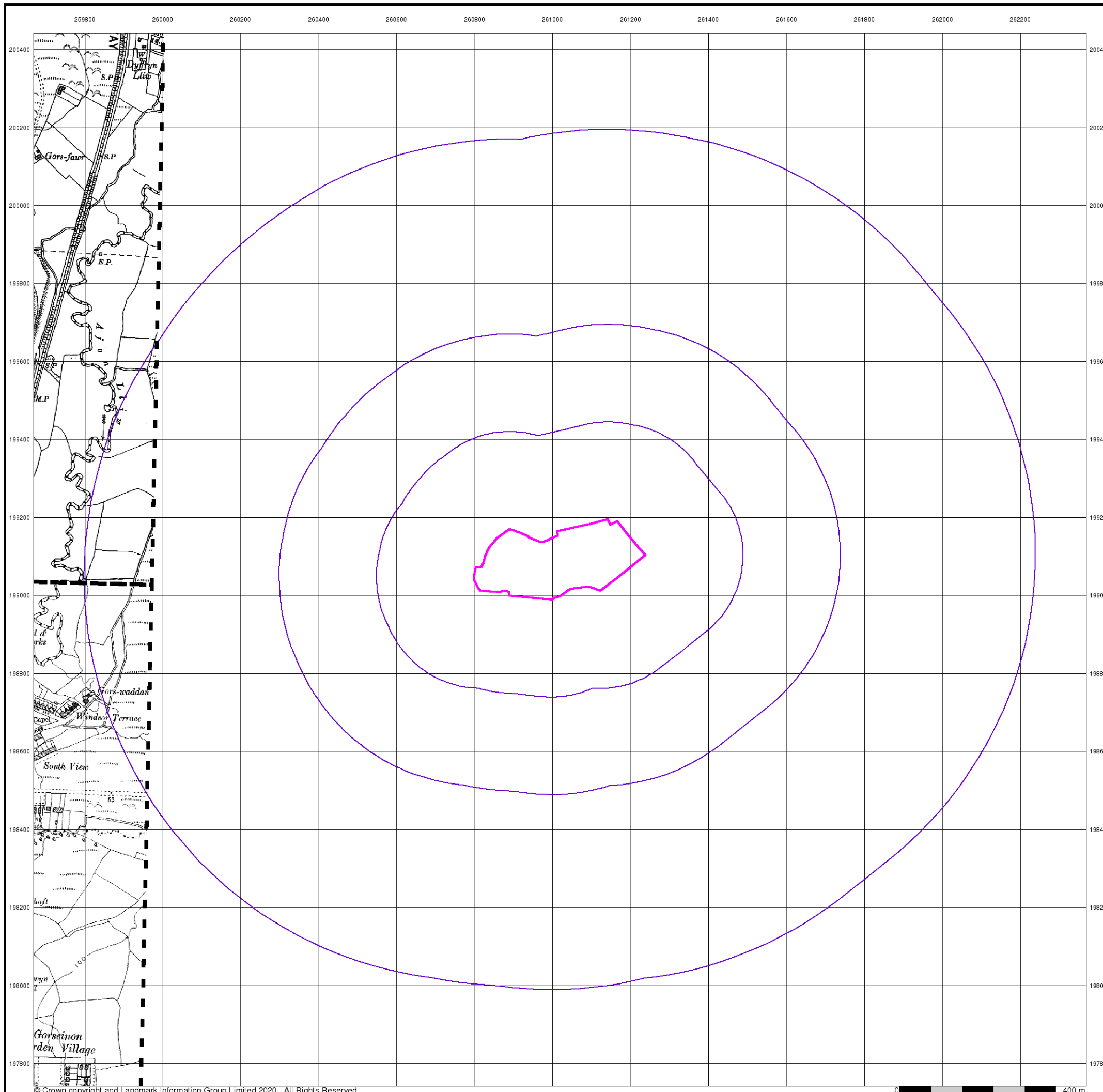
Order Number: 264127625_1_1
 Customer Ref: 16300
 National Grid Reference: 261010, 199090
 Slice: A
 Site Area (Ha): 5.93
 Search Buffer (m): 1000

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Geotechnical & Geoenvironmental Specialists

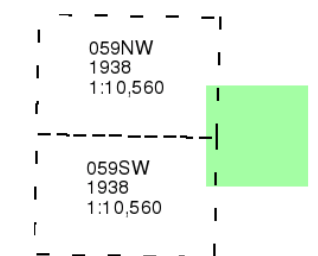
Carmarthenshire

Published 1938

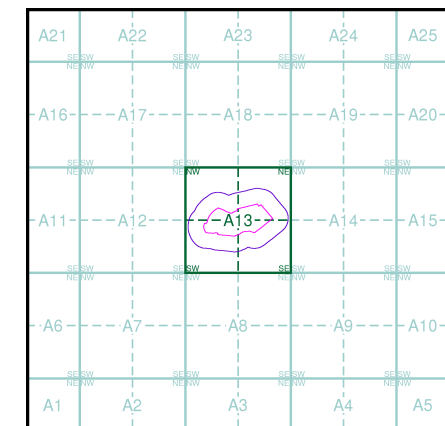
Source map scale - 1:10,560

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

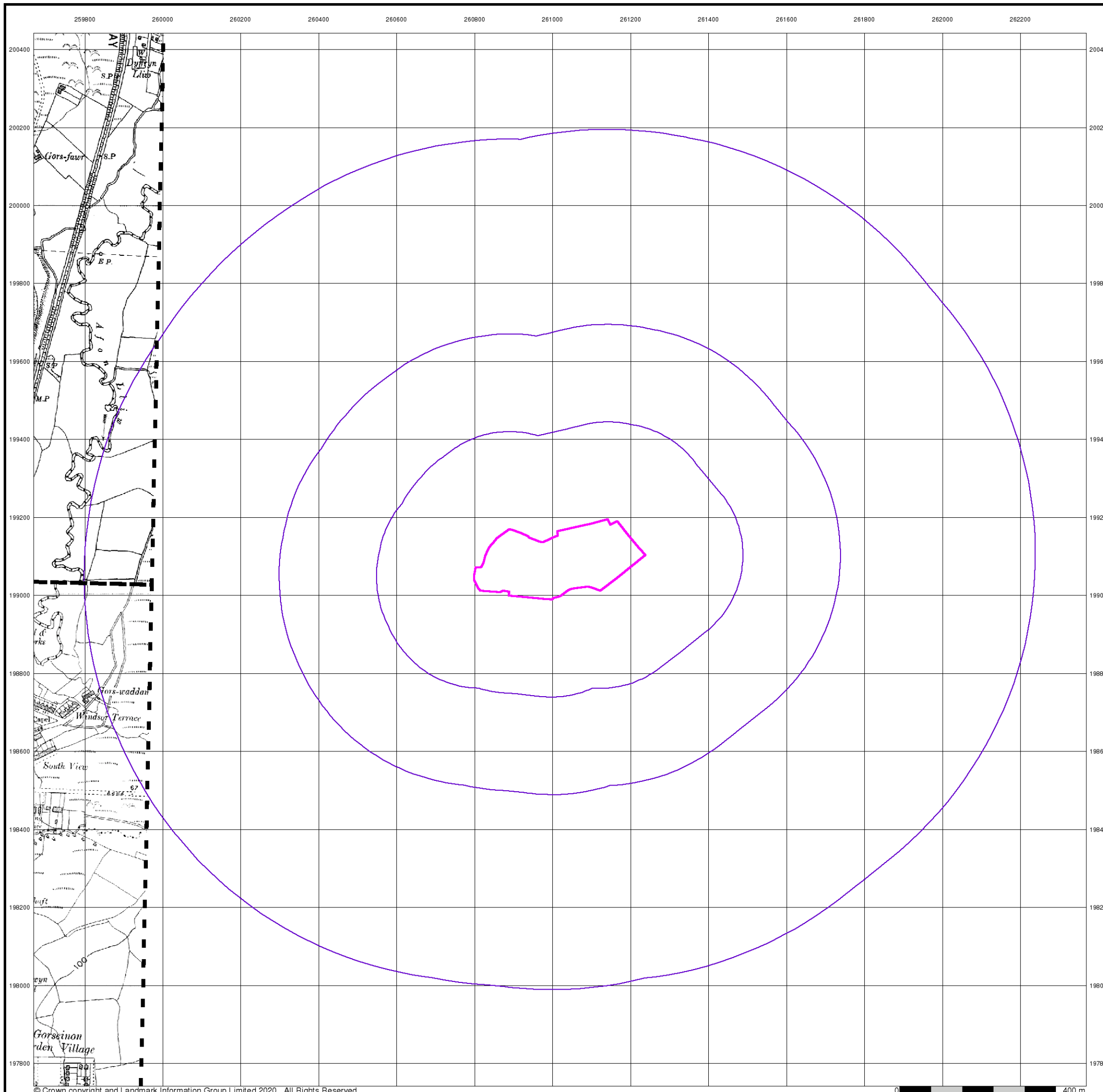
Order Number: 264127625_1_1
Customer Ref: 16300
National Grid Reference: 261010, 199090
Slice: A
Site Area (Ha): 5.93
Search Buffer (m): 1000

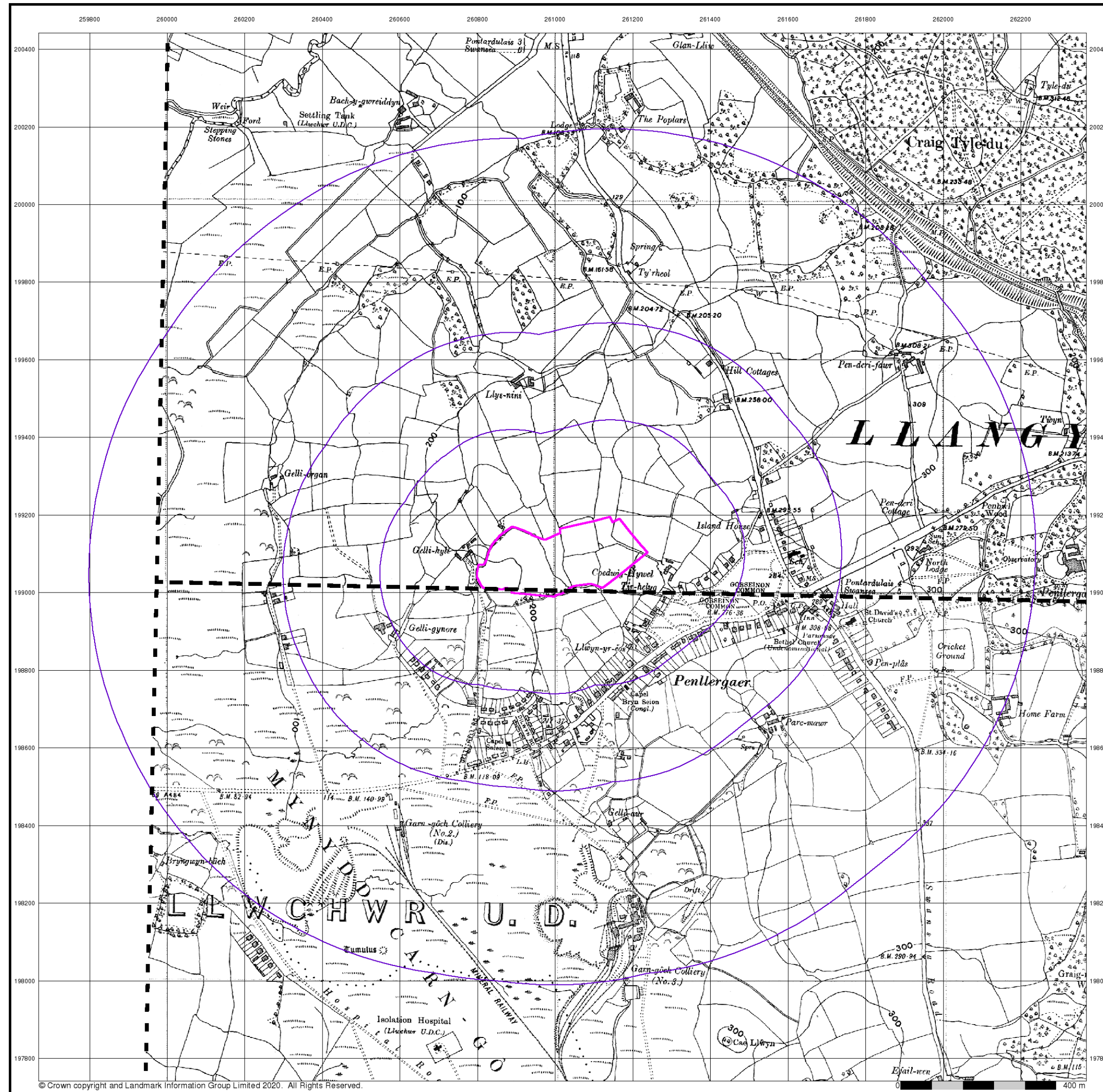
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Geotechnical & Geoenvironmental Specialists

Glamorganshire

Published 1938 - 1951

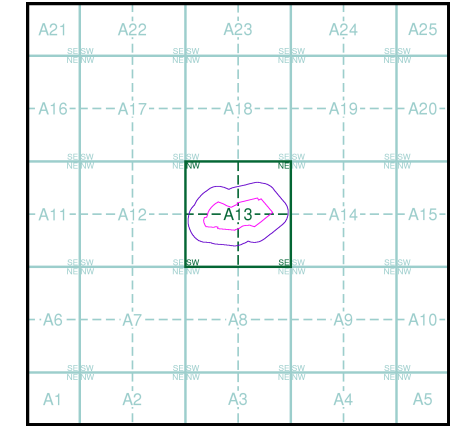
Source map scale - 1:10,560

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)

014NE	1951
1:10,560	
014SE	1938
1:10,560	

Historical Map - Slice A



Order Details

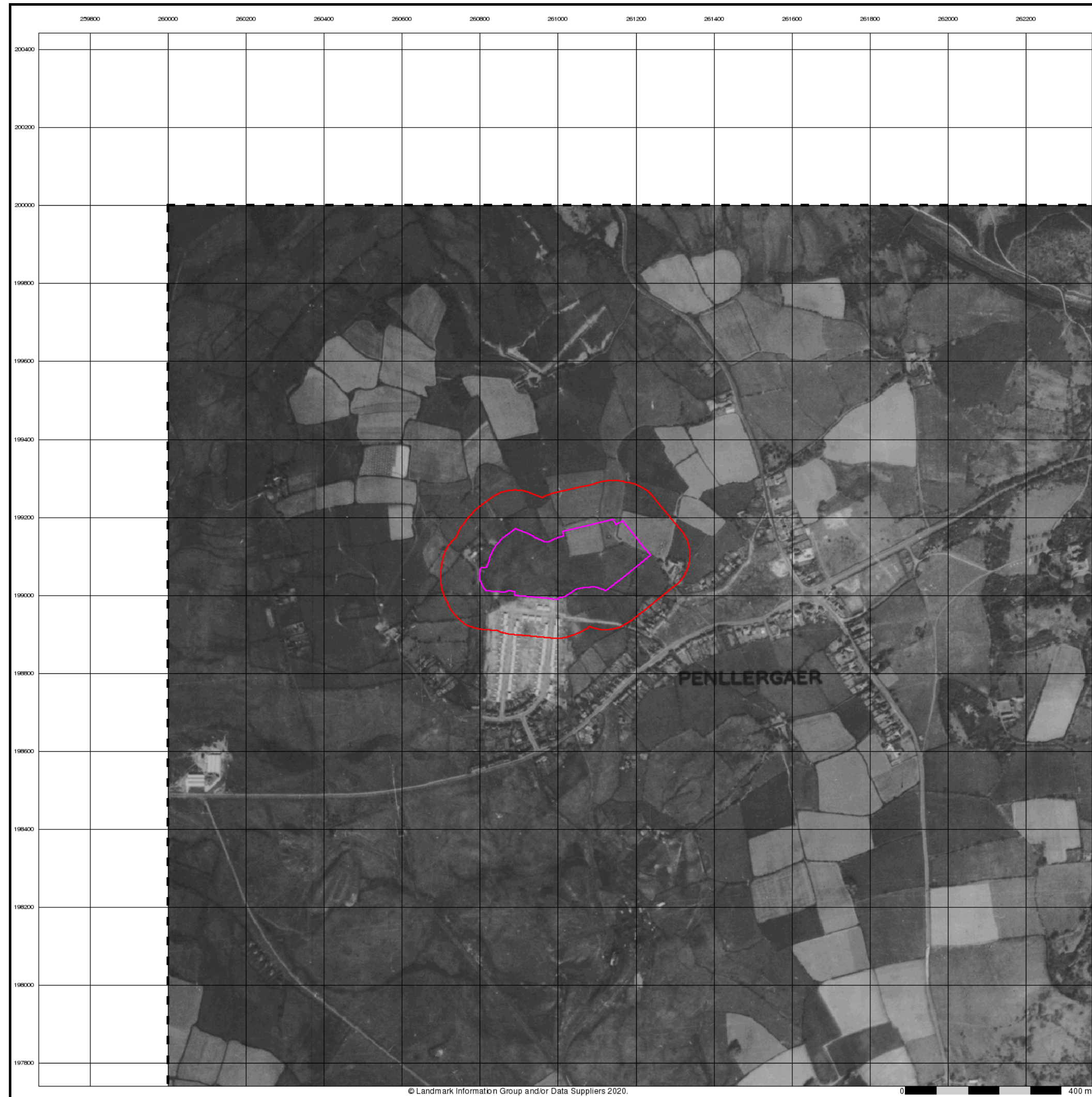
Order Number: 264127625_1_1
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 Slice: A
 Site Area (Ha): 5.93
 Search Buffer (m): 1000

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Geotechnical & Geoenvironmental Specialists

Historical Aerial Photography

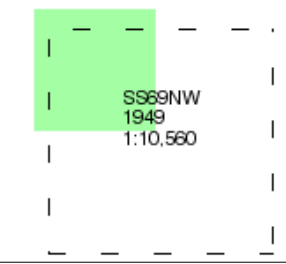
Published 1949

Source map scale - 1:10,560

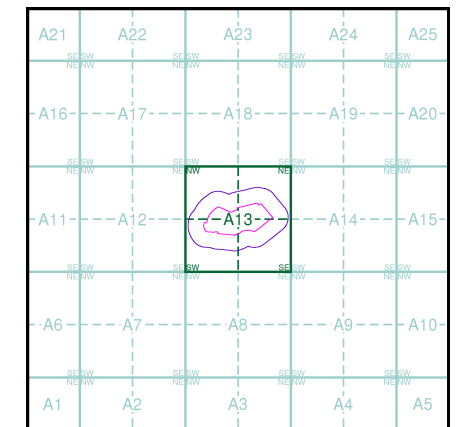
The Historical Aerial Photos were produced by the Ordnance Survey at a scale of 1:1,250 and 1:10,560 from Air Force photography. They were produced between 1944 and 1951 as an interim measure, pending preparation of conventional mapping, due to post war resource shortages. New security measures in the 1950's meant that every photograph was re-checked for potentially unsafe information with security sites replaced by fake fields or clouds. The original editions were withdrawn and only later made available after a period of fifty years although due to the accuracy of the editing, without viewing both revisions it is not easy to spot the edits. Where available Landmark have included both revisions.

© Landmark Information Group and/or Data Suppliers 2010.

Map Name(s) and Date(s)



Historical Aerial Photography - Slice A



Order Details

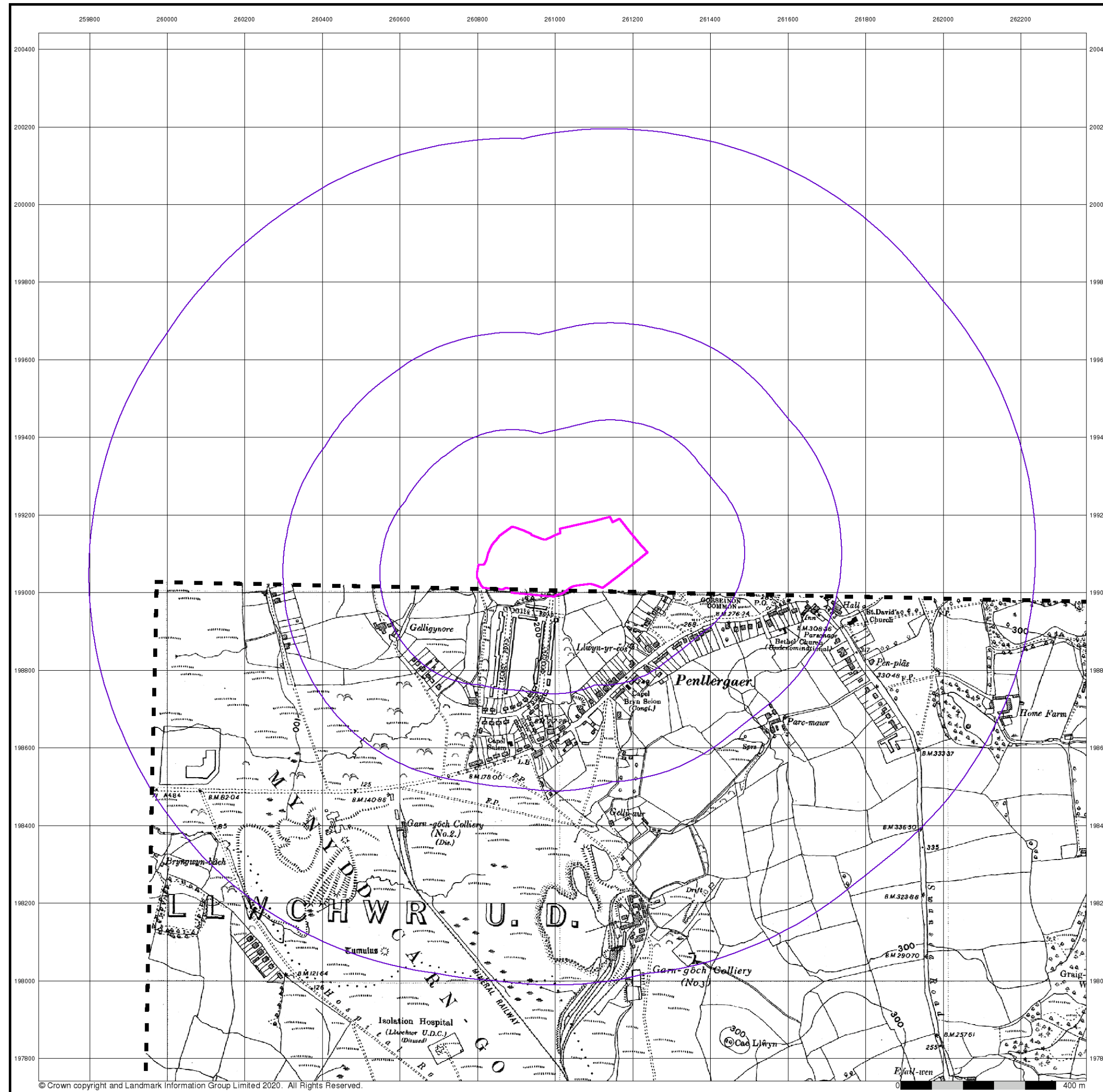
Order Number: 264127625_1_1
 Customer Ref: 16300
 National Grid Reference: 261010, 199090
 Slice: A
 Site Area (Ha): 5.93
 Search Buffer (m): 1000

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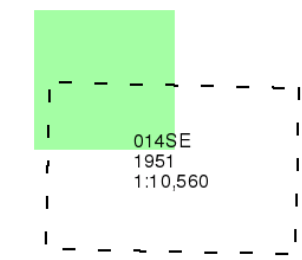
Glamorganshire

Published 1951

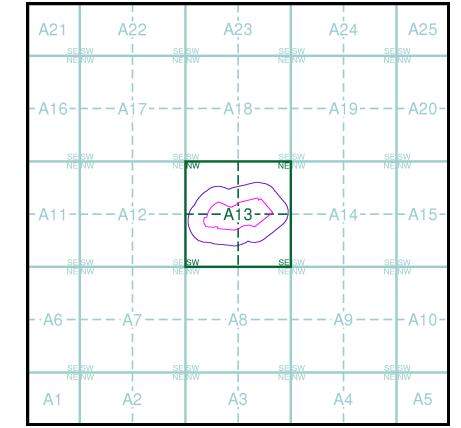
Source map scale - 1:10,560

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

Order Number: 264127625_1_1
 Customer Ref: 16300
 National Grid Reference: 261010, 199090
 Slice: A
 Site Area (Ha): 5.93
 Search Buffer (m): 1000

Site Details

Site at 260980, 199090



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Geotechnical & Geoenvironmental Specialists

Carmarthenshire

Published 1951

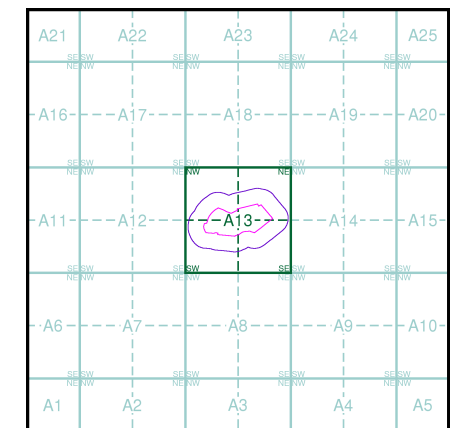
Source map scale - 1:10,560

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)

059NW	1951	1:10,560
059SW	1951	1:10,560

Historical Map - Slice A



Order Details

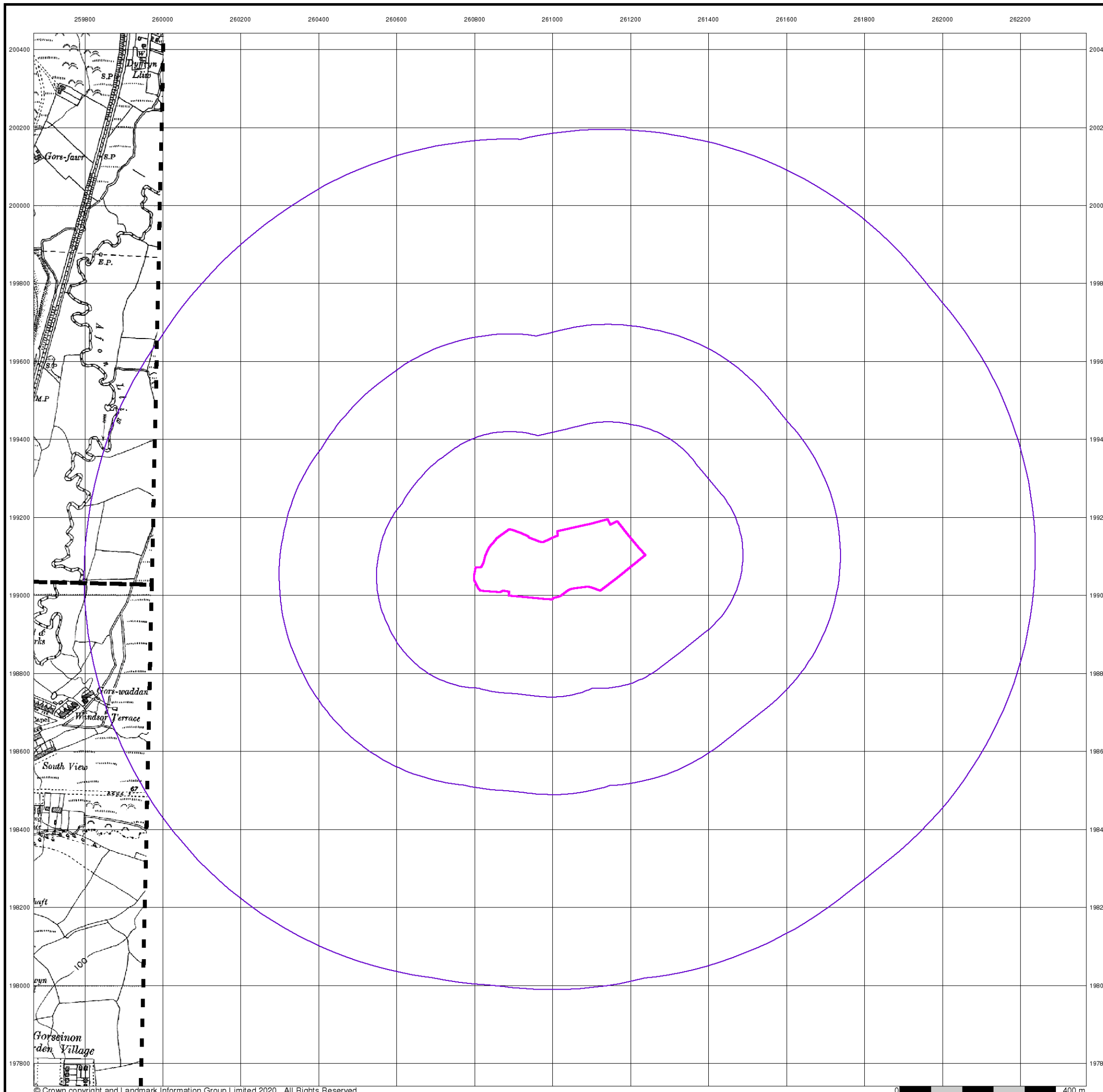
Order Number: 264127625_1_1
 Customer Ref: 16300
 National Grid Reference: 261010, 199090
 Slice: A
 Site Area (Ha): 5.93
 Search Buffer (m): 1000

Site Details

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Geotechnical & Geoenvironmental Specialists

Ordnance Survey Plan

Published 1964

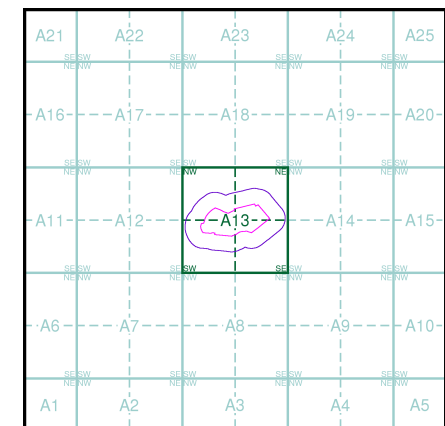
Source map scale - 1:10,000

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)

SN50SE	SN60SW
1964	1964
1:10,560	1:10,560
SS59NE	SS69NW
1964	1964
1:10,560	1:10,560

Historical Map - Slice A



Order Details

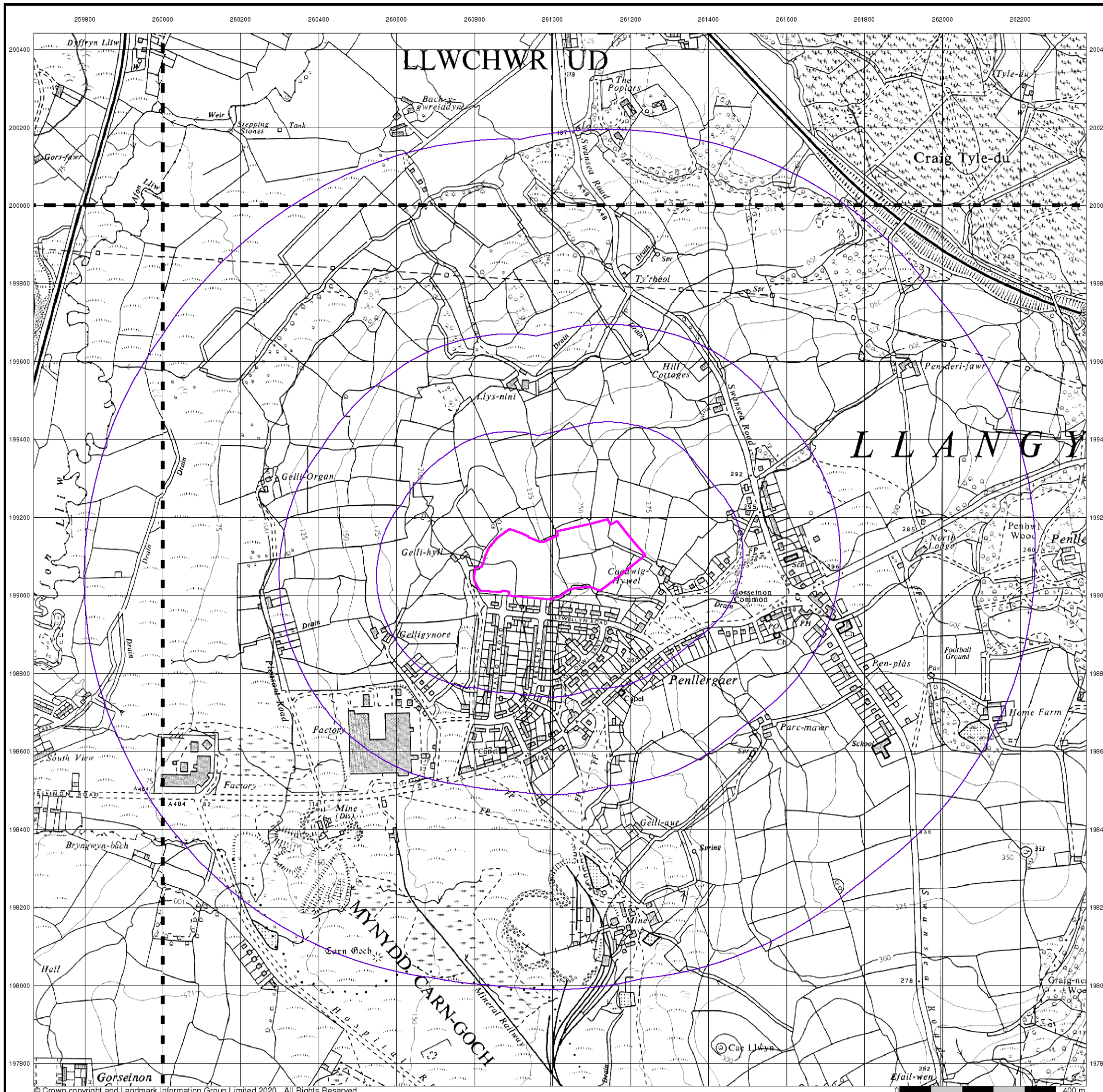
Order Number: 264127625_1_1
 Customer Ref: 16300
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 Slice: A
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 Search Buffer (m): 1000

Site Details

Site at 260980, 199090



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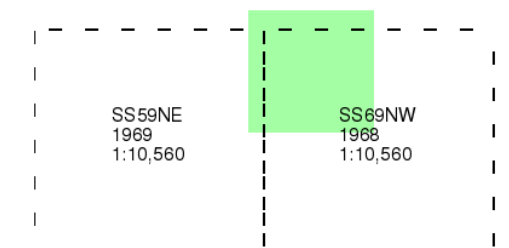
Ordnance Survey Plan

Published 1968 - 1969

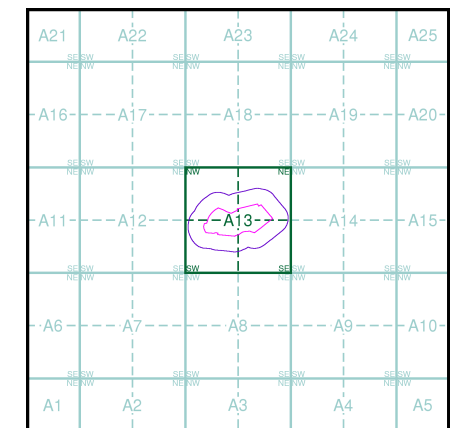
Source map scale - 1:10,000

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

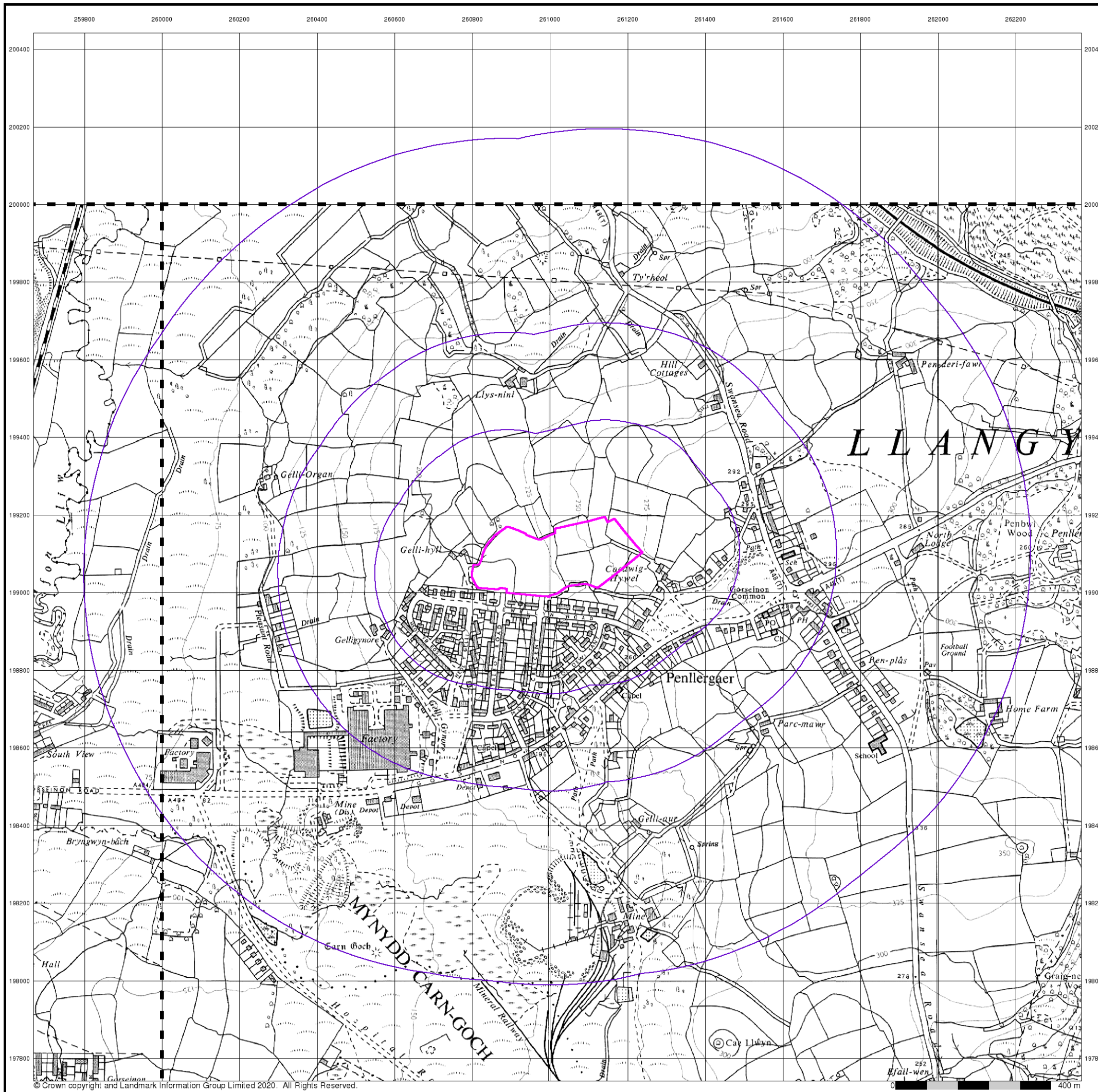
Order Number: 264127625_1_1
Customer Ref: 16300
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Slice: A
Site Area (Ha): 5.93
Search Buffer (m): 1000

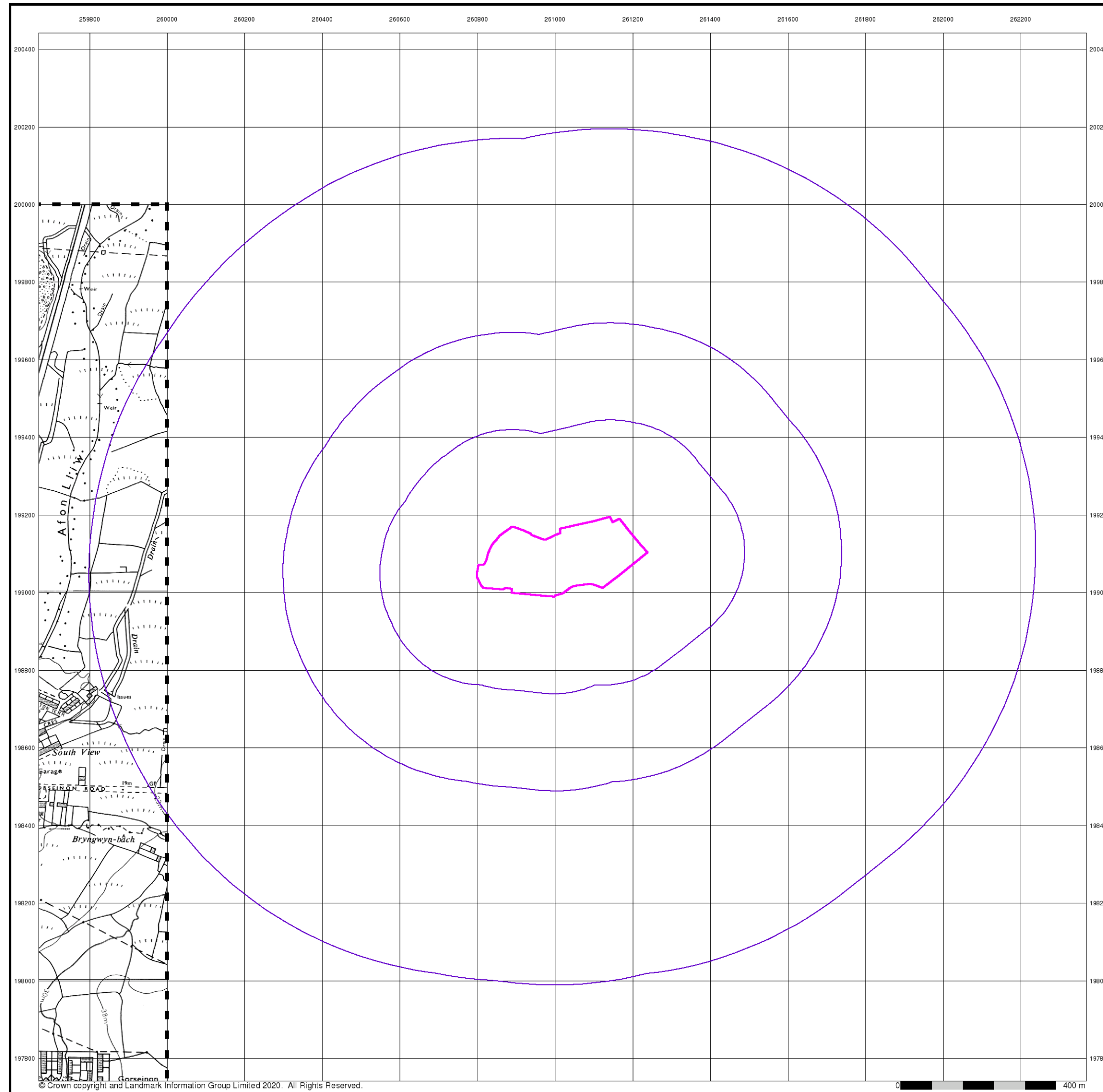
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Geotechnical & Geoenvironmental Specialists

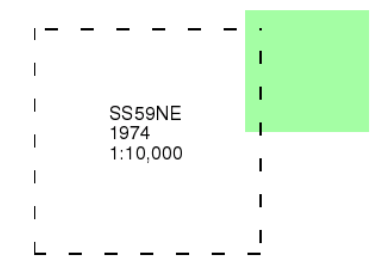
Ordnance Survey Plan

Published 1974

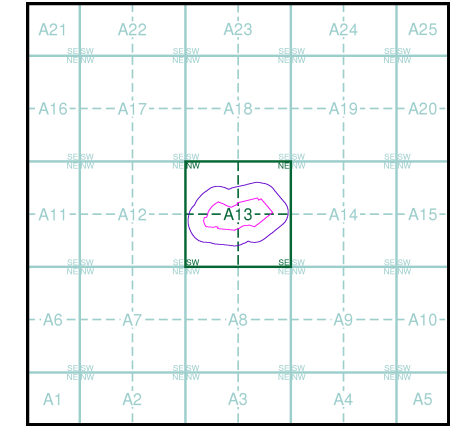
Source map scale - 1:10,000

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: 264127625_1_1
 Customer Ref: 16300
 National Grid Reference: 261010, 199090
 Slice: A
 Site Area (Ha): 5.93
 Search Buffer (m): 1000

Site Details

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Geotechnical & Geoenvironmental Specialists

Swansea

Published 1976

Source map scale - 1:10,000

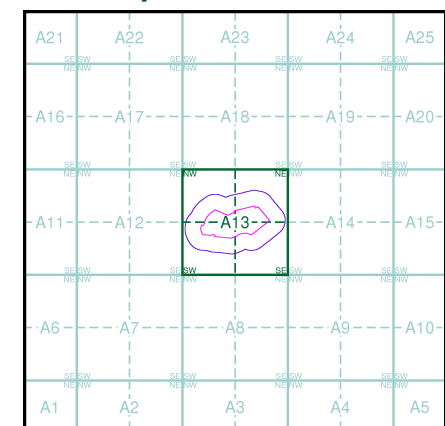
These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use.

They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the cities that are mapped.

Map Name(s) and Date(s)

SN50SE 1976 1:10,000	SN60SW 1976 1:10,000
SS59NE 1976 1:10,000	SS69NW 1976 1:10,000

Russian Map - Slice A



Order Details

Order Number: 264127625_1_1
 Customer Ref: 16300
 National Grid Reference: 261010, 199090
 Slice: A
 Site Area (Ha): 5.93
 Search Buffer (m): 1000

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Geotechnical & Geoenvironmental Specialists

Ordnance Survey Plan

Published 1980 - 1989

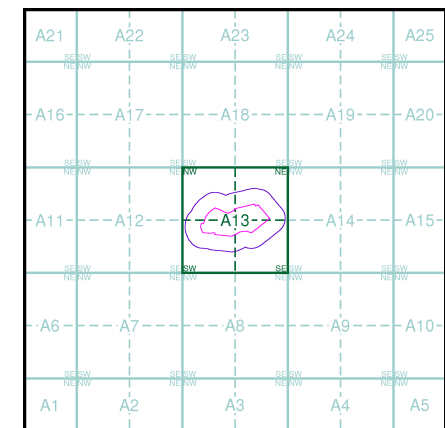
Source map scale - 1:10,000

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)

SN50SE	1980	1:10,000
SS59NE	1989	1:10,000
SS69NW	1982	1:10,000

Historical Map - Slice A



Order Details

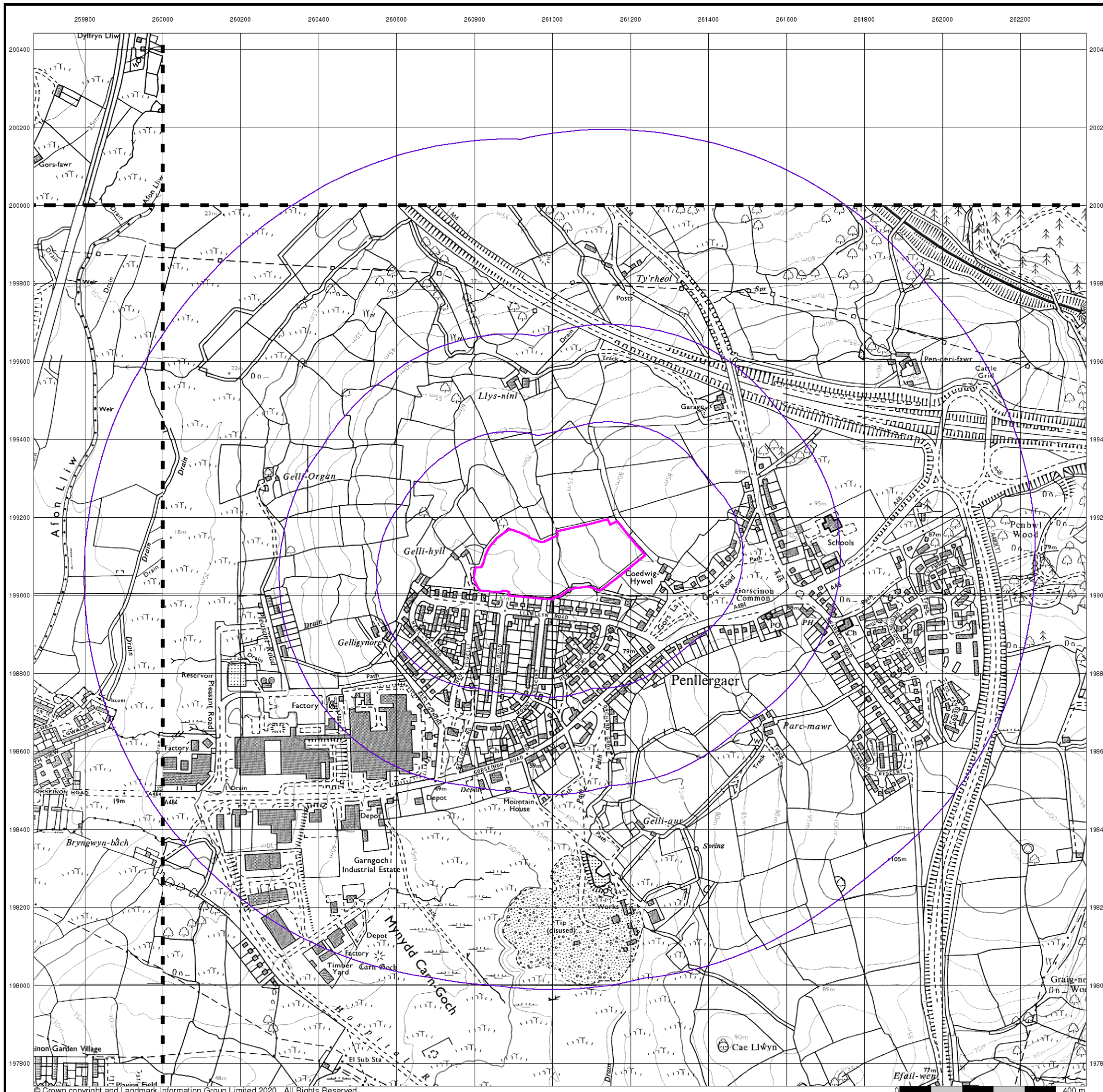
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 Customer Ref: 16300
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 Slice: A
 Site Area (Ha): 5.93
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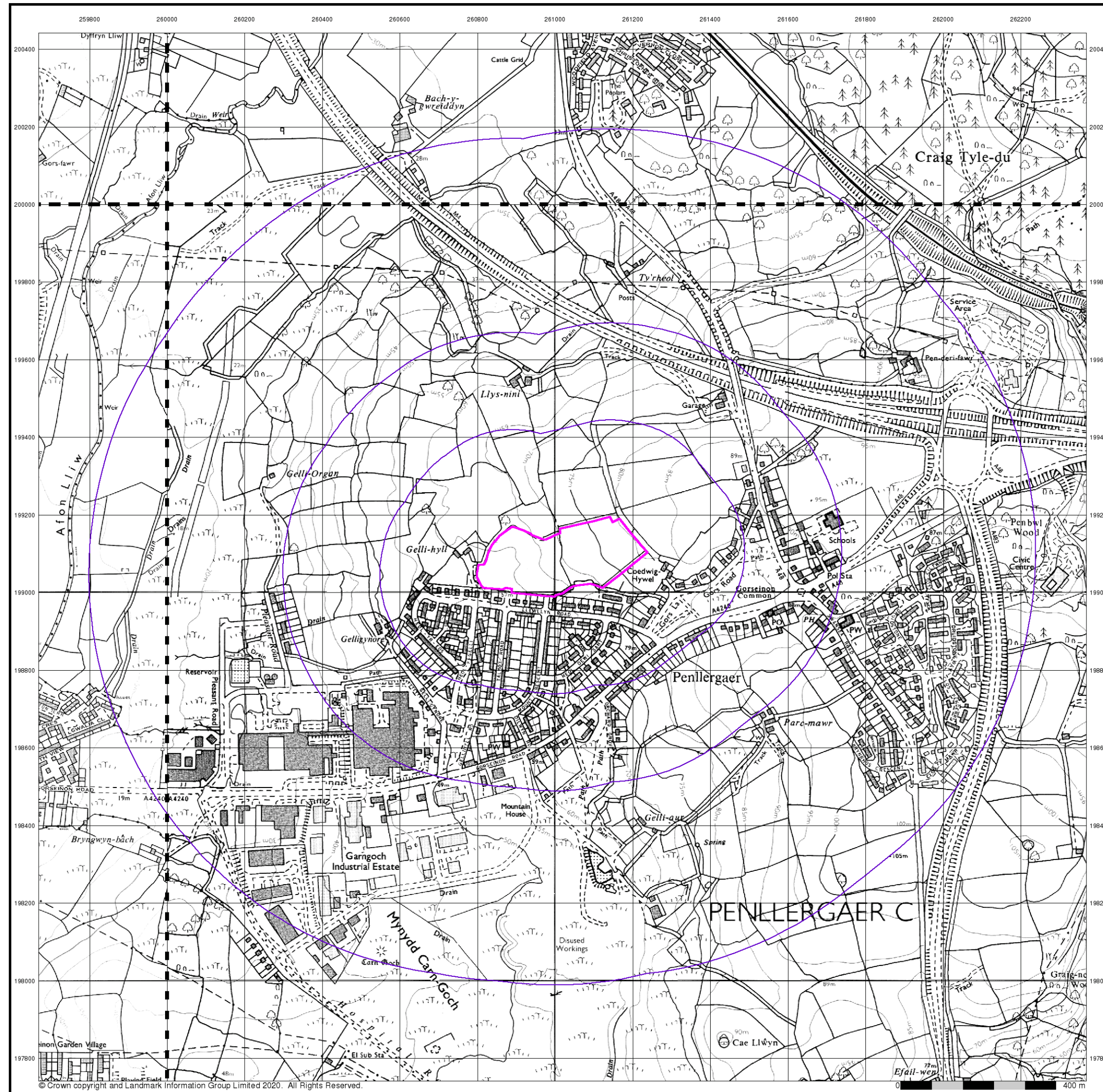
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Geotechnical & Geoenvironmental Specialists

Ordnance Survey Plan

Published 1991 - 1995

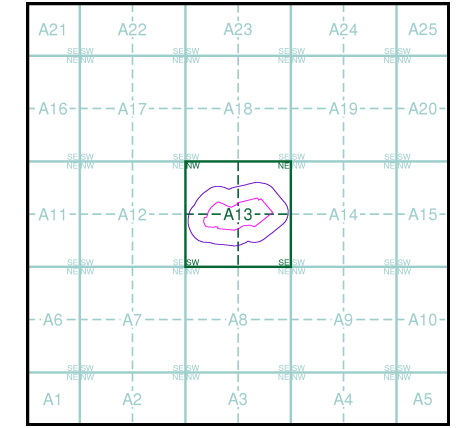
Source map scale - 1:10,000

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)

SN50SE 1993 1:10,000	SN60SW 1991 1:10,000
SS59NE 1993 1:10,000	SS69NW 1995 1:10,000

Historical Map - Slice A



Order Details

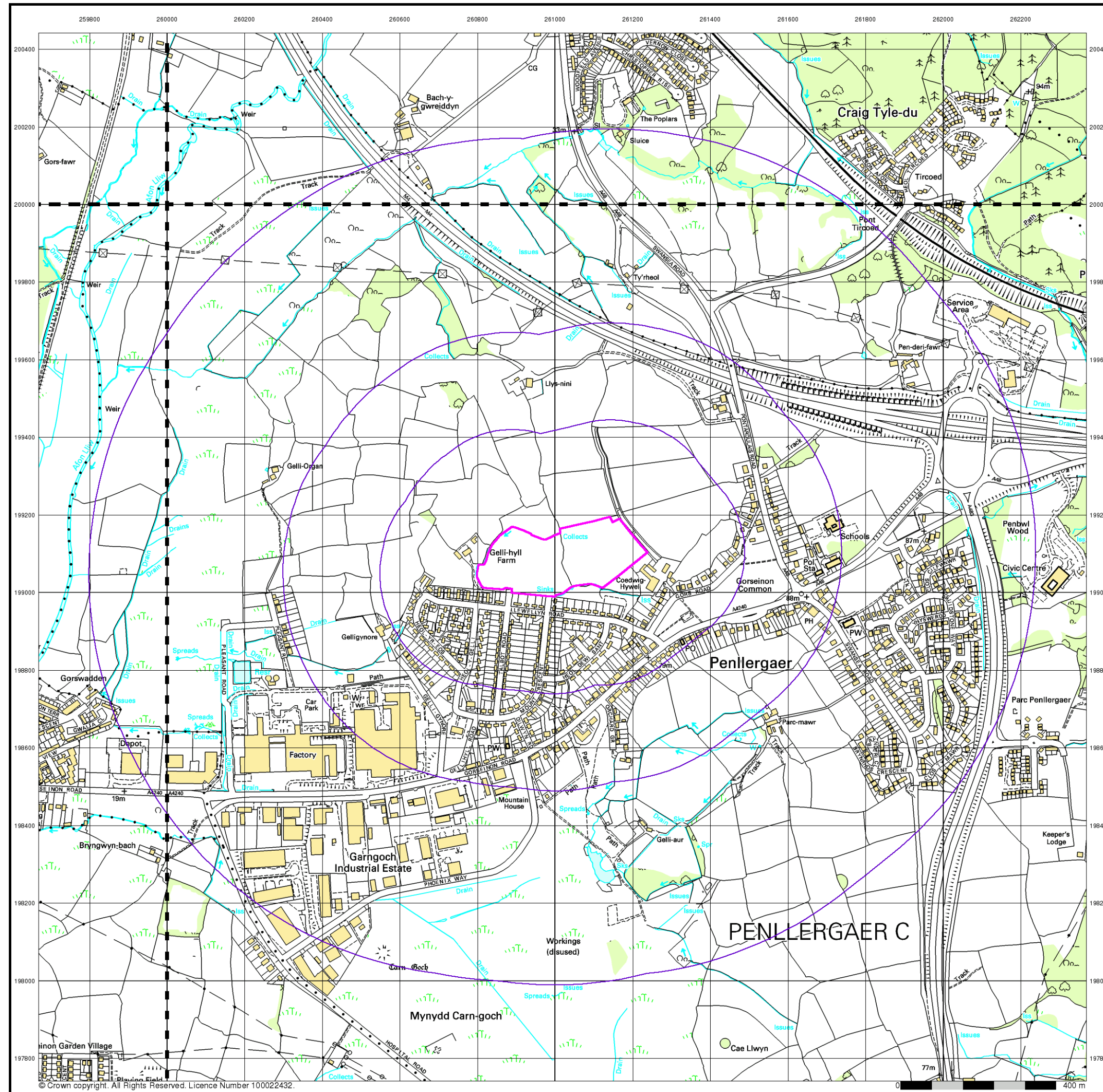
Order Number: 264127625_1_1
 Customer Ref: 16300
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 Site Area (Ha): 5.93
 Search Buffer (m): 1000

Site Details

Site at 260980, 199090



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Geotechnical & Geoenvironmental Specialists

10k Raster Mapping

Published 1999

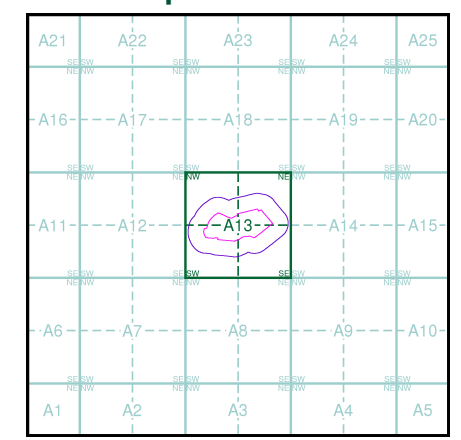
Source map scale - 1:10,000

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)

SN50SE 1999 1:10,000	SN60SW 1999 1:10,000
SS59NE 1999 1:10,000	SS69NW 1999 1:10,000

Historical Map - Slice A



Order Details

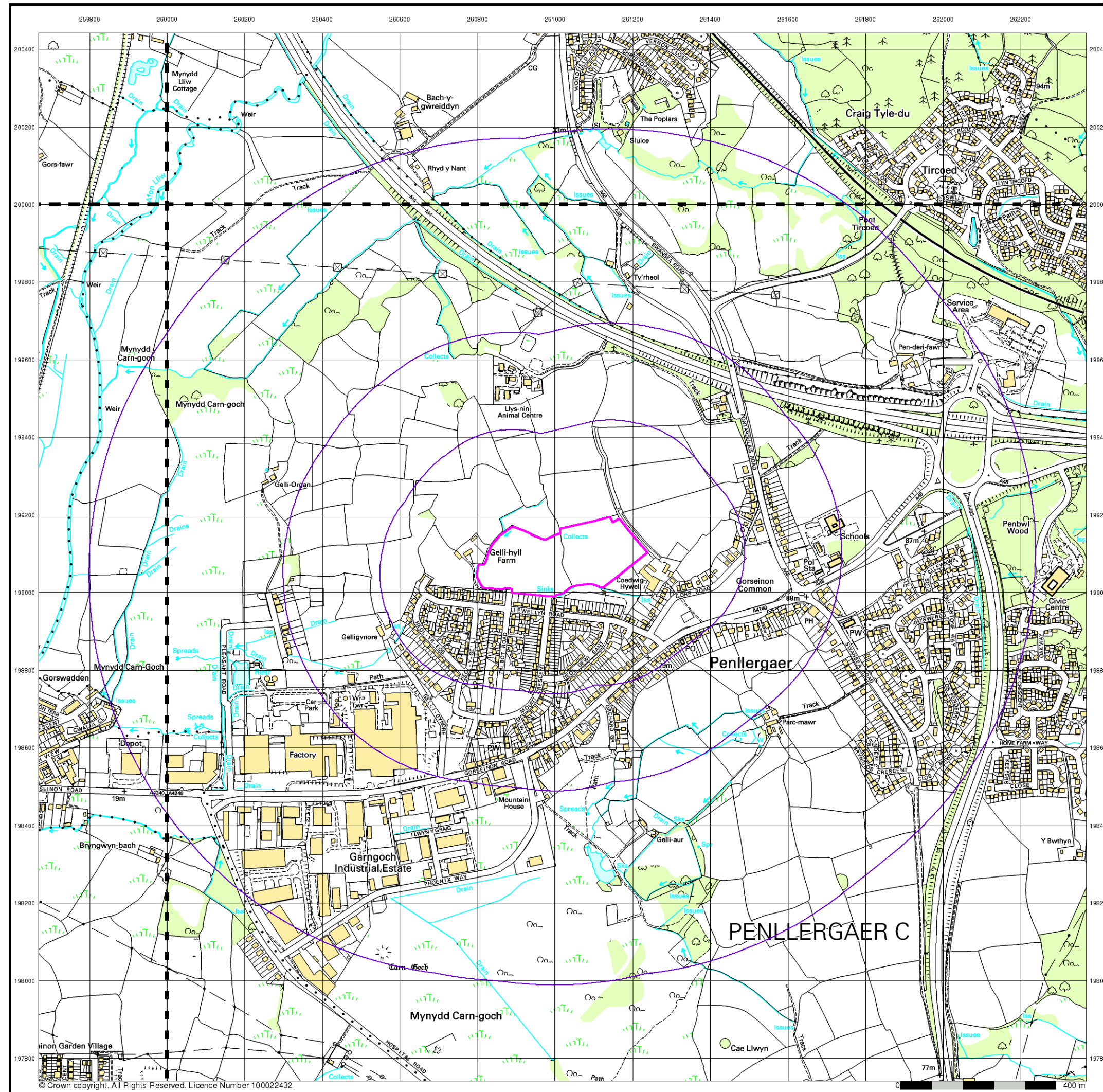
Order Number: 264127625_1_1
 Customer Ref: 16300
 National Grid Reference: 261010, 199090
 Slice: A
 Site Area (Ha): 5.93
 Search Buffer (m): 1000

Site Details

Site at 260980, 199090



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Published 2006

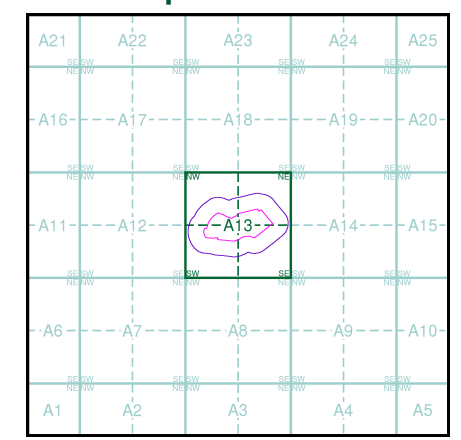
Source map scale - 1:10,000

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)

SN50SE 2006 1:10,000	SN60SW 2006 1:10,000
SS59NE 2006 1:10,000	SS69NW 2006 1:10,000

Historical Map - Slice A



Order Details

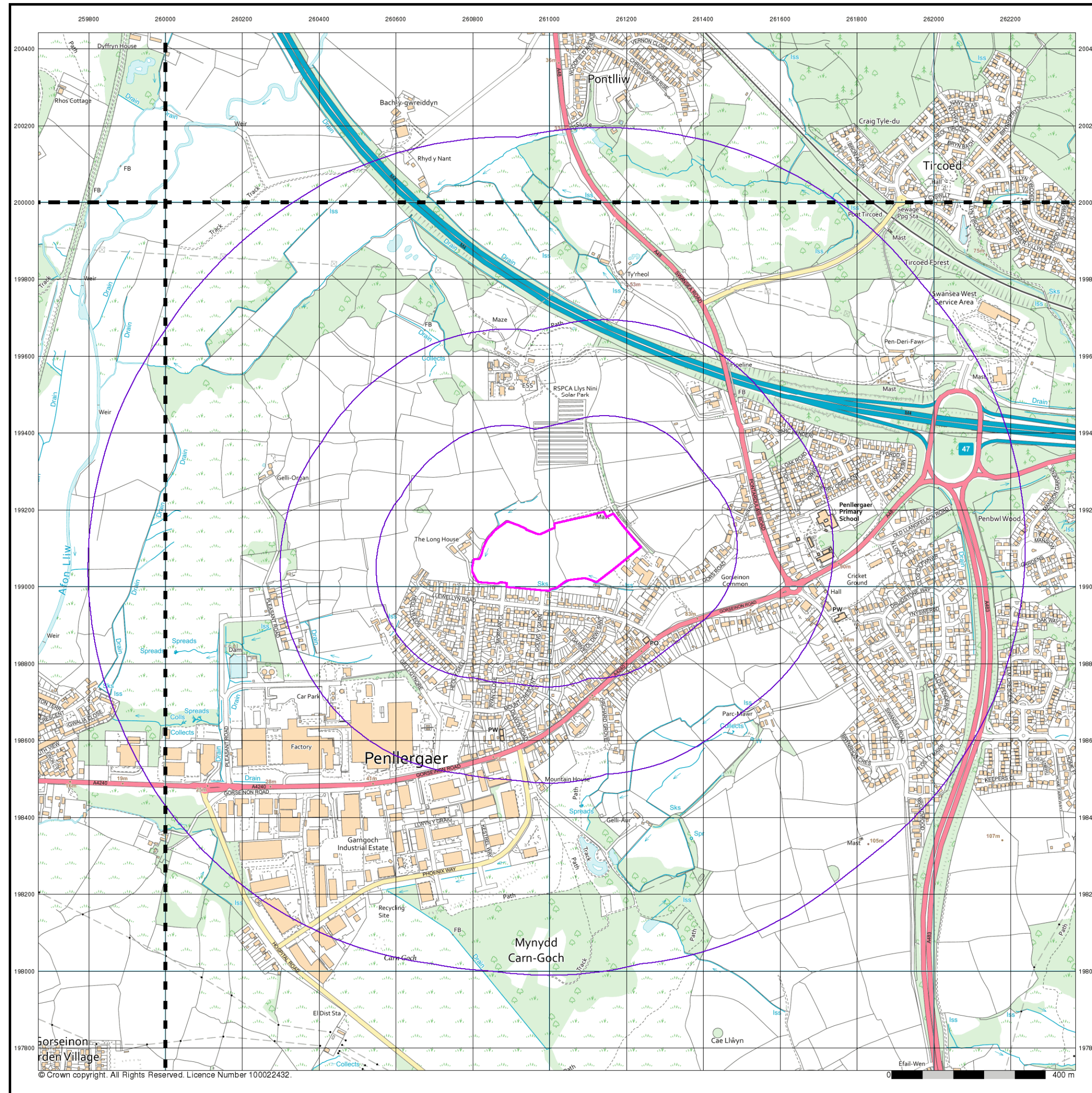
Order Number: 264127625_1_1
 Customer Ref: 16300
 National Grid Reference: 261010, 199090
 Slice: A
 Site Area (Ha): 5.93
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Site Details

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VectorMap Local

Published 2020

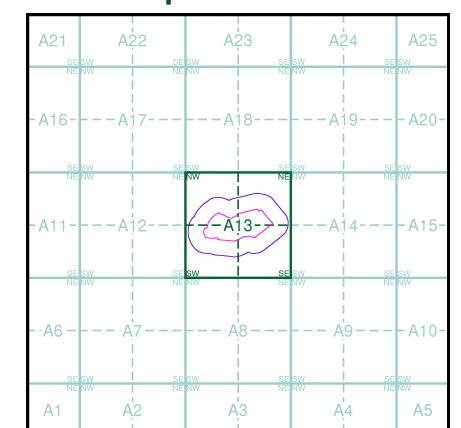
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities), 1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)

SN50SE 2020 Variable	SN60SW 2020 Variable
SS59NE 2020 Variable	SS69NW 2020 Variable

Historical Map - Slice A



Order Details

Order Number: 264127625_1_1
 Customer Ref: 16300
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Site Details

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Geology 1:10,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	WGR	Worked Ground (Undivided)	Void	Holocene - Holocene
	LSGR	Landsaped Ground (Undivided)	Unknown/Unclassified Entry	Holocene - Holocene
	MGR	Made Ground (Undivided)	Artificial Deposit	Holocene - Holocene
	WMGR	Infilled Ground	Artificial Deposit	Holocene - Holocene
	SLIP	Landslide Deposit	Unknown/Unclassified Entry	Quaternary - Quaternary

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	SUPNM	Superficial Theme Not Mapped [For Digital Map Use Only]	Unknown/Unclassified Entry	Not Supplied - Not Supplied
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Flandrian - Pleistocene
	TILLD	Till, Devensian	Diamicton	Devensian - Ipswichian

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	SW	Swansea Member	Mudstone, Siltstone and Sandstone	Westphalian D - Westphalian D
	GDB	Grovesend Formation	Mudstone, Siltstone and Sandstone	Westphalian D - Westphalian D
	SW	Swansea Member	Sandstone	Westphalian D - Westphalian D
	GDB	Grovesend Formation	Sandstone	Westphalian D - Westphalian D
	Fault			
	Rock			



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Geology 1:10,000 Maps

This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:10,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around a site. This mapping may be more up to date than previously published paper maps.

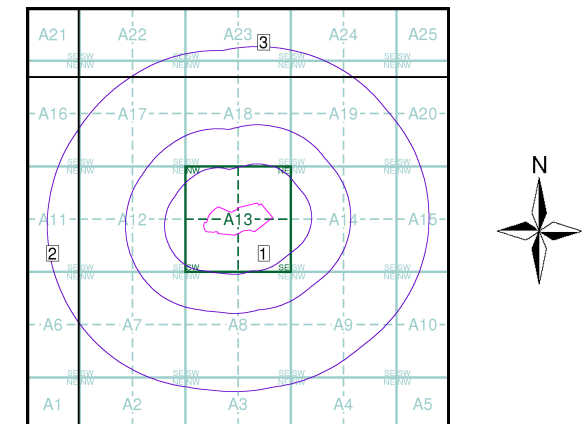
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page.

Please Note: Not all of the layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:10,000 Maps Coverage

Map ID:	SN50SE	Map ID:	3
Map Name:	1965	Map Name:	SN60SW
Map Date:	1965	Map Date:	1966
Bedrock Geology:	Available	Bedrock Geology:	Available
Superficial Geology:	Available	Superficial Geology:	Available
Artificial Geology:	Available	Artificial Geology:	Available
Faults:	Available	Faults:	Available
Landslip:	Not Available	Landslip:	Available
Rock Segments:	Available	Rock Segments:	Available
Map ID:	1	Map ID:	2
Map Name:	SS69NW	Map Name:	SS59NE
Map Date:	1969	Map Date:	1969
Bedrock Geology:	Available	Bedrock Geology:	Available
Superficial Geology:	Available	Superficial Geology:	Available
Artificial Geology:	Available	Artificial Geology:	Available
Faults:	Available	Faults:	Available
Landslip:	Available	Landslip:	Not Available
Rock Segments:	Available	Rock Segments:	Available

Geology 1:10,000 Maps - Slice A



Order Details

Order Number:	264127625_1_1
Customer Ref:	16300
National Grid Reference:	261010, 199090
Slice:	A
Site Area (Ha):	5.93
Search Buffer (m):	1000

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Landmark
INFORMATION GROUP

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Artificial Ground and Landslip

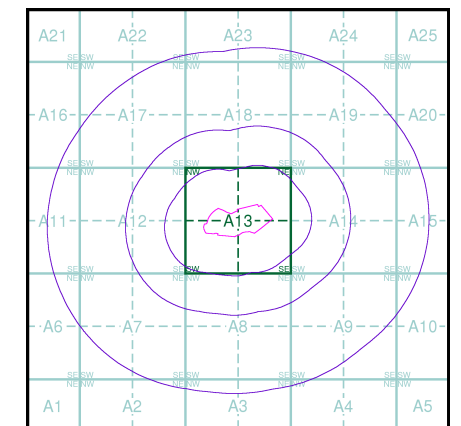
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes founded strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



Order Details

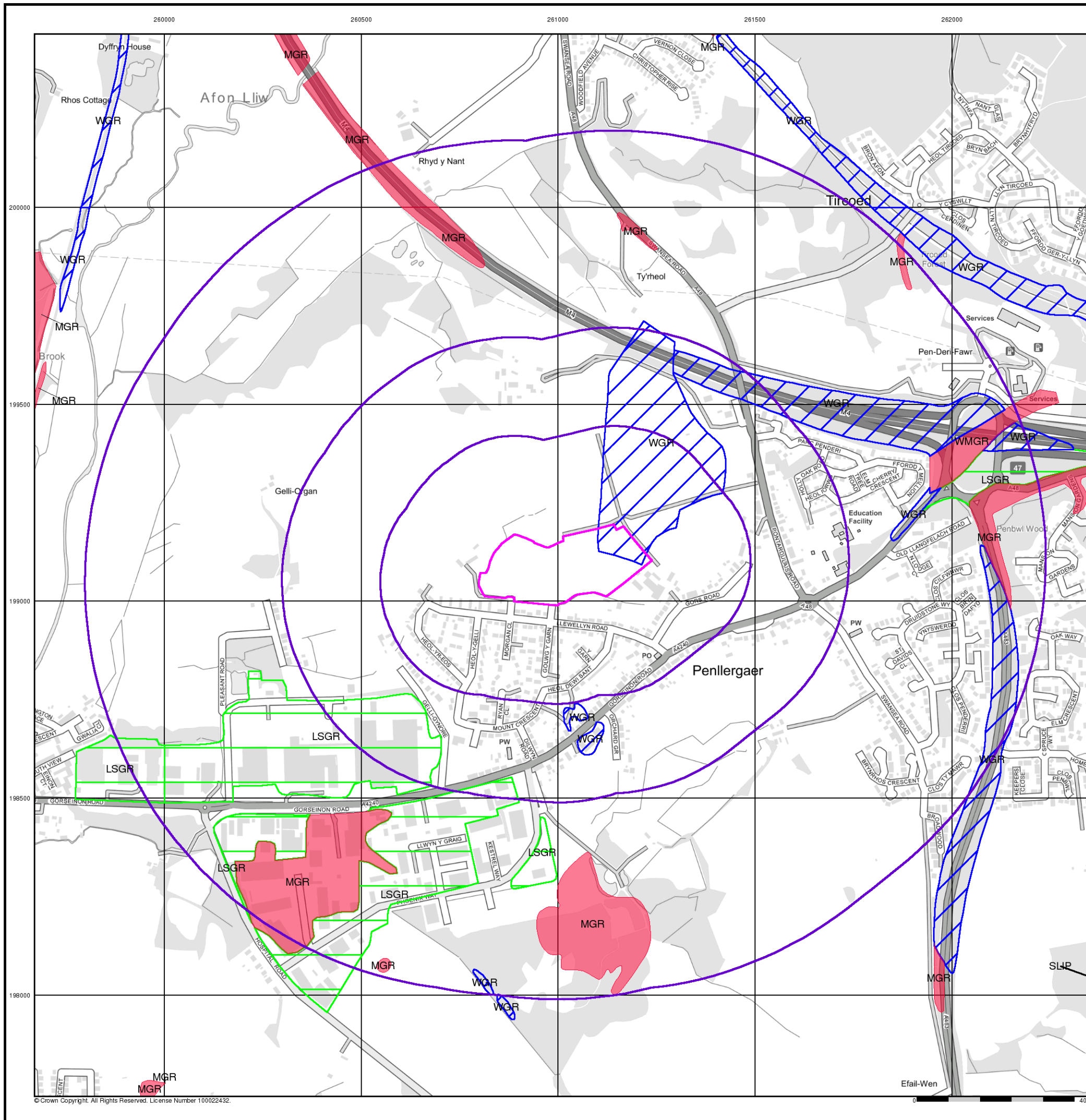
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 Customer Ref: 16300
 National Grid Reference: 261010, 199090
 Slice: A
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Site Details

Site at 260980, 199090



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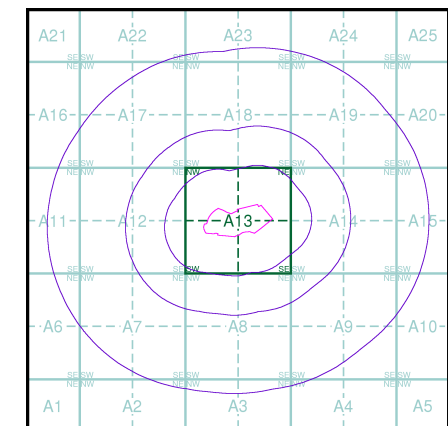
Superficial Geology

BGS 1:10,000 Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



Order Details

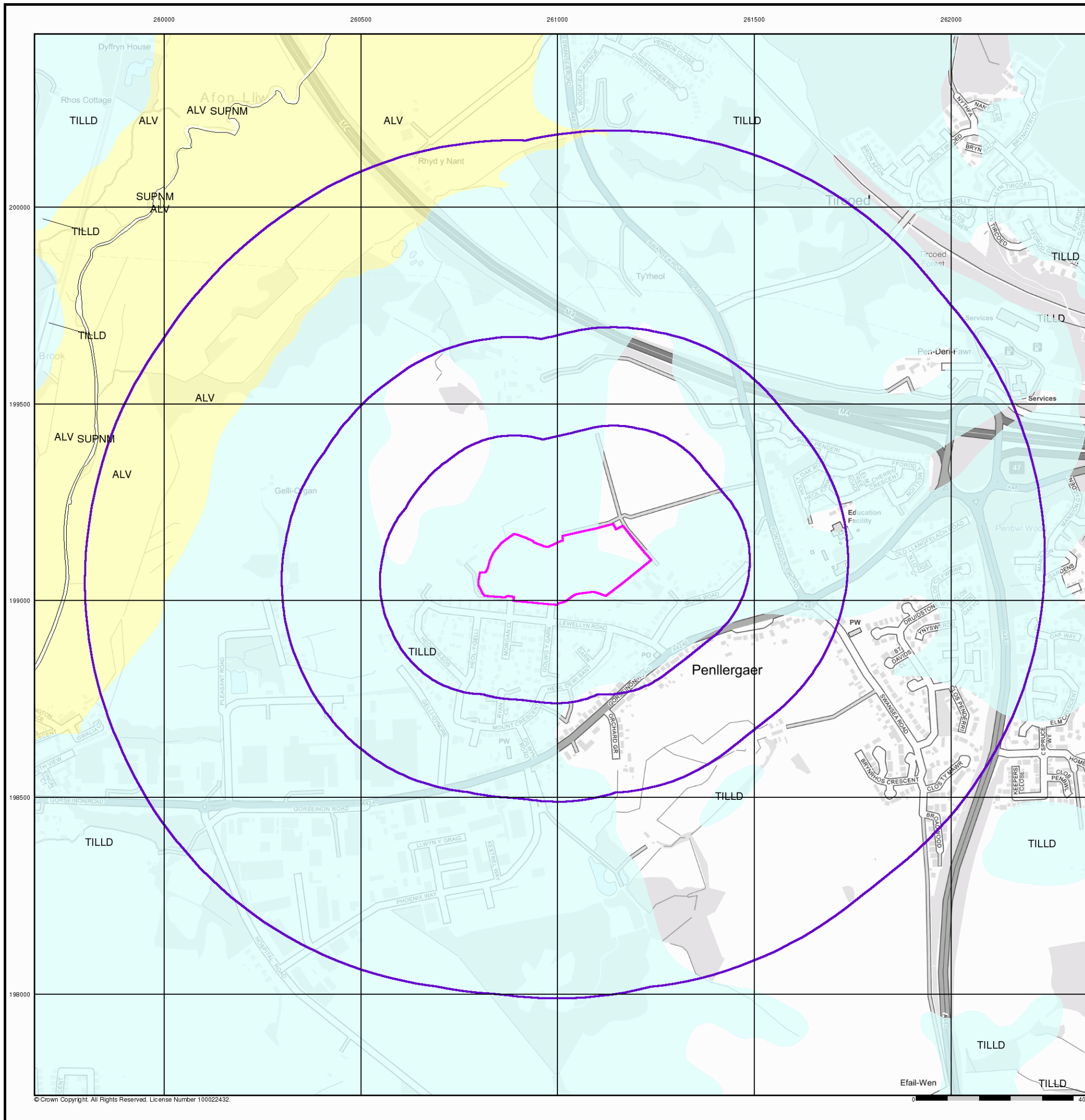
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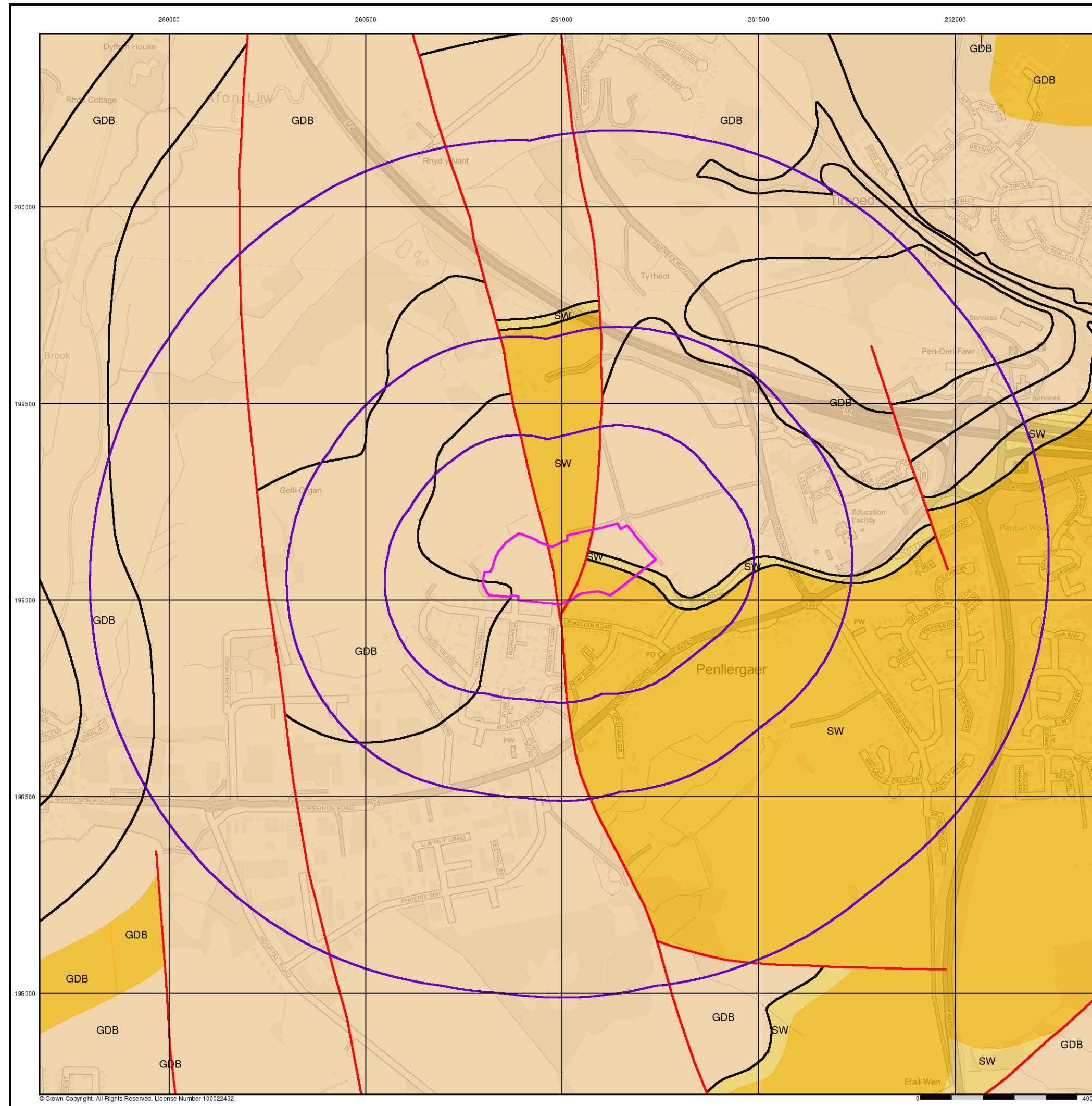
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Geotechnical & Geoenvironmental Specialists

Bedrock and Faults

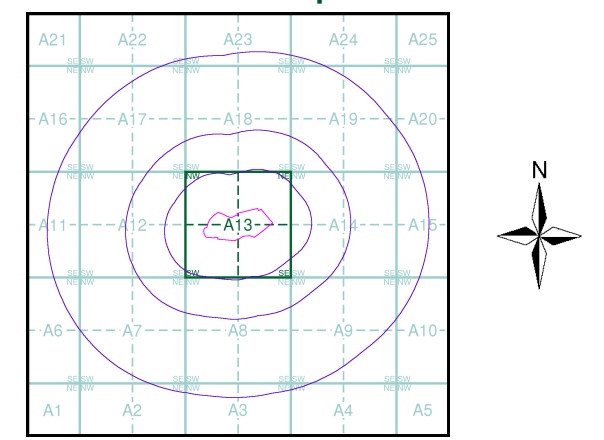
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults and thin beds mapped as lines such as coal seams and mineral veins. These are not restricted by age and could relate to features of any of the 1:10,000 geology datasets.

Bedrock and Faults Map - Slice A



Order Details

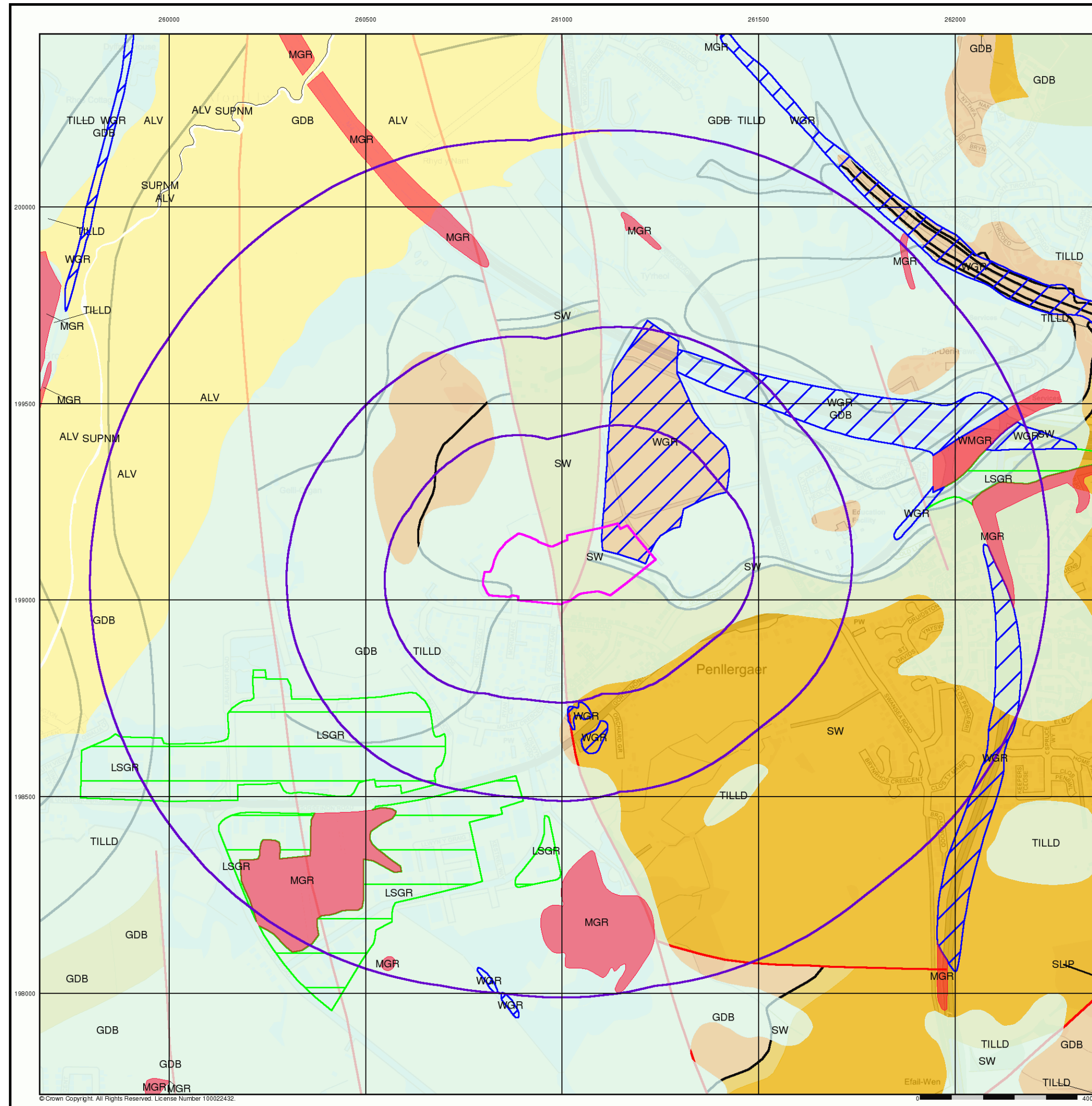
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 Customer Ref: 16300
 National Grid Reference: 261010, 199090
 Slice: A
 Site Area (Ha): 5.93
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Site Details

Site at 260980, 199090



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Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

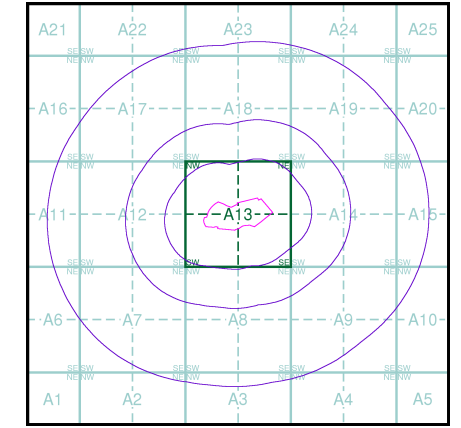
Additional Information

More information on 1:10,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey
 Kingsley Dunham Centre
 Keyworth
 Nottingham
 NG12 5GG
 Telephone: 0115 936 3143
 Fax: 0115 936 3276
 email: enquiries@bgs.ac.uk
 website: www.bgs.ac.uk

Combined Geology Map - Slice A



Order Details

Order Number: 264127625_1_1
 Customer Ref: 16300
 National Grid Reference: 261010, 199090
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Site Details

Site at 260980, 199090



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**ANNEX B
Coal Mining Data**



The Coal
Authority

CON29M

coal mining report

SITE AT 261260, 199040, SWANSEA



Known or potential coal mining risks

Past underground coal mining	Page 4
Future underground coal mining	Page 4
Mine entries	Page 5
Past opencast coal mining	Page 5



Further action

No further reports from the Coal Authority are required. Further information on any next steps can be found in our Professional opinion.

For more information on our reports please visit www.groundstability.com



Professional opinion

According to the official mining information records held by the Coal Authority at the time of this search, evidence of, or the potential for, coal mining related features have been identified. In view of the coal mining circumstances we would recommend that any planned or future development should follow detailed technical advice before beginning work on site. Please see [page 3](#) for further details on **Future development**.

Your reference: [272384488_2](#)
Our reference: [51002348547001](#)
Date: **28 January 2021**

Client name:
NLIS Hub

If you require any further assistance please
contact our experts on:
0345 762 6848
groundstability@coal.gov.uk

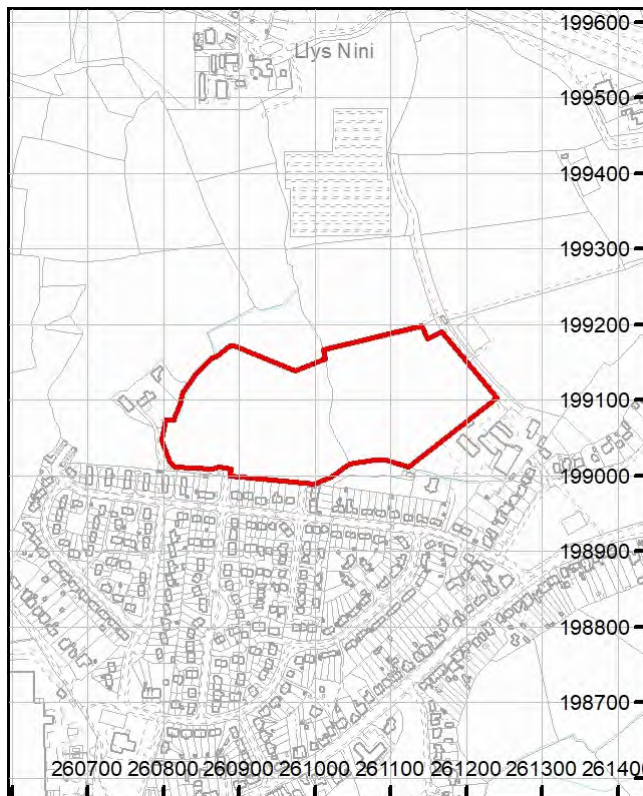


The Law
Society

Enquiry boundary

Key

Approximate position of enquiry boundary shown



We can confirm that the location is **on the coalfield**



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This report is prepared in accordance with the latest Law Society's Guidance Notes 2018, the User Guide 2018 and the Coal Authority's Terms and Conditions applicable at the time the report was produced.



Accessibility

If you would like this information in an alternative format, please contact our communications team on 0345 762 6848 or email communications@coal.gov.uk.

Professional opinion



Future development

If development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply specialist engineering practice required for former mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or coal mines without first obtaining the permission of the Coal Authority. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed.

If you are looking to develop, or undertake works, within a coal mining development high risk area your Local Authority planning department may require a Coal Mining Risk Assessment to be undertaken by a qualified mining geologist or engineer. Should you require any additional information then please contact the Coal Authority on **0345 762 6848** or email **cmra@coal.gov.uk**.

Detailed findings

Information provided by the Coal Authority in this report is compiled in response to the Law Society's CON29M Coal Mining enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL.

The Coal Authority owns the copyright in this report and the information used to produce this report is protected by our database rights. All rights are reserved and unauthorised use is prohibited. If we provide a report for you, this does not mean that copyright and any other rights will pass to you. However, you can use the report for your own purposes.

1 Past underground coal mining

The property is in a surface area that could be affected by underground mining in 2 seams of coal at 80m to 270m depth, and last worked in 1942.

Any movement in the ground due to coal mining activity associated with these workings should have stopped by now.

In addition the property is in an area where the Coal Authority believes there is coal at or close to the surface. This coal may have been worked at some time in the past. The potential presence of coal workings at or close to the surface should be considered, particularly prior to any site works or future development activity, as ground movement could still be a risk. Your attention is drawn to the Professional opinion sections of the report.

2 Present underground coal mining

The property is not within a surface area that could be affected by present underground mining.

3 Future underground coal mining

The property is not in an area where the Coal Authority has received an application for, and is currently considering whether to grant a licence to remove or work coal by underground methods.

The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area likely to be affected from any planned future underground coal mining.

However, reserves of coal exist in the local area which could be worked at some time in the future.

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

4 Mine entries

There are no recorded coal mine entries known to the Coal Authority within, or within 20 metres, of the boundary of the property.

This information is based on the information that the Coal Authority has at the time of this enquiry.

Based on the Coal Authority's knowledge of the mining circumstances at the time of this enquiry, there may be unrecorded mine entries in the local area that do not appear on Coal Authority records.

5 Coal mining geology

The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

6 Past opencast coal mining

The property is within the boundary of an opencast site from which coal has been removed by opencast methods.

7 Present opencast coal mining

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

8 Future opencast coal mining

There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

9 Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

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

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

10 Mine gas

The Coal Authority has no record of a mine gas emission requiring action.

11 Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Coal Authority, under its Emergency Surface Hazard Call Out procedures.

12 Withdrawal of support

The property is not in an area where a notice to withdraw support has been given.

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

13 Working facilities order

The property is not in an area where an order has been made, under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

14 Payments to owners of former copyhold land

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

Statutory cover



Coal mining subsidence

In the unlikely event of any coal mining related subsidence damage, the Coal Authority or the mine operator has a duty to take remedial action in respect of subsidence caused by the withdrawal of support from land or property in connection with lawful coal mining operations.

When the works are the responsibility of the Coal Authority, our dedicated public safety and subsidence team will manage the claim. The house or land owner ("the owner") is covered for these works under the terms of the Coal Mining Subsidence Act 1991 (as amended by the Coal Industry Act 1994). Please note, this Act does not apply where coal was worked or gotten by virtue of the grant of a gale in the Forest of Dean, or any other part of the Hundred of St. Briavels in the county of Gloucester.

If you believe your land or property is suffering from coal mining subsidence damage and you need more information on what to do next, please use the following link to our website which sets out what your rights are and what you need to consider before making a claim.

www.gov.uk/government/publications/coal-mining-subsidence-damage-notice-form



Coal mining hazards

Our public safety and subsidence team provide a 24 hour a day, 7 days a week hazard reporting service, to help protect the public from hazards caused by past coal workings, such as a mine shaft or shallow working collapse. To report any hazards please call **01623 646 333**. Further information can be found on our website: www.gov.uk/coalauthority.

Glossary



Key terms

adit - horizontal or sloped entrance to a mine

coal mining subsidence - ground movement caused by the removal of coal by underground mining

Coal Mining Subsidence Act 1991 - the Act setting out the duties of the Coal Authority to repair damage caused by coal mining subsidence

coal mining subsidence damage - damage to land, buildings or structures caused by the removal of coal by underground mining

coal seams - bed of coal of varying thickness

future opencast coal mining - a licence granted, or licence application received, by the Coal Authority to excavate coal from the surface

future underground coal mining - a licence granted, or licence application received, by the Coal Authority to excavate coal underground. Although it is unlikely, remaining coal reserves could create a possibility for future mining, which would be licensed by the Coal Authority

mine entries - collective name for shafts and adits

payments to owners of former copyhold land - historically, copyhold land gave rights to coal to the copyholder. Legislation was set up to allow others to work this coal, but they had to issue a notice and pay compensation if a copyholder came forward

shaft - vertical entry into a mine

site investigation - investigations of coal mining risks carried out with the Coal Authority's permission

stop notice - a delay to repairs because further coal mining subsidence damage may occur and it would be unwise to carry out permanent repairs

subsidence claim - a formal notice of subsidence damage to the Coal Authority since it was established on 31 October 1994

withdrawal of support - a historic notice informing landowners that the coal beneath their property was going to be worked

working facilities orders - a court order which gave permission, restricted or prevented coal mine workings



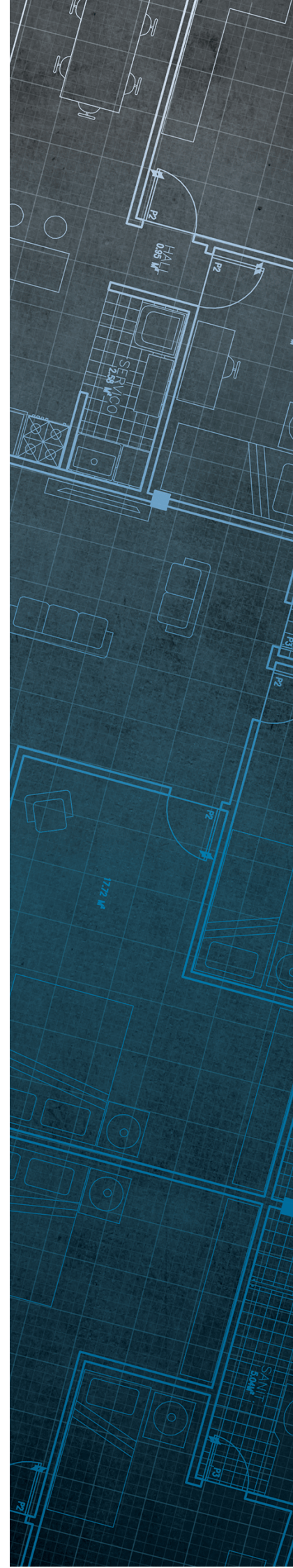
The Coal
Authority

Consultants Coal Mining Report

Site At 260980, 199090
Vale Of Glamorgan

Date of enquiry: 27 October 2020
Date enquiry received: 27 October 2020
Issue date: 27 October 2020

Our reference: 51002317194001
Your reference: 264127625_2



Consultants

Coal Mining Report

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

Client name

NLIS Hub

Enquiry address

Site At 260980, 199090
Vale Of Glamorgan

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

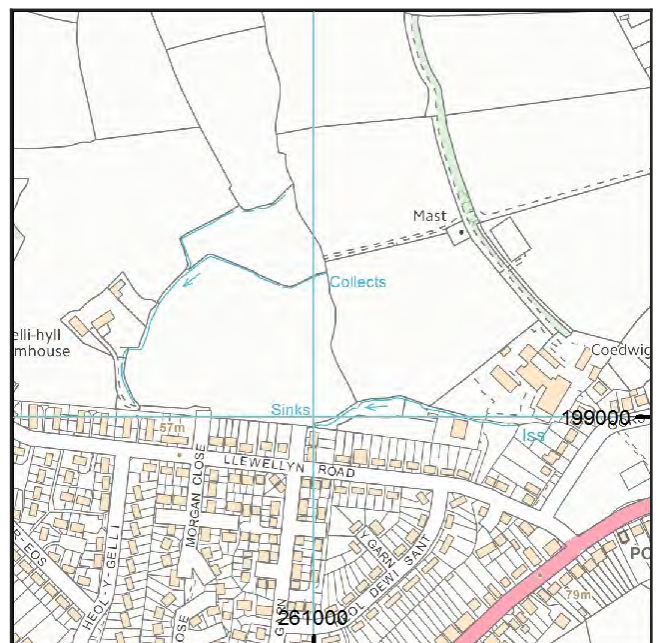
www.groundstability.com

 @coalauthority

 /company/the-coal-authority

 /thecoalauthority

 /thecoalauthority



Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	UNNAMED	Coal	4DEJ	80	Beneath Property	4.6	North	162	1913
unnamed	UNNAMED	Coal	4DBC	82	Beneath Property	0.0	East	220	1911
unnamed	UNNAMED	Coal	4DEK	97	Beneath Property	3.8	North	162	1919
unnamed	UNNAMED	Coal	4DBA	102	South	4.2	West	230	1911
unnamed	UNNAMED	Coal	4DEI	132	Beneath Property	6.1	South-West	162	1917
unnamed	UNNAMED	Coal	4BB9	147	Beneath Property	5.2	South-West	220	1908
unnamed	SWANSEA 6FT	Coal	4DBF	210	Beneath Property	3.3	South-West	182	1902
unnamed	SWANSEA 6FT	Coal	4DEA	212	Beneath Property	4.7	North-West	230	1936
unnamed	SWANSEA 6FT	Coal	4DEC	217	Beneath Property	3.4	North	162	1942
unnamed	SWANSEA 6FT	Coal	4DE9	259	Beneath Property	5.4	South-West	230	1900
unnamed	SWANSEA 6FT	Coal	4DBE	263	South	5.8	South-West	210	1896

Probable unrecorded shallow workings

None.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Adit	261199-008	261259 199039		Coal	

Abandoned mine plan catalogue numbers

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

4483	SWA800	SW2239
SW2204	16146	SWR2710
SW2228	SWA695	7714

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

Please contact us on 0345 762 6848 to determine the exact abandoned mine plans you require based on your needs.

Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
BRYNWHILACH	Coal	Yes	Within	N/A	118
PENNYSCALLEN	Coal	Yes	Within	N/A	51
SWANSEA FOUR FEET	Coal	Yes	Within	N/A	114

Geological faults, fissures and breaklines

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

Faults under or close to the property recorded.

Opencast mines

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

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

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

Site investigations

None recorded within 50 metres of the enquiry boundary.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

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

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

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

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

Withdrawal of support notices

The property is not in an area where a notice to withdraw support has been given.

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

Payments to owners of former copyhold land

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

Section 4 – Further information

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

Development advice

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

For further information on specific site or ground investigations in relation to any issues raised in Section 4, please call us on 0345 762 6848 or email us at groundstability@coal.gov.uk.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk**.

Past underground coal mining

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

Probable unrecorded shallow workings

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

Spine roadways at shallow depth

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

Mine entries

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

Abandoned mine plan catalogue numbers

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

Outcrops

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

Geological faults, fissures and breaklines

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

Opencast mines

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

Coal Authority managed tips

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

Site investigations

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

Remediated sites

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

Coal mining subsidence

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

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

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

Mine gas

Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission.

Mine water treatment schemes

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

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

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

Future underground mining

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

Coal mining licensing

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

Court orders

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

Section 46 notices

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

Withdrawal of support notices

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

Payment to owners of former copyhold land

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

ANNEX C
Risk Assessment Definitions



The contaminated land regime is set out in Part 2A of the Environmental Protection Act (EPA) 1990 and was introduced on the 1st April 2000 in England and 1st July 2001 in Wales. A similar regime was introduced in Scotland on 14th July 2000.

Part 2A was introduced to achieve three overarching objectives:

- (a) To identify and remove unacceptable risks to human health and the environment.
- (b) To seek to ensure that contaminated land is made suitable for its current use.
- (c) To ensure that the burdens faced by individuals, companies and society as a whole are proportionate, manageable and compatible with the principles of sustainable development.

Under Part 2A the statutory definition of 'contaminated land' is:

"any land which appears to the local authority in whose area it is situated, to be in such a condition, by reason of substances in, on, or under the land, that:

- (a) Significant harm is being caused or there is a significant possibility of such harm being caused; or
- (b) Pollution of controlled waters is being, or is likely to be, caused."

Under Part 2A, for land to be classified as 'Contaminated Land' there must be one or more contaminant, pathway, receptor linkages, known as the '**Pollutant Linkage**'. A pollutant linkage requires three essential elements:

- (a) A **CONTAMINANT (SOURCE)** – a substance that is in, on or under the land and has the potential to cause harm or to cause pollution of controlled waters.
- (b) A **RECEPTOR** – something which could be adversely affected by a contaminant.
- (c) A **PATHWAY** – a route by which a receptor is or might be exposed to or affected by a contaminant.

The term 'Risk' is widely used in different contexts and situations, but a prescriptive definition is given by the Guidelines for Environmental Risk Assessment and Management (DEFRA *et al*, 2000):

'Risk is a combination of the probability, or frequency, of occurrence of a defined hazard and the magnitude of the consequences of the occurrence'.

Model Procedures for the Management of Land Contamination – Contamination Land Report 11 (2004) defines a 'Hazard' as

'a property or situation that in particular circumstances could lead to harm'.

A framework for qualitative risk assessment is provided in CIRIA publication C552 Contaminated Land Risk Assessment – A Guide to Good Practice (2001). The method requires an assessment of the magnitude of the probability of the risk occurring and the magnitude of the potential consequence. Classifications of consequences and probability, levels and descriptions of risk have been devised from the above publication and are defined in the following sections.

Classification of Consequence

Table A Classification of Consequence	
Classification	Definition
Severe	<ul style="list-style-type: none"> • Short term (acute) risk to human health likely to result in significant harm • Short term risk to controlled waters • Catastrophic damage to buildings/structures • Short term risk to an ecosystem or organism within the particular ecosystem
Medium	<ul style="list-style-type: none"> • Chronic damage to human health (long term risk) • Pollution of a sensitive water resource • A significant change in an ecosystem or organism within the ecosystem
Mild	<ul style="list-style-type: none"> • Pollution of non-sensitive water resources • Significant damage to buildings/structures • Damage to sensitive buildings/structure/services or the environment
Negligible	<ul style="list-style-type: none"> • Harm (not necessarily significant) which may result in financial loss • Non-permanent health effects to humans (easily prevented by PPE for example) • Easily repairable effects of structural (building) damage

Classification of Probability

Table B Classification of Probability	
Classification	Definition
High Likelihood	<ul style="list-style-type: none"> • There is a complete pollution linkage and an event appears very likely to occur in the short term and is inevitable in the long term. • Evidence of harm to the receptor
Likely	<ul style="list-style-type: none"> • There is a complete pollution linkage which means that it is probable that an event will occur • The event is not inevitable but possible in short term and likely in the long term
Low Likelihood	<ul style="list-style-type: none"> • There is a complete pollution linkage and circumstances are possible under which an event could occur • It is not certain that an event will occur in the long term, and it is less likely to occur in the short term
Unlikely	<ul style="list-style-type: none"> • There is a complete pollution linkage but circumstances are such that it is improbable that an event would occur even in the long term

Risk Assessment Matrix

By comparing the consequences of a risk and the probability of the risk of a pollution linkage, the likely risk category can be determined as shown in **Table C** below.

Table C Risk Assessment Matrix					
Increasing acceptability		Consequence			
		Severe	Medium	Mild	Negligible
Probability	High Likelihood	High risk	High risk	Medium risk	Low risk
	Likely	High risk	Medium risk	Low risk	Near zero risk
	Low Likelihood	Medium risk	Low risk	Low risk	Near zero risk
	Unlikely	Low risk	Near zero risk	Near zero risk	Near zero risk

Description of Risks and Likely Actions

High Risk

There is a high probability that severe harm could arise to a receptor, or there is evidence that a receptor is currently being severely harmed. The risk if realised is likely to result in liability, and urgent investigation or remediation will be required.

Medium Risk

It is probable that harm will arise to a receptor. However, it is relatively unlikely that such harm would be severe, or if harm does occur the harm is likely to be relatively mild. Investigation will be required to determine the liability, and some remedial works may be required in the long term.

Low Risk

It is possible that harm may arise to a receptor, but it is likely that the harm would be mild.

Near Zero Risk

There is a very low risk of harm to the receptor. In the event of harm being realised the harm is not likely to be severe.

**ANNEX D
Trial Pit Logs**



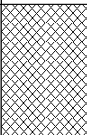
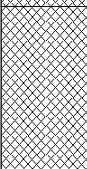
Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Trial Pit No:
SA1
 Sheet 1 of 1

Project Name: Penllergaer Project No: 16300 Co-ords: - Date:
 Level:

Location: Dimensions: Scale: 1:25
 Depth 1.00 Logged:

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.45			MADE GROUND: Brown, gravelly sandy SILT/CLAY
				1.00			MADE GROUND: Stiff, brown, slightly gravelly sandy SILT/CLAY
							End of Pit at 1.000m

Stability:

Remarks: Trial Pit Dry/Stable



Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Trial Pit No:
SA2
 Sheet 1 of 1

Project Name: Penllergaer Project No: 16300 Co-ords: - Date:
 Level:

Location: Dimensions: Scale: 1:25
 Depth 1.20 Logged:

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.60			Soft, dark brown, sandy, slightly gravelly SILT/CLAY
				1.20			Firm, grey to yellow, sandy SILT/CLAY.
							End of Pit at 1.200m

Stability:

Remarks: Minor Water Ingress at 1.0m



Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Trial Pit No:
SA3
 Sheet 1 of 1

Project Name: Penllergaer	Project No: 16300	Co-ords: - Level:	Date:
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Location:	Dimensions: Depth 1.50	Scale: 1:25 Logged:
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Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.30			Soft, dark-brown, slightly sandy gravelly SILT/CLAY
				1.50			Firm to stiff, grey to orange-brown, sandy slightly gravelly SILT/CLAY
							End of Pit at 1.500m

Stability:

Remarks:



Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Trial Pit No:
SA4
 Sheet 1 of 1

Project Name: Penllergaer Project No: 16300 Co-ords: - Date:
 Level:

Location: Dimensions: Scale: 1:25
 Depth 1.00 Logged:

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.20			Soft, dark-brown, sandy gravelly SILT/CLAY
				1.00			Stiff, yellow-brown to grey, SILT/CLAY with occasional gravel.
							End of Pit at 1.000m

Stability:

Remarks:



Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Trial Pit No:
TP01
 Sheet 1 of 1

Project Name: Penllergaer Project No: 16300 Co-ords: 261206.00 - 199131.00 Date: 04/11/2020

Location: Dimensions: Scale: 1:25
 Client: Depth 1.50 Logged:

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.45			MADE GROUND: Brown, gravelly sandy SILT/CLAY
				1.50			MADE GROUND: Stiff, brown, very gravelly sandy SILT/CLAY including boulders. Becomes increasingly gravelly with depth.
							End of Pit at 1.500m

Stability:

Remarks: Trial Pit Dry/Stable



Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Trial Pit No:
TP02
 Sheet 1 of 1

Project Name: Penllergaer Project No: 16300 Co-ords: 261174.00 - 199153.00 Date: 04/11/2020

Location: Dimensions: Scale: 1:25
 Client: Depth 1.60 Logged:

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.60			MADE GROUND: Brown, gravelly sandy SILT/CLAY
				1.50			MADE GROUND: Stiff, brown, very gravelly sandy SILT/CLAY including boulders. Becomes increasingly gravelly with depth.
							End of Pit at 1.600m

Stability:

Remarks: Trial Pit Dry/Stable



Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Trial Pit No:
TP03
 Sheet 1 of 1

Project Name: Penllergaer Project No: 16300 Co-ords: 261132.00 - 199162.00 Date: 04/11/2020

Location: Dimensions: Scale: 1:25
 Client: Depth 2.00 Logged:

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.70			MADE GROUND: Brown, very gravelly sandy SILT/CLAY
				2.00			MADE GROUND: Stiff, very gravelly SILT/CLAY with zones of medium dense clayey GRAVEL including boulders.
							End of Pit at 2.000m

Stability:

Remarks: Trial Pit Dry/Stable



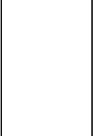
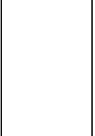
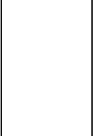
Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Trial Pit No:
TP04
 Sheet 1 of 1

Project Name: Penllergaer Project No: 16300 Co-ords: 261097.00 - 199156.00 Date: 04/11/2020

Location: Dimensions: Scale: 1:25
 Client: Depth 2.00 Logged:

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.40			MADE GROUND: Brown, gravelly sandy SILT
				0.80			POSSIBLE MADE GROUND: Stiff, yellow-brown to grey, sandy gravelly SILT/CLAY
				2.00			POSSIBLE MADE GROUND: Stiff, brown, sandy gravelly SILT/CLAY
							End of Pit at 2.000m

Stability:

Remarks: Trial Pit Dry/Stable



Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Trial Pit No:
TP05
 Sheet 1 of 1

Project Name: Penllergaer Project No: 16300 Co-ords: 261036.00 - 199150.00 Date: 04/11/2020

Location: Dimensions: Scale: 1:25
 Client: Depth 2.55 Logged:

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.50			Brown, sandy, very slightly gravelly SILT/CLAY
				0.90			Firm, yellow-brown, sandy SILT/CLAY
							Stiff, grey brown, sandy gravelly SILT/CLAY including cobbles and boulders.
				2.55			End of Pit at 2.550m

Stability:

Remarks: Minor Groundwater Ingress at 2.55m.



Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Trial Pit No:
TP06
 Sheet 1 of 1

Project Name: Penllergaer Project No: 16300 Co-ords: 261037.00 - 199113.00 Date: 04/11/2020

Location: Dimensions: Scale: 1:25
 Client: Depth 3.00 Logged:

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.60			Soft, dark-brown, sandy, slightly gravelly SILT/CLAY
							Firm to stiff, yellow-brown sandy slightly gravelly SILT/CLAY. Contains occasional cobble.
				3.00			End of Pit at 3.000m

Stability:

Remarks: Minor Groundwater Ingress at 2.9m



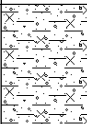
Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Trial Pit No:
TP07
 Sheet 1 of 1

Project Name: Penllergaer Project No: 16300 Co-ords: 261049.00 - 199053.00 Date: 05/11/2020

Location: Dimensions: Scale: 1:25
 Client: Depth 2.40 Logged:

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.40			Soft, dark-brown, sandy gravelly SILT/CLAY
							End of Pit at 2.400m



Stability:

Remarks: Minor Groundwater Ingress 2.3m



Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Trial Pit No:
TP08
 Sheet 1 of 1

Project Name: Penllergaer Project No: 16300 Co-ords: 261108.00 - 199070.00 Date: 05/11/2020

Location: Dimensions: Scale: 1:25
 Client: Depth 1.75 Logged:

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.40			Soft, dark-brown, gravelly sandy SILT/CLAY including cobbles.
				1.75			Firm to stiff, orange-brown to grey, sandy gravelly SILT/CLAY including cobbles and boulders, becoming increasingly gravelly with depth.
							End of Pit at 1.750m

Stability:

Remarks: Trial Pit Dry/Stable



Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Trial Pit No:
TP09
 Sheet 1 of 1

Project Name: Penllergaer Project No: 16300 Co-ords: 261108.00 - 199109.00 Date: 05/11/2020
 Level:

Location: Dimensions: Scale: 1:25
 Depth 1.80 Logged:

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.50			Soft, dark-brown, sandy gravelly SILT/CLAY
				1.80			Stiff, yellow-brown to grey, gravelly CLAY including boulders.
							End of Pit at 1.800m

Stability:

Remarks: Trial Pit Dry/Stable



Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Trial Pit No:
TP10
 Sheet 1 of 1

Project Name: Penllergaer Project No: 16300 Co-ords: 260919.00 - 199147.00 Date: 05/11/2020

Location: Dimensions: Scale: 1:25
 Client: Depth 2.00 Logged:

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.15			Dark-brown, slightly sandy gravelly SILT/CLAY
							Firm to stiff, grey to orange-brown, sandy gravelly SILT/CLAY.
				2.00			End of Pit at 2.000m

Stability:

Remarks: Trial Pit Dry/Stable



Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Trial Pit No:
TP11
 Sheet 1 of 1

Project Name: Penllergaer	Project No: 16300	Co-ords: 260846.00 - 199032.00 Level:	Date: 05/11/2020
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Location:	Dimensions:	Scale: 1:25
Client:	Depth 1.50	Logged:

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.25			Dark-brown, slightly sandy gravelly SILT/CLAY
				1.50			Firm to stiff, grey to orange-brown, sandy gravelly SILT/CLAY.
							End of Pit at 1.500m

Stability:

Remarks: Trial Pit Dry/Stable

ANNEX E
LCP Borehole Logs



Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Borehole No.

BH01

Sheet 1 of 1

Project Name: Penllergaer	Project No: 16300	Co-ords: 261185E - 199139N	Hole Type CP
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Location:	Level:	Scale 1:50
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Client:	Dates: 10/01/2021 - 12/01/2021	Logged By
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Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				0.20				MADE GROUND: Very soft, black, sandy gravelly SILT/CLAY	
	1.20	SPT	N=29 (3,5/8,9,6,6)					MADE GROUND: Firm to stiff, sandy gravelly CLAY including cobbles.	1
	2.20	SPT	N=16 (4,6/4,3,4,5)						2
	3.20	SPT	N=20 (2,3/4,5,5,6)	3.20				MADE GROUND: Grey to brown, sandy, very gravelly CLAY with cobbles and boulders.	3
	4.20	SPT	N=28 (4,6/6,8,8,6)						4
	5.20	SPT	N=13 (3,3/3,3,4,3)						5
▼	6.50	SPT	N=12 (3,3/2,4,4,2)	6.50				MADE GROUND: Brown, sandy, very gravelly CLAY to very clayey GRAVEL. Includes cobbles and boulders of sandstone and shale.	6
	7.50	SPT	50 (7,11/50 for 266mm)	7.50				Weathered MUDSTONE	7
	8.00	SPT	50 (25 for 75mm/50 for 246mm)						8
	8.20	SPT	50 (25 for 75mm/50 for 244mm)	8.20				End of Borehole at 8.200m	9

Chiseling	Depth Top (m)	Depth Base (m)	Duration (hh:mm)	Remarks

Remarks: Chiseling 8.0 - 8.2 (1 hr)



Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

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 5 Deryn Court, Wharfedale Road
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 CF23 7HA

Borehole No.

BH02

Sheet 1 of 1

Project Name: Penllergaer	Project No: 16300	Co-ords: 261164E - 199162N	Hole Type CP
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Location:	Level:	Scale 1:50
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Client:	Dates: 12/01/2021 - 13/01/2021	Logged By
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Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				0.30				MADE GROUND: Very soft, black, sandy gravelly SILT/CLAY	
	1.20	SPT	N=36 (10,11/10,10,9,7)	1.10				MADE GROUND: Brown, sandy gravelly CLAY including cobbles.	1
	2.20	SPT	N=24 (3,5/5,5,6,8)	2.00				MADE GROUND: Dense, dark-grey, clayey sandy GRAVEL to BOULDER of shale.	2
	3.20	SPT	N=18 (2,4/4,4,4,6)						3
	4.20	SPT	N=28 (3,5/6,6,7,9)						4
	5.20	SPT	N=26 (5,7/6,6,6,8)						5
	6.50	SPT	N=16 (3,2/3,3,4,6)	6.50				MADE GROUND: Medium dense, GRAVEL to COBBLE of mudstone.	7
	7.50	SPT	N=50 (10,15/15,17,15,3)	7.50				Weathered MUDSTONE	
	8.00	SPT	50 (25 for 97mm/50 for 243mm)	8.20				End of Borehole at 8.200m	8
									9

Chiseling	Depth Top (m)	Depth Base (m)	Duration (hh:mm)	Remarks

Remarks: Chiseling 8.0 - 8.2 (1 hr)



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Borehole No.

BH03

Sheet 1 of 1

Project Name: Penllergaer	Project No: 16300	Co-ords: 261134E - 199162N	Hole Type CP
Location:		Level:	Scale 1:50
Client:		Dates: 13/01/2021 - 14/01/2021	Logged By

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				0.30				MADE GROUND: Very soft, black, sandy gravelly SILT/CLAY	
	1.20	SPT	N=40 (8,11/9,12,11,8)					MADE GROUND: Stiff, brown, sandy gravelly CLAY including cobbles	1
	2.20	SPT	N=23 (4,5/5,5,7,6)						2
	3.20	SPT	N=18 (4,6/6,4,4,4)						3
	4.20	SPT	N=9 (1,2/1,2,2,4)	4.20				MADE GROUND: Brown, clayey GRAVEL to COBBLES of sandstone and shale.	4
▼	5.00	SPT	N=4 (1,0/1,1,1,1)	5.00				MADE GROUND: Soft to very soft, black, gravelly snady SILT/CLAY including shale fragments.	5
	6.50	SPT	N=10 (1,1/2,2,3,3)						6
	7.50	SPT	50 (11,12/50 for 225mm)	7.30				Weathered MUDSTONE	7
	8.00	SPT	50 (25 for 105mm/50 for 252mm)	8.20				End of Borehole at 8.200m	8
									9

Chiseling	Depth Top (m)	Depth Base (m)	Duration (hh:mm)	Remarks

Remarks: Chiseling 8.0m - 8.2m (1 hr)



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 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

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 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Borehole No.

BH04

Sheet 1 of 1

Project Name: Penllergaer	Project No: 16300	Co-ords: 261115E - 199160N	Hole Type CP
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Location:	Level:	Scale 1:50
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Client:	Dates: 14/01/2021 - 14/01/2021	Logged By
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Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				0.30				Soft, dark-brown, sandy gravelly SILT/CLAY.	
	1.20	SPT	N=32 (4,7/10,8,8,6)					Firm to stiff, brown, sandy gravelly SILT/CLAY including cobbles.	1
	2.20	SPT	N=22 (2,3/5,5,6,6)						2
	3.20	SPT	N=14 (1,2/2,2,4,6)						3
	4.20	SPT	N=27 (1,3/6,11,6,4)						4
▼				4.50				Stiff, grey, sandy gravelly CLAY with cobbles and boulders.	
	5.20	SPT	N=19 (4,4/4,4,5,6)						5
	6.70	SPT	N=50 (6,8/10,10,15,15)						6
	7.20	SPT	50 (25 for 90mm/50 for 247mm)	7.20				MUDSTONE	7
				7.65				End of Borehole at 7.650m	8
									9

Chiseling	Depth Top (m)	Depth Base (m)	Duration (hh:mm)	Remarks

Remarks: Chiseling 7.0 - 7.2 (1 hr)



Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Borehole No.

BH05

Sheet 1 of 1

Project Name: Penllergaer	Project No: 16300	Co-ords: 261104E - 199162N	Hole Type CP
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Location:	Level:	Scale 1:50
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Client:	Dates: 15/01/2021 - 15/01/2021	Logged By
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Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				0.30				Soft, dark-brown, sandy gravelly SILT/CLAY	
	1.20	SPT	N=9 (1,1/1,2,2,4)					Firm to stiff, brown, sandy gravelly SILT/CLAY including cobbles. (POSSIBLY REWORKED)	1
	2.20	SPT	N=21 (2,3/4,5,6,6)						2
	3.20	SPT	N=26 (3,5/5,6,9,6)						3
				3.50				Stiff, brown, sandy gravelly CLAY. Includes fragments of coal. (POSSIBLY REWORKED)	
	4.20	SPT	N=30 (8,6/8,10,6,6)	4.00				Stiff, brown, sandy gravelly SILT/CLAY. Includes cobbles (POSSIBLY REWORKED)	4
	5.20	SPT	N=5 (1,0/1,1,1,2)	5.20				Soft, slightly sandy silty CLAY (POSSIBLY REWORKED)	5
	6.00	SPT	50 (25 for 90mm/50 for 246mm)	6.00 6.20				POSSIBLE BEDROCK	6
								End of Borehole at 6.450m	7
									8
									9

Chiseling	Depth Top (m)	Depth Base (m)	Duration (hh:mm)	Remarks

Remarks: Chiseling 6.0 - 6.2 (1 hr)

ANNEX F
Rotary Borehole Logs



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

R014

Sheet 1 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 261199E - 199114N	Hole Type RO
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Location:	Level:	Scale 1:100
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Client:	Dates: 15/01/2021 - 15/01/2021	Logged By
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Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				0.20				TOPSOIL (DRILLERS DESCRIPTION) BOULDER CLAY (DRILLERS DESCRIPTION)	1
									2
									3
									4
									5
									6
				7.00				MUDSTONE (DRILLERS DESCRIPTION)	7
									8
				9.00				COAL (DRILLERS DESCRIPTION)	9
				9.20				MUDSTONE (DRILLERS DESCRIPTION)	10
									11
									12
									13
				13.40				MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	14
									15
									16
									17
									18
									19
									20

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

R014

Sheet 2 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 261199E - 199114N	Hole Type RO
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Location:	Level:	Scale 1:100
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Client:	Dates: 15/01/2021 - 15/01/2021	Logged By
---------	--------------------------------	-----------

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				30.00				MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	21
									22
									23
									24
									25
									26
									27
									28
									29
									30
								End of Borehole at 30.000m	31
									32
									33
									34
									35
									36
									37
									38
									39
									40

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

R015

Sheet 1 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 261193E - 199068N	Hole Type RO
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Location:	Level:	Scale 1:100
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Client:	Dates: 15/01/2021 - 15/01/2021	Logged By
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Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				0.20				TOPSOIL (DRILLERS DESCRIPTION) BOULDER CLAY (DRILLERS DESCRIPTION)	1
									2
									3
									4
									5
									6
									7
				7.60				MUDSTONE (DRILLERS DESCRIPTION)	8
									9
									10
									11
				11.00				MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	12
									13
									14
									15
									16
									17
									18
									19
									20

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

R015

Sheet 2 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 261193E - 199068N	Hole Type RO
---------------------------	-------------------	----------------------------	--------------

Location:	Level:	Scale 1:100
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Client:	Dates: 15/01/2021 - 15/01/2021	Logged By
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Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				30.00				MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	21
									22
									23
									24
									25
									26
									27
									28
									29
									30
								End of Borehole at 30.000m	31
									32
									33
									34
									35
									36
									37
									38
									39
									40

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP01

Sheet 1 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 260836E - 199033N	Hole Type RO
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Location:	Level:	Scale 1:100
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Client:	Dates: 11/01/2021 - 11/01/2021	Logged By
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Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				0.20				TOPSOIL (DRILLERS DESCRIPTION) BOULDER CLAY (DRILLERS DESCRIPTION)	1
								MUDSTONE (DRILLERS DESCRIPTION)	10
				13.00				COAL (DRILLERS DESCRIPTION)	13
				13.70				MUDSTONE (DRILLERS DESCRIPTION)	14
				17.10				MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	17

Remarks:



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 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP01

Sheet 2 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 260836E - 199033N	Hole Type RO
---------------------------	-------------------	----------------------------	--------------

Location:	Level:	Scale 1:100
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Client:	Dates: 11/01/2021 - 11/01/2021	Logged By
---------	--------------------------------	-----------

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				30.00				MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	21
									22
									23
									24
									25
									26
									27
									28
									29
									30
								End of Borehole at 30.000m	31
									32
									33
									34
									35
									36
									37
									38
									39
									40

Remarks:



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 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP02

Sheet 1 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 260839E - 199066N	Hole Type RO
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Location:	Level:	Scale 1:100
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Client:	Dates: 12/01/2021 - 12/01/2021	Logged By
---------	--------------------------------	-----------

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				0.20				TOPSOIL (DRILLERS DESCRIPTION) BOULDER CLAY (DRILLERS DESCRIPTION)	1
									2
									3
									4
									5
									6
									7
									8
									9
									10
				10.50				MUDSTONE (DRILLERS DESCRIPTION)	11
									12
									13
				13.80				COAL (DRILLERS DESCRIPTION)	14
				14.50				MUDSTONE (DRILLERS DESCRIPTION)	15
									16
									17
									18
									19
				20.00					20

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP02

Sheet 2 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 260839E - 199066N	Hole Type RO
---------------------------	-------------------	----------------------------	--------------

Location:	Level:	Scale 1:100
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Client:	Dates: 12/01/2021 - 12/01/2021	Logged By
---------	--------------------------------	-----------

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				30.00				MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	21
									22
									23
									24
									25
									26
									27
									28
									29
								End of Borehole at 30.000m	30
									31
									32
									33
									34
									35
									36
									37
									38
									39
									40

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP03

Sheet 1 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 260845E - 199107N	Hole Type RO
---------------------------	-------------------	----------------------------	-----------------

Location:	Level:	Scale 1:100
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Client:	Dates: 03/01/2021 - 13/01/2021	Logged By
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Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				0.20				TOPSOIL (DRILLERS DESCRIPTION) BOULDER CLAY (DRILLERS DESCRIPTION)	1
				8.10				MUDSTONE (DRILLERS DESCRIPTION)	2
				16.00				COAL (DRILLERS DESCRIPTION)	3
				16.70				MUDSTONE (DRILLERS DESCRIPTION)	4
									5
									6
									7
									8
									9
									10
									11
									12
									13
									14
									15
									16
									17
									18
									19
									20

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP03

Sheet 2 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 260845E - 199107N	Hole Type RO
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Location:	Level:	Scale 1:100
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Client:	Dates: 03/01/2021 - 13/01/2021	Logged By
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Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
								MUDSTONE (DRILLERS DESCRIPTION)	21
									22
									23
									24
									25
				25.80				COAL (DRILLERS DESCRIPTION)	26
				26.80				MUDSTONE (DRILLERS DESCRIPTION)	27
									28
									29
				30.00				End of Borehole at 30.000m	30
									31
									32
									33
									34
									35
									36
									37
									38
									39
									40

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP04

Sheet 1 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 260871E - 199034N	Hole Type RO
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Location:	Level:	Scale 1:100
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Client:	Dates: 11/01/2021 - 11/01/2021	Logged By
---------	--------------------------------	-----------

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				0.20				TOPSOIL (DRILLERS DESCRIPTION) BOULDER CLAY (DRILLERS DESCRIPTION)	1
									2
									3
									4
									5
									6
									7
									8
				9.00				MUDSTONE (DRILLERS DESCRIPTION)	9
									10
									11
				12.10				COAL (DRILLERS DESCRIPTION)	12
									13
				12.80				MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	13
									14
									15
									16
									17
									18
									19
									20

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP04

Sheet 2 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 260871E - 199034N	Hole Type RO
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Location:	Level:	Scale 1:100
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Client:	Dates: 11/01/2021 - 11/01/2021	Logged By
---------	--------------------------------	-----------

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
								MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	21
				21.90				COAL (DRILLERS DESCRIPTION)	22
				23.10				MUDSTONE (DRILLERS DESCRIPTION)	23
									24
									25
									26
									27
									28
									29
				30.00				End of Borehole at 30.000m	30
									31
									32
									33
									34
									35
									36
									37
									38
									39
									40

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP05

Sheet 1 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 260882E - 199090N	Hole Type RO
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Location:	Level:	Scale 1:100
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Client:	Dates: 12/01/2021 - 12/01/2021	Logged By
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Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				0.20				TOPSOIL (DRILLERS DESCRIPTION) BOULDER CLAY (DRILLERS DESCRIPTION)	1 2 3 4 5 6
				6.80				MUDSTONE (DRILLERS DESCRIPTION)	7 8 9 10 11 12 13 14
				14.70				COAL (DRILLERS DESCRIPTION)	15
				15.50				MUDSTONE (DRILLERS DESCRIPTION)	16 17 18 19 20

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP05

Sheet 2 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 260882E - 199090N	Hole Type: RO
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Location:	Level:	Scale: 1:100
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Client:	Dates: 12/01/2021 - 12/01/2021	Logged By:
---------	--------------------------------	------------

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
								MUDSTONE (DRILLERS DESCRIPTION)	21
									22
									23
				24.30					24
								COAL (DRILLERS DESCRIPTION)	25
				25.50					26
								MUDSTONE (DRILLERS DESCRIPTION)	27
									28
									29
				30.00					30
								End of Borehole at 30.000m	31
									32
									33
									34
									35
									36
									37
									38
									39
									40

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP06

Sheet 1 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 260880E - 199147N	Hole Type RO
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Location:	Level:	Scale 1:100
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Client:	Dates: 13/01/2021 - 13/01/2021	Logged By
---------	--------------------------------	-----------

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				0.20				TOPSOIL (DRILLERS DESCRIPTION) BOULDER CLAY (DRILLERS DESCRIPTION)	1
									2
									3
									4
									5
									6
									7
				8.10				MUDSTONE (DRILLERS DESCRIPTION)	8
									9
									10
									11
									12
									13
									14
									15
				16.60				COAL (DRILLERS DESCRIPTION)	16
									17
				17.20				MUDSTONE (DRILLERS DESCRIPTION)	17
									18
									19
									20

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP06

Sheet 2 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 260880E - 199147N	Hole Type RO
---------------------------	-------------------	----------------------------	--------------

Location:	Level:	Scale 1:100
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Client:	Dates: 13/01/2021 - 13/01/2021	Logged By
---------	--------------------------------	-----------

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
								MUDSTONE (DRILLERS DESCRIPTION)	21
									22
									23
									24
									25
									26
				26.80				COAL (DRILLERS DESCRIPTION)	27
				27.90				MUDSTONE (DRILLERS DESCRIPTION)	28
									29
				30.00				End of Borehole at 30.000m	30
									31
									32
									33
									34
									35
									36
									37
									38
									39
									40

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP07

Sheet 1 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 260905E - 199159N	Hole Type RO
---------------------------	-------------------	----------------------------	--------------

Location:	Level:	Scale 1:100
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Client:	Dates: 13/01/2021 - 13/01/2021	Logged By
---------	--------------------------------	-----------

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				0.20				TOPSOIL (DRILLERS DESCRIPTION)	
								BOULDER CLAY (DRILLERS DESCRIPTION)	1
									2
									3
									4
									5
									6
									7
				8.00				GRAVEL (DRILLERS DESCRIPTION)	8
				9.00				MUDSTONE (DRILLERS DESCRIPTION)	9
									10
									11
									12
									13
									14
									15
				16.50				COAL (DRILLERS DESCRIPTION)	16
				17.10				MUDSTONE (DRILLERS DESCRIPTION)	17
									18
									19
									20

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP07

Sheet 2 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 260905E - 199159N	Hole Type RO
---------------------------	-------------------	----------------------------	--------------

Location:	Level:	Scale 1:100
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Client:	Dates: 13/01/2021 - 13/01/2021	Logged By
---------	--------------------------------	-----------

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
								MUDSTONE (DRILLERS DESCRIPTION)	21
									22
									23
									24
									25
									26
				26.70				COAL (DRILLERS DESCRIPTION)	27
				27.70				MUDSTONE (DRILLERS DESCRIPTION)	28
									29
				30.00				End of Borehole at 30.000m	30
									31
									32
									33
									34
									35
									36
									37
									38
									39
									40

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP08

Sheet 1 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 260938E - 199059N	Hole Type RO
---------------------------	-------------------	----------------------------	--------------

Location:	Level:	Scale 1:100
-----------	--------	-------------

Client:	Dates: 11/01/2021 - 11/01/2021	Logged By
---------	--------------------------------	-----------

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				0.20				TOPSOIL (DRILLERS DESCRIPTION) BOULDER CLAY (DRILLERS DESCRIPTION)	1
				6.50				MUDSTONE (DRILLERS DESCRIPTION)	2
				14.30				COAL (DRILLERS DESCRIPTION)	3
				15.10				MUDSTONE (DRILLERS DESCRIPTION)	4
				17.20				MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	5

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP08

Sheet 2 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 260938E - 199059N	Hole Type RO
---------------------------	-------------------	----------------------------	--------------

Location:	Level:	Scale 1:100
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Client:	Dates: 11/01/2021 - 11/01/2021	Logged By
---------	--------------------------------	-----------

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
								MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	21
									22
									23
				24.00				COAL (DRILLERS DESCRIPTION)	24
				25.20				MUDSTONE (DRILLERS DESCRIPTION)	25
									26
									27
									28
									29
				30.00				End of Borehole at 30.000m	30
									31
									32
									33
									34
									35
									36
									37
									38
									39
									40

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP09

Sheet 1 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 260962E - 199051N	Hole Type RO
---------------------------	-------------------	----------------------------	--------------

Location:	Level:	Scale 1:100
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Client:	Dates: 01/01/2021 - 11/01/2021	Logged By
---------	--------------------------------	-----------

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				0.20				TOPSOIL (DRILLERS DESCRIPTION) BOULDER CLAY (DRILLERS DESCRIPTION)	1
									2
									3
									4
									5
									6
				7.00				MUDSTONE (DRILLERS DESCRIPTION)	7
									8
									9
									10
									11
									12
									13
				14.10				COAL (DRILLERS DESCRIPTION)	14
									15
				14.90				MUDSTONE (DRILLERS DESCRIPTION)	15
									16
									17
									18
				17.90				MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	18
									19
									20

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP09

Sheet 2 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 260962E - 199051N	Hole Type RO
---------------------------	-------------------	----------------------------	--------------

Location:	Level:	Scale 1:100
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Client:	Dates: 01/01/2021 - 11/01/2021	Logged By
---------	--------------------------------	-----------

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
								MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	21
									22
									23
				24.00				COAL (DRILLERS DESCRIPTION)	24
				25.20				MUDSTONE (DRILLERS DESCRIPTION)	25
									26
									27
									28
									29
				30.00				End of Borehole at 30.000m	30
									31
									32
									33
									34
									35
									36
									37
									38
									39
									40

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

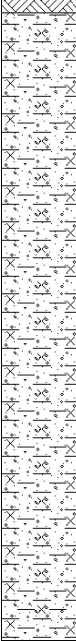
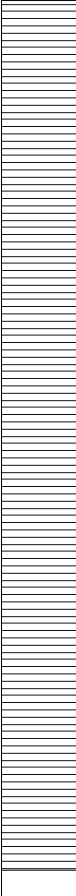
RP10

Sheet 1 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 260973E - 199093N	Hole Type RO
---------------------------	-------------------	----------------------------	--------------

Location:	Level:	Scale 1:100
-----------	--------	-------------

Client:	Dates: 14/01/2021 - 14/01/2021	Logged By
---------	--------------------------------	-----------

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				0.20				TOPSOIL (DRILLERS DESCRIPTION) BOULDER CLAY (DRILLERS DESCRIPTION)	1 2 3 4 5 6 7 8
				8.50				MUDSTONE (DRILLERS DESCRIPTION)	9 10 11 12 13 14 15 16 17 18 19 20

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
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Borehole No.

RP10

Sheet 2 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 260973E - 199093N	Hole Type RO
---------------------------	-------------------	----------------------------	--------------

Location:	Level:	Scale 1:100
-----------	--------	-------------

Client:	Dates: 14/01/2021 - 14/01/2021	Logged By
---------	--------------------------------	-----------

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				30.00				MUDSTONE (DRILLERS DESCRIPTION)	21
									22
									23
									24
									25
									26
									27
									28
									29
								End of Borehole at 30.000m	30
									31
									32
									33
									34
									35
									36
									37
									38
									39
									40

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP11

Sheet 1 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 261006E - 199059N	Hole Type RO
---------------------------	-------------------	----------------------------	--------------

Location:	Level:	Scale 1:100
-----------	--------	-------------

Client:	Dates: 14/01/2021 - 14/01/2021	Logged By
---------	--------------------------------	-----------

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				0.20				TOPSOIL (DRILLERS DESCRIPTION) BOULDER CLAY (DRILLERS DESCRIPTION)	1
									2
									3
									4
									5
									6
									7
				7.50				SANDSTONE (DRILLERS DESCRIPTION)	8
									9
				9.00				MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	10
									11
									12
									13
									14
									15
									16
									17
									18
									19
									20

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP11

Sheet 2 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 261006E - 199059N	Hole Type RO
---------------------------	-------------------	----------------------------	-----------------

Location:	Level:	Scale 1:100
-----------	--------	----------------

Client:	Dates: 14/01/2021 - 14/01/2021	Logged By
---------	--------------------------------	-----------

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				30.00				MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	21
									22
									23
									24
									25
									26
									27
									28
									29
									30
								End of Borehole at 30.000m	31
									32
									33
									34
									35
									36
									37
									38
									39
									40

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP12

Sheet 1 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 261038E - 199146N	Hole Type RO
---------------------------	-------------------	----------------------------	--------------

Location:	Level:	Scale 1:100
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Client:	Dates: 14/01/2021 - 14/01/2021	Logged By
---------	--------------------------------	-----------

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				0.20				TOPSOIL (DRILLERS DESCRIPTION)	
								BOULDER CLAY (DRILLERS DESCRIPTION)	1
				3.20				MUDSTONE (DRILLERS DESCRIPTION)	2
				4.00				SANDSTONE (DRILLERS DESCRIPTION)	3
								MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	4
				9.00				MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	5
								MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	6
								MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	7
								MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	8
								MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	9
								MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	10
								MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	11
								MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	12
								MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	13
								MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	14
								MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	15
								MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	16
								MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	17
								MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	18
								MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	19
								MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	20

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP12

Sheet 2 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 261038E - 199146N	Hole Type RO
---------------------------	-------------------	----------------------------	-----------------

Location:	Level:	Scale 1:100
-----------	--------	----------------

Client:	Dates: 14/01/2021 - 14/01/2021	Logged By
---------	--------------------------------	-----------

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				30.00				MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	21
									22
									23
									24
									25
									26
									27
									28
									29
									30
								End of Borehole at 30.000m	31
									32
									33
									34
									35
									36
									37
									38
									39
									40

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP13

Sheet 1 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 261090E - 199143N	Hole Type RO
---------------------------	-------------------	----------------------------	--------------

Location:	Level:	Scale 1:100
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Client:	Dates: 15/01/2021 - 15/01/2021	Logged By
---------	--------------------------------	-----------

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				0.20				TOPSOIL (DRILLERS DESCRIPTION) BOULDER CLAY (DRILLERS DESCRIPTION)	1
				4.20				MUDSTONE AND SANDSTONE (DRILLERS DESCRIPTION)	2 3 4
				14.00				MUDSTONE (DRILLERS DESCRIPTION)	5 6 7 8 9 10 11 12 13 14
									15 16 17 18 19 20

Remarks:



Terra Firma (Wales) Limited
 5 Deryn Court, Wharfedale Road
 Pentwyn, Cardiff
 CF23 7HA

Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole No.

RP13

Sheet 2 of 2

Project Name: Penllergaer	Project No: 16300	Co-ords: 261090E - 199143N	Hole Type RO
---------------------------	-------------------	----------------------------	--------------

Location:	Level:	Scale 1:100
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Client:	Dates: 15/01/2021 - 15/01/2021	Logged By
---------	--------------------------------	-----------

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				30.00				MUDSTONE (DRILLERS DESCRIPTION)	
									21
									22
									23
									24
									25
									26
									27
									28
									29
									30
								End of Borehole at 30.000m	31
									32
									33
									34
									35
									36
									37
									38
									39
									40

Remarks:

ANNEX G
Chemical Test Results



Final Report

Report No.: 20-30298-1
Initial Date of Issue: 13-Nov-2020
Client Terra Firma (Wales) Ltd
Client Address: 5 Deryn Court
Wharfedale Road
Pentwyn
Cardiff
CF23 7HA

Contact(s): Dave Emanuel

Project 16300 Penllergaer

Quotation No.: **Date Received:** 09-Nov-2020

Order No.: **Date Instructed:** 09-Nov-2020

No. of Samples: 11

Turnaround (Wkdays): 5 **Results Due:** 13-Nov-2020

Date Approved: 13-Nov-2020

Approved By:



Details: Glynn Harvey, Technical Manager

Results - Soil

Project: 16300 Penllergaer

Client: Terra Firma (Wales) Ltd		Chemtest Job No.: 20-30298 20-30298 20-30298 20-30298 20-30298 20-30298 20-30298 20-30298 20-30298 20-30298 20-30298											
Quotation No.:		Chemtest Sample ID.: 1093410 1093411 1093412 1093413 1093414 1093415 1093416 1093417 1093418											
Sample Location:		TP01 TP02 TP03 TP04 TP05 TP06 TP07 TP08 TP09											
Sample Type:		SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL											
Top Depth (m):		0.20 0.40 0.40 0.20 0.20 0.40 0.20 0.20 0.20											
Date Sampled:		04-Nov-2020 04-Nov-2020 04-Nov-2020 04-Nov-2020 04-Nov-2020 04-Nov-2020 04-Nov-2020 05-Nov-2020 05-Nov-2020 05-Nov-2020											
Asbestos Lab:		COVENTRY COVENTRY COVENTRY COVENTRY COVENTRY COVENTRY COVENTRY COVENTRY COVENTRY COVENTRY COVENTRY											
Determinand	Accred.	SOP	Units	LOD									
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
ACM Detection Stage	U	2192		N/A	-	-	-	-	-	-	-	-	-
Moisture	N	2030	%	0.020	15	13	13	11	17	22	12	13	16
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones	Stones	Stones and Roots	Stones and Roots	Stones and Roots	Stones and Roots
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010		4.0	6.6	7.1	7.5	6.9	6.9	6.4	6.5	6.2	6.1
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	0.49	0.51	< 0.40	< 0.40	0.42	< 0.40	< 0.40	< 0.40	< 0.40
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Sulphate (Acid Soluble)	M	2430	%	0.010	0.057	0.037	0.021	0.058	0.046	0.060	0.044	0.027	0.032
Arsenic	M	2450	mg/kg	1.0	22	16	13	9.4	12	21	18	14	14
Cadmium	M	2450	mg/kg	0.10	0.57	0.32	0.35	0.17	0.20	0.48	0.34	0.33	0.37
Chromium	M	2450	mg/kg	1.0	25	17	15	13	17	14	16	19	17
Mercury Low Level	M	2450	mg/kg	0.05	0.10	0.07	0.06	0.05	0.07	0.07	0.08	0.09	0.08
Copper	M	2450	mg/kg	0.50	40	29	27	20	20	35	31	29	26
Nickel	M	2450	mg/kg	0.50	22	19	17	20	16	15	21	26	20
Lead	M	2450	mg/kg	0.50	38	25	25	16	19	31	28	26	29
Selenium	M	2450	mg/kg	0.20	0.82	0.76	0.60	0.41	0.89	0.67	0.74	0.48	0.56
Zinc	M	2450	mg/kg	0.50	91	60	58	47	46	68	67	67	60
Chromium (Trivalent)	N	2490	mg/kg	1.0	25	17	15	13	17	14	16	19	17
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: 16300 Penllergaer

Client: Terra Firma (Wales) Ltd		Chemtest Job No.:											
Quotation No.:	Chemtest Sample ID.:												
	Sample Location:												
	Sample Type:												
	Top Depth (m):												
	Date Sampled:												
	Asbestos Lab:												
Determinand	Accred.	SOP	Units	LOD									
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Naphthalene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.29	< 0.10	< 0.10
Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.28	< 0.10	< 0.10
Benzo[a]anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total Phenols	M	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30
Organic Matter BS1377	N	2930	%	0.10	3.1	2.6	3.0	2.2	2.6	3.3	2.5	2.2	2.9

Results - Soil

Project: 16300 Penllergaer

Client: Terra Firma (Wales) Ltd		Chemtest Job No.:		20-30298	20-30298	
Quotation No.:		Chemtest Sample ID.:		1093419	1093420	
		Sample Location:		TP10	TP11	
		Sample Type:		SOIL	SOIL	
		Top Depth (m):		0.10	0.20	
		Date Sampled:		05-Nov-2020	05-Nov-2020	
		Asbestos Lab:		COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected
ACM Detection Stage	U	2192		N/A	-	-
Moisture	N	2030	%	0.020	16	16
Soil Colour	N	2040		N/A	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones and Roots
Soil Texture	N	2040		N/A	Sand	Sand
pH	M	2010		4.0	5.8	6.0
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	0.43	0.47
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	< 0.50
Sulphate (Acid Soluble)	M	2430	%	0.010	0.039	0.031
Arsenic	M	2450	mg/kg	1.0	27	14
Cadmium	M	2450	mg/kg	0.10	0.99	0.30
Chromium	M	2450	mg/kg	1.0	9.3	11
Mercury Low Level	M	2450	mg/kg	0.05	0.11	0.06
Copper	M	2450	mg/kg	0.50	38	23
Nickel	M	2450	mg/kg	0.50	17	17
Lead	M	2450	mg/kg	0.50	45	24
Selenium	M	2450	mg/kg	0.20	0.73	0.69
Zinc	M	2450	mg/kg	0.50	85	58
Chromium (Trivalent)	N	2490	mg/kg	1.0	9.3	11
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0

Results - Soil

Project: 16300 Penllergaer

Client: Terra Firma (Wales) Ltd		Chemtest Job No.:		20-30298	20-30298	
Quotation No.:		Chemtest Sample ID.:		1093419	1093420	
		Sample Location:		TP10	TP11	
		Sample Type:		SOIL	SOIL	
		Top Depth (m):		0.10	0.20	
		Date Sampled:		05-Nov-2020	05-Nov-2020	
		Asbestos Lab:		COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10
Naphthalene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Fluorene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Phenanthrene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[a]anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Chrysene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0	< 2.0
Total Phenols	M	2920	mg/kg	0.30	< 0.30	< 0.30
Organic Matter BS1377	N	2930	%	0.10	3.6	2.9

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8- C10, >C10-C12, >C12-C16, >C16- C21, >C21- C35, >C35- C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
2930	Organic Matter	Organic Matter	Acid Dichromate digestion/Titration

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



Final Report

Report No.: 21-01483-1
Initial Date of Issue: 28-Jan-2021
Client: Terra Firma (Wales) Ltd
Client Address: 5 Deryn Court
Wharfedale Road
Pentwyn
Cardiff
CF23 7HA

Contact(s): Dave Emanuel

Project: 16300 Penllergaer

Quotation No.: **Date Received:** 20-Jan-2021

Order No.: **Date Instructed:** 20-Jan-2021

No. of Samples: 3

Turnaround (Wkdays): 7 **Results Due:** 28-Jan-2021

Date Approved: 28-Jan-2021

Approved By:

Details: Glynn Harvey, Technical Manager

Results - 2 Stage WAC

Project: 16300 Penllergaer

Chemtest Job No: 21-01483 Chemtest Sample ID: 1127374 Sample Ref: Sample ID: Sample Location: BH01 Top Depth(m): 1 Bottom Depth(m): Sampling Date: 11-Jan-2021										Landfill Waste Acceptance Criteria Limits		
							Inert Waste Landfill	Stable, Non- reactive hazardous waste in non- hazardous Landfill	Hazardous Waste Landfill			
Determinand	SOP	Accred.	Units									
Total Organic Carbon	2625	M	%				2.2	3	5	6		
Loss On Ignition	2610	M	%				6.2	--	--	10		
Total BTEX	2760	M	mg/kg				< 0.010	6	--	--		
Total PCBs (7 Congeners)	2815	M	mg/kg				< 0.10	1	--	--		
TPH Total WAC (Mineral Oil)	2670	M	mg/kg				< 10	500	--	--		
Total (Of 17) PAH's	2700	N	mg/kg				< 2.0	100	--	--		
pH	2010	M					7.5	--	>6	--		
Acid Neutralisation Capacity	2015	N	mol/kg				< 0.0020	--	To evaluate	To evaluate		
Eluate Analysis			2:1 mg/l	8:1 mg/l	2:1 mg/kg	Cumulative mg/kg 10:1	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg					
Arsenic	1450	U	< 0.0010	0.0019	< 0.050	< 0.050	0.5	2	25			
Barium	1450	U	0.0033	0.0072	< 0.50	< 0.50	20	100	300			
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5			
Chromium	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	10	70			
Copper	1450	U	0.0011	0.0042	< 0.050	< 0.050	2	50	100			
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2			
Molybdenum	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	10	30			
Nickel	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.4	10	40			
Lead	1450	U	< 0.0010	0.0026	< 0.010	0.025	0.5	10	50			
Antimony	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.06	0.7	5			
Selenium	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.1	0.5	7			
Zinc	1450	U	0.0053	0.0071	< 0.50	< 0.50	4	50	200			
Chloride	1220	U	1.9	3.6	< 10	35	800	15000	25000			
Fluoride	1220	U	0.16	0.19	< 1.0	1.9	10	150	500			
Sulphate	1220	U	4.5	7.4	< 10	73	1000	20000	50000			
Total Dissolved Solids	1020	N	33	19	65	190	4000	60000	100000			
Phenol Index	1920	U	0.050	< 0.030	< 0.30	< 0.50	1	-	-			
Dissolved Organic Carbon	1610	U	6.4	3.5	< 50	< 50	500	800	1000			

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	11

Leachate Test Information	
Leachant volume 1st extract/l	0.329
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.078

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - 2 Stage WAC

Project: 16300 Penllergaer

Chemtest Job No: 21-01483 Chemtest Sample ID: 1127375 Sample Ref: Sample ID: Sample Location: BH02 Top Depth(m): 1 Bottom Depth(m): Sampling Date: 12-Jan-2021							Landfill Waste Acceptance Criteria Limits		
							Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Determinand	SOP	Accred.	Units						
Total Organic Carbon	2625	M	%				2.0	3	5
Loss On Ignition	2610	M	%				6.6	--	10
Total BTEX	2760	M	mg/kg				< 0.010	6	--
Total PCBs (7 Congeners)	2815	M	mg/kg				< 0.10	1	--
TPH Total WAC (Mineral Oil)	2670	M	mg/kg				< 10	500	--
Total (Of 17) PAH's	2700	N	mg/kg				< 2.0	100	--
pH	2010	M					6.8	--	>6
Acid Neutralisation Capacity	2015	N	mol/kg				< 0.0020	--	To evaluate
Eluate Analysis			2:1 mg/l	8:1 mg/l	2:1 mg/kg	Cumulative mg/kg 10:1	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1450	U	< 0.0010	0.0033	< 0.050	< 0.050	0.5	2	25
Barium	1450	U	0.0026	0.0086	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	0.00028	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	0.0013	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	0.0022	0.0059	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	0.0082	< 0.010	0.077	0.5	10	50
Antimony	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.06	0.7	5
Selenium	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.1	0.5	7
Zinc	1450	U	0.0051	0.013	< 0.50	< 0.50	4	50	200
Chloride	1220	U	1.3	4.9	< 10	47	800	15000	25000
Fluoride	1220	U	0.20	0.23	< 1.0	2.3	10	150	500
Sulphate	1220	U	3.1	6.4	< 10	62	1000	20000	50000
Total Dissolved Solids	1020	N	25	21	50	210	4000	60000	100000
Phenol Index	1920	U	0.041	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	6.2	3.2	< 50	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	16

Leachate Test Information	
Leachant volume 1st extract/l	0.316
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.102

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - 2 Stage WAC

Project: 16300 Penllergaer

Chemtest Job No: 21-01483 Chemtest Sample ID: 1127376 Sample Ref: Sample ID: Sample Location: BH03 Top Depth(m): 1 Bottom Depth(m): Sampling Date: 13-Jan-2021										Landfill Waste Acceptance Criteria Limits		
							Inert Waste Landfill	Stable, Non- reactive hazardous waste in non- hazardous Landfill	Hazardous Waste Landfill			
Determinand	SOP	Accred.	Units									
Total Organic Carbon	2625	M	%				2.5	3	5	6		
Loss On Ignition	2610	M	%				6.9	--	--	10		
Total BTEX	2760	M	mg/kg				< 0.010	6	--	--		
Total PCBs (7 Congeners)	2815	M	mg/kg				< 0.10	1	--	--		
TPH Total WAC (Mineral Oil)	2670	M	mg/kg				< 10	500	--	--		
Total (Of 17) PAH's	2700	N	mg/kg				< 2.0	100	--	--		
pH	2010	M					6.5	--	>6	--		
Acid Neutralisation Capacity	2015	N	mol/kg				< 0.0020	--	To evaluate	To evaluate		
Eluate Analysis			2:1 mg/l	8:1 mg/l	2:1 mg/kg	Cumulative mg/kg 10:1	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg					
Arsenic	1450	U	< 0.0010	0.0031	< 0.050	< 0.050	0.5	2	25			
Barium	1450	U	0.0052	0.0070	< 0.50	< 0.50	20	100	300			
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5			
Chromium	1450	U	< 0.0010	0.0015	< 0.050	< 0.050	0.5	10	70			
Copper	1450	U	0.0027	0.0044	< 0.050	< 0.050	2	50	100			
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2			
Molybdenum	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	10	30			
Nickel	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.4	10	40			
Lead	1450	U	< 0.0010	0.0040	< 0.010	0.037	0.5	10	50			
Antimony	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.06	0.7	5			
Selenium	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.1	0.5	7			
Zinc	1450	U	0.0067	0.0084	< 0.50	< 0.50	4	50	200			
Chloride	1220	U	4.8	2.3	< 10	24	800	15000	25000			
Fluoride	1220	U	0.15	0.19	< 1.0	1.9	10	150	500			
Sulphate	1220	U	4.1	2.7	< 10	28	1000	20000	50000			
Total Dissolved Solids	1020	N	41	22	80	230	4000	60000	100000			
Phenol Index	1920	U	0.050	< 0.030	< 0.30	< 0.50	1	-	-			
Dissolved Organic Carbon	1610	U	6.1	3.6	< 50	< 50	500	800	1000			

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	18

Leachate Test Information	
Leachant volume 1st extract/l	0.312
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.105

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operation procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



Final Report

Report No.: 21-01476-1
Initial Date of Issue: 26-Jan-2021
Client: Terra Firma (Wales) Ltd
Client Address: 5 Deryn Court
Wharfedale Road
Pentwyn
Cardiff
CF23 7HA
Contact(s): Dave Emanuel
Project: 16300 Penllergaer
Quotation No.: **Date Received:** 20-Jan-2021
Order No.: **Date Instructed:** 20-Jan-2021
No. of Samples: 3
Turnaround (Wkdays): 5 **Results Due:** 26-Jan-2021
Date Approved: 26-Jan-2021

Approved By:

Details: Glynn Harvey, Technical Manager

Results - Soil

Project: 16300 Penllergaer

Client: Terra Firma (Wales) Ltd		Chemtest Job No.:		21-01476	21-01476	21-01476	
Quotation No.:		Chemtest Sample ID.:		1127339	1127340	1127341	
		Sample Location:		BH01	BH02	BH03	
		Sample Type:		SOIL	SOIL	SOIL	
		Top Depth (m):		1	1	1	
		Date Sampled:		11-Jan-2021	12-Jan-2021	13-Jan-2021	
		Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
ACM Detection Stage	U	2192		N/A	-	-	-
Moisture	N	2030	%	0.020	13	17	12
Soil Colour	N	2040		N/A	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones and Roots	Stones and Roots	Stones and Roots
Soil Texture	N	2040		N/A	Clay	Sand	Loam
pH	M	2010		4.0	7.4	6.9	7.2
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	0.48	0.51	< 0.40
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Sulphate (Acid Soluble)	M	2430	%	0.010	0.021	0.062	0.022
Arsenic	M	2450	mg/kg	1.0	11	27	10
Cadmium	M	2450	mg/kg	0.10	0.18	0.52	0.23
Chromium	M	2450	mg/kg	1.0	17	26	20
Mercury Low Level	M	2450	mg/kg	0.05	0.06	0.08	0.05
Copper	M	2450	mg/kg	0.50	24	41	27
Nickel	M	2450	mg/kg	0.50	26	23	28
Lead	M	2450	mg/kg	0.50	15	35	18
Selenium	M	2450	mg/kg	0.20	0.61	0.87	0.54
Zinc	M	2450	mg/kg	0.50	60	110	70
Chromium (Trivalent)	N	2490	mg/kg	1.0	17	26	20
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: 16300 Penllergaer

Client: Terra Firma (Wales) Ltd		Chemtest Job No.:		21-01476	21-01476	21-01476
Quotation No.:		Chemtest Sample ID.:		1127339	1127340	1127341
		Sample Location:		BH01	BH02	BH03
		Sample Type:		SOIL	SOIL	SOIL
		Top Depth (m):		1	1	1
		Date Sampled:		11-Jan-2021	12-Jan-2021	13-Jan-2021
		Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10
Naphthalene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Fluorene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Phenanthrene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[a]anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Chrysene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0	< 2.0
Total Phenols	M	2920	mg/kg	0.30	< 0.30	< 0.30
Organic Matter BS1377	N	2930	%	0.10	1.4	2.2

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8- C10, >C10-C12, >C12-C16, >C16- C21, >C21- C35, >C35- C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
2930	Organic Matter	Organic Matter	Acid Dichromate digestion/Titration

Report Information

Key

U	UKAS accredited
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Comments or interpretations are beyond the scope of UKAS accreditation

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The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

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- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

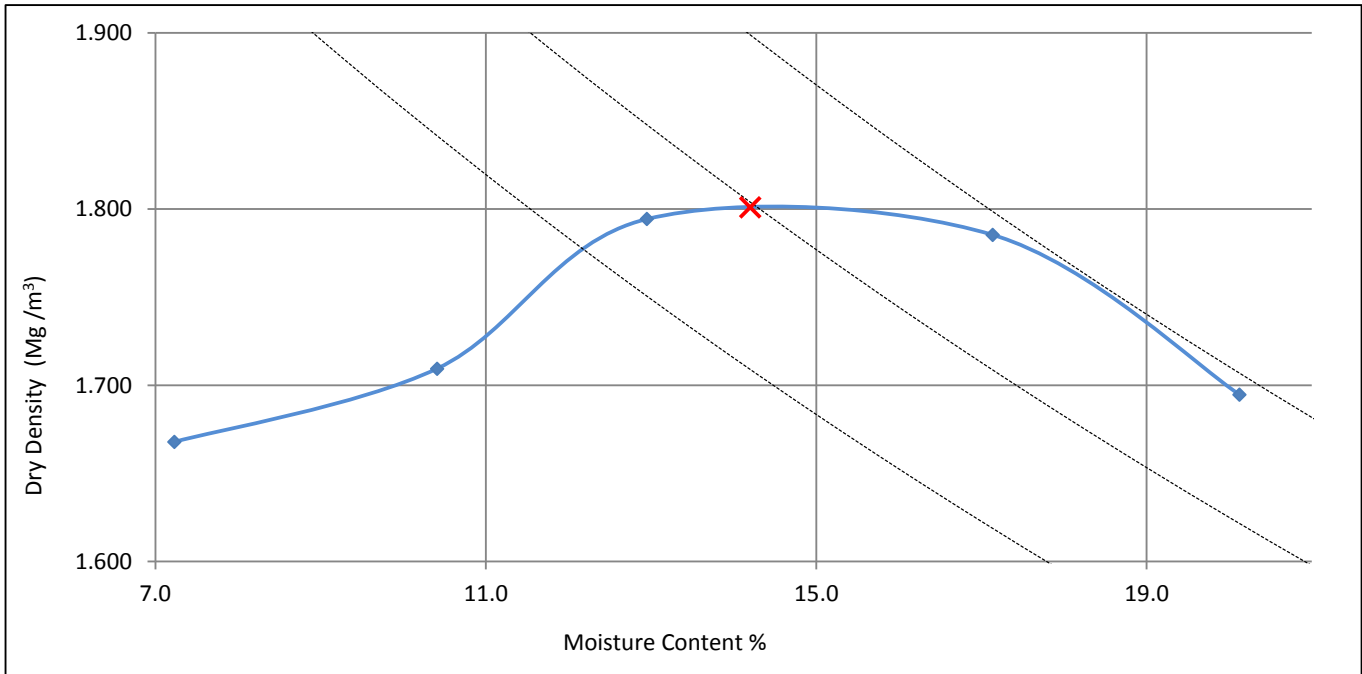
customerservices@chemtest.com

ANNEX H
Geotechnical Test Results

TEST REPORT
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377:Part 4:1990: Clause 3.4

Project No:	D21030	Client:	Terra Firma
Project Name:	Penlligaer	Address:	5 Deryn Court Wharfdale Road Cardiff CF23 7HA
ATS Sample No:	23050		

Site Ref / Hole ID:	BH01	Depth (m):	0.20
Sample No:		Sample Type:	Bulk
Sampling Certificate Received:	No	Material Description:	Brown sandy gravelly CLAY
Location in Works:	N/A	Material Source:	Site Generated
Date Sampled:	Unknown	Material Supplier:	Site
Sampled By:	Client	Specification:	BS1377
Date Received:	14 January 2021	Date Tested:	20 January 2021



Test Method:	BS 1377: part 4: 1990: clause 3.3, 2.5kg rammer in a 1 litre mould
Preparation:	Original sample was oven dried @ 105 oC, separate specimens tested

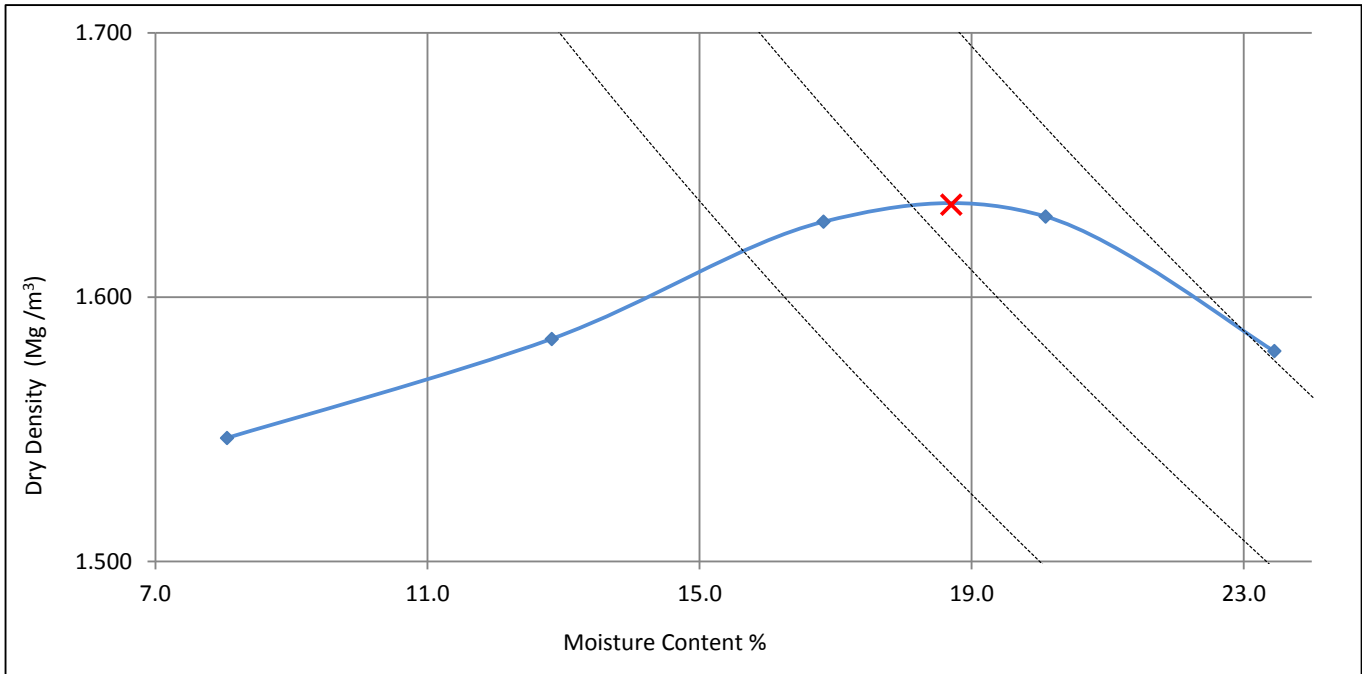
Particle Density, Mg/m ³	2.60	assumed	Derived Parameters ✗	
Material > 37.5mm	10	%	Maximum Dry Density, Mg/m ³	1.80
Material < 37.5mm > 20mm	6	%	Optimum Moisture Content %	14.2

Remarks:

TEST REPORT
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377:Part 4:1990: Clause 3.4

Project No: D21030	Client: Terra Firma
Project Name: Penlligaer	Address: 5 Deryn Court Wharfdale Road Cardiff CF23 7HA
ATS Sample No: 23051	

Site Ref / Hole ID: BH2	Depth (m): 1.00
Sample No:	Sample Type: Bulk
Sampling Certificate Received: No	Material Description: Brown slightly gravelly sandy CLAY
Location in Works: N/A	Material Source: Site Generated
Date Sampled: Unknown	Material Supplier: Site
Sampled By: Client	Specification: BS1377
Date Received: 14 January 2021	Date Tested: 20 January 2021



Test Method:	BS 1377: part 4: 1990: clause 3.4, 2.5kg rammer in a CBR mould
Preparation:	Original sample was oven dried @ 105 oC, separate specimens tested

Particle Density, Mg/m³	2.50	assumed	Derived Parameters ✗
Material > 37.5mm	1	%	Maximum Dry Density, Mg/m ³
Material < 37.5mm > 20mm	4	%	Optimum Moisture Content %
			1.64
			18.7

Remarks:

TEST REPORT
PARTICLE SIZE DISTRIBUTION ANALYSIS
BS1377:Part 2:1990

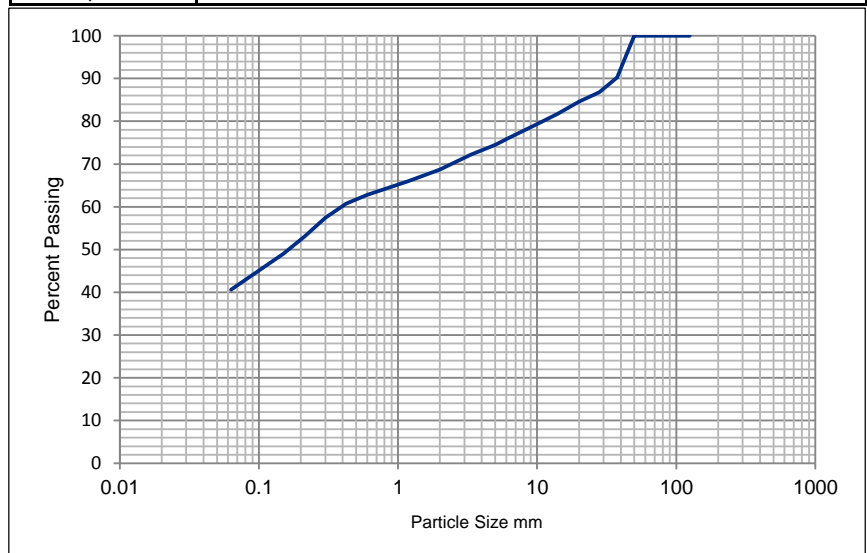
Project No: D21030	Client: Terra Firma
Project Name: Penlligaer	Address: Deryn Court 5 Wharfdale Road Cardiff CF23 7HA
ATS Sample No: 23050	

Site Ref / Hole ID: BH1	Depth (m): 0.20 - 3.20
Sample No:	Sample Type: Bulk
Sampling Certificate Received: No	Material Description: Brown sandy gravelly CLAY
Location in Works: N/A	Material Source: Unknown
Date Sampled: Unknown	Material Supplier: Unknown
Sampled By: Client	Specification: BS1377
Date Received: 14 January 2021	Date Tested: 20 January 2021

Test Results

Sieving	
Particle Size mm	% Passing
125	100
90	100
75	100
63	100
50	100
37.5	90
28	87
20	85
14	82
10	79
6.3	76
5.0	74
3.35	72
2.00	69
1.18	66
0.600	63
0.425	61
0.300	57
0.212	53
0.150	49
0.063	41

Preparation / Pretreatment	
Sieve:	Pre dried
Pipette:	



Sample Portions		Particle Density Mg/m3	Uniformity Coefficient D ₆₀ / D ₁₀
Cobbles / Boulders	0	N/A	
Gravel	31		
Sand	28		
Silt / Clay	41	6.1	N/A

Remarks:

TEST REPORT
Determination Of Water Content
ISO 17892-1: 2014

Project No: D21030	Client: Terra Firma
Project Name: Penlligaer	Address: Deryn Court 5 Wharfdale Road Cardiff CF23 7HA
ATS Sample No: 23050	

Site Ref / Hole ID: BH1	Depth (m): 0.20 - 3.20
Sample No:	Sample Type: Bulk
Sampling Certificate Received: No	Material Description: Brown sandy gravelly CLAY
Location in Works: N/A	Material Source: Unknown
Date Sampled: Unknown	Material Supplier: Unknown
Sampled By: Client	Specification: ISO17892
Date Received: 14 January 2021	Date Tested: 20 January 2021

Test Results

Moisture Content (%)	18.0
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Remarks:

TEST REPORT
LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

BS 1377:Part 2:1990. Clause 4.3/5.3/5.4

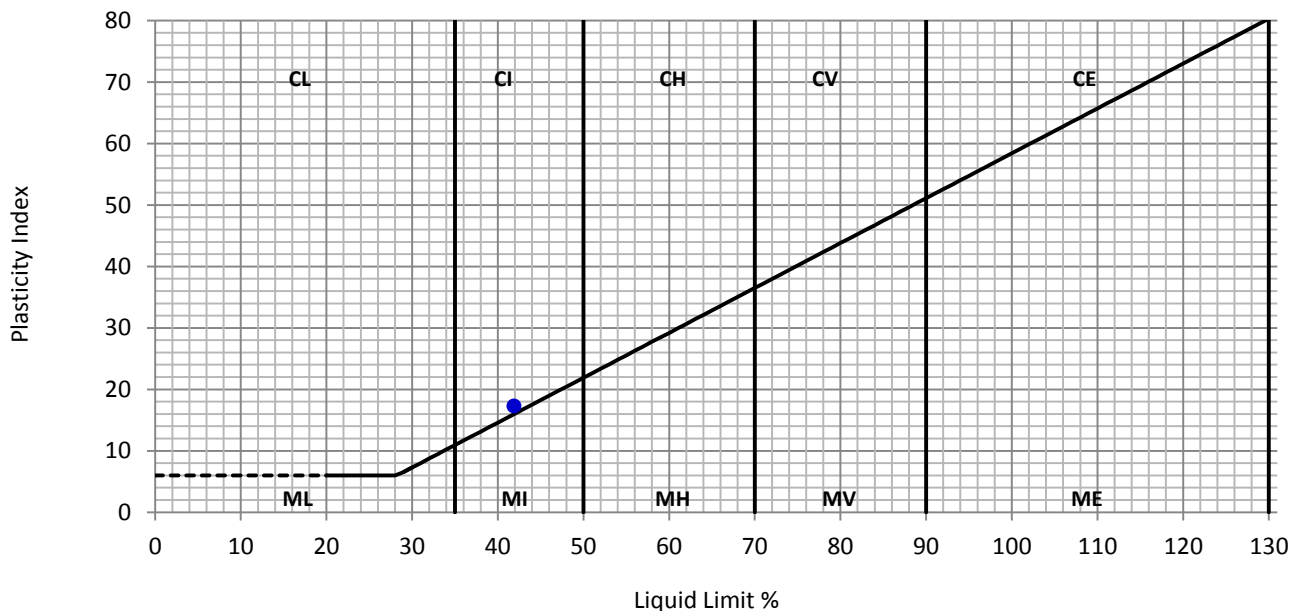
Project No:	D21030	Client:	Terra Firma
Project Name:	Penlligaer	Address:	Deryn Court 5 Wharfdale Road Cardiff CF23 7HA
ATS Sample No:	23050		

Site Ref / Hole ID:	BH1	Depth (m):	0.20 - 3.20
Sample No:		Sample Type:	Bulk
Sampling Certificate Received:	No	Material Description:	Brown sandy gravelly CLAY
Location in Works:	N/A	Material Source:	Unknown
Date Sampled:	Unknown	Material Supplier:	Unknown
Sampled By:	Client	Specification:	BS1377
Date Received:	14 January 2021	Date Tested:	20 January 2021

Test Results

Liquid Limit	42	%
Plastic Limit	25	%
Plasticity Index	17	%

Preparation:	4.2.4 Sieved Specimen
Proportion retained on 425µm sieve:	30 %



Remarks:

QA Ref.	 Apex Testing Solutions Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	 7771	Approver	Date	Fig.
BS1377 - 2 Rev. 2.0			L Davis	20/01/2020	
			L Davis, Quality Manager		

TEST REPORT
PARTICLE SIZE DISTRIBUTION ANALYSIS
BS1377:Part 2:1990

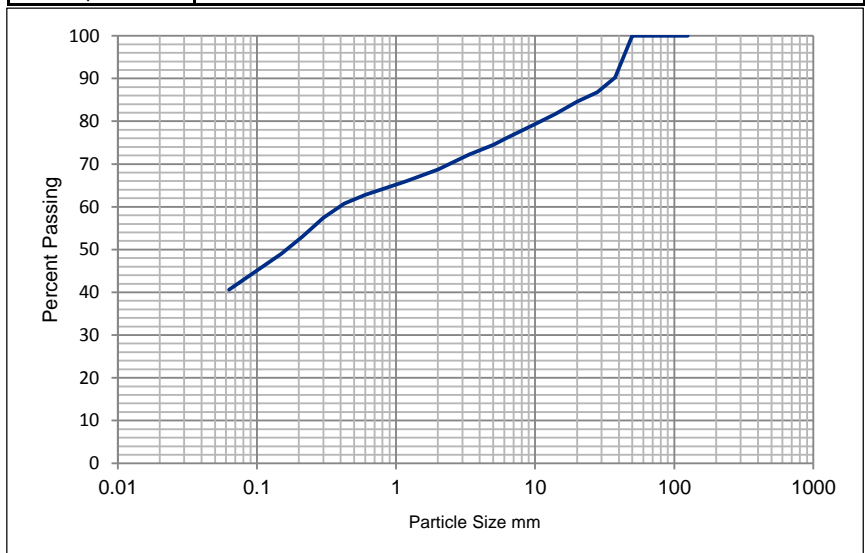
Project No: D21030	Client: Terra Firma
Project Name: Penlligaer	Address: Deryn Court 5 Wharfdale Road Cardiff CF23 7HA
ATS Sample No: 23050	

Site Ref / Hole ID: BH1	Depth (m): 0.20 - 3.20
Sample No:	Sample Type: Bulk
Sampling Certificate Received: No	Material Description: Brown sandy gravelly CLAY
Location in Works: N/A	Material Source: Unknown
Date Sampled: Unknown	Material Supplier: Unknown
Sampled By: Client	Specification: BS1377
Date Received: 14 January 2021	Date Tested: 20 January 2021

Test Results

Sieving	
Particle Size mm	% Passing
125	100
90	100
75	100
63	100
50	100
37.5	90
28	87
20	85
14	82
10	79
6.3	76
5.0	74
3.35	72
2.00	69
1.18	66
0.600	63
0.425	61
0.300	57
0.212	53
0.150	49
0.063	41

Preparation / Pretreatment	
Sieve:	Pre dried
Pipette:	



Sample Portions		Particle Density Mg/m3	Uniformity Coefficient D ₆₀ / D ₁₀
Cobbles / Boulders	0	N/A	
Gravel	31		
Sand	28		
Silt / Clay	41	6.1	N/A

Remarks:

TEST REPORT
Determination Of Water Content
ISO 17892-1: 2014

Project No: D21030	Client: Terra Firma
Project Name: Penlligaer	Address: Deryn Court 5 Wharfdale Road Cardiff CF23 7HA
ATS Sample No: 23051	

Site Ref / Hole ID: BH2	Depth (m): 1.00
Sample No:	Sample Type: Bulk
Sampling Certificate Received: No	Material Description: Brown slightly gravelly sandy CLAY
Location in Works: N/A	Material Source: Unknown
Date Sampled: Unknown	Material Supplier: Unknown
Sampled By: Client	Specification: ISO17892
Date Received: 14 January 2021	Date Tested: 20 January 2021

Test Results

Moisture Content (%)	29.4
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Remarks:

TEST REPORT
LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

BS 1377:Part 2:1990. Clause 4.3/5.3/5.4

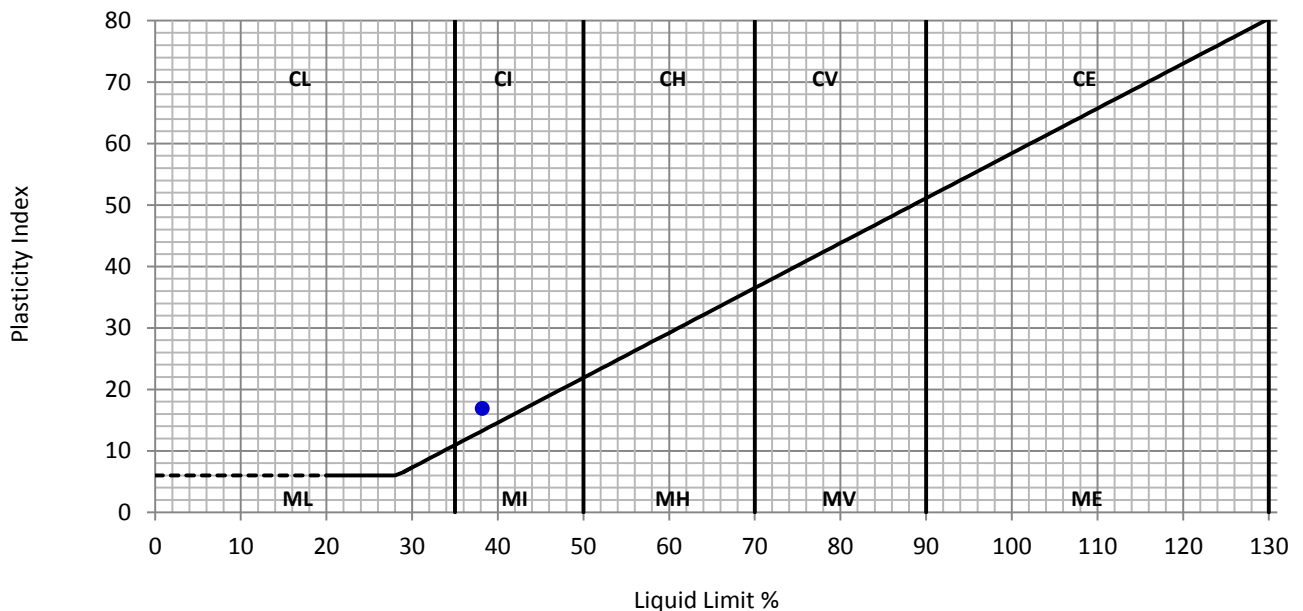
Project No:	D21030	Client:	Terra Firma
Project Name:	Penlligaer	Address:	Deryn Court 5 Wharfdale Road Cardiff CF23 7HA
ATS Sample No:	23051		

Site Ref / Hole ID:	BH2	Depth (m):	1.00
Sample No:		Sample Type:	Bulk
Sampling Certificate Received:	No	Material Description:	Brown slightly gravelly sandy CLAY
Location in Works:	N/A	Material Source:	Unknown
Date Sampled:	Unknown	Material Supplier:	Unknown
Sampled By:	Client	Specification:	BS1377
Date Received:	14 January 2021	Date Tested:	20 January 2021

Test Results

Liquid Limit	38	%
Plastic Limit	21	%
Plasticity Index	17	%

Preparation:	4.2.4 Sieved Specimen
Proportion retained on 425µm sieve:	21 %



Remarks:

QA Ref.	 Apex Testing Solutions Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	 7771	Approver	Date	Fig.
BS1377 - 2 Rev. 2.0			L Davis	13/01/2021	
			L Davis, Quality Manager		

TEST REPORT
PARTICLE SIZE DISTRIBUTION ANALYSIS
BS1377:Part 2:1990

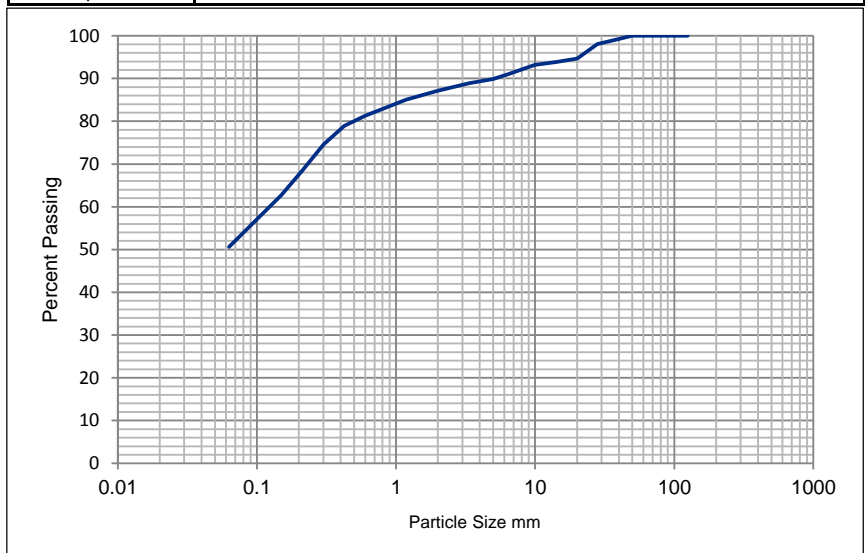
Project No:	D21030	Client:	Terra Firma
Project Name:	Penlligaer	Address	Deryn Court 5 Wharfdale Road Cardiff CF23 7HA
ATS Sample No:	23051		

Site Ref / Hole ID:	BH2	Depth (m):	1.00
Sample No:		Sample Type:	Bulk
Sampling Certificate Received:	No	Material Description:	Brown slightly gravelly sandy CLAY
Location in Works:	N/A	Material Source:	Unknown
Date Sampled:	Unknown	Material Supplier:	Unknown
Sampled By:	Client	Specification:	BS1377
Date Received:	14 January 2021	Date Tested:	20 January 2021

Test Results

Sieving	
Particle Size mm	% Passing
125	100
90	100
75	100
63	100
50	100
37.5	99
28	98
20	95
14	94
10	93
6.3	91
5.0	90
3.35	89
2.00	87
1.18	85
0.600	81
0.425	79
0.300	75
0.212	68
0.150	63
0.063	51

Preparation / Pretreatment	
Sieve:	Pre dried
Pipette:	



Sample Portions		Particle Density Mg/m3	Uniformity Coefficient D ₆₀ / D ₁₀
Cobbles / Boulders	0	N/A	
Gravel	13		
Sand	37		
Silt / Clay	51	6.8	N/A

Remarks:

TEST REPORT
Determination Of Water Content
ISO 17892-1: 2014

Project No: D21030	Client: Terra Firma
Project Name: Penlligaer	Address: Deryn Court 5 Wharfdale Road Cardiff CF23 7HA
ATS Sample No: 23045	

Site Ref / Hole ID: TP05	Depth (m): 1.00
Sample No:	Sample Type: Disturbed
Sampling Certificate Received: No	Material Description: Grey silty sandy CLAY
Location in Works: N/A	Material Source: Unknown
Date Sampled: Unknown	Material Supplier: Unknown
Sampled By: Client	Specification: ISO17892
Date Received: 14 January 2021	Date Tested: 18 January 2021

Test Results

Moisture Content (%)	31.1
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Remarks:

TEST REPORT
LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

BS 1377:Part 2:1990. Clause 4.3/5.3/5.4

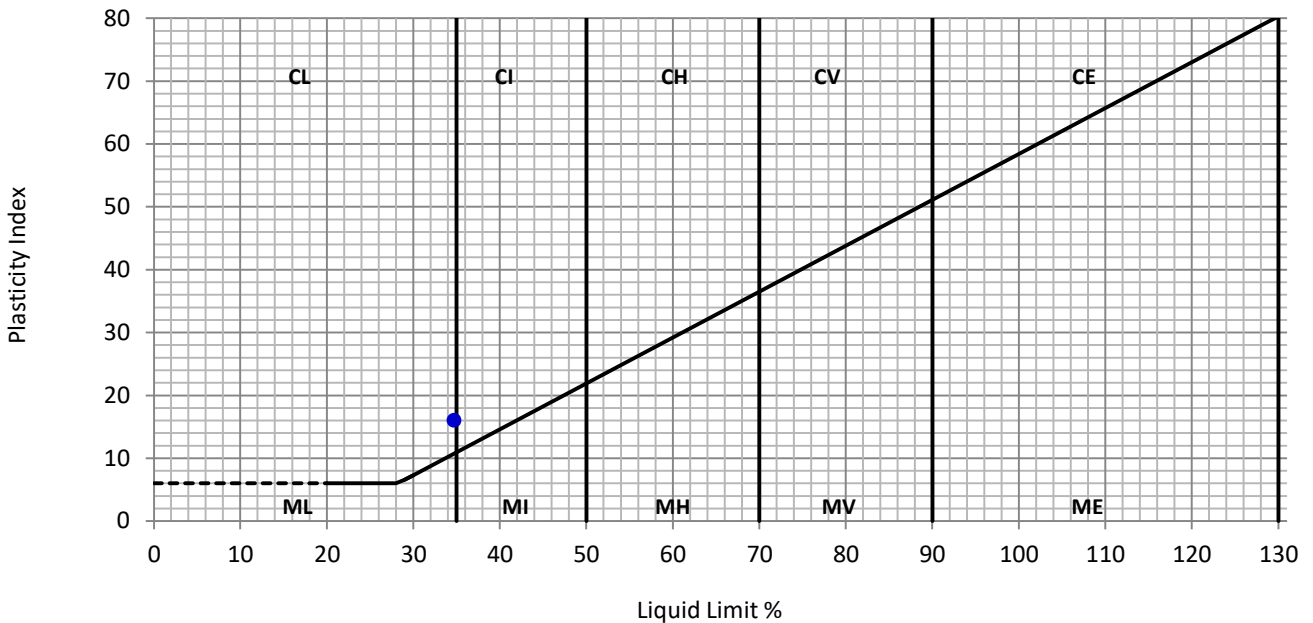
Project No:	D21030	Client:	Terra Firma
Project Name:	Penlligaer	Address:	Deryn Court 5 Wharfdale Road Cardiff CF23 7HA
ATS Sample No:	23045		

Site Ref / Hole ID:	TP05	Depth (m):	1.00
Sample No:		Sample Type:	Disturbed
Sampling Certificate Received:	No	Material Description:	Grey silty sandy CLAY
Location in Works:	N/A	Material Source:	Unknown
Date Sampled:	Unknown	Material Supplier:	Unknown
Sampled By:	Client	Specification:	BS1377
Date Received:	14 January 2021	Date Tested:	15 January 2021

Test Results

Liquid Limit	35	%
Plastic Limit	19	%
Plasticity Index	16	%

Preparation:	4.2.3 Natural Specimen
Proportion retained on 425µm sieve:	0 %



Remarks:

TEST REPORT
Determination Of Water Content
ISO 17892-1: 2014

Project No: D21030	Client: Terra Firma
Project Name: Penlligaer	Address: Deryn Court 5 Wharfdale Road Cardiff CF23 7HA
ATS Sample No: 23046	

Site Ref / Hole ID: TP06	Depth (m): 1.00
Sample No:	Sample Type: Disturbed
Sampling Certificate Received: No	Material Description: Grey silty sandy CLAY
Location in Works: N/A	Material Source: Unknown
Date Sampled: Unknown	Material Supplier: Unknown
Sampled By: Client	Specification: ISO17892
Date Received: 14 January 2021	Date Tested: 16 January 2021

Test Results

Moisture Content (%)	33.3
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Remarks:

TEST REPORT
LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

BS 1377:Part 2:1990. Clause 4.3/5.3/5.4

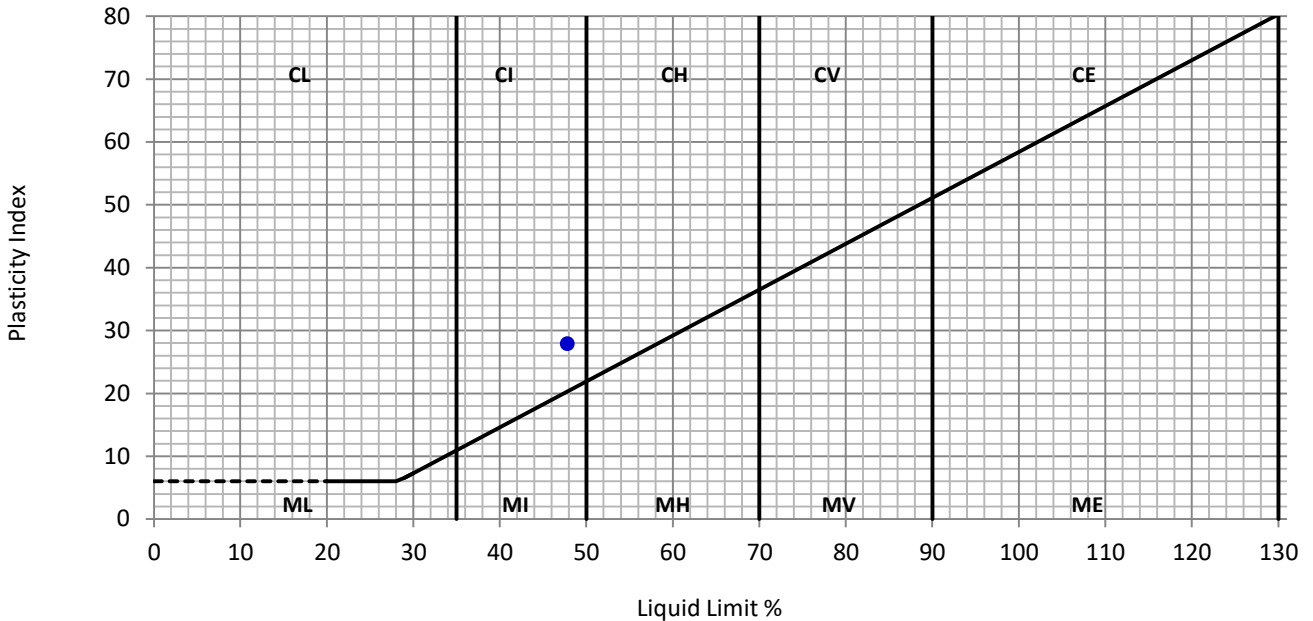
Project No:	D21030	Client:	Terra Firma
Project Name:	Penlligaer	Address:	Deryn Court 5 Wharfdale Road Cardiff CF23 7HA
ATS Sample No:	23046		

Site Ref / Hole ID:	TP06	Depth (m):	1.00
Sample No:		Sample Type:	Disturbed
Sampling Certificate Received:	No	Material Description:	Grey silty sandy CLAY
Location in Works:	N/A	Material Source:	Unknown
Date Sampled:	Unknown	Material Supplier:	Unknown
Sampled By:	Client	Specification:	BS1377
Date Received:	14 January 2021	Date Tested:	18 January 2021

Test Results

Liquid Limit	48	%
Plastic Limit	20	%
Plasticity Index	28	%

Preparation:	4.2.3 Natural Specimen
Proportion retained on 425µm sieve:	0 %



Remarks:

TEST REPORT
Determination Of Water Content
ISO 17892-1: 2014

Project No: D21030	Client: Terra Firma
Project Name: Penlligaer	Address: Deryn Court 5 Wharfdale Road Cardiff CF23 7HA
ATS Sample No: 23047	

Site Ref / Hole ID: TP07	Depth (m): 0.50
Sample No:	Sample Type: Disturbed
Sampling Certificate Received: No	Material Description: Grey gravelly CLAY
Location in Works: N/A	Material Source: Unknown
Date Sampled: Unknown	Material Supplier: Unknown
Sampled By: Client	Specification: ISO17892
Date Received: 14 January 2021	Date Tested: 16 January 2021

Test Results

Moisture Content (%)	39.1
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Remarks:

TEST REPORT
LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

BS 1377:Part 2:1990. Clause 4.3/5.3/5.4

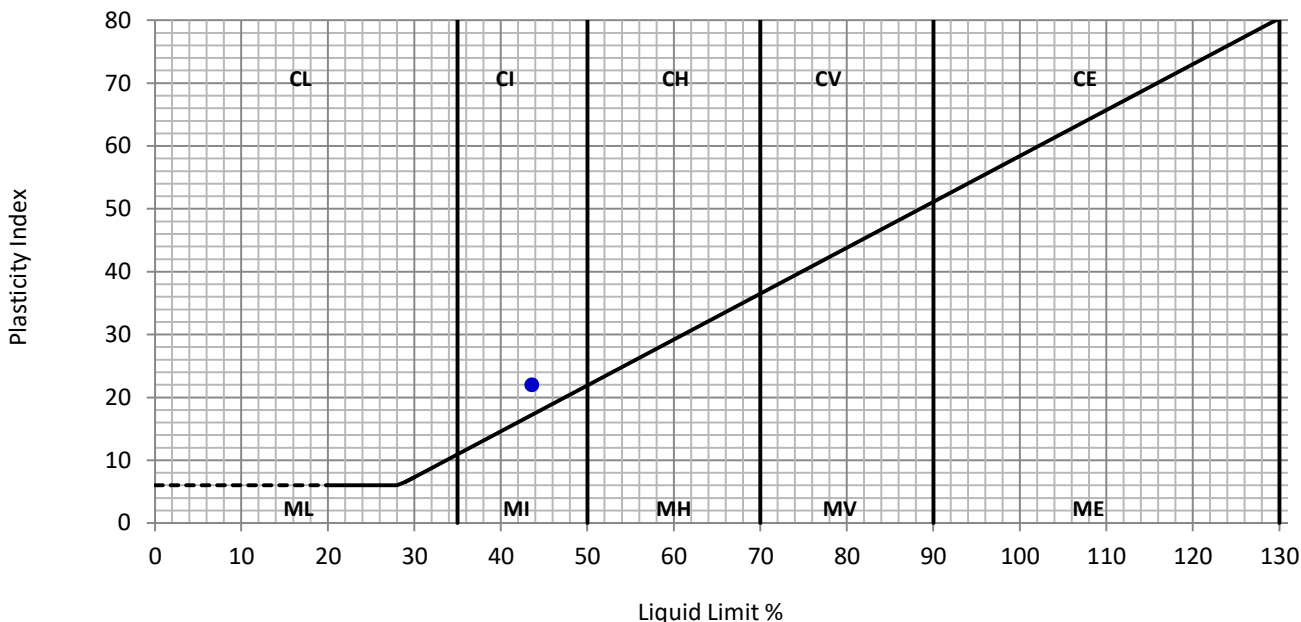
Project No:	D21030	Client:	Terra Firma
Project Name:	Penlligaer	Address:	Deryn Court 5 Wharfdale Road Cardiff CF23 7HA
ATS Sample No:	23047		

Site Ref / Hole ID:	TP07	Depth (m):	0.50
Sample No:		Sample Type:	Disturbed
Sampling Certificate Received:	No	Material Description:	Grey gravelly CLAY
Location in Works:	N/A	Material Source:	Unknown
Date Sampled:	Unknown	Material Supplier:	Unknown
Sampled By:	Client	Specification:	BS1377
Date Received:	14 January 2021	Date Tested:	18 January 2021

Test Results

Liquid Limit	44	%
Plastic Limit	22	%
Plasticity Index	22	%

Preparation:	4.2.3 Natural Specimen
Proportion retained on 425µm sieve:	0 %



Remarks:

TEST REPORT
Determination Of Water Content
ISO 17892-1: 2014

Project No: D21030	Client: Terra Firma
Project Name: Penlligaer	Address: Deryn Court 5 Wharfdale Road Cardiff CF23 7HA
ATS Sample No: 23048	

Site Ref / Hole ID: TP08	Depth (m): 1.00
Sample No:	Sample Type: Disturbed
Sampling Certificate Received: No	Material Description: Brownish grey silty sandy CLAY
Location in Works: N/A	Material Source: Unknown
Date Sampled: Unknown	Material Supplier: Unknown
Sampled By: Client	Specification: ISO17892
Date Received: 14 January 2021	Date Tested: 16 January 2021

Test Results

Moisture Content (%)	29.2
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Remarks:

TEST REPORT
LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

BS 1377:Part 2:1990. Clause 4.3/5.3/5.4

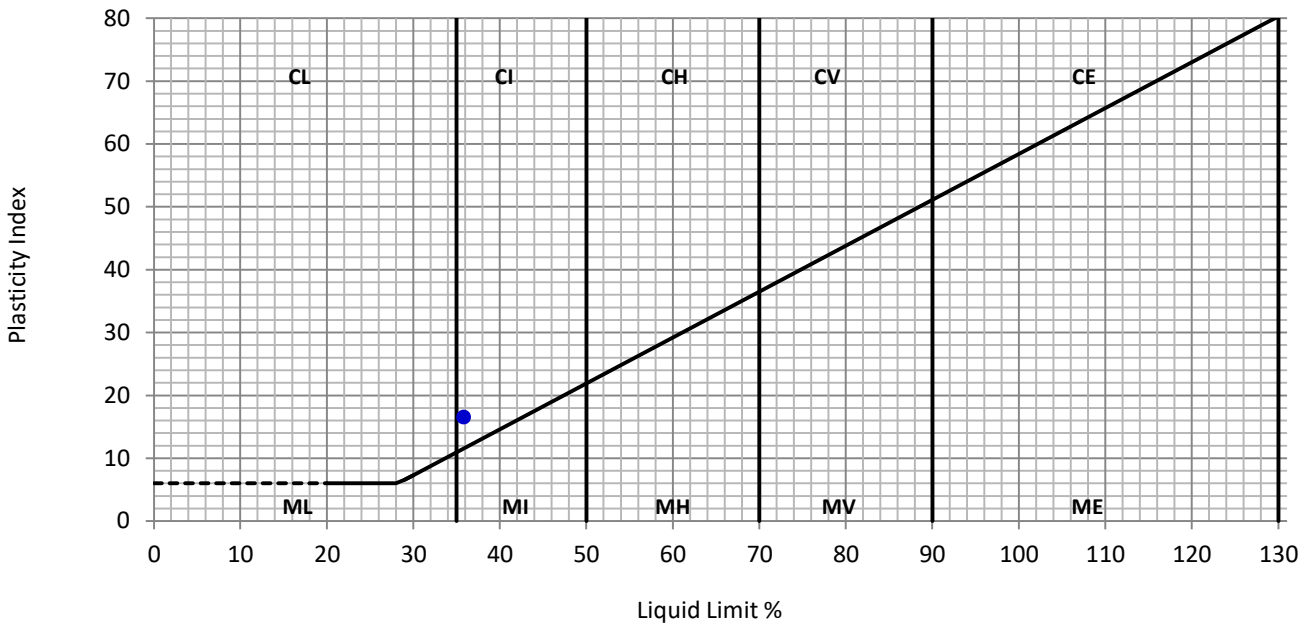
Project No:	D21030	Client:	Terra Firma
Project Name:	Penlligaer	Address:	Deryn Court 5 Wharfdale Road Cardiff CF23 7HA
ATS Sample No:	23048		

Site Ref / Hole ID:	TP08	Depth (m):	1.00
Sample No:		Sample Type:	Disturbed
Sampling Certificate Received:	No	Material Description:	Brownish grey silty sandy CLAY
Location in Works:	N/A	Material Source:	Unknown
Date Sampled:	Unknown	Material Supplier:	Unknown
Sampled By:	Client	Specification:	BS1377
Date Received:	14 January 2021	Date Tested:	18 January 2021

Test Results

Liquid Limit	36	%
Plastic Limit	19	%
Plasticity Index	17	%

Preparation:	4.2.3 Natural Specimen
Proportion retained on 425µm sieve:	0 %



Remarks:

TEST REPORT
Determination Of Water Content
ISO 17892-1: 2014

Project No: D21030	Client: Terra Firma
Project Name: Penlligaer	Address: Deryn Court 5 Wharfdale Road Cardiff CF23 7HA
ATS Sample No: 23049	

Site Ref / Hole ID: TP10	Depth (m): 0.50
Sample No:	Sample Type: Disturbed
Sampling Certificate Received: No	Material Description: Grey silty sandy CLAY
Location in Works: N/A	Material Source: Unknown
Date Sampled: Unknown	Material Supplier: Unknown
Sampled By: Client	Specification: ISO17892
Date Received: 14 January 2021	Date Tested: 16 January 2021

Test Results

Moisture Content (%)	29.9
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Remarks:

TEST REPORT
LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

BS 1377:Part 2:1990. Clause 4.3/5.3/5.4

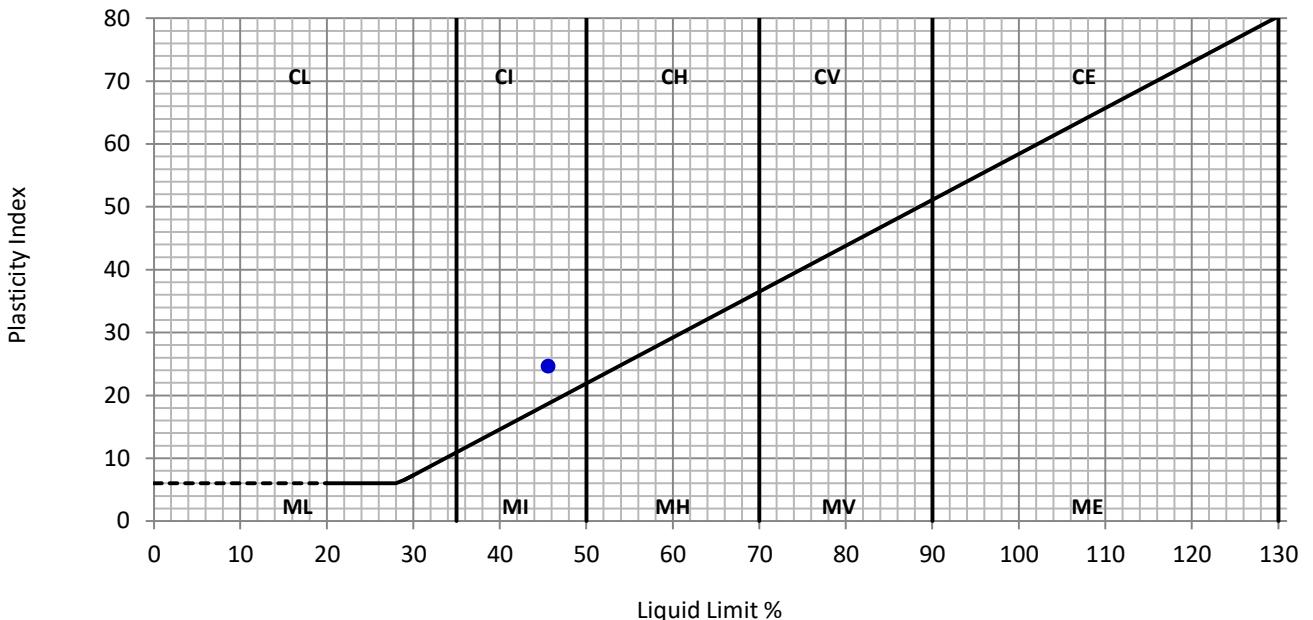
Project No:	D21030	Client:	Terra Firma
Project Name:	Penlligaer	Address:	Deryn Court 5 Wharfdale Road Cardiff CF23 7HA
ATS Sample No:	23049		

Site Ref / Hole ID:	TP10	Depth (m):	0.50
Sample No:		Sample Type:	Disturbed
Sampling Certificate Received:	No	Material Description:	Grey silty sandy CLAY
Location in Works:	N/A	Material Source:	Unknown
Date Sampled:	Unknown	Material Supplier:	Unknown
Sampled By:	Client	Specification:	BS1377
Date Received:	14 January 2021	Date Tested:	18 January 2021

Test Results

Liquid Limit	46	%
Plastic Limit	21	%
Plasticity Index	25	%

Preparation:	4.2.3 Natural Specimen
Proportion retained on 425µm sieve:	0 %



Remarks:

ANNEX I
Gas Monitoring Results

TERRA FIRMA WALES LTD

GAS MONITORING: PENLLERGAER

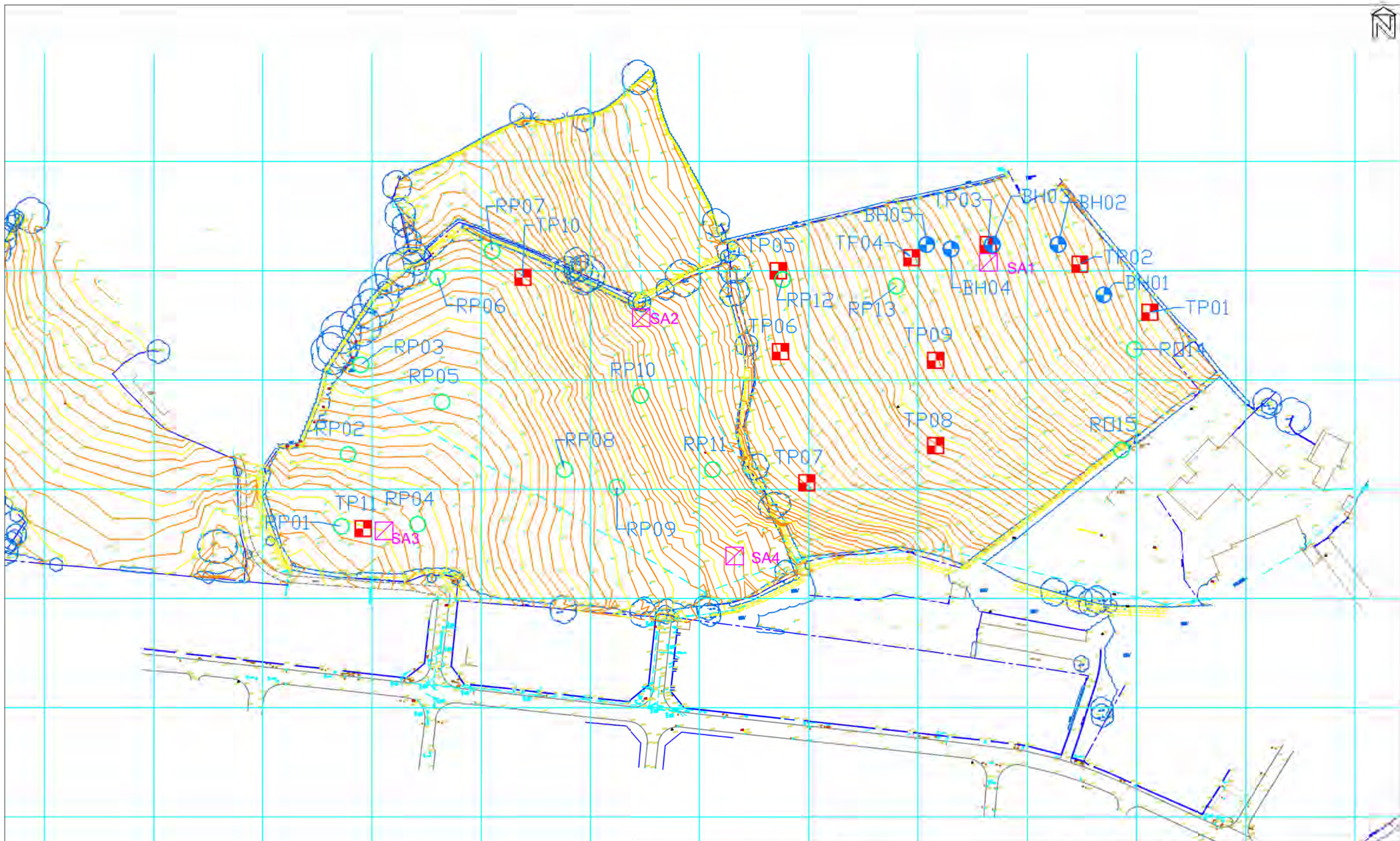
DATE	18/01/2021					
AP	998					
LOCATION	CH4 (%)	CO2 (%)	O2 (%)	CO (ppm)	H2S (PPM)	FLOW (L/Hr)
BH01	0.2	2.3	12.6	0	0	0
BH03	0.1	0.1	20.9	0	0	0
BH05	0.1	1.4	16.8	0	0	0
RP1	0.0	0.1	20.1	0	0	0
RP15	0.1	0.1	19.9	0	0	0

DATE	29/01/2021					
AP	981 mB					
LOCATION	CH4 (%)	CO2 (%)	O2 (%)	CO (ppm)	H2S (PPM)	FLOW (L/Hr)
BH01	0.4	2.6	11.4	0	0	0
BH03	0.3	0.1	20.9	0	0	0
BH05	0.3	1.6	16.0	0	0	0
RP1	0.0	0.1	20.1	0	0	0
RP15	0.1	0.1	19.8	0	0	0

**ANNEX J
TRL Probe Results**



	DRAWINGS	
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5 Deryn Court, Wharfedale Road, Pentwyn,
Cardiff, CF23 7HA
TEL: 02920 735354
www.terrafirmawales.co.uk

Site: Penllergaer
Client: Barrats
Job No: 16300
Scale: Plotted to A3

Drawing 01
Exploration Locations
Drawn By: I.B