Ateb Group

FOOTBALL GROUND REDEVELOPMENT, UPPER SOLVA

Site Investigation Report

12998/LS/22/SI

Intégral
Géotechnique

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PROJECT:	**Football Ground Redevelopment, Upper Solva**
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1.0 INTRODUCTION

1.1 GENERAL

Ateb Group are proposing to redevelop a site at Upper Solva for residential end-use.

Grays Consulting are the appointed Consulting Civil and Structural Engineers for the scheme.

Intégral Géotechnique (Wales) Limited have been appointed as the Geotechnical Engineers to undertake a site investigation to enable a geotechnical and geoenvironmental appraisal of the site and provide a basis for design.

This report presents the findings of the site investigation and gives recommendations for the design of foundations, floor slabs and other geotechnical and geoenvironmental aspects of the project.

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1.2 PROPOSED DEVELOPMENT

The development proposals have not been made available to us at this stage. It is assumed that the development will involve the construction of a number of residential properties and associated infrastructure including access roads, car parking areas and private driveways. The development is also likely to include areas of landscaping and private gardens.

1.3 SCOPE OF WORKS

The work instructed included a desk study of available information, site reconnaissance and intrusive investigation. This was followed by laboratory testing and geotechnical and geoenvironmental reporting.

1.3 SCOPE OF WORKS (CONTINUED)

The desk study comprised a review of:

- An Envirocheck Report obtained for the site
- Old Ordnance Survey maps covering the site, included within the Envirocheck Report
- A Radon GeoReport obtained from the British Geological Survey
- Geological maps of the area provided by the British Geological Survey
- Natural Resources Wales groundwater vulnerability map and aquifer database for the area

The desk study information was used to make an initial assessment of the site and to design an investigation to be carried out by Intégral Géotechnique. The site investigation was designed in accordance with BS 5930:2015+A1:2020, the Code of Practice for Site Investigations, BS10175:2011+A2:2017, the code of practice for investigation of potentially contaminated sites, and 'Development of Land Affected by Contamination: A Guide for Developers' prepared by Welsh Local Government Association (WLGA)/Natural Resources Wales (NRW) Land Contamination Working Group, 2017.

The site investigation included:

- An intrusive investigation carried out during April 2022 comprising the excavation of ten machine excavated trial pits
- Soil infiltration testing within selected trial pits
- Sampling of soils for laboratory chemical and geotechnical testing

1.4 LIMITATIONS

This document is intended to be a working document for further development in discussion with all concerned including the Local Planning Authority, Natural Resources Wales, and the NHBC as appropriate.

"Contamination" is taken throughout the report to mean the "presence of one or more potentially harmful substances as a result of human activity". The use of the term in this way does not imply that harm is being or might be caused by the contamination. It should be noted that "contamination" can have different meanings under different regulatory regimes, for example, planning, building control and Part IIA of the Environmental Protection Act 1990. Naturally elevated concentrations of potentially harmful substances may also be of concern and the significance of any that have been found is also evaluated in this report.

1.4 LIMITATIONS (CONTINUED)

It is important to recognise that there may be areas of contamination that have not been found, or that contaminants are present at concentrations above those that have been found. It is also important to recognise that contamination may be localised and that no investigation, however comprehensive, is capable of finding such occurrences other than by chance.

It should also be noted that vertical and lateral changes in ground conditions may be present between exploratory hole locations.

Access for the intrusive site investigation was limited at the time due to active football pitches. Due to the potential for extensive ground disturbance, trial pits were not excavated within the area of the pitches.

Two Welsh Water pipes ran west to east across the north of the site.

2.0 THE SITE

2.1 SITE LOCATION AND DESCRIPTION

The site is located within the existing football ground in Upper Solva at a National Grid Reference of 179700, 224330, see Figure 1.

The site is roughly rectangular in shape and occupies an area of approximately 1.68 hectares. The boundaries of the site are defined by the A487 to the north, existing residential developments to the west and east and undeveloped fields to the south. A site plan is presented in Figure 2.

The site is situated on gently sloping ground which falls to the east from an approximate maximum elevation of 64m AOD within the western area to an approximate minimum elevation of 62m AOD within the eastern area.

The site is currently grassed and utilised as football pitches. One large main pitch occupies the majority of the site and a small half sized pitch occupied the southwest corner.

Access to the site is from the A487 via the northeast corner of the site. The western, eastern and southern boundaries of the site are formed by mature hedgerows.

2.2 SITE OPERATIONS

The site is currently in active use as football pitches.

2.3 SURROUNDING LAND USE

The surrounding areas are developed for residential use with undeveloped fields located to the south.

2.4 AVAILABLE SITE INVESTIGATION DATA

There is no available site investigation data to our knowledge.

2.5 CONSULTATIONS WITH REGULATORS

The regulators have not been contacted at this stage.

3.0 SITE HISTORY

The recent history of the site has been traced with the aid of an Envirocheck Report, a copy of which is included in Appendix A. The Envirocheck Report includes the following scaled historical maps:

Map Scale	Dates
1:2,500	1889, 1908, 1975, 1994, 2003 (aerial photo)
1:10,560	1888, 1908, 1953
1:10,000	1964, 1980, 2000, 2006, 2021

The earliest edition of the map dated 1889 indicated the site to be an undeveloped field. The northern boundary of the site is formed by an existing road. The areas surrounding the site to the south, east and west and the area beyond the road to the north were also undeveloped fields. Solva was already established further to the east of the site and with Solva Harbour located approximately 350m to the southeast.

Significant changes were not indicated to the site or the surrounding areas over the subsequent years until the edition of the map dated 1953. By this time the site had remained undeveloped, but development in the form of residential housing had commenced to the west of the site and beyond the road to the north. By the edition of the map dated 1975 these developments were complete with the estate to the west known as Bro Dawel and the estate to the north known as Maes Ewan. Solva itself also continued to develop to the east. The road to the north had been widened and was more established to enable access into the new developments.

The 1994 edition of the map indicated the site to have remained undeveloped but residential development had continued up to the eastern boundary of the site. The area to the south remained as undeveloped fields.

The Google Earth images indicated the site to be football pitches by 2005. One large pitch occupied the majority of the site and with a smaller half sized pitch located within the southwest corner. By this time, additional residential development had taken place to the east of the site. Residential development now fully bounded the site to the east and the west. The site and the immediate surrounding areas have remained relatively unchanged up until the present day with the site in continued use as football pitches.

4.0 SITE ENVIRONMENTAL SETTING

4.1 PHYSICAL SETTING

The site is located within Upper Solva in an area developed for residential use.

The site is situated on gently sloping ground which falls to the east from an approximate maximum elevation of 64m AOD within the western area to an approximate minimum elevation of 62m AOD within the eastern area.

Solva Harbour and the River Solva are located approximately 400m to the southeast.

4.2 GEOLOGY

The 1:50,000 scale geological map of the area indicates the majority of the site is underlain by Menevian Group of the Cambrian period. These rocks typically comprise dark grey, laminated mudstones passing upwards into coarse turbiditic sandstones and interbedded mudstones in the upper part of the Group. The northeast corner of the site is indicated to be underlain by Solva Group, also of the Cambrian period. These rocks typically comprise greenish grey sandstones, locally coarse and pebbly, and interbedded mudstones.

No superficial deposits are indicated to overlie the solid strata.

Due to the historically undeveloped nature of the site significant made ground would not be anticipated. Topsoil/subsoil would be anticipated across the majority of the site but localised areas of reworked materials or made ground should not be completely ruled out associated with the construction of the football pitches

A summary of the anticipated geological succession is given below in Table 1.

4.2 GEOLOGY (CONTINUED)

Table 1: Summary of Anticipated Site Geology		
Geological unit	**Horizon**	**Description**
Recent	Topsoil/subsoil and possible very localised made ground or reworked materials	Various materials
Cambrian	Menevian Group	Dark grey, laminated mudstones passing upwards into coarse turbiditic sandstones and interbedded mudstones in the upper part of the Group
	Solva Group	Greenish grey sandstones, locally coarse and pebbly, and interbedded mudstones

4.3 RADON

Information with regard to Radon Protective Measures is provided within the Envirocheck Report and the BGS Radon GeoReport as presented in Appendices A and B respectively. The reports state that the site is located within an intermediate probability area, as 1% to 3% of properties are above action level, and that therefore no radon protective measures would be necessary in the construction of new buildings within the site.

4.4 MINING

The site is not located within an area that would be affected by past, present or future underground mining.

4.5 HYDROLOGY, HYDROGEOLOGY AND FLOOD RISK

The Envirocheck Report indicates the nearest surface water feature to be located 257m to the northwest of the site. The available maps indicate this to be an unnamed pond feature. The nearest named feature is the River Solva located 381m to the southeast.

The Natural Resources Wales groundwater vulnerability map and aquifer database classifies the bedrock beneath the site as a Secondary 'B' Aquifer. Secondary 'B' Aquifers are predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering.

4.5 HYDROLOGY, HYDROGEOLOGY AND FLOOD RISK (CONTINUED)

It is considered possible that any existing site drainage could act as a pathway for potential surface contaminants.

The Envirocheck Report indicates that there are no effective discharge consents and no water abstractions recorded within 500m of the site boundary.

Tables 2 and 3 present a summary of the hydrological features and key hydrogeological nature of the site.

Table 2: Summary of Site Hydrology

Feature	Distance from site	Flow	Classification	Abstraction	Discharge
Pond	257m northwest	N/A	Pond	No	N/A
River Solva	381m southeast	South westerly	Tidal River	No	St Brides Bay
Surface run-off	On site	Flows into site or site drainage	N/A	No	Not known
Site Drainage	On site	Not known	N/A	No	Not known

Table 3: Summary of Site Hydrogeology

Geological Unit	Aquifer Classification	Aquifer Characteristics	Source Protection Zone	Groundwater Abstractions
Topsoil/subsoil	Not classified	Highly variable permeability and porosity. Perched water may be present with variable flow directions.	No	None
Menevian Group	Secondary B Aquifer	Variable low permeability interbedded sandstones and mudstones storing and yielding limited amounts of groundwater	No	None
Solva Group				

The Groundwater Vulnerability map of the area indicates the secondary bedrock aquifer to have a high vulnerability. The pollutant speed is high with well-connected fractures.

The Natural Resources Wales Flood Risk map, as presented within the Envirocheck Report, indicates that the site is not at risk of extreme flooding from rivers or sea without defences.

4.5 HYDROLOGY, HYDROGEOLOGY AND FLOOD RISK (CONTINUED)

The Natural Resources Wales Surface Water Flood Risk map, as presented within the Envirocheck Report, indicates that the site is not at a high-risk of surface water flooding (1 in 30-year flood extent)

The BGS Groundwater Flooding Susceptibility map, as presented within the Envirocheck Report, indicates the site is not susceptible to groundwater flooding.

4.6 LANDFILL SITES

The Envirocheck Report indicates that there are no historical, BGS recorded, local authority recorded, or registered landfill sites or any licensed waste management facilities located within 1km of the site boundary.

There is one area of potentially infilled land (water) located within 250m of the site boundary. The area is located 113m to the east of the site at the location of a former pond feature known as Yellow Pool.

4.7 POTENTIAL CONTAMINATION

Previous Uses

The various activities in the vicinity of the site which may have resulted in ground or water resource contamination on this site are listed below in Tables 4 and 5. A summary of the potential contaminants can be found in the tables.

Table 4: Potential Contaminants

Land Use: Undeveloped land until the present day		
Material/Process	**Contamination/Hazard**	**Evidence**
Possible agricultural land	No potential contaminants	Historical maps
Utilised as football pitches for approximately the last 20 years with possible ground disturbance associated with the change of use and potential localised areas of reworked ground or imported materials of unknown origin	Metals, semi metals, non-metals, PAH, asbestos	Google Earth images/current use

4.7 POTENTIAL CONTAMINATION (CONTINUED)

Existing Uses

The site is currently in use as football pitches. The current site uses would not add any additional contamination concerns.

Adjacent Site Uses

Table 5: Potential Contaminants: Adjacent Site Uses

Potential Contamination Source	Boundary	Associated Contaminants and Hazards
Residential	Western and eastern	No Potential Contaminants
Undeveloped fields	Southern	No Potential Contaminants
A487 road with residential development beyond	Northern	No Potential Contaminants

4.8 OTHER ENVIRONMENTAL ISSUES

The Envirocheck Report indicates that the site is located within an Environmentally Sensitive Area. The site is also located within the Pembrokeshire Coast which is fully designated as a National Park. St Davids Peninsula Coast located 295m to the southeast is a Site of Special Scientific Interest.

The Envirocheck Report indicates that there have been no pollution incidents to controlled waters recorded on site but one within 500m of the site boundary. The incident was recorded 249m to the southeast and was a Category 2-Significant Incident involving light oil.

There have been no substantiated pollution incidents registered on site or recorded within 1km of the site boundary.

There have been no prosecutions relating to controlled waters or to authorised processes recorded on site or recorded within 1km of the site boundary.

The site is grass covered and the southern, eastern and western boundaries of the site are formed by mature hedgerows with some trees. It is not known is any invasive plant species are present. It may be prudent to allow for a full vegetation survey prior to development.

5.0 PRELIMINARY CONCEPTUAL SITE MODEL

5.1 RISK ASSESSMENT FRAMEWORK

In order to be consistent with current UK government policies and legislation, it is necessary to identify, assess, estimate, evaluate, and take appropriate action to deal with land contamination, in accordance with the procedures specified in the Environment Agency guidance Land Contamination Risk Management (LCRM) published in October 2020. This replaces the now withdrawn 'Model Procedures for the Management of Land Contamination CLR-11' (Environment Agency 2004).

The risk assessment process is designed to provide a reasoned, structured and pragmatic mechanism for the identification of any potential human health and controlled waters risks associated with land contamination and where necessary to develop a robust remediation strategy to ensure protection of the sensitive receptors (human health of future residents, controlled waters, etc).

In accordance with LCRM, the term 'land contamination' is defined as:

- All land affected by contamination – land that might have contamination present which may, or may or may not, meet the statutory definition of contaminated land,
- Land determined as contaminated land under Part 2A of the Environmental Protection Act 1990.

LCRM provides a tiered approach to risk assessment, comprising a preliminary risk assessment (including the development of an initial conceptual site model), a generic quantitative risk assessment and a detailed quantitative risk assessment. For each tier of risk assessment, the following steps must be followed:

1. Identify the hazard - establish contaminant sources,
2. Assess the hazard – use a source-pathway-receptor linkage approach to determine if there is potential for unacceptable risk,
3. Estimate the risk – predict what degree of harm or pollution may result and how likely it is to occur, and
4. Evaluate the risk – decide whether a risk is unacceptable.

LCRM also provides definitions of the following terms:

- Hazard – a property or situation that in particular circumstances could lead to harm or pollution,

5.1 RISK ASSESSMENT FRAMEWORK (CONTINUED)

- Risk – a combination of the probability, or frequency of occurrence of a defined hazard and the magnitude of the consequences of the occurrence,
- Risk assessment – the formal process of identifying, assessing and evaluating the health and environmental risks that may be associated with a hazard,
- Risk management – the formal process to identify, assess and determine the risks, and to select and take action to mitigate them.

The three essential elements to any risk are defined by LCRM as follows:

- A contaminant, or pollutant, that is in, on, or under the land and that has the potential to cause harm, or pollution (Source)
- A route by which a receptor is, or could be affected by a contaminant (Pathway)
- A receptor, i.e. something that could be adversely affected by a contaminant, for example a person, controlled waters, an organism, an ecosystem, or Part 2A receptors such as buildings, crops or animals (Receptor).

In order for there to be a potential risk, all three of the above elements must be present. If there is a source of contamination and a receptor (for example a resident or site user), then there is only a potential risk if there is a pathway linking the two. Such an active pathway is known as a relevant pollutant linkage. It is possible for the same contaminant to be linked to a receptor via a number of pathways, and hence it is important that all relevant pollutant linkages, to both human health and controlled waters, are separately identified on a site in order that a comprehensive conceptual model can be formed and ultimately a robust remediation strategy designed.

Current practice during Generic Quantitative Risk Assessment of land affected by contamination is to use generic soil screening values based on the appropriate proposed end use. These usually comprise risk based Soil Guideline values (SGVs) or Generic Assessment Criteria (GACs) derived by the Environment Agency's Contaminated Land Exposure Assessment Model (CLEA). The SGVs and the supporting technical guidance were developed in order to assist in the assessment of long term risk to human health from the exposure to contaminated soils.

Revised Statutory Guidance, published in 2012, to support Part 2A of the Environmental Protection Act 1990, introduced a new four category system for classifying land under Part 2A. Category 1 includes land where the level of risk is clearly unacceptable and Category 4 includes land where the level of risk posed is considered to be acceptably low. Under Part 2A, land would be determined as contaminated if it falls within Categories 1 or 2.

5.1 RISK ASSESSMENT FRAMEWORK (CONTINUED)

The revised Part 2A Statutory Guidance was accompanied by an Impact Assessment that identified a role for new 'Category 4 Screening Levels' (C4SLs) that would provide a simple test for determining when land is suitable for use and definitely not contaminated land. A Policy Companion Document including the C4SLs was published in March 2014 (England) and May 2014 (Wales).

The C4SLs have been based on the CLEA methodology and derived using the CLEA model, with modified toxicological and exposure parameters. To date, C4SLs have been released for six substances (arsenic, cadmium, chromium (VI), lead, benzo(a)pyrene and benzene).

The C4SLs have been derived on the assumption that where they exist, they will be used as generic screening criteria within generic quantitative risk assessment.

Following publication of the C4SLs, Land Quality Management (LQM), in conjunction with the Chartered Institute for Environmental Health (CIEH) released Suitable 4 Use Levels (S4ULs) in January 2015.

The S4ULs have been derived in accordance with UK legislation, and using a modified version of the Environment Agency's CLEA software. As such, the S4ULs are based on the concept of minimal or tolerable risk as described in Human Health Toxicological Assessment of Contaminants in Soil (Science Report SR2, Environment Agency 2009a).

S4ULs have been derived for a wider number of substances.

In addition to the existing SGVs, C4SLs and S4ULs, Atkins ATRISK^{soil} also provide a set of Soil Screening Values. These are currently intended to be used in conjunction with SGVs, although they intend to update these values in line with the C4SLs in due course.

We have reviewed all sets of values and intend to use the most appropriate assessment criteria as Tier 1 screening values in the first instance. Where a published S4UL is available, and considered appropriate, this will be used in the first instance.

5.2 CONCEPTUAL MODEL FRAMEWORK

The preliminary stage of the risk assessment process is to develop and define a conceptual site model, based on the desk study and any existing site investigation data. This is used to establish any potential contaminant sources, identify existing and future receptors and assess if there are any potentially active pathways by which a potential risk may be present.

5.2 CONCEPTUAL MODEL FRAMEWORK

The preliminary conceptual site model will be developed and refined as site specific data is gathered, such as actual ground conditions and chemical data, resulting in a more robust conceptual understanding of the site.

5.3 CRITICAL SENSITIVE RECEPTOR – HUMAN HEALTH

The proposed redevelopment of the site is for a residential end use. Therefore, the critical sensitive receptor from a human health perspective is an on-site residential receptor.

In accordance with S4UL/C4SL and CLEA guidance for a standard residential scenario with homegrown produce, the critical sensitive receptor for a residential end use risk assessment is a female child, with exposure from 0 to 6 years.

The standard residential end-use conceptual model defined by S4UL/C4SL and CLEA is assumed to be suitable for the purposes of this assessment.

5.4 CRITICAL SENSITIVE RECEPTOR – CONTROLLED WATERS

Based on the proposed redevelopment of the site for a residential end use, and the findings of the desk study, the critical sensitive receptor from a controlled water perspective is groundwater within the Secondary 'B' Aquifer of the Menevian Group and the Solva Group.

By considering groundwater as the critical sensitive receptor for controlled waters, the groundwater/hydrogeological risk assessment will also be protective of any nearby surface water features.

5.5 POTENTIAL CONTAMINANT SOURCES

As identified in the desk study, the site has remained historically undeveloped until the site use was changed to a football ground within approximately the last twenty years.

Significant thicknesses of made ground would not be anticipated within the site, however, if any was encountered, the potential types of contaminants of concern are listed below:

- Metals, semi-metals, and inorganics within the shallow made ground
- Polyaromatic hydrocarbons (PAH) within the shallow made ground
- Asbestos within the shallow made ground.

5.6 POTENTIAL EXPOSURE PATHWAYS

Potential exposure pathways for the critical receptors (both human health and controlled waters) are listed below:

- Dermal contact with soil and/or soil derived dust
- Ingestion of soil and/or soil attached to home-grown produce
- Ingestion of home-grown produce
- Inhalation of soil derived dust
- Inhalation of vapours – indoor and outdoor air
- Leaching of contaminants from made ground to groundwater
- Transportation of contaminants within groundwater.

In addition, the following exposure pathways have also been considered:

- Ground gas generation and migration
- Building materials durability.

5.7 SUMMARY OF CONCEPTUAL EXPOSURE MODEL

A preliminary conceptual exposure model has been developed for the site. This is based on the findings of the desk study, historical review and site walk over and includes all potential sources, pathways and receptors that may be present on site. Those that have been identified as being potentially active require further investigation in the form of sampling and testing of soils and groundwater, followed by appropriate risk assessment.

The preliminary conceptual exposure model will be reviewed and refined following the completion of the site works and laboratory testing.

The preliminary conceptual exposure model is presented below in Table 6.

5.7 SUMMARY OF CONCEPTUAL EXPOSURE MODEL (CONTINUED)

Table 6: Preliminary Conceptual Exposure Model

Source		Receptor	Pathway	Potentially Active Pathway?
Origin	Contaminant			
Made Ground of unknown origin and historical land uses	Metals, semi-metals, non-metals, PAH, asbestos	Resident – human health	Dermal Contact with made ground/dust	✓
			Ingestion of soil and/or soil attached to home-grown produce	✓
			Ingestion of home-grown produce	✓
			Inhalation of dust	✓
			Inhalation of vapours – indoor/outdoor	✓
	Metals, semi-metals, inorganics, PAH	Groundwater quality	Leaching from made ground	✓
	Metals, semi-metals, inorganics, PAH	Surface water quality	Transportation within groundwater	✓
Made Ground of unknown origin and natural ground	pH and water soluble sulphate	Building Materials Durability	Direct contact	✓
Ground Gas – organic, gas producing materials	Methane, carbon dioxide	Human health	Accumulation of gases in confined spaces, and/or migration off site, leading to asphyxiation, or risk of explosion	X No on-site or off-site sources identified

6.0 THE SITE INVESTIGATION

6.1 FIELDWORKS

A site investigation was designed in accordance with BS 5930:2015+A1:2020, the Code of Practice for Site Investigations, BS10175:2011+A2:2017, the Code of Practice for Investigation of Potentially Contaminated Sites, and 'Development of Land Affected by Contamination: A Guide for Developers' prepared by Welsh Local Government Association (WLGA)/Natural Resources Wales (NRW) Land Contamination Working Group, 2017.

The site investigation was also designed to provide information to support and refine the preliminary conceptual site model/conceptual exposure model.

An intrusive investigation comprising the excavation of ten trial pits was carried in April 2022. The purpose of the trial pits was to provide information on the shallow ground conditions beneath the site and allow an assessment of the most appropriate foundation type for the proposed development.

The trial pits were excavated using a JCB 3CX mechanical excavator to depths of between 2.0m and 3.10mbgl.

Soil infiltration testing was carried out in six trial pits (TP01, TP02, TP03, TP04, TP06 and TP08) in order to assess/monitor the likely permeability of the natural ground.

Representative soil samples were taken from the trial pits for laboratory chemical and geotechnical testing and placed in the appropriate sample containers deemed suitable for the analysis required. Strict protocols were adopted during this process to limit the cross contamination of samples.

The fieldworks were supervised by a qualified Geotechnical Engineer from Intégral Géotechnique (Wales) Limited who also logged the trial pits and prepared their detailed engineering logs in accordance with the requirements of BS5930:2015+A1:2020. The engineering logs provide descriptions of the materials encountered in accordance with BSEN ISO 14688-1 (2002) and 14689-1 (2003) for soils and rocks respectively.

The approximate locations of the trial pits are shown on Figure 2, while their logs are presented in Appendix C. The results of the soil infiltration tests are presented in Appendix D.

6.2 FIELD OBSERVATIONS

No visual or olfactory evidence of any contamination was observed during the excavation of the trial pits.

6.3 LABORATORY CHEMICAL TESTING

Representative samples of soils were taken from the trial pits across the site, stored at the appropriate temperature and dispatched to the laboratories of i2 Analytical for laboratory chemical testing within 24 hours.

The samples were tested for a range of contaminants that reflects the historical use of the site, the findings of the desk study and the preliminary conceptual site model/conceptual exposure model. A list of the soil testing carried out is given below:

Beryllium	Cadmium
Total Chromium	Hexavalent Chromium (VI)
Copper	Lead
Mercury	Nickel
Vanadium	Zinc
Arsenic	Boron
Selenium	Elemental Sulphur
Total Cyanide	Total Sulphate
Sulphide	Water Soluble Sulphate
pH	Monohydric Phenol
Polyaromatic Hydrocarbons (PAH)	Asbestos

The results of the soil testing are presented in Appendix E.

6.4 LABORATORY GEOTECHNICAL TESTING

Representative samples of the natural ground were dispatched to the UKAS accredited laboratories of Apex Testing Solutions and scheduled for analysis of moisture content, Atterberg Limits, water soluble sulphate and pH.

The results of the geotechnical testing are presented in Appendix F.

The modified plasticity results calculated on the near surface weathered soils from the four soil samples were non-plastic, 7.92%, 7.557% and 19.44%. This indicates that the near surface weathered soils range from non-plastic through negligible volume change potential to a low volume change potential in accordance with NHBC chapter 4.2.

7.0 GROUND CONDITIONS

Geologically, the ground conditions generally comprise a relatively shallow depth of weather soil/rock overlying weathered bedrock.

A summary of the ground conditions encountered across the site is presented below in Table 7.

Table 7: Summary of Ground Conditions

Depth (m) From	To	Stratum
GL	0.3/0.5	TOPSOIL: Grass onto loose brown and red brown gravelly SAND. Gravel is fine to coarse angular and subangular sandstone. Medium cobble content of subangular and subrounded sandstone, mudstone, and claystone.
0.3	1.0/2.60	Loose to medium dense sandy slightly clayey to clayey GRAVEL and COBBLES. Gravel is fine to coarse angular and subangular mudstone Cobbles are angular and subangular mudstone. Low boulder content of subrounded sandstone. Locally these materials can be more clay rich (HIGHLY WEATHERED BEDROCK)
1.0/2.60	>2.9	Extremely weak to weak brown and grey thinly bedded and laminated MUDSTONE and locally SANDSTONE Recovered as fine to coarse gravel and cobbles of acicular and tabular mudstone/shale of platy and blocky sandstone (WEATHERED BEDROCK).

The trial pit sides remained stable for the duration of the excavation works. Minor instability was noted within the gravel and cobbles and localised sand layers.

7.1 TOPSOIL

Topsoil was recorded at each trial pit location and extended to depths of between 0.3m and 0.5m below existing ground level but was typically around 0.3m thick. The topsoil comprised loose, brown, slightly clayey gravelly sand with some cobbles. The gravel and cobbles consisted of angular to subrounded mudstone and sandstone.

7.2 IN-SITU SOILS

The natural soils underlying the topsoil displayed a variable weathering profile and comprised loose to medium dense and medium dense brown and orange brown, clayey, gravelly sand, sandy gravel and cobbles and locally to TP07, a gravelly clay with frequent cobbles. These materials typically improved in strength and density with depth.

Less weathered bedrock was recorded at depths of between 1.0m and 2.6m below existing ground level. The less weathered bedrock was noted to comprise an extremely weak to weak, brown and grey thinly bedded and laminated mudstone in TP02, TP03, TP04, TP05, TP06, TP07, TP08 and TP09. The mudstone was proven to depths of between 2.0m and 2.9m below existing ground level. The progress of excavation within the mudstone was slow.

In TP10, the near surface weathered horizon was proven to be underlain weak, highly weathered sandstone.

The less weathered bedrock was not recorded in TP01 as the pit was terminated to allow a soil infiltration test to be undertaken.

7.3 GROUNDWATER

Groundwater was not encountered within the trial pits.

The groundwater conditions are based on observations made at the time of the fieldwork. It should be noted that groundwater levels may vary due to seasonal and other effects.

7.4 SOIL INFILTRATION TESTS

TABLE 8: SOIL INFILTRATION TEST RESULTS					
LOCATION	BASE DEPTH (MBGL)	CYCLE 1 (M/S)	CYCLE 2 (M/S)	CYCLE 3 (M/S)	DESIGN INFILTRATION RATE (M/S)
TP01	2.1	4.2×10^{-06}	4.8×10^{-06}	N/A	4.2×10^{-06}
TP02	2.0	8.2×10^{-04}	4.6×10^{-04}	4.3×10^{-04}	4.3×10^{-04}
TP03	1.8	1.6×10^{-03}	1.3×10^{-03}	1.1×10^{-03}	1.1×10^{-03}
TP04	2.1	4.8×10^{-04}	4.0×10^{-04}	4.3×10^{-04}	4.0×10^{-04}
TP06	2.2	8.5×10^{-04}	6.2×10^{-04}	5.1×10^{-04}	5.1×10^{-04}
TP08	2.35	2.6×10^{-05}	2.5×10^{-05}	N/A	2.5×10^{-05}

The soakaway test results are specific to the location and depths of the tests undertaken.

It should be noted that the above infiltration rates may vary due to seasonal and other effects.

It should be noted that this initial testing should only be regarded as indicative. If it should be proposed to use soakaways for this site, then more extensive follow-up tests will be required and should fully comply with BRE 365, in order to confirm the suitability of the site and to satisfy the local authority.

8.0 CONTAMINATION

8.1 AVERAGING AREAS

In order to assess the laboratory test results reliably and in context, the data have been grouped into an averaging area. An averaging area (or area of interest) is that area of soil to which a receptor is exposed or which otherwise contributes to the creation of hazardous conditions. This may be an area of historical industrial usage, a soil type, or a specific proposed end use.

In the case of this analysis, the averaging area has been determined according to the proposed residential end use.

8.2 SOIL CONTAMINATION

The Suitable 4 Use Levels (S4ULs) published by LQM have been adopted as critical concentrations against which soil contaminant concentrations can be compared. In the absence of additional published S4ULs, the Category 4 Screening Levels (C4SLs) derived by DEFRA and Soil Screening Values (SSVs) derived by Atkins ATRISK^{soil} for a residential with home grown produce end use have been adopted, where considered appropriate.

Since the results of the testing indicate total organic carbon content (TOC) in the range of 0.2% to 3.3%, the results have been compared to the respective guidelines, where applicable, for 1% soil organic matter content.

The soil test results for made ground have been summarised and are shown in Appendix G.

8.2.1 Topsoil/subsoil

The results of the laboratory testing carried out on six representative samples of topsoil and subsoil indicate that the analysed chemical elements or compounds are present at concentration below the appropriate thresholds.

Asbestos was not detected within any of the samples tested.

8.2.2 In-situ Natural Ground

No visual or olfactory evidence of contamination of the deeper in-situ natural ground was identified during the excavation of the trial pits. At the time of writing this report no samples of natural ground beneath the topsoil/subsoil had been tested for a generic contaminant suite. It is considered likely that concentrations of determinands within the natural ground are likely to be naturally occurring and as such, the natural ground poses no significant threat to human health or the environment.

9.0 REVISED CONCEPTUAL EXPOSURE MODEL

The preliminary conceptual exposure model has been reviewed and revised to reflect the findings of the site investigation and the results of the laboratory testing of soils, soil leachate, groundwater and gas monitoring. Pathways identified as a relevant pollutant linkage require appropriate risk assessment or mitigation measures (see Section 10).

Table 9: Revised Conceptual Exposure Model

Source		Receptor	Pathway	Preliminary Active Pathway?	Relevant Pollutant Linkage	Justification/ Mitigation
Origin	Contaminant					
Topsoil/subsoil. (No made ground was encountered during the intrusive works)	Metals, semi-metals, non-metals, PAH, asbestos	Resident – human health	Dermal Contact with made ground/dust	✓	X	No significantly elevated concentrations identified.
			Ingestion of soil and/or soil attached to home-grown produce	✓	X	
			Ingestion of home-grown produce	✓	X	
			Inhalation of dust	✓	X	
			Inhalation of vapours – indoor/outdoor	✓	X	No sufficiently volatile contaminants identified.
	Metals, semi-metals, inorganics, PAH	Groundwater quality	Leaching from made ground	✓	X	No sources of contamination identified.
	Metals, semi-metals, inorganics, PAH	Surface water quality	Transportation within groundwater	✓	X	
Made Ground of unknown origin and natural ground	pH and water soluble sulphate	Building Materials Durability	Direct contact	✓	✓	Building materials will be in contact with natural ground *Risk Assess*

9.0 REVISED CONCEPTUAL EXPOSURE MODEL (CONTINUED)

Table 9: Revised Conceptual Exposure Model (Continued)

Source		Receptor	Pathway	Preliminary Active Pathway?	Relevant Pollutant Linkage	Justification/ Mitigation
Origin	Contaminant					
Ground Gas – organic, gas producing materials	Methane, carbon dioxide	Human health	Accumulation of gases in confined spaces, and/or migration off site, leading to asphyxiation, or risk of explosion	✓	X	No on-site or off-site sources identified

10.0 RISK ASSESSMENT

10.1 METHODOLOGY

The risk of pollution, health effects or environmental harm occurring as a result of ground contamination is dependent upon three principal factors:

- The scale of the contamination sources;
- The presence of sensitive “receptors”, eg Humans: health of the general public, site occupiers, redevelopment workers. Environment: flora, fauna, etc;
- The existence of migration pathways by which contaminants can reach the sensitive receptors.

This section assesses each of these factors in order to evaluate the overall level of risk and potential harm to receptors. The receptor may be human, a water resource, an eco-system or construction materials. Pathways connecting a perceived hazard to a receptor are referred to as exposure pathways.

The sources of contamination and the links connecting the hazards to the sensitive receptors will represent the basis for the risk assessment.

10.2 SOURCE-PATHWAY-RECEPTOR MODEL

The preliminary conceptual site model was based on the findings of the desk study. This was later reviewed and refined according to the findings of the site investigation, allowing for the ground conditions encountered and the results of laboratory testing of soil and groundwater. Any pathways considered to be inactive were removed from the model and all remaining potentially active pathways require risk assessment.

The pathways shown as potentially active in the Revised Conceptual Site Model in Section 9.0 above have been assessed below.

10.3 HUMAN HEALTH RISK ASSESSMENT

10.3.1 Site in its Present Condition

The site does not pose any risks to casual visitors or trespassers. The site is an undeveloped field used for two football pitches.

10.3 HUMAN HEALTH RISK ASSESSMENT (CONTINUED)

10.3.2 Future Site Users

The contamination test results, and investigation observations do not show elevated concentrations within the topsoil and near surface soils beneath the site.

It is therefore considered that the site does not present a significant risk to end users and no specific remedial mitigation measures are required.

10.3.3 Construction Workers

Normal good hygiene practices should be adequate to protect the health and safety of redevelopment workers, and should include:

- Minimum handling of materials;
- Washing of hands prior to all meal breaks, which should be taken in a designated clean area;
- The use of standard protective clothing such as boots and overalls and gloves, where considered relevant.

In dry weather, inhalation of dust and gases should be avoided preferably by the use of dust suppression techniques to minimise fugitive emissions and minimisation of exposed materials at any particular time.

Additionally, a system should be established by which any 'unusual' materials that may be encountered are reported rapidly to the site management, so that the appropriate action may be taken, following specialist advice if necessary. An unusual material may be identified on site by colour, odour or physical nature.

Reference should be made to the Health and Safety Executive document "Protection of Workers and the General Public during the development of contaminated land" for detailed guidance on these matters.

10.4 RISKS TO VEGETATION

The concentrations of phytotoxic contaminants in the topsoil and subsoil do not indicate the potential for adverse effects to vegetation. All gardens and areas of soft landscaping will require provision of a minimum thickness of 150mm of clean topsoil to encourage plant growth.

10.5 GROUNDWATER RISK ASSESSMENT

The site does not have a history of any previous development and no contamination or potential sources of contamination have been identified on site with the potential to adversely affect groundwater quality beneath the site.

When considering the above and the development proposals, which comprise the construction of residential houses with areas of hardstanding and access roads which will greatly reduce rainwater percolation into the ground, the potential risk to controlled waters is considered to be low.

10.6 GROUND GAS RISK ASSESSMENT

The historical use of the site as possible agricultural land and subsequently football pitches, without any previous development, the lack of any on-site and/or off-site sources of potential ground gas, combined with the nature of the underlying soils encountered, including only natural in-situ soils without any made ground or potentially organic rich materials, indicate that the site is not at risk from ground gas.

10.7 RISKS TO BUILDINGS AND MATERIALS DURABILITY

10.7.1 Concrete Classification

A summary of the laboratory chemical test results for the chemicals monohydric phenol, sulphur, total sulphate, water soluble sulphate, sulphide and pH, which may adversely affect the durability of building materials is presented in Appendix E.

In accordance with BRE Digest SD1:2005 and adopting the assessment procedure specified therein for greenfield sites, the laboratory chemical test results indicate a characteristic value (taking the highest of the test results) for water soluble sulphate within the natural strata of 19.1mg/l.

Using Table C1 of BRE Digest SD1:2005, this characteristic value corresponds to Design Sulphate Class DS-1.

The groundwater regime of the site has been assessed as ‘mobile’ and a characteristic pH value within the natural strata of 5.5 has been determined (adopting the lowest of the test results). The Design Sulphate Class has been modified to give a site ACEC class of AC-1 for concrete structures constructed within the natural strata.

10.7 RISKS TO BUILDINGS AND MATERIALS DURABILITY (CONTINUED)

10.7.2 Water Services

Based on the chemical analysis and observations undertaken to date, water supply pipes will not require any special protective measures from contaminants at the site.

Reference should be made to UKWIR Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites, document No. 10/WM/03/21. The final design and selection of the pipe and associated backfill should be agreed with the appropriate Regulator prior to installation.

In order to comply with the UKWIR guidance, specific sampling and testing along the actual line of the proposed water supply route may need to be carried out once this has been established.

10.8 WASTE DISPOSAL

Excavated materials generated by the development may be considered as waste and subject to waste controls. Any re-use of excavated materials on-site should be undertaken in accordance with current waste and environmental legislation and which may require the production of an approved Materials Management Plan (MMP) prepared in accordance with the CL:AIRE Code of Practice.

It is recommended that a sustainable development strategy is adopted which reduces to a practicable minimum the generation of waste materials and the need for disposal to a licensed tip. Emphasis should be on recovery and re-use rather than disposal.

However, any waste or surplus materials that are generated will need to be classified in accordance with current EC regulations and Environment Agency guidance prior to disposal. It is the responsibility of the waste producer to classify the waste.

Based on the data obtained from the site investigation works, any waste materials comprising the existing natural ground are likely to be classified as non-hazardous.

Any asbestos containing materials (ACMs) will be classified as hazardous waste.

This classification is provisional and indicative of the likely waste classification based on the data obtained to date (including chemical composition, moisture content, etc.). It also assumes that the materials tested will be representative of future generated waste.

10.8 WASTE DISPOSAL (CONTINUED)

In order to minimise disposal, the materials generated should be segregated and examined, with appropriate testing as necessary, to enable the materials to be sorted or treated into lower classifications, with the resultant benefit of potentially generating re-use rather than disposal.

Once final waste sources and volumes are known, the waste stockpile to be disposed off-site will need to be classified in accordance with Environment Agency/Natural Resources Wales Waste Classification – Guidance on the Classification and Assessment of Waste Technical Guidance WM3 (2015). This is likely to require additional sampling and testing of the generated waste materials to provide an up to date current basis for classification.

Depending on the waste classification, waste acceptance criteria (WAC) testing may be required, in order to determine which class of landfill site the waste can be sent to.

It is recommended that the results of the waste classification and any WAC test results are sent to the intended licensed waste operator prior to disposal in order to confirm their classification and acceptance.

10.9 UNCERTAINTIES

It is important to recognise that there may be areas of contamination within the site that have not been found or that contaminants may be present at concentrations above those that have been found. It is also important to recognise that contamination may be localised and that no investigation, however comprehensive, is capable of finding such occurrences, other than by chance.

The near-surface drainage patterns have not been fully established.

11.0 ENGINEERING CONSIDERATIONS AND RECOMMENDATIONS

11.1 DETAILS OF PROPOSED DEVELOPMENT

At this stage it is assumed that the development will involve the construction of a number of residential properties and associated infrastructure including access roads, car parking areas and private driveways. The development is also likely to include areas of landscaping and private gardens.

11.2 SITE PREPARATION

Prior to works commencing on site, any services within the site should be identified and either relocated or protected. All existing underground services, including drainage runs and manholes, should be removed or protected and/or diverted from beneath the development area. Any diversion works should be carried out under the supervision of, and to the specification of, the appropriate statutory authorities.

Any vegetation within the development area should be stripped off and stockpiled on site for off-site disposal. A full vegetation survey should be carried out prior to stripping works.

The topsoil should be removed from beneath the proposed buildings and access roads. These excavated materials will be unacceptable as structural fill and should be stockpiled for re use in landscaped areas and gardens. Chemical test results on selected samples of topsoil indicate that they are suitable for re-use in private gardens.

The boundaries of the site are lined with mature trees and hedgerows. Allowances should therefore be made for the removal of any associated roots that may become exposed in any proposed nearby earthworks and foundation excavations. Any such works should be conducted in accordance with the code of practice recommended by the National House Building Council (NHBC). All protection orders relating to existing vegetation/ecology should be adhered to during the development of the site.

Exposed formations should be protected from site traffic and inclement weather in order to preserve their integrity. Any soft spots/areas should be removed and replaced with well compacted site won or imported granular fill material.

A system should be established by which any ‘unusual’ materials that may be encountered are reported rapidly to the site management so that appropriate action can be taken following specialist advice if necessary. Any unusual material may be identified on site by colour, odour or physical nature.

11.2 SITE PREPARATION (CONTINUED)

During site clearance and subsequent operations airborne nuisance caused by dust from the site must be controlled on account of the health and safely of site operatives and the general public who are occupying properties adjacent to the site.

11.3 FOUNDATIONS AND FLOOR SLABS

The ground conditions encountered beneath the site comprised a veneer of topsoil over variably weathered residual soils and rock.

On the basis of the desk study research and recent trial pitting investigation, it is considered and that the ground encountered at shallow depths is capable of supporting the proposed low rise residential houses on conventional mass concrete strip/trench fill foundations.

Conventional mass concrete strip footings, as described above, can therefore be used and founded within the loose to medium and medium dense sand, gravel and cobbles or firm gravelly clay. These materials were encountered beneath the existing topsoil at depths of between 0.3m and 0.5m below existing ground level.

Based on the modified plasticity values recorded in the near surface soils, foundations should extend to a minimum depth of 0.9m below existing or finished ground level.

An allowable bearing pressure of 100kN/m² could be used for design purposes could be adopted when casting foundations in the highly weathered soils/rocks as described above. If foundations are over deepened such that they extend into the less weathered rock comprising mudstone and sandstone, then an allowable bearing pressure if 200kN/m^2 could be adopted for design purposes. At this intensity of loading and within these materials, the total settlements should not exceed 30mm, any angular distortions caused by differential movements should be less than 1:750.

Foundations should be founded on similar strata throughout to reduce the risk of differential settlement, given the variations in the founding strata underlying the site, the ground conditions may vary laterally beneath building footprints. Any foundation bearing on a combination of differing bearing strata (such as spanning granular and cohesive soils) should be reinforced with top and bottom mesh reinforcement across the change in strata. This should be avoided where possible due to the difference in in-situ competence of the strata.

11.3 FOUNDATIONS AND FLOOR SLABS (CONTINUED)

A minimum foundation depth of 0.9m below existing or finished ground level (whichever is the deepest) should be observed. Foundations should penetrate the founding strata by a minimum of 200mm.

Laboratory Atterberg Limits have been determined for the natural strata. The results show these materials are either non-shrinkable or low volume change potential. Footings may need to be deepened in accordance with NHBC guidance for foundations constructed adjacent to mature trees and hedgerows.

Deeper foundation depths may also be required where the founding horizons may need to be taken below any root system.

A limiting depth can be adopted where foundations are cast on non-plastic rock.

Where structural make up below ground slabs does not exceed 600mm ground bearing slabs may be used. If make up below ground slabs exceeds 600mm it is recommended that a suspended ground floor slab construction is used.

No radon protective measures are required.

11.4 EXCAVATIONS AND FORMATIONS

Excavations to the depths of the trial pits should be possible with normal soil excavating machinery. Allowances should be made for encountering shallow more competent bedrock within excavations deeper than the trial pits undertaken to date. Heavier machinery or hydraulic breakers may be required when undertaking deep excavations into the rock, particularly if sandstone is encountered.

During the intrusive site investigation, groundwater was not encountered within the depths of the trial pits. It is considered that any groundwater inflows/seepages, together with rainfall infiltrations, should be dealt with by conventional pumping.

The groundwater conditions are based on observations made at the time of the fieldwork. It should be noted that groundwater levels may vary due to seasonal and other effects.

The sides of the excavated trial pits remained stable in the short term. The sides of excavations deeper than 1.0m should be fully supported by trench boxes or temporarily battered at gradients of typically 30° if access is required.

11.4 EXCAVATIONS AND FORMATIONS (CONTINUED)

The exposed formations within the in-situ materials will be susceptible to damage, loosening and deterioration by wet weather and site traffic. They should therefore be protected by a 200mm thick layer of compacted hardcore or, alternatively, by a thin layer of blinding concrete immediately after exposure.

11.5 ACCESS ROADS AND CAR PARKING AREAS

There are likely to be variations in the strength of the materials at the access road formation levels and therefore a California Bearing Ratio (CBR) value of between 1% and 3% could be used for designed purposes within the in-situ natural strata at this stage.

After proof rolling, the pavement formations, any 'soft spots/areas' should be removed and replaced with well-compacted imported granular materials. Department of Transport (DTp) Type 1 Sub-Base, or similar approved, could be used and should be compacted in layers in accordance with the current DTp Specification for Highway Works.

Formations within cohesive deposits should be regarded as frost susceptible.

It should be noted that the Local Highway Authority may insist that field CBR tests should be carried out to confirm the above recommendations. Allowances should therefore be made for carrying out such tests and any further works which the local authority may require as a result of these tests.

11.6 DRAINAGE

Soil infiltration tests were undertaken within four trial pits (TP01, TP02, TP03, TP04, TP06 and TP08), located in areas representative of the materials which are present within the site. The trial pits were filled with clean water and the water level monitored over a period of time. Where infiltration and time allowed, repeat cycle tests were carried out in general accordance with BRE365.

Design soil infiltration rates were calculated for all trial pits. The results of the soil infiltration testing are presented in Appendix D.

Note that the soil infiltration results are specific to the locations and depths of the tests undertaken. The soakaway results should be provided to a suitably qualified drainage engineer so that a soakaway design specific to the development can be completed and provided.

APPENDIX A

ENVIROCHECK REPORT

Intégral
Géotechnique

Envirocheck® Report:

Datasheet

Order Details:

Order Number:
291745849_1_1

Customer Reference:
12998/LP

National Grid Reference:
179700, 224330

Slice:
A

Site Area (Ha):
1.68

Search Buffer (m):
1000

Site Details:

Football Ground
Solva
Haverfordwest
SA62 6TY

Client Details:

MR H Pritchard
Integral Geotechnique
Integral House
7 Beddau Way
Castlegate Business Park
Caerphilly
CF83 2AX

Intégral Géotechnique

Contents

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.

Report Version v53.0

Intégral Géotechnique

Summary

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	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1			1	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					
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 4			Yes	
Pollution Incidents to Controlled Waters	pg 4		1		5
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality	pg 5				1
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points	pg 6				1
Substantiated Pollution Incident Register					
Water Abstractions	pg 6				10 (*4)
Water Industry Act Referrals					
Groundwater Vulnerability Map	pg 10	Yes	n/a	n/a	n/a
Bedrock Aquifer Designations	pg 10	Yes	n/a	n/a	n/a
Superficial Aquifer Designations			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 10			1	47

Intégral Géotechnique

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites					
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Landfill Coverage	pg 16	1	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Potentially Infilled Land (Non-Water)	pg 16			1	1
Potentially Infilled Land (Water)	pg 16		1		
Registered Landfill Sites					
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					

Intégral Géotechnique

Summary

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 17	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 17	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 19			1	6
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 20	Yes	Yes	n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 20	Yes	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 21	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards				n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 21	Yes	Yes	n/a	n/a
Radon Potential - Radon Affected Areas	pg 22	Yes	n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 23		1		
Fuel Station Entries					
Points of Interest - Commercial Services					
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 23			1	7
Points of Interest - Public Infrastructure	pg 23			1	9
Points of Interest - Recreational and Environmental	pg 24		3		2
Gas Pipelines					
Underground Electrical Cables					

Intégral Géotechnique

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland					
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas	pg 25	1			6
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks	pg 25	1			
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones					
Ramsar Sites					
Sites of Special Scientific Interest	pg 25			1	1
Special Areas of Conservation	pg 26			2	1
Special Protection Areas	pg 26			1	
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A14SW (SE)	398	1	180050 224000
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A9NW (SE)	469	1	180100 223950
1	**Discharge Consents** Operator: Ashkyle Ltd Property Type: Domestic Property (Multiple) Location: Residential Units The Old Courtyard, The Old Courtyard Llanunwas Solv, Llanunwas Solva Authority: Natural Resources Wales Catchment Area: River Tywi Reference: Bp0230301 Permit Version: 1 Effective Date: 28th September 1993 Issued Date: 28th September 1993 Revocation Date: 17th July 1996 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: To Land **Status:** **Consent expired** Positional Accuracy: Located by supplier to within 100m	A12NE (NW)	459	2	179230 224580
2	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Water Supply Grid Location: Solva 2 Chlorinated Overflow Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Bp0200301 Permit Version: 1 Effective Date: 2nd October 1989 Issued Date: 2nd October 1989 Revocation Date: 16th March 1994 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: To Land **Status:** **Consent expired** Positional Accuracy: Located by supplier to within 100m	A19SW (NE)	535	2	180100 224800
2	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Water Supply Grid Location: Solva 2 Chlorinated Overflow Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Bp0200401 Permit Version: 1 Effective Date: 2nd October 1989 Issued Date: 2nd October 1989 Revocation Date: 16th March 1994 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: To Land **Status:** **Consent expired** Positional Accuracy: Located by supplier to within 100m	A19SW (NE)	535	2	180100 224800
3	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Solva P.S. . . Authority: Natural Resources Wales Catchment Area: SOLVA - HEADWATERS TO TIDAL LIMIT Reference: Bp0111701 Permit Version: 2 Effective Date: 8th September 2010 Issued Date: 8th September 2010 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Tidal R.Solva **Status:** **Effective** Positional Accuracy: Located by supplier to within 10m	A14SE (E)	746	2	180540 224280

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Solva P.S. . . Authority: Natural Resources Wales Catchment Area: SOLVA - HEADWATERS TO TIDAL LIMIT Reference: Bp0111701 Permit Version: 2 Effective Date: 8th September 2010 Issued Date: 8th September 2010 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Tidal R.Solva **Status: Effective** Positional Accuracy: Located by supplier to within 10m	A14SE (E)	746	2	180540 224280
3	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Solva P.S. . . Authority: Natural Resources Wales Catchment Area: Not Given Reference: BP0111701 Permit Version: 1 Effective Date: 13th December 1991 Issued Date: 13th December 1991 Revocation Date: 7th September 2010 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: Tidal R.Solva **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A14SE (E)	746	2	180540 224280
4	**Discharge Consents** Operator: Vaughan H M & D P Property Type: Undefined Or Other Location: Llanwngar Dairy Solva Haverfordwest Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Bl0134101 Permit Version: 1 Effective Date: 1st August 1978 Issued Date: 1st August 1978 Revocation Date: 17th November 1992 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Soakaway To Spring **Status: Consent expired** Positional Accuracy: Located by supplier to within 100m	A17NE (NW)	876	2	179300 225200
5	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewage Disposal Works Location: Solva Stw Solva Haverfordwest, Solva, Pembrokeshire Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Bl0138601 Permit Version: 4 Effective Date: 1st January 2010 Issued Date: 26th June 2009 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Gribin Stream **Status: Effective** Positional Accuracy: Located by supplier to within 10m	A15SW (E)	967	2	180740 224140

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewage Disposal Works Location: Solva Stw Solva Haverfordwest, Solva, Pembrokeshire Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: BI0138601 Permit Version: 4 Effective Date: 1st January 2010 Issued Date: 26th June 2009 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Gribin Stream **Status: Effective** Positional Accuracy: Located by supplier to within 10m	A15SW (E)	967	2	180740 224140
5	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewage Disposal Works - Water Company Location: Solva Stw Solva Haverfordwest, Solva, Pembrokeshire Authority: Natural Resources Wales Catchment Area: HA 61 Stream 600 Reference: BI0138601 Permit Version: 3 Effective Date: 31st December 2005 Issued Date: 31st December 2005 Revocation Date: 31st December 2009 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Gribin Stream **Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A15SW (E)	967	2	180740 224140
5	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewage Disposal Works - Water Company Location: Solva Stw Solva Haverfordwest, Solva, Pembrokeshire Authority: Natural Resources Wales Catchment Area: HA 61 Stream 600 Reference: BL0138601 Permit Version: 2 Effective Date: 27th October 1987 Issued Date: 27th October 1987 Revocation Date: 20th January 2006 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Not Supplied Receiving Water: Gribin Stream **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A15SW (E)	967	2	180740 224140
5	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewage Disposal Works - Water Company Location: Solva Stw Solva Haverfordwest, Solva, Pembrokeshire Authority: Natural Resources Wales Catchment Area: HA 61 Stream 600 Reference: BI0138601 Permit Version: 1 Effective Date: 21st March 1983 Issued Date: 21st March 1983 Revocation Date: 26th October 1987 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Not Supplied Receiving Water: Gribin Stream **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A15SW (E)	967	2	180740 224140

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	**Discharge Consents** Operator: Griffiths S C Property Type: Undefined Or Other Location: Gwar-Y-Coed Uchaf Solva Authority: Natural Resources Wales Catchment Area: River Solfach Reference: Bn0231901 Permit Version: 1 Effective Date: 8th August 1980 Issued Date: 8th August 1980 Revocation Date: 24th July 1994 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Underground Strata **Status: Consent expired** Positional Accuracy: Located by supplier to within 100m	A19SE (NE)	968	2	180600 224900
	Nearest Surface Water Feature	A13NW (NW)	257	-	179416 224500
7	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, Welsh Region Pollutant: Light Oil Note: Not Supplied Incident Date: 8th April 1991 Incident Reference: 1565 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	A13SE (SE)	249	3	180001 224201
8	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Solva Harbout, And Strand Line Authority: Environment Agency, Welsh Region Pollutant: Mud/Clay/Soil Note: Not Supplied Incident Date: 3rd April 1996 Incident Reference: 27860 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	A14SE (E)	623	3	180400 224200
8	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Solva Harbour, And Saracens Hotel Authority: Environment Agency, Welsh Region Pollutant: Mud/Clay/Soil Note: Not Supplied Incident Date: 3rd April 1996 Incident Reference: 27860 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	A14SE (E)	624	3	180400 224195
9	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Public House Authority: Environment Agency, Welsh Region Pollutant: Milk/Creamery Wastes Note: Not Supplied Incident Date: 20th January 1992 Incident Reference: 3787 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	A14SE (E)	705	3	180500 224295

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
9	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Sewerage Location: Car Park Solva Authority: Environment Agency, Welsh Region Pollutant: Light Oil Note: Not Supplied Incident Date: 19th August 1991 Incident Reference: 789 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	A14SE (E)	705	3	180500 224300
9	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, Welsh Region Pollutant: Crude Sewage Note: Afon Solfach; Overflow Incident Date: 28th November 1997 Incident Reference: 34276 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Blocked Sewer Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14SE (E)	710	3	180505 224295
	River Quality Name: Solfach GQA Grade: River Quality B Reach: Solfa Harbour - Middlemill Wtw Estimated Distance (km): 1.8 Flow Rate: Flow less than 0.62 cumecs Flow Type: River Year: 2000	A14SE (E)	712	3	180500 224242

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
10	**River Quality Chemistry Sampling Points** Name: Solfach Reach: Solfa Harbour To Middlemill Wtw Estimated Distance: 1.80 Objective: Not Supplied Positional Accuracy: Located by supplier to within 10m Year: 1990 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 1993 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 1994 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 1995 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 1996 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 1997 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 1998 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 1999 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2000 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2001 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2002 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2003 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2004 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2005 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2006 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2007 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2008 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2009 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied	A14SE (E)	823	3	180620 224320
11	**Water Abstractions** Operator: Mrs M Griffiths Licence Number: 22/61/2/0059 Permit Version: 100 Location: Reservoir Supplied By Stream And Land Drains At Llanunwas Authority: Environment Agency, Welsh Region Abstraction: General Agriculture: Spray Irrigation - Storage Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Licenced from 01-May to 31-Jul Authorised Start: 01 May Authorised End: 31 July Permit Start Date: 31st March 2005 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A12NW (NW)	723	3	178970 224645

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
11	**Water Abstractions** Operator: Mr Robert Griffiths Licence Number: 22/61/2/0059 Permit Version: 101 Location: Reservoir Supplied By Stream And Land Drains At Llanunwas Authority: Natural Resources Wales Abstraction: General Agriculture: Spray Irrigation - Storage Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Llanunwas Farm Authorised Start: 01 November Authorised End: 31 March Permit Start Date: 28th March 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A12NW (NW)	725	2	178970 224650
11	**Water Abstractions** Operator: Mr Robert Griffiths Licence Number: 22/61/2/0059 Permit Version: 101 Location: Reservoir Supplied By Stream And Land Drains At Llanunwas Authority: Natural Resources Wales Abstraction: General Agriculture: Spray Irrigation - Storage Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Llanunwas Farm Authorised Start: 05 January Authorised End: 07 July Permit Start Date: 28th March 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A12NW (NW)	725	2	178970 224650
11	**Water Abstractions** Operator: Mr Robert Griffiths Licence Number: 22/61/2/0059 Permit Version: 101 Location: Reservoir Supplied By Stream And Land Drains At Llanunwas Authority: Natural Resources Wales Abstraction: General Agriculture: Spray Irrigation - Storage Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Llanunwas Farm Authorised Start: 01 May Authorised End: 31 July Permit Start Date: 28th March 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A12NW (NW)	725	2	178970 224650
11	**Water Abstractions** Operator: Mrs M Griffiths Licence Number: 22/61/2/0059 Permit Version: 100 Location: Reservoir Supplied By Stream And Land Drains At Llanunwas Authority: Environment Agency, Welsh Region Abstraction: General Agriculture: Spray Irrigation - Storage Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Licenced from 01-Nov to 31-Mar Authorised Start: 01 November Authorised End: 31 March Permit Start Date: 31st March 2005 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A12NW (NW)	725	3	178970 224650

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
12	**Water Abstractions** Operator: Mrs M Griffiths Licence Number: 22/61/2/0059 Permit Version: 100 Location: Reservoir Supplied By Stream & Land Drains At Llanunwas Authority: Environment Agency, Welsh Region Abstraction: General Agriculture: Spray Irrigation - Storage Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Reservoirs Supplied By Stream And Land Drains Authorised Start: 01 May Authorised End: 31 July Permit Start Date: 31st March 2005 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A12NW (W)	852	3	178800 224545
12	**Water Abstractions** Operator: Mr Robert Griffiths Licence Number: 22/61/2/0059 Permit Version: 101 Location: Reservoirs Supplied By Stream And Land Drains Authority: Natural Resources Wales Abstraction: General Agriculture: Spray Irrigation - Storage Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Llanunwas Farm Authorised Start: 01 November Authorised End: 31 March Permit Start Date: 28th March 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A12NW (W)	853	2	178800 224550
12	**Water Abstractions** Operator: Mr Robert Griffiths Licence Number: 22/61/2/0059 Permit Version: 101 Location: Reservoir Supplied By Stream & Land Drains At Llanunwas Authority: Natural Resources Wales Abstraction: General Agriculture: Spray Irrigation - Storage Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Llanunwas Farm Authorised Start: 01 May Authorised End: 31 July Permit Start Date: 28th March 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A12NW (W)	853	2	178800 224550
12	**Water Abstractions** Operator: Mrs M Griffiths Licence Number: 22/61/2/0059 Permit Version: 100 Location: Reservoirs Supplied By Stream And Land Drains Authority: Environment Agency, Welsh Region Abstraction: General Agriculture: Spray Irrigation - Storage Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Reservoir On Llanunwas Farm Authorised Start: 01 November Authorised End: 31 March Permit Start Date: 31st March 2005 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A12NW (W)	853	3	178800 224550

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
12	**Water Abstractions** Operator: Robert Griffiths Licence Number: 22/61/2/0059 Permit Version: Not Supplied Location: Land At Carnwchwrn Authority: Natural Resources Wales Abstraction: General Agriculture: Spray Irrigation - Storage Abstraction Type: Water may be abstracted from any point within an area Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A12NW (W)	853	2	178800 224550
	Water Abstractions Operator: Mr R Grime Licence Number: 22/61/2/0069 Permit Version: 100 Location: R.Solfach At The Woollen Mill, Middle Mill Solva Authority: Environment Agency, Welsh Region Abstraction: Public Water Supply: General Use (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: R.Solfach At The Woollen Mill; Middle Mill Solva Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 25th June 1992 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A24NE (NE)	1733	3	180550 225920
	Water Abstractions Operator: Dwr Cymru Cyfyngedig Licence Number: 22/61/2/0031 Permit Version: 100 Location: River Solva At Middle Mill Authority: Natural Resources Wales Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: River Solva At Middle Mill Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 1993 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A24NE (NE)	1738	2	180540 225930
	Water Abstractions Operator: Dwr Cymru Cyfyngedig Licence Number: 22/61/2/0031 Permit Version: Not Supplied Location: Middle Mill Site Authority: Natural Resources Wales Abstraction: Public Water Supply: Potable Water Supply - Direct 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: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A24NE (NE)	1738	2	180540 225930

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: G.J Tjoonk Licence Number: 22/61/2/0027 Permit Version: Not Supplied Location: Location Description Not Available Authority: Environment Agency, Welsh Region Abstraction: General Agriculture: Spray Irrigation - Direct Abstraction Type: Not Supplied Source: Surface Daily Rate (m3): 818 Yearly Rate (m3): 2091 Details: River Solva 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	(N)	1949	3	180100 226300
	Groundwater Vulnerability Map Combined Classification: Secondary Bedrock Aquifer - High Vulnerability Combined Vulnerability: High Combined Aquifer: Productive Bedrock Aquifer, No Superficial Aquifer Pollutant Speed: High Bedrock Flow: Well Connected Fractures Dilution: 300-550 mm/year Baseflow Index: <40% Superficial Patchiness: <90% Superficial Thickness: <3m Superficial Recharge: No Data	A13SW (N)	0	2	179703 224328
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - B	A13SW (N)	0	2	179703 224328
	Superficial Aquifer Designations No Data Available				
	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				
13	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 816.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Solva Catchment Name: St Davids Head and St Brides North Primacy: 1	A8NE (SE)	381	4	180022 223995
14	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 472.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A17SE (NW)	605	4	179173 224762
15	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 946.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A9NW (SE)	657	4	180326 223945

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
16	**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: St Davids Head and St Brides North Primacy: 1	A12NE (NW)	661	4	179037 224646
17	**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: St Davids Head and St Brides North Primacy: 1	A12NW (W)	686	4	178996 224614
18	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A12NW (NW)	690	4	179013 224663
19	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 10.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A12NW (NW)	690	4	179013 224663
20	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 42.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A12NW (NW)	692	4	179010 224661
21	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 11.3 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A12NW (W)	693	4	178992 224621
22	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 27.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A17SW (NW)	696	4	179012 224674
23	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 14.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A12NW (NW)	703	4	178985 224629
24	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 208.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A12SW (W)	711	4	178922 224153

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
25	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 11.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A12NW (NW)	717	4	178974 224639
26	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 21.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A17NE (NW)	721	4	179286 225018
27	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 33.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A17NE (NW)	721	4	179287 225019
28	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 166.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A12NW (W)	723	4	178964 224633
29	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 15.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A17NE (NW)	743	4	179279 225040
30	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 5.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A17NE (NW)	745	4	179293 225050
31	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 44.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A17NE (NW)	745	4	179293 225050
32	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 16.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A17NE (NW)	750	4	179288 225053
33	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 192.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Solva Catchment Name: St Davids Head and St Brides North Primacy: 1	A14SE (E)	755	4	180549 224279

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
34	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 63.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A17NE (NW)	763	4	179319 225084
35	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 32.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A17NE (NW)	786	4	179363 225129
36	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 18.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A12NW (W)	840	4	178822 224581
37	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 37.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A12SW (W)	854	4	178771 224215
38	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 23.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A12NW (W)	857	4	178803 224577
39	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 31.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A12NW (W)	857	4	178803 224577
40	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 7.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A12NW (W)	872	4	178797 224608
41	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 185.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A12NW (W)	873	4	178783 224566
42	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 9.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A12NW (W)	875	4	178796 224615

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
43	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 103.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A12NW (W)	879	4	178796 224625
44	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Solva Catchment Name: St Davids Head and St Brides North Primacy: 1	A14NE (E)	880	4	180677 224408
45	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 691.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Solva Catchment Name: St Davids Head and St Brides North Primacy: 1	A14NE (E)	881	4	180677 224410
46	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 123.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A12SW (W)	887	4	178737 224229
47	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 16.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A12SW (W)	913	4	178710 224246
48	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 16.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A12SW (W)	915	4	178707 224250
49	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 33.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A12SW (W)	919	4	178703 224268
50	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A17SW (NW)	923	4	178788 224728
51	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 33.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A17SW (NW)	924	4	178786 224727

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
52	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 323.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A17SW (NW)	924	4	178786 224727
53	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 20.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A11SE (W)	928	4	178694 224249
54	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 59.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A11SE (W)	947	4	178675 224255
55	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A17SW (NW)	950	4	178762 224738
56	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 15.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A17SW (NW)	950	4	178762 224738
57	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 21.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A17SW (NW)	951	4	178762 224739
58	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 70.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A11NE (W)	968	4	178661 224437
59	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 11.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A11NE (W)	968	4	178661 224437
60	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 40.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: St Davids Head and St Brides North Primacy: 1	A11NE (W)	982	4	178640 224372

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Local Authority Landfill Coverage Name: Pembrokeshire County Council - Has supplied landfill data		0	5	179703 224328
61	**Potentially Infilled Land (Non-Water)** Bearing Ref: E Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1979	A14NW (E)	456	-	180243 224456
62	**Potentially Infilled Land (Non-Water)** Bearing Ref: W Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1980	A12NW (W)	904	-	178757 224587
63	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1908	A13NE (E)	113	-	179905 224392

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Middle Cambrian	A13SW (N)	0	1	179703 224328
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 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 (N)	0	1	179703 224328
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NE (NE)	0	1	179725 224366
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 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	A13SE (E)	206	1	180000 224321
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: no data Cadmium Concentration: <1.8 mg/kg Chromium Concentration: no data Lead Concentration: <100 mg/kg Nickel Concentration: no data	A8NE (SE)	372	1	179977 223967
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 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	A17SE (NW)	608	1	179110 224673
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 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	A8NE (S)	612	1	179901 223670

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 Concentration: <15 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	A8SW (S)	624	1	179698 223642
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 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	A8SE (S)	680	1	179732 223584
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 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	A9NW (SE)	716	1	180258 223757
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 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	A9SW (SE)	780	1	180116 223574
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 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	A8SE (S)	788	1	180016 223521
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7NW (SW)	797	1	179000 223776

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 Concentration: <15 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	A18NW (N)	818	1	179684 225219
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 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	A9SW (SE)	908	1	180293 223535
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SE (E)	916	1	180671 224082
64	**BGS Recorded Mineral Sites** Site Name: Solva Location: St David'S, Pembrokeshire Source: British Geological Survey, National Geoscience Information Service Reference: 89880 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Cambrian Geology: Solva Group Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A14NW (E)	447	1	180231 224470
65	**BGS Recorded Mineral Sites** Site Name: Solva Location: Solva, St David'S, Pembrokeshire Source: British Geological Survey, National Geoscience Information Service Reference: 90849 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Ordovician Geology: Unnamed Igneous Intrusion, Ordovician Commodity: Igneous and Metamorphic Rock Positional Accuracy: Located by supplier to within 10m	A14SW (E)	576	1	180369 224285
66	**BGS Recorded Mineral Sites** Site Name: Lower Solva Location: Whitchurch, St David'S, Pembrokeshire Source: British Geological Survey, National Geoscience Information Service Reference: 89881 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Ordovician Geology: Unnamed Igneous Intrusion, Ordovician Commodity: Igneous and Metamorphic Rock Positional Accuracy: Located by supplier to within 10m	A14NE (E)	715	1	180489 224540

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
67	**BGS Recorded Mineral Sites** Site Name: Solva Location: Solva, St David'S, Pembrokeshire Source: British Geological Survey, National Geoscience Information Service Reference: 90848 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Cambrian Geology: Solva Group Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A14NE (E)	735	1	180533 224366
68	**BGS Recorded Mineral Sites** Site Name: Mutton Location: St David'S, Pembrokeshire Source: British Geological Survey, National Geoscience Information Service Reference: 89878 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Cambrian Geology: Lingula Flags Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A12NW (W)	930	1	178737 224610
69	**BGS Recorded Mineral Sites** Site Name: Mutton Location: St David'S, Pembrokeshire Source: British Geological Survey, National Geoscience Information Service Reference: 89877 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Cambrian Geology: Lingula Flags Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A17SW (W)	957	1	178743 224710
70	**BGS Recorded Mineral Sites** Site Name: Mutton Location: St David'S, Pembrokeshire Source: British Geological Survey, National Geoscience Information Service Reference: 89879 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Cambrian Geology: Lingula Flags Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A11NE (W)	967	1	178683 224551
	BGS Measured Urban Soil Chemistry No data available				
	BGS Urban Soil Chemistry Averages No data available				
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Non Coal Mining Areas of Great Britain Risk: Highly Unlikely Source: British Geological Survey, National Geoscience Information Service	A13SW (N)	0	1	179703 224328
	Non Coal Mining Areas of Great Britain Risk: Highly Unlikely Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	202	1	180000 224328
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (N)	0	1	179703 224328
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	202	1	180000 224328
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (N)	0	1	179703 224328

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	202	1	180000 224328
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (N)	0	1	179703 224328
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	202	1	180000 224328
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (N)	0	1	179703 224328
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	179725 224366
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	107	1	179644 224145
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (S)	154	1	179770 224108
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	183	1	179973 224304
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	190	1	179818 224086
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	202	1	180000 224328
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	206	1	180000 224321
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	236	1	180000 224231
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (N)	0	1	179703 224328
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	202	1	180000 224328
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	179725 224366
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (N)	0	1	179703 224328
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	107	1	179644 224145
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	190	1	179818 224086
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	202	1	180000 224328
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	236	1	180000 224231

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Radon Potential - Radon Affected Areas Affected Area: The property is in an Intermediate probability radon area (1 to 3% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13SW (N)	0	1	179703 224328
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13SW (N)	0	1	179703 224328

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
71	**Contemporary Trade Directory Entries** Name: Micro-Chef Location: Delfryn, St. Brides View, Solva, Haverfordwest, Dyfed, SA62 6TB Classification: Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	214	-	179960 224199
72	**Points of Interest - Manufacturing and Production** Name: Philip Prickett Location: 17 High Street, Solva, Haverfordwest, SA62 6TF Category: Farming Class Code: Arable Farming Positional Accuracy: Positioned to address or location	A14SW (E)	372	6	180156 224259
73	**Points of Interest - Manufacturing and Production** Name: Quarry (Disused) Location: SA62 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A14SW (E)	563	6	180355 224280
74	**Points of Interest - Manufacturing and Production** Name: F D R P Vaughan Location: Llanungar Lane, Solva, Haverfordwest, SA62 6UA Category: Farming Class Code: Livestock Farming Positional Accuracy: Positioned to address or location	A18SW (N)	579	6	179595 224976
75	**Points of Interest - Manufacturing and Production** Name: Limekiln (Disused) Location: SA62 Category: Industrial Features Class Code: Lime Kilns Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	725	6	180356 223864
75	**Points of Interest - Manufacturing and Production** Name: Lime Kiln (Disused) Location: SA62 Category: Industrial Features Class Code: Lime Kilns Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	727	6	180358 223863
76	**Points of Interest - Manufacturing and Production** Name: Solfach Quarry (Disused) Location: SA62 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to address or location	A14NE (E)	738	6	180536 224349
77	**Points of Interest - Manufacturing and Production** Name: Tank Location: SA62 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	932	6	180547 224913
78	**Points of Interest - Manufacturing and Production** Name: Quarry (Disused) Location: SA62 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A17SW (W)	945	6	178748 224689
79	**Points of Interest - Public Infrastructure** Name: Slurry Bed Location: SA62 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A18SW (N)	490	6	179552 224879
80	**Points of Interest - Public Infrastructure** Name: Weir Location: SA62 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A14SE (E)	767	6	180561 224284
80	**Points of Interest - Public Infrastructure** Name: Weir Location: SA62 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A14SE (E)	789	6	180584 224295

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
81	**Points of Interest - Public Infrastructure** Name: Slurry Bed Location: SA62 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A17NE (N)	850	6	179354 225195
82	**Points of Interest - Public Infrastructure** Name: Sewage Works Location: SA62 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A14SE (E)	924	6	180704 224178
82	**Points of Interest - Public Infrastructure** Name: Sludge Tank Location: SA62 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A15SW (E)	996	6	180778 224184
82	**Points of Interest - Public Infrastructure** Name: Sewage Works Location: SA62 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A15SW (E)	996	6	180775 224164
83	**Points of Interest - Public Infrastructure** Name: Sewage Works (Disused) Location: SA62 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A12NW (W)	926	6	178700 224411
83	**Points of Interest - Public Infrastructure** Name: Sewage Works (Disused) Location: SA62 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A11NE (W)	945	6	178678 224371
84	**Points of Interest - Public Infrastructure** Name: Slurry Pit Location: SA62 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	991	6	180592 224952
85	**Points of Interest - Recreational and Environmental** Name: Skatepark Location: SA62 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A13SE (SE)	89	6	179822 224210
85	**Points of Interest - Recreational and Environmental** Name: Play Area Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A13SE (SE)	115	6	179870 224240
85	**Points of Interest - Recreational and Environmental** Name: Play Area Location: (Glanhafan), SA62 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A13SE (SE)	117	6	179862 224221
86	**Points of Interest - Recreational and Environmental** Name: Playground Location: New Street, SA62 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A14NE (E)	870	6	180668 224368
86	**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	A14NE (E)	875	6	180673 224368

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
87	**Environmentally Sensitive Areas** Name: Preseli (decommissioned) Multiple Areas: Y Total Area (m2): 1187932672 Source: The National Assembly for Wales, GI Services (Department of Planning & Countryside)	A13SW (N)	0	7	179703 224328
88	**Environmentally Sensitive Areas** Name: Preseli (decommissioned) Multiple Areas: Y Total Area (m2): 965.625 Source: The National Assembly for Wales, GI Services (Department of Planning & Countryside)	A8NW (S)	548	7	179531 223734
89	**Environmentally Sensitive Areas** Name: Preseli (decommissioned) Multiple Areas: Y Total Area (m2): 513.281 Source: The National Assembly for Wales, GI Services (Department of Planning & Countryside)	A8NW (S)	561	7	179570 223716
90	**Environmentally Sensitive Areas** Name: Preseli (decommissioned) Multiple Areas: Y Total Area (m2): 10723.437 Source: The National Assembly for Wales, GI Services (Department of Planning & Countryside)	A8NW (S)	590	7	179708 223675
91	**Environmentally Sensitive Areas** Name: Preseli (decommissioned) Multiple Areas: Y Total Area (m2): 438.281 Source: The National Assembly for Wales, GI Services (Department of Planning & Countryside)	A8NW (SW)	623	7	179420 223685
92	**Environmentally Sensitive Areas** Name: Preseli (decommissioned) Multiple Areas: Y Total Area (m2): 306.25 Source: The National Assembly for Wales, GI Services (Department of Planning & Countryside)	A9SW (SE)	742	7	180124 223621
93	**Environmentally Sensitive Areas** Name: Preseli (decommissioned) Multiple Areas: Y Total Area (m2): 375 Source: The National Assembly for Wales, GI Services (Department of Planning & Countryside)	A8SE (SE)	747	7	180041 223575
94	**National Parks** Name: Pembrokeshire Coast Multiple Area: Y Area (m2): 187013417.05 Source: Natural Resources Wales **Status: Fully Designated - designated as a National Park** Designation Date: 31st December 1951	A13SW (N)	0	2	179703 224328
95	**Sites of Special Scientific Interest** Name: St. Davids Peninsula Coast Multiple Areas: Y Total Area (m2): 6858510.94 Source: Natural Resources Wales Reference: 108832wtj Designation Details: Mixed Biological And Geological Designation Date: 1st January 1954 Date Type: Notified	A13SE (SE)	295	2	179990 224091
96	**Sites of Special Scientific Interest** Name: Dwrhyd Pit Multiple Areas: N Total Area (m2): 1759.45 Source: Natural Resources Wales Reference: 82932wst Designation Details: Geological Designation Date: 1st January 1957 Date Type: Notified	A17SE (NW)	607	2	179201 224800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
97	**Special Areas of Conservation** Name: Pembrokeshire Marine / Sir Benfro Forol Multiple Areas: Y Total Area (m2): 1380663657.51 Source: Natural Resources Wales Reference: Uk0013116 **Status: Designated**	A13SE (SE)	333	2	179998 224040
98	**Special Areas of Conservation** Name: St Davids / Ty Ddewi Multiple Areas: Y Total Area (m2): 9398841.84 Source: Natural Resources Wales Reference: UK0013045 **Status: Designated**	A8NW (S)	471	2	179593 223804
99	**Special Areas of Conservation** Name: West Wales Marine / Gorllewin Cymru Forol Multiple Areas: Y Total Area (m2): 7377173853.81 Source: Natural Resources Wales Reference: UK0030397 **Status: Designated**	A8NE (SE)	526	2	180018 223810
100	**Special Protection Areas** Name: Ramsey And St Davids Peninsula Coast Multiple Areas: Y Total Area (m2): 8462392.96 Source: Natural Resources Wales Reference: Uk9014062 Designation Date: 24th July 1996	A8NW (S)	471	2	179593 223804

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Natural Resources Wales	June 2020	Annually
Pembrokeshire County Council - Public Protection Division	September 2017	Annual Rolling Update
Discharge Consents		
Environment Agency - Welsh Region	August 2014	Quarterly
Natural Resources Wales	January 2022	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Welsh Region	March 2013	
Integrated Pollution Controls		
Environment Agency - Welsh Region	January 2009	
Integrated Pollution Prevention And Control		
Environment Agency - Welsh Region	January 2021	Quarterly
Natural Resources Wales	January 2022	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Pembrokeshire County Council - Environmental Health Department	November 2015	Variable
Local Authority Pollution Prevention and Controls		
Pembrokeshire County Council - Environmental Health Department	November 2015	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
Pembrokeshire County Council - Environmental Health Department	November 2015	Variable
Nearest Surface Water Feature		
Ordnance Survey	November 2021	
Pollution Incidents to Controlled Waters		
Environment Agency - Welsh Region	December 1998	
Prosecutions Relating to Authorised Processes		
Environment Agency - Welsh Region	July 2015	
Natural Resources Wales	July 2015	
Prosecutions Relating to Controlled Waters		
Environment Agency - Welsh Region	March 2013	
Natural Resources Wales	March 2013	
Registered Radioactive Substances		
Natural Resources Wales	January 2015	
Environment Agency - Welsh Region	June 2016	As notified
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	April 2012	
Substantiated Pollution Incident Register		
Environment Agency Wales - South West Area	January 2021	Quarterly
Natural Resources Wales	January 2022	Quarterly
Water Abstractions		
Environment Agency - Welsh Region	January 2022	Quarterly
Natural Resources Wales	November 2021	Quarterly
Water Industry Act Referrals		
Natural Resources Wales	January 2022	Quarterly
Environment Agency - Welsh Region	October 2017	
Groundwater Vulnerability Map		
Natural Resources Wales	June 2018	As notified
Bedrock Aquifer Designations		
Natural Resources Wales	January 2018	Annually
Superficial Aquifer Designations		
Natural Resources Wales	January 2018	Annually

Data Currency

Agency & Hydrological	Version	Update Cycle
Source Protection Zones Natural Resources Wales	July 2017	Annual Rolling Update
Extreme Flooding from Rivers or Sea without Defences Natural Resources Wales	September 2020	
Flooding from Rivers or Sea without Defences Natural Resources Wales	September 2020	
Areas Benefiting from Flood Defences Natural Resources Wales	November 2019	Quarterly
Flood Water Storage Areas Natural Resources Wales	August 2019	Quarterly
Flood Defences Natural Resources Wales	November 2019	Quarterly
OS Water Network Lines Ordnance Survey	October 2021	Quarterly
Surface Water 1 in 30 year Flood Extent Natural Resources Wales	May 2018	Annually
Surface Water 1 in 100 year Flood Extent Natural Resources Wales	May 2018	Annually
Surface Water 1 in 1000 year Flood Extent Natural Resources Wales	May 2018	Annually
Surface Water Suitability Natural Resources Wales	February 2016	Annually
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	Annually

Data Currency

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	November 2002	Not Applicable
Historical Landfill Sites		
Natural Resources Wales	July 2019	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Welsh Region	January 2009	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency Wales - South West Area	October 2021	Quarterly
Natural Resources Wales	October 2021	Quarterly
Licensed Waste Management Facilities (Locations)		
Natural Resources Wales	April 2021	Quarterly
Environment Agency Wales - South West Area	July 2021	Quarterly
Local Authority Landfill Coverage		
Pembrokeshire County Council - Environmental Health Department	February 2003	Not Applicable
Local Authority Recorded Landfill Sites		
Pembrokeshire County Council - Environmental Health Department	October 2018	
Potentially Infilled Land (Non-Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water)		
Landmark Information Group Limited	December 1999	
Registered Landfill Sites		
Environment Agency Wales - South West Area	March 2006	Not Applicable
Registered Waste Transfer Sites		
Environment Agency Wales - South West Area	April 2018	
Registered Waste Treatment or Disposal Sites		
Environment Agency Wales - South West Area	June 2015	
Hazardous Substances	**Version**	**Update Cycle**
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	January 2022	Bi-Annually
Explosive Sites		
Health and Safety Executive	March 2017	Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	August 2001	
Planning Hazardous Substance Enforcements		
Pembrokeshire Coast National Park Authority - Development Control	February 2016	Variable
Pembrokeshire County Council - Planning Department	October 2015	Variable
Planning Hazardous Substance Consents		
Pembrokeshire Coast National Park Authority - Development Control	February 2016	Variable
Pembrokeshire County Council - Planning Department	October 2015	Variable

Data Currency

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	December 2015	Annually
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	November 2021	Bi-Annually
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB) Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011 November 2020	As notified
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	Annual Rolling Update
Mining Instability Ove Arup & Partners	June 1998	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	April 2020	As notified
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	Annually
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	Annually

Data Currency

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	January 2022	Quarterly
Fuel Station Entries Catalist Ltd - Experian	November 2021	Quarterly
Gas Pipelines National Grid	October 2021	Bi-Annually
Points of Interest - Commercial Services PointX	December 2021	Quarterly
Points of Interest - Education and Health PointX	December 2021	Quarterly
Points of Interest - Manufacturing and Production PointX	December 2021	Quarterly
Points of Interest - Public Infrastructure PointX	December 2021	Quarterly
Points of Interest - Recreational and Environmental PointX	December 2021	Quarterly
Underground Electrical Cables National Grid	May 2021	Bi-Annually

Data Currency

Sensitive Land Use	Version	Update Cycle
Ancient Woodland		
Natural Resources Wales	September 2018	Bi-Annually
Areas of Adopted Green Belt		
Pembrokeshire Coast National Park Authority - Development Control	October 2020	Quarterly
Pembrokeshire County Council	October 2020	Quarterly
Areas of Unadopted Green Belt		
Pembrokeshire Coast National Park Authority - Development Control	October 2020	Quarterly
Pembrokeshire County Council	October 2020	Quarterly
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		
Pembrokeshire County Council	August 2018	Bi-Annually
Marine Nature Reserves		
Natural Resources Wales	August 2018	Bi-Annually
National Nature Reserves		
Natural Resources Wales	February 2022	Bi-Annually
National Parks		
Natural Resources Wales	February 2018	Annually
Nitrate Vulnerable Zones		
The National Assembly for Wales - GI Services (Department of Planning & Countryside)	April 2016	
Natural Resources Wales	July 2019	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

Data Suppliers

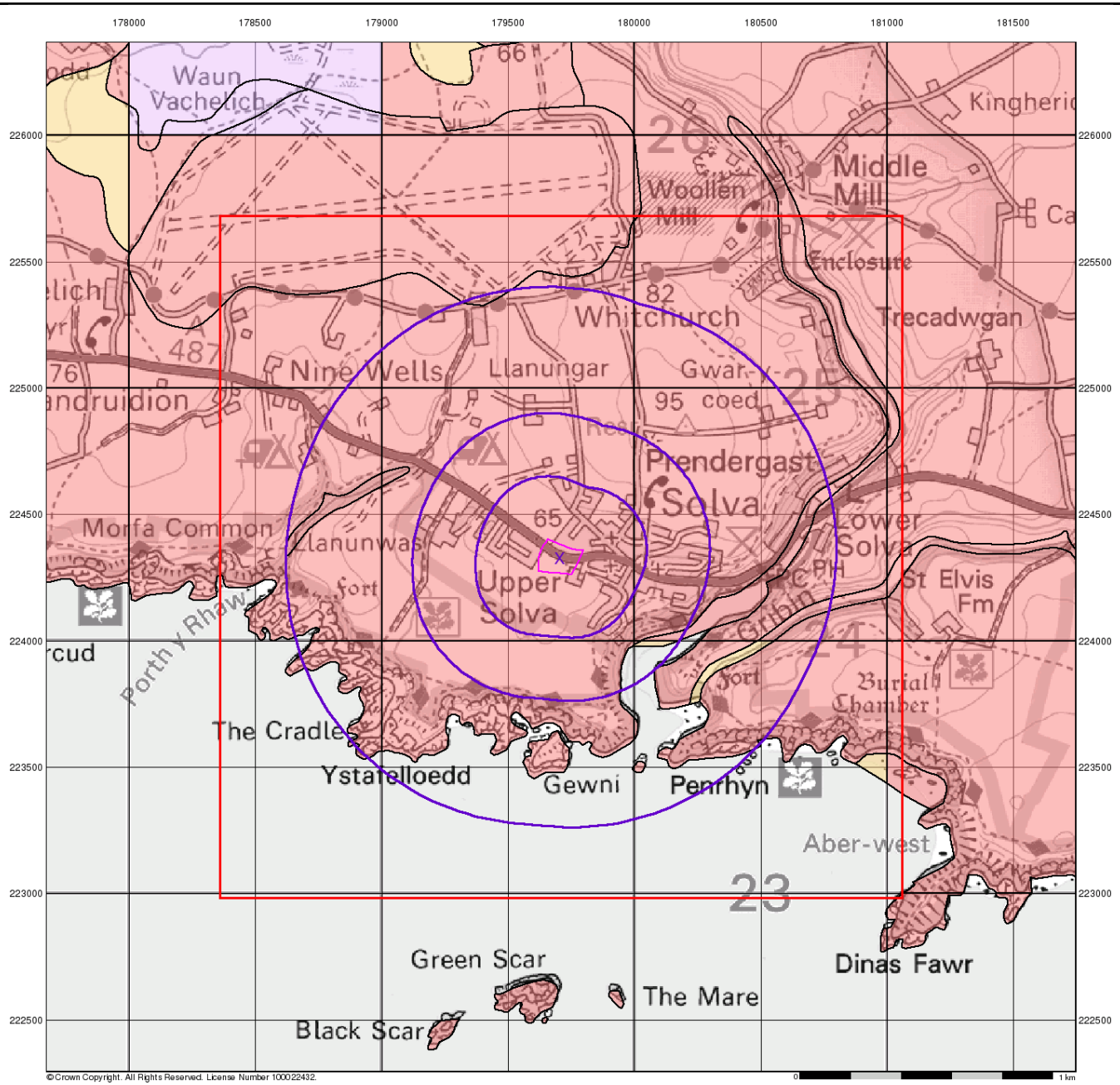
A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	Map data
Environment Agency	Environment Agency
Scottish Environment Protection Agency	SEPA Scottish Environment Protection Agency
The Coal Authority	The Coal Authority
British Geological Survey	British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
Centre for Ecology and Hydrology	Centre for Ecology & Hydrology NATURAL ENVIRONMENT RESEARCH COUNCIL
Natural Resources Wales	Cyfoeth Naturiol Cymru Natural Resources Wales
Scottish Natural Heritage	SCOTTISH NATURAL HERITAGE
Natural England	NATURAL ENGLAND
Public Health England	Public Health England
Ove Arup	ARUP
Stantec UK Ltd	Stantec

Useful Contacts

Contact	Name and Address	Contact Details
1	**British Geological Survey - Enquiry Service** British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	**Natural Resources Wales** Ty Cambria, 29 Newport Road, Cardiff, CF24 0TP	Telephone: 0300 065 3000 Email: enquiries@naturalresourceswales.gov.uk
3	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
4	**Ordnance Survey** Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
5	**Pembrokeshire County Council - Environmental Health Department** Public Protection Division, Pembrokeshire County Council, County Hall, Haverfordwest, Pembrokeshire, SA61 1TP	Telephone: 01437 764551 Fax: 01437 775838 Website: www.pembrokeshire.gov.uk
6	**PointX** 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
7	**The National Assembly for Wales - GI Services (Department of Planning & Countryside)** Yr Hen Ysgol Gymraeg, Alexandria Road, Aberystwyth, Ceredigion, SY23 1LD	Telephone: 02920 825111 Website: www.wales.gov.uk
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

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



Intégral
Géotechnique

Groundwater Vulnerability

General

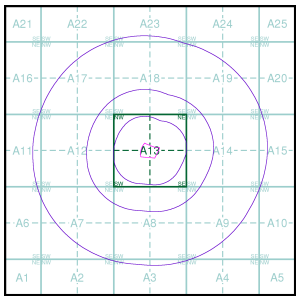
Specified Site | Specified Buffer(s) | Bearing Reference Point
Slice | Map ID

Agency and Hydrological

Bedrock Aquifers	Superficial Aquifers
High Vulnerability, Principal Aquifer	High Vulnerability, Principal Aquifer
High Vulnerability, Secondary Aquifer	High Vulnerability, Secondary Aquifer
Medium Vulnerability, Principal Aquifer	Medium Vulnerability, Principal Aquifer
Medium Vulnerability, Secondary Aquifer	Medium Vulnerability, Secondary Aquifer
Low Vulnerability, Principal Aquifer	Low Vulnerability, Principal Aquifer
Low Vulnerability, Secondary Aquifer	Low Vulnerability, Secondary Aquifer

Unproductive Aquifer
Soluble Rock

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	291745849_1_1
Customer Ref:	12998/LP
National Grid Reference:	179700, 224330
Slice:	A
Site Area (Ha):	1.68
Search Buffer (m):	1000

Site Details

Football Ground, Solva, Haverfordwest, SA62 6TY

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Intégral Géotechnique

Bedrock Aquifer Designation

General

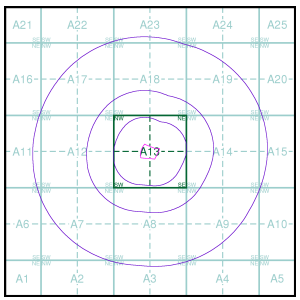
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice A



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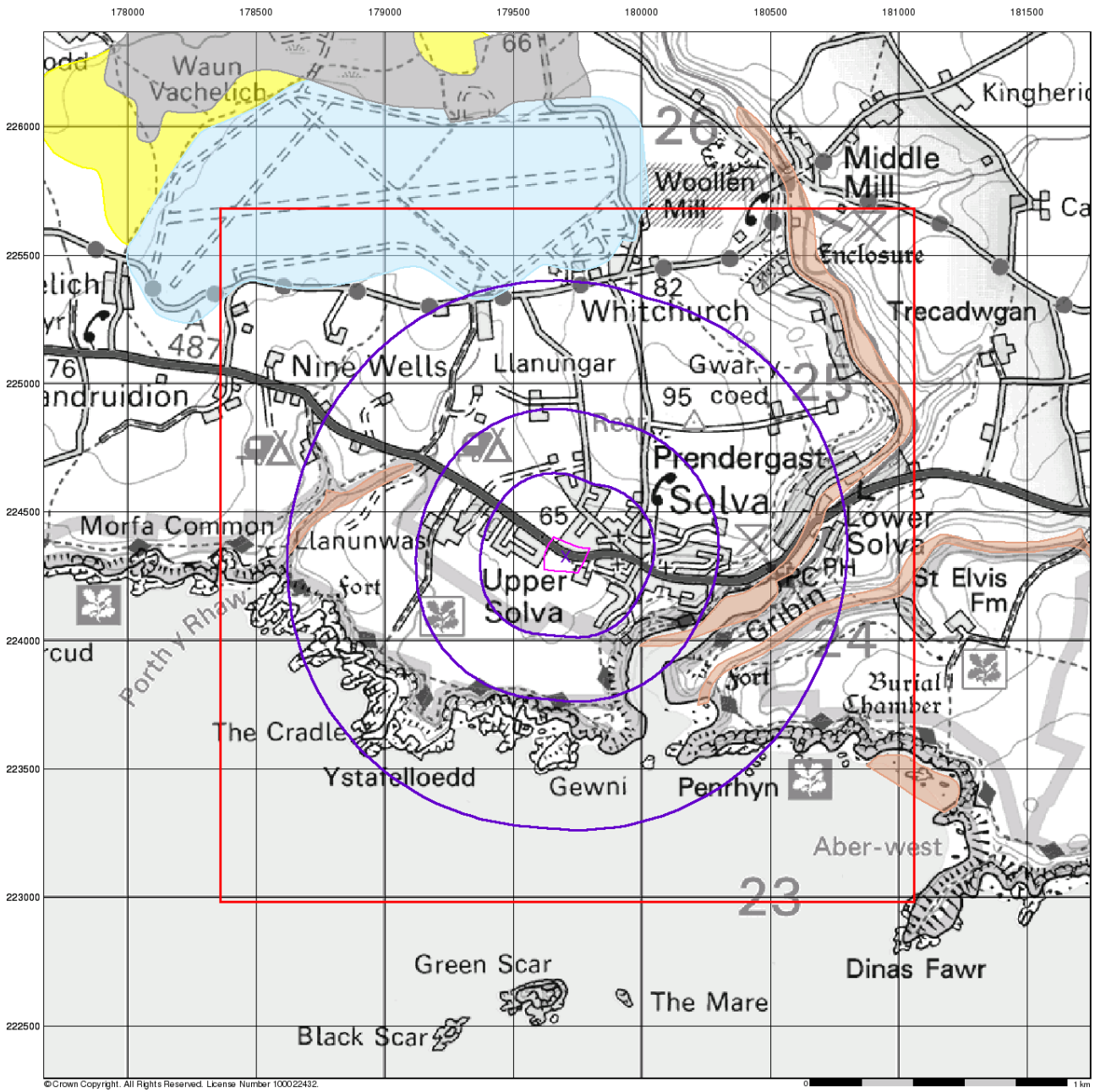


Intégral Géotechnique

Superficial Aquifer Designation

General

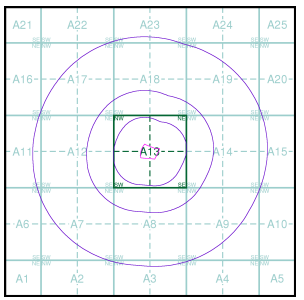
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice A



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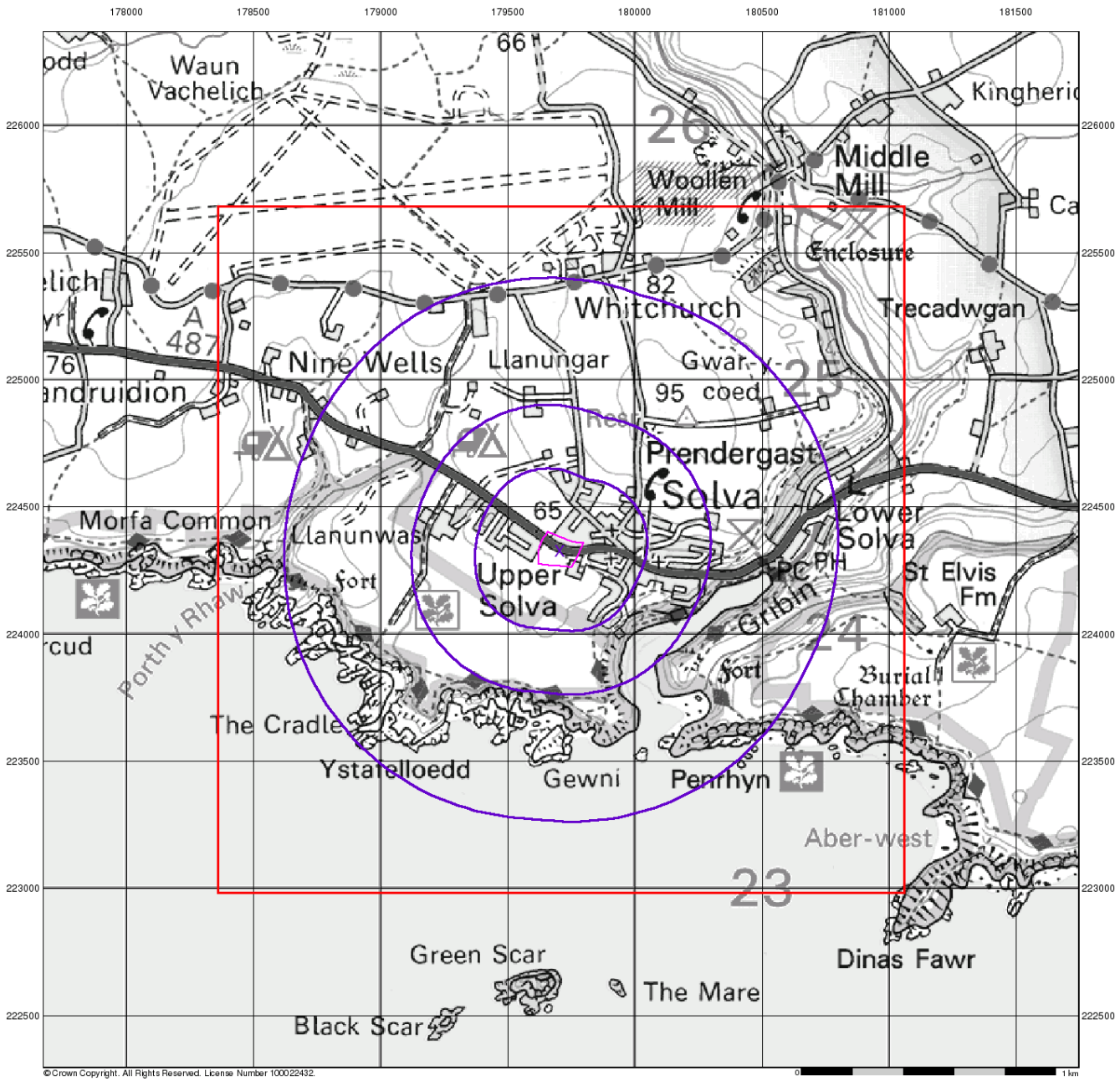


Intégral
Géotechnique

Source Protection Zones

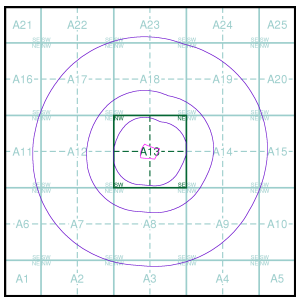
General

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

Agency and Hydrological

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

Site Sensitivity Context Map - Slice A



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Site Area (Ha):	1.68
Search Buffer (m):	1000

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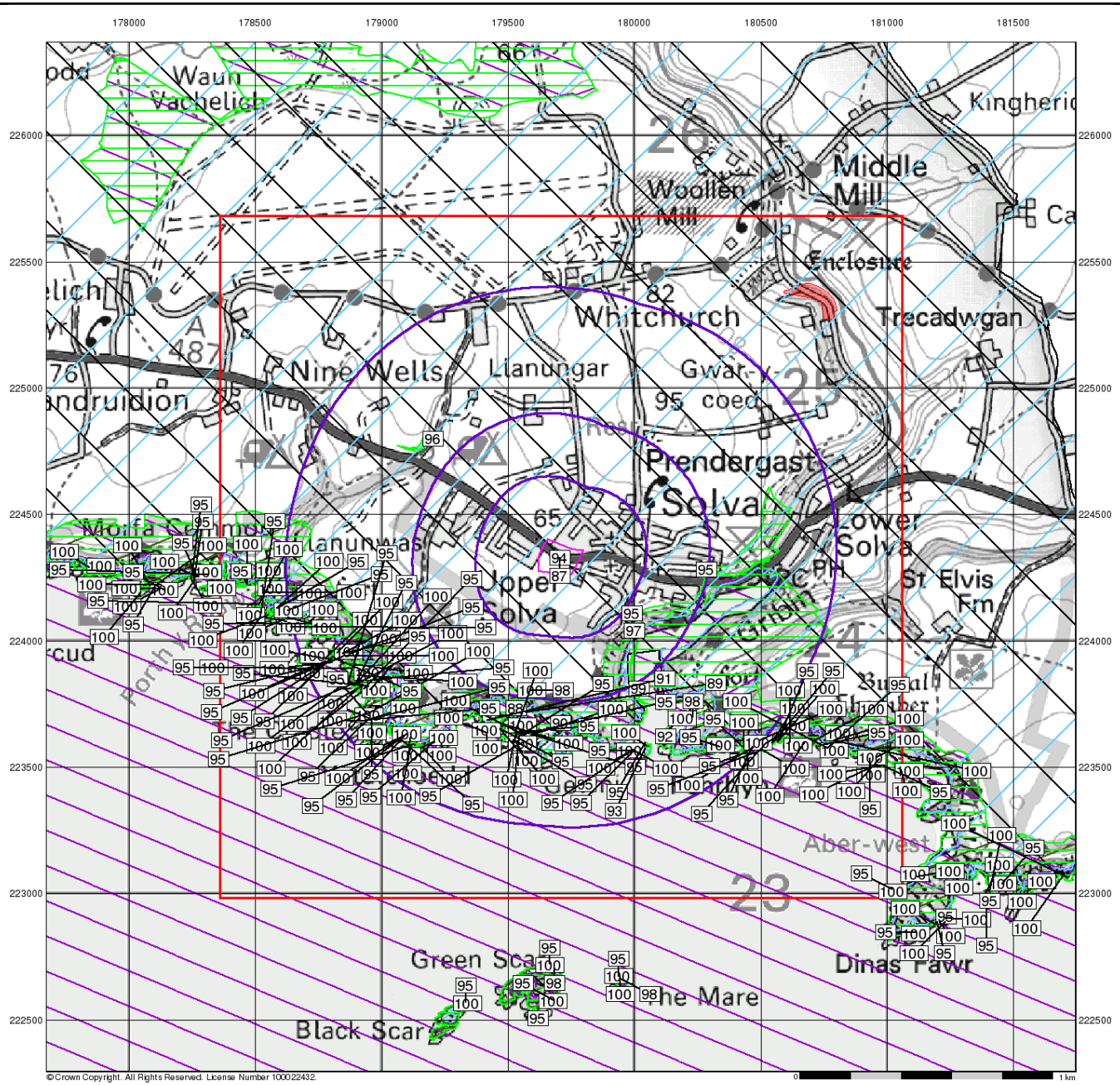


Intégral
Géotechnique

Sensitive Land Uses

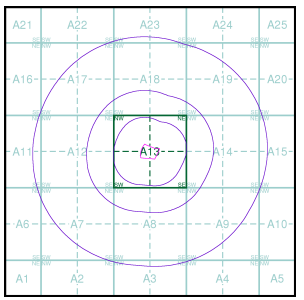
General

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

Sensitive Land Uses

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

Site Sensitivity Context Map - Slice A



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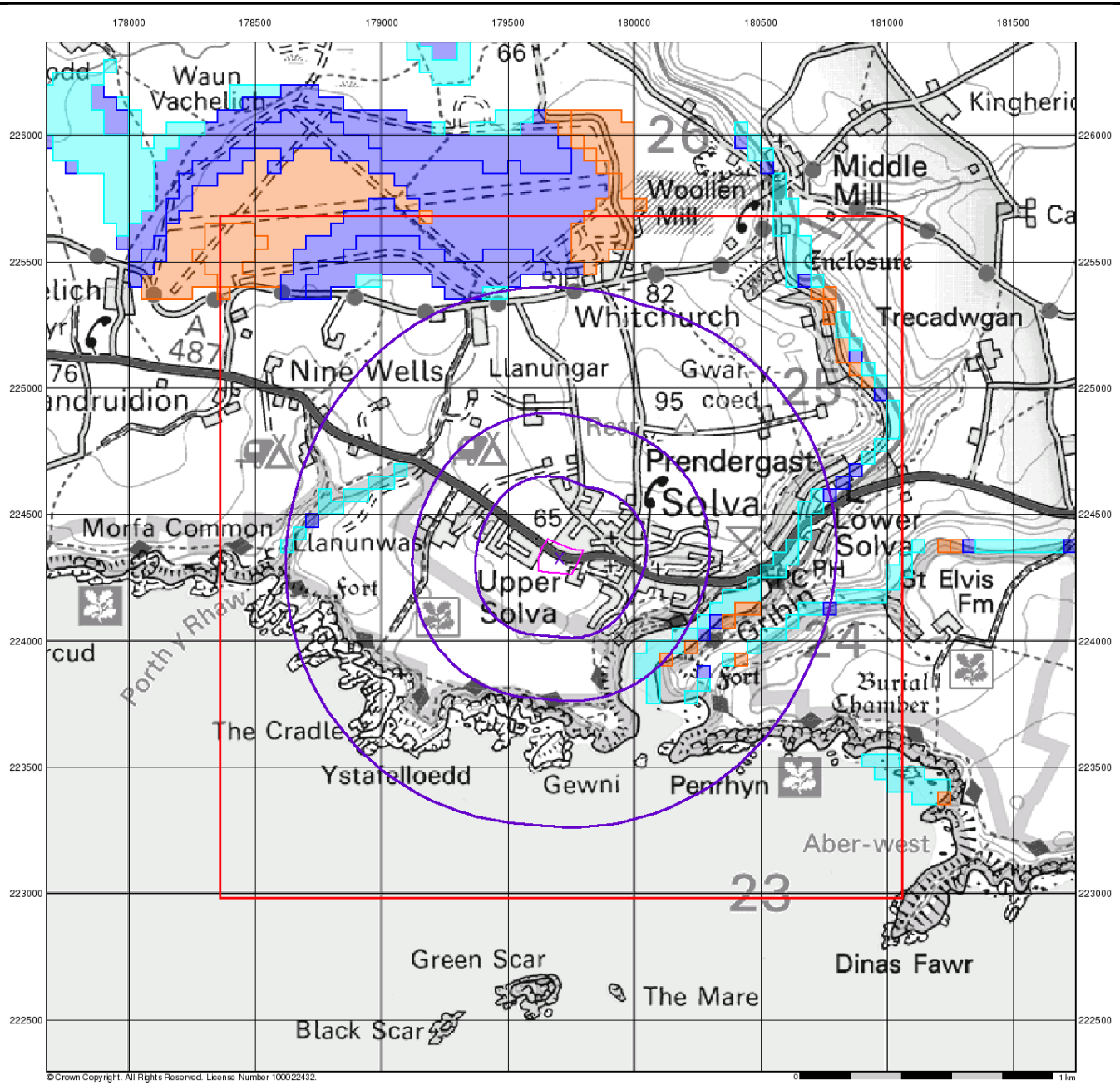
Site Area (Ha):	1.68
Search Buffer (m):	1000

Site Details

Football Ground, Solva, Haverfordwest, SA62 6TY



Intégral
Géotechnique

BGS Flood GFS Data

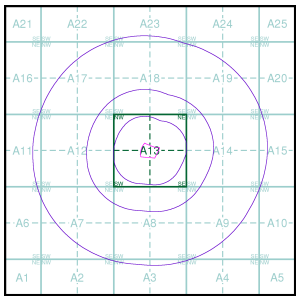
General

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

Agency and Hydrological (Flood)

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

Site Sensitivity Context Map - Slice A



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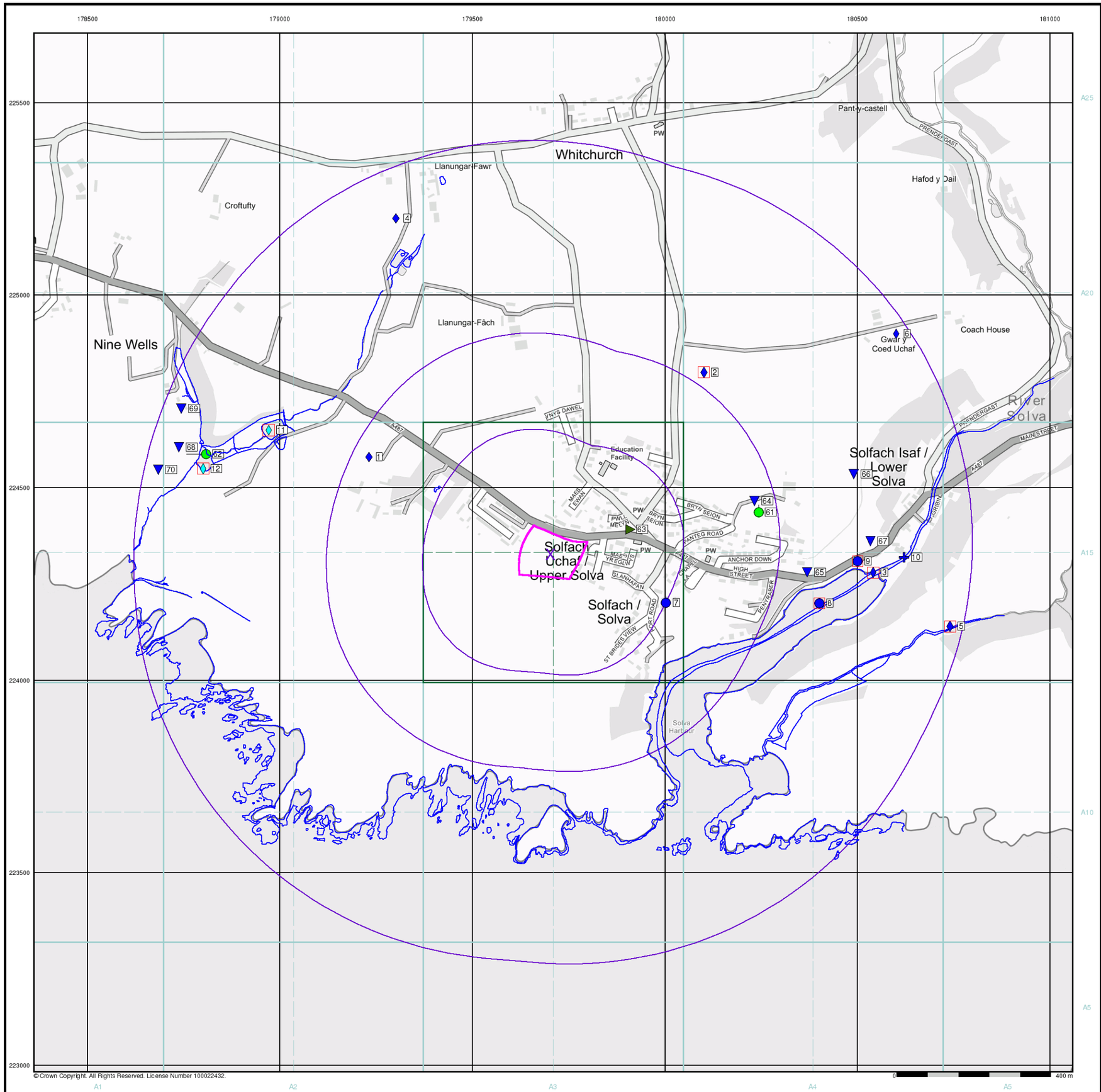


Intégral Géotechnique

General

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

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

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

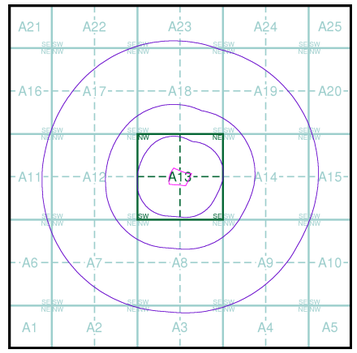
Geological

- BGS Recorded Mineral Site

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
- 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

Site Sensitivity Map - Slice A



Order Details

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Customer Ref:	12998/LP
National Grid Reference:	179700, 224330
Slice:	A
Site Area (Ha):	1.68
Search Buffer (m):	1000

Site Details

Football Ground, Solva, Haverfordwest, SA62 6TY

Landmark INFORMATION GROUP

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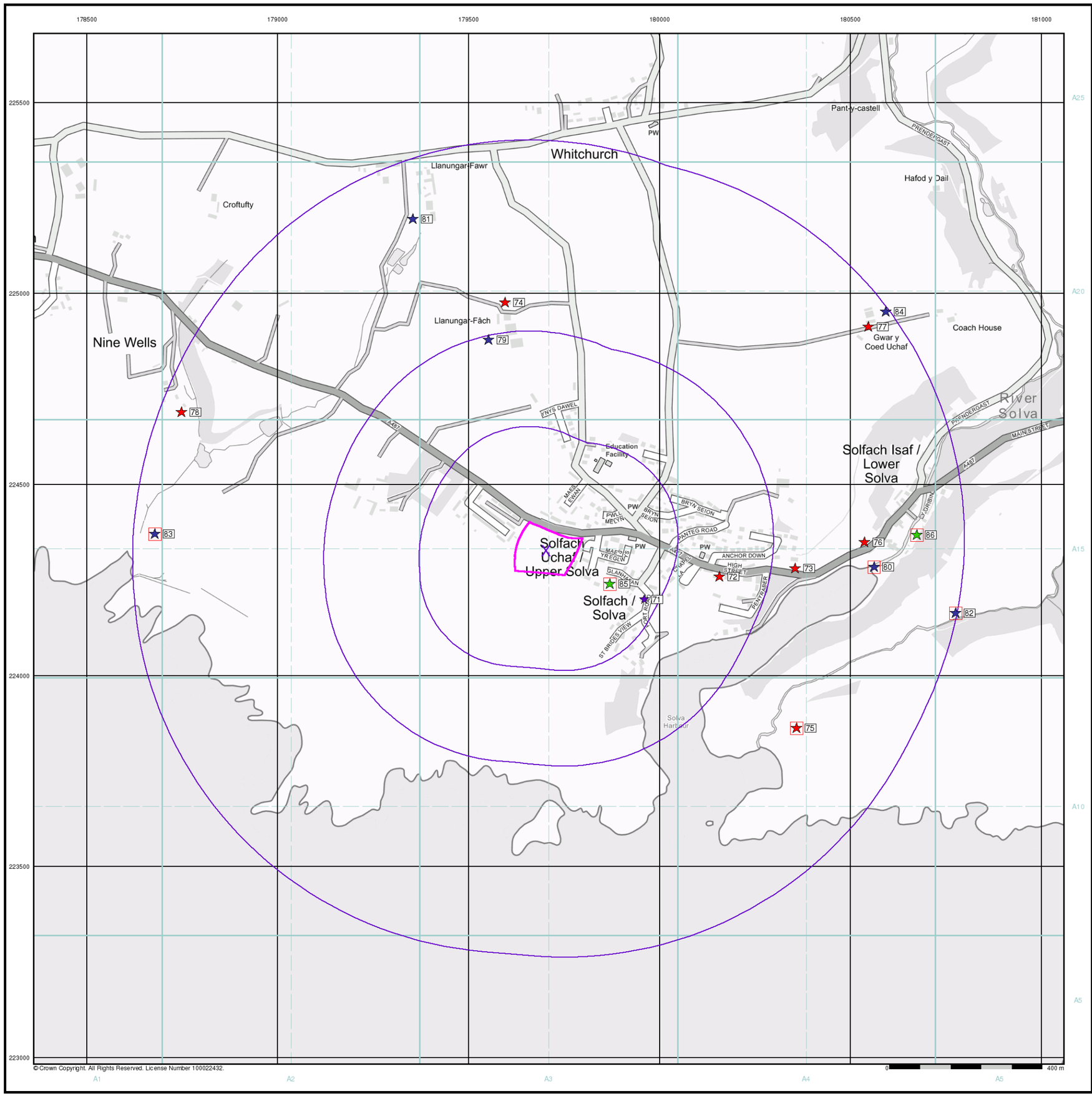
Web: www.envirocheck.co.uk



Intégral Géotechnique

Industrial Land Use Map

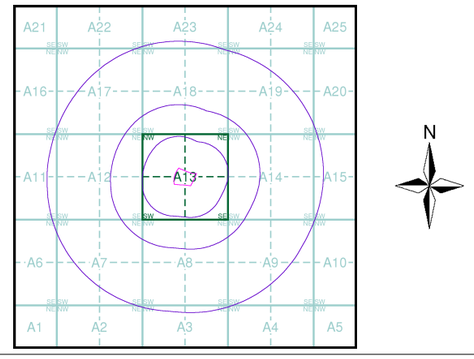
General

- 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

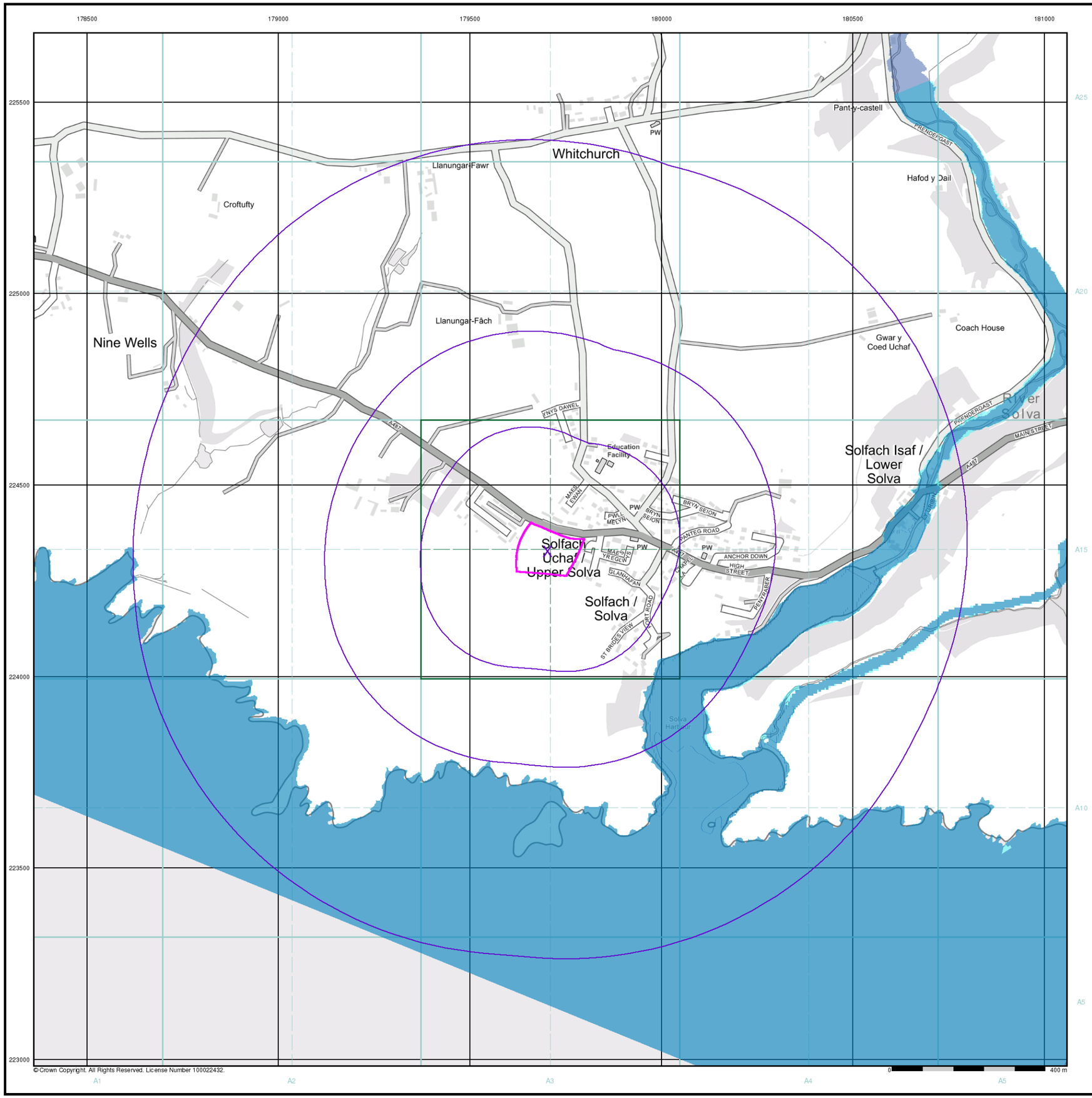
Order Number:	291745849_1_1
Customer Ref:	12998/LP
National Grid Reference:	179700, 224330
Slice:	A
Site Area (Ha):	1.68
Search Buffer (m):	1000

Site Details

Football Ground, Solva, Haverfordwest, SA62 6TY

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Intégral
Géotechnique

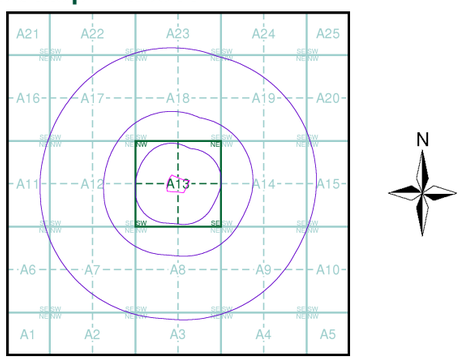
General

- 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



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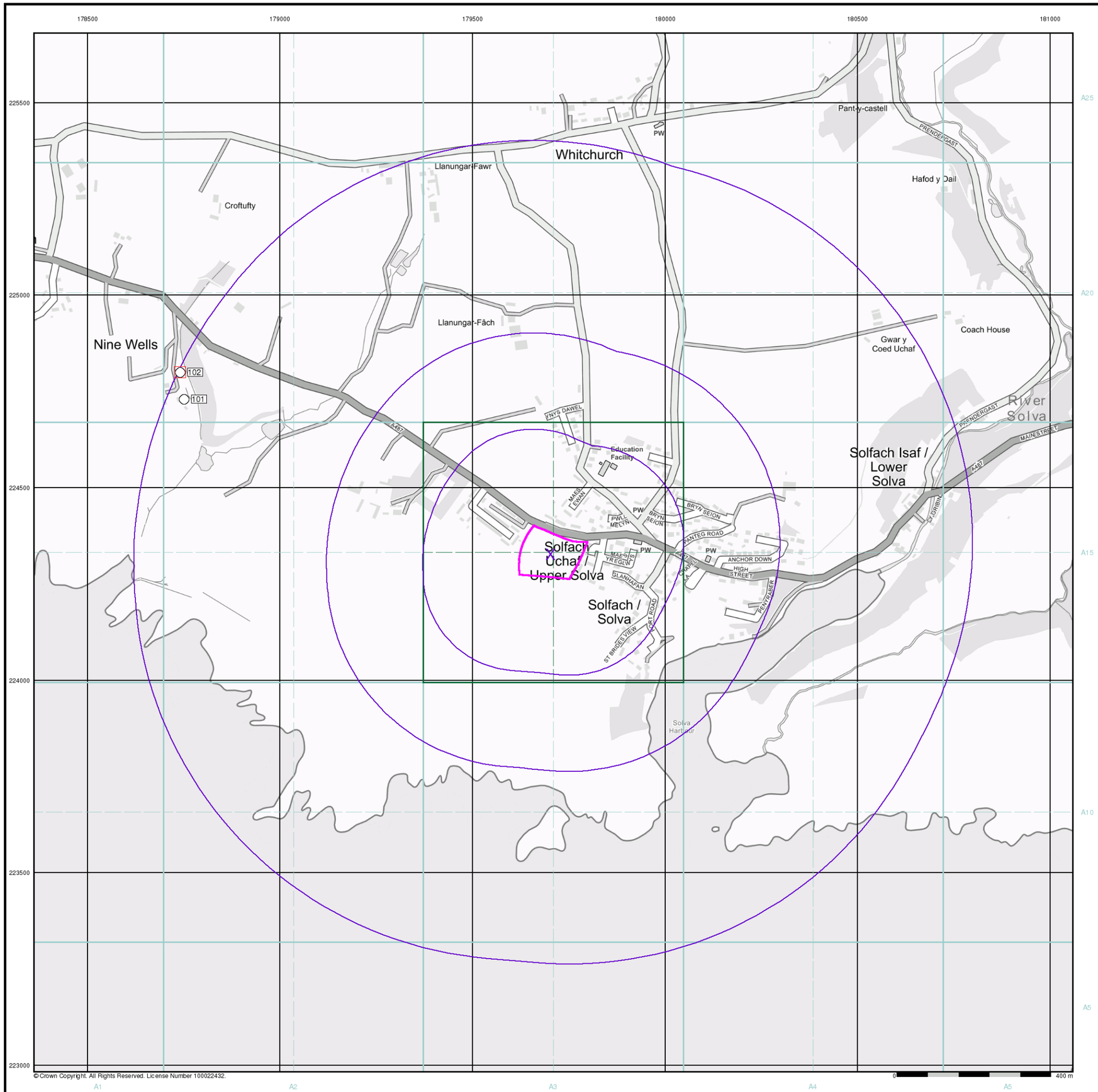


Intégral Géotechnique

General

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

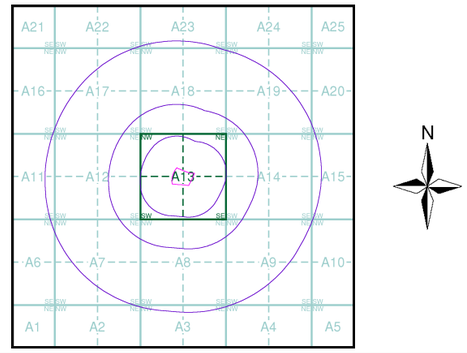
Agency and Hydrological (Boreholes)

- 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



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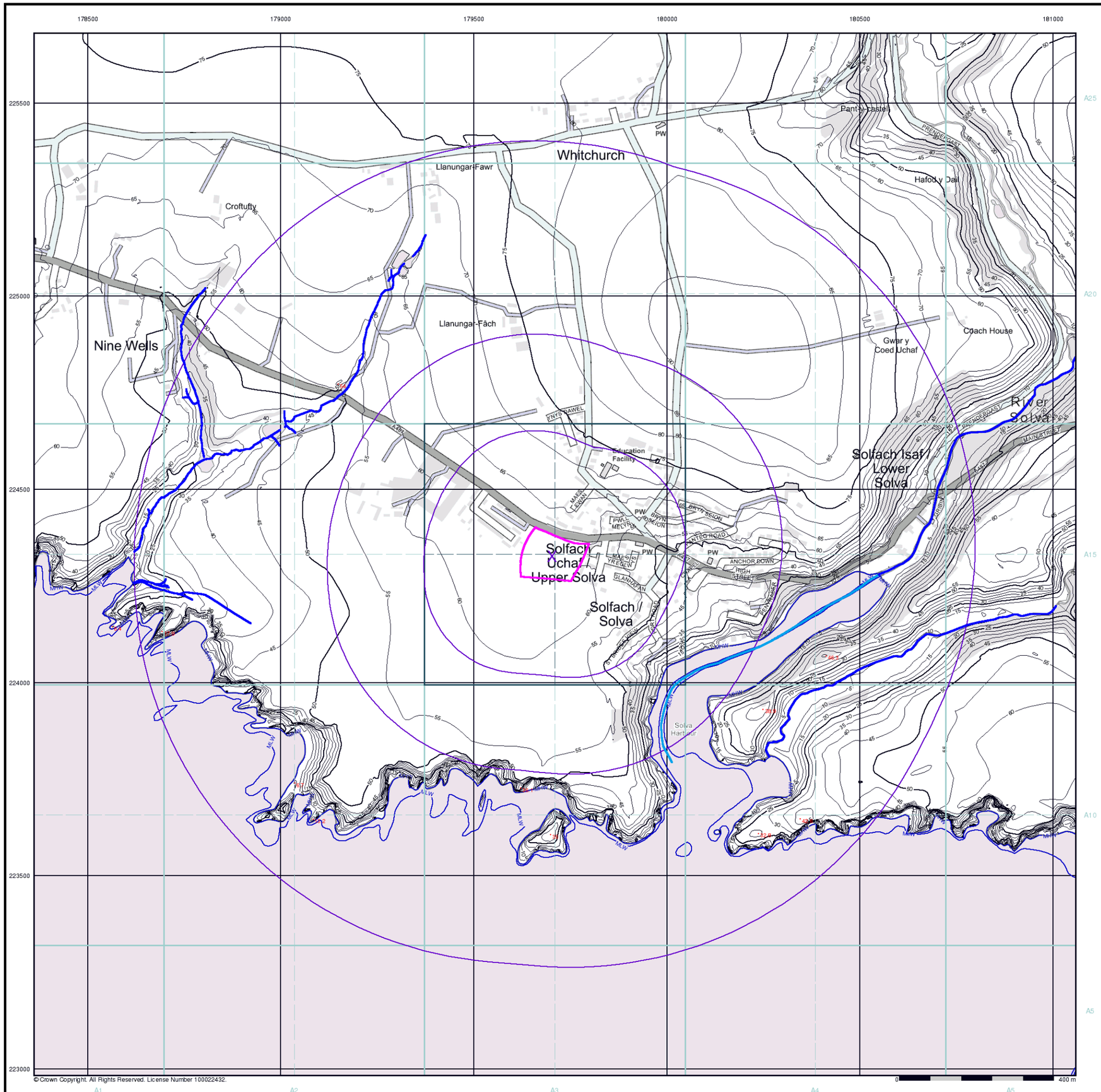


Intégral Géotechnique

General

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

OS Water Network Data

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

Contours (height in meters)

Standard Contour 105 100 95

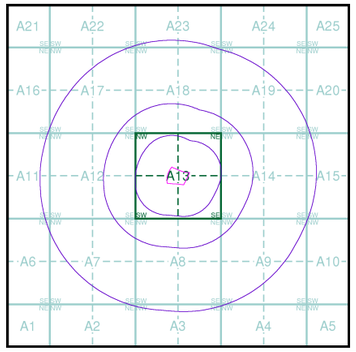
Master Contour

Spot Height 167.3

MLW Mean Low Water

MHW Mean High Water

OS Water Network Map - Slice A



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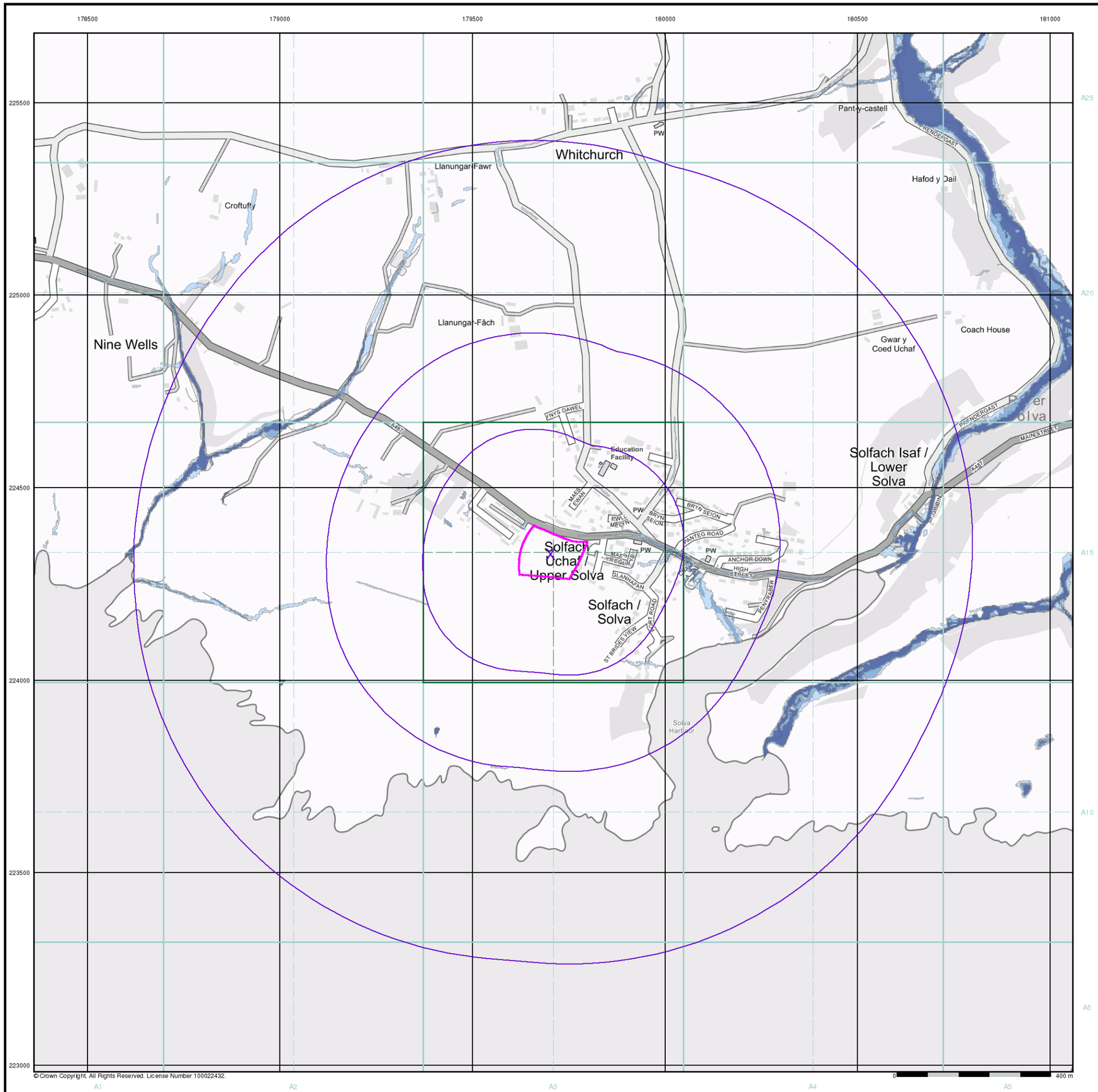


Intégral Géotechnique

General

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

Risk of Flooding from Surface Water

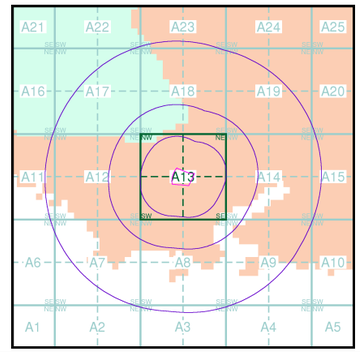
- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

Suitability

See the suitability map below

- National to county
- County to town
- Town to street
- Street to parcels of land
- Property

EA/NRW Suitability Map - Slice A



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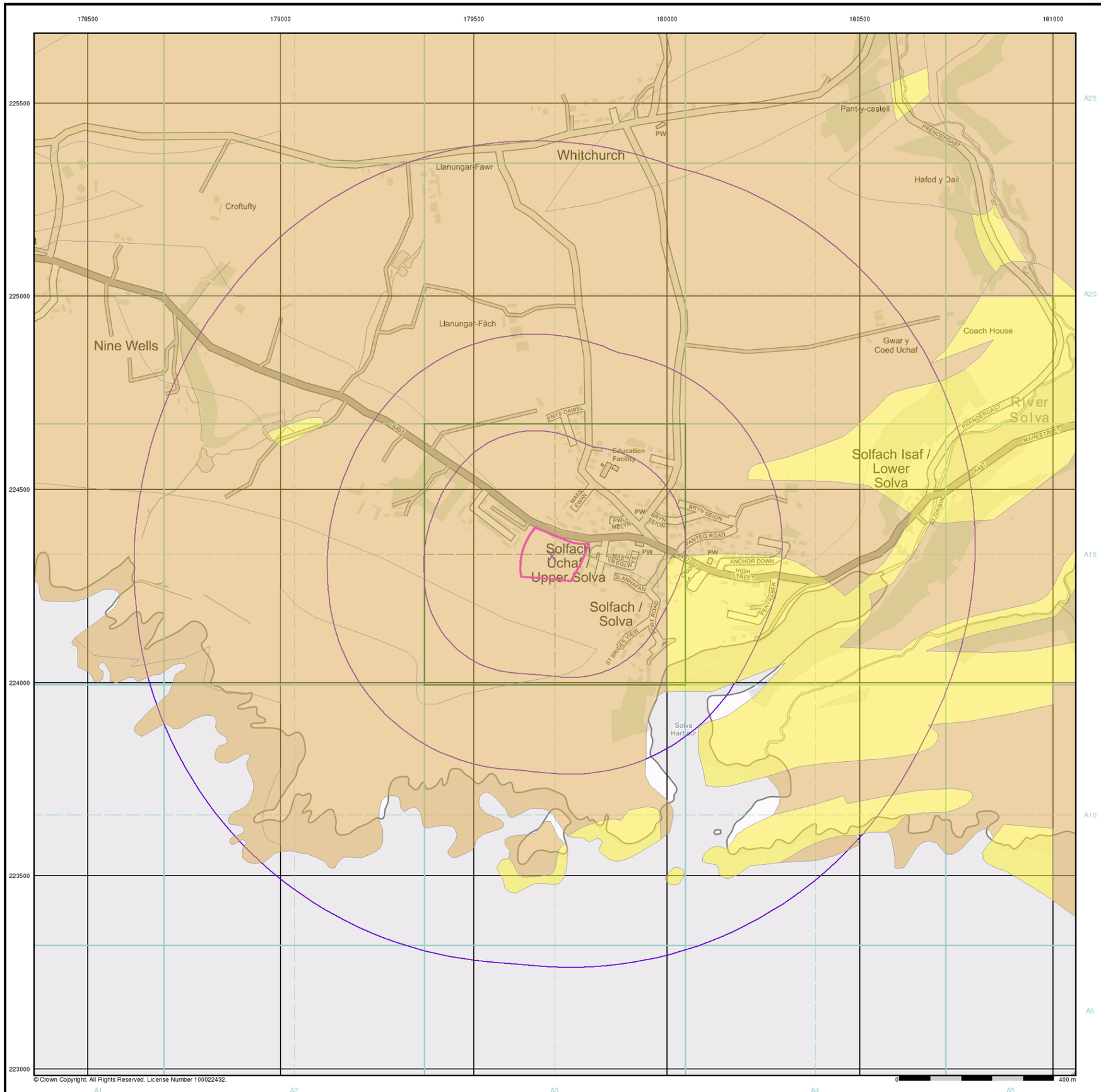


Intégral Géotechnique

General

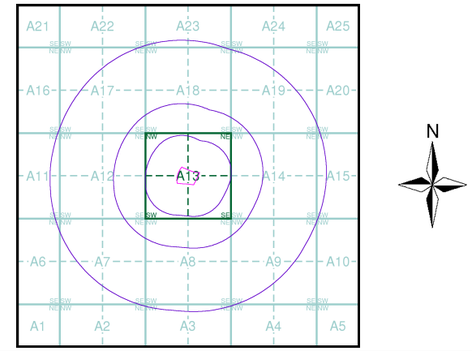
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg

- < 15
- 15 - 25
- 25 - 35
- 35 - 45
- 45 - 60
- 60 - 120
- > 120

Estimated Soil Chemistry Arsenic - Slice A



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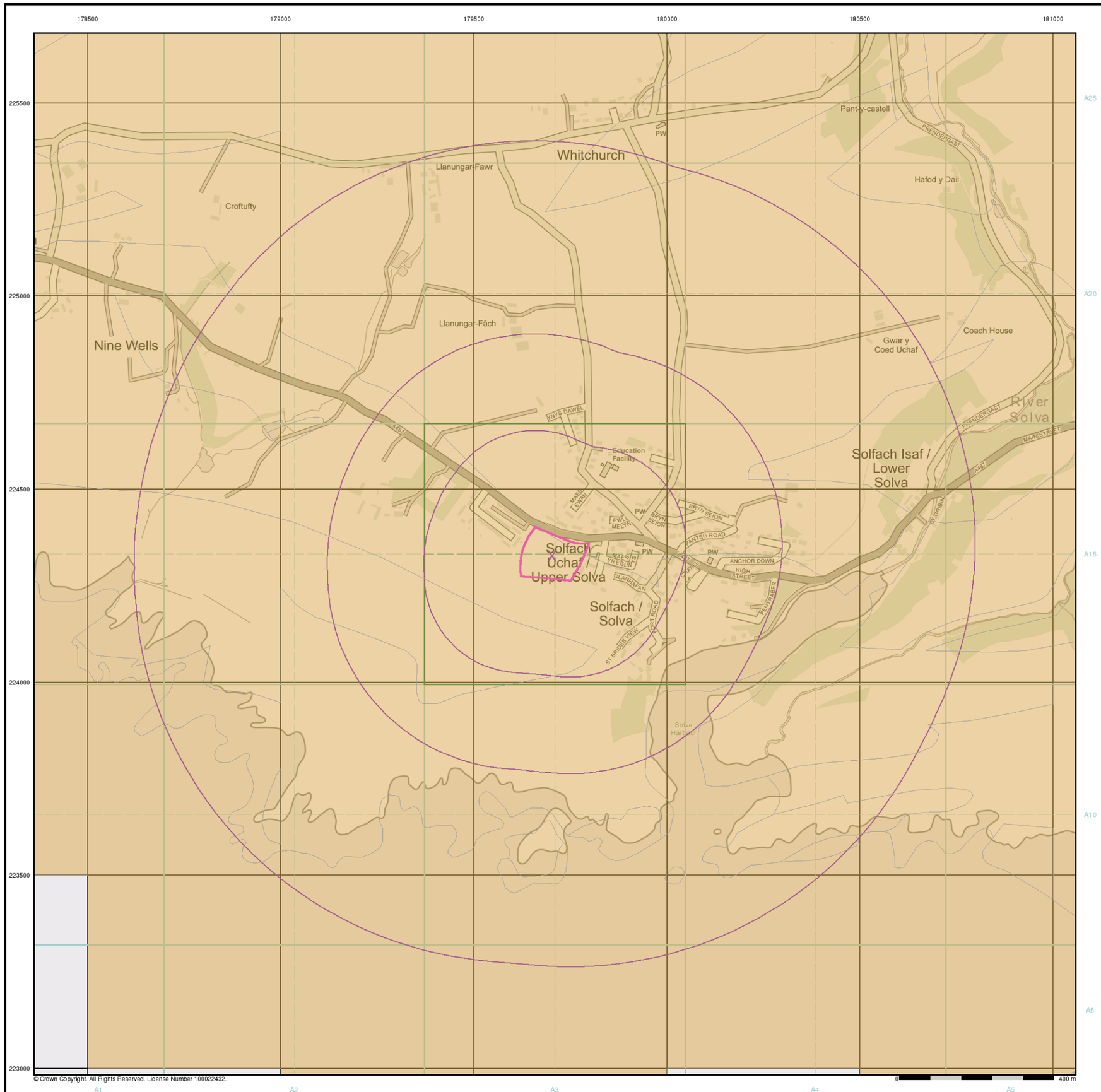


Intégral Géotechnique

General

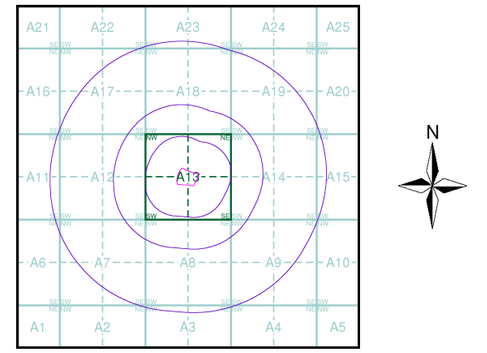
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg

- < 1.8
- 1.8 - 2.2
- 2.2 - 3.0
- > 3.0

Estimated Soil Chemistry Cadmium - Slice A



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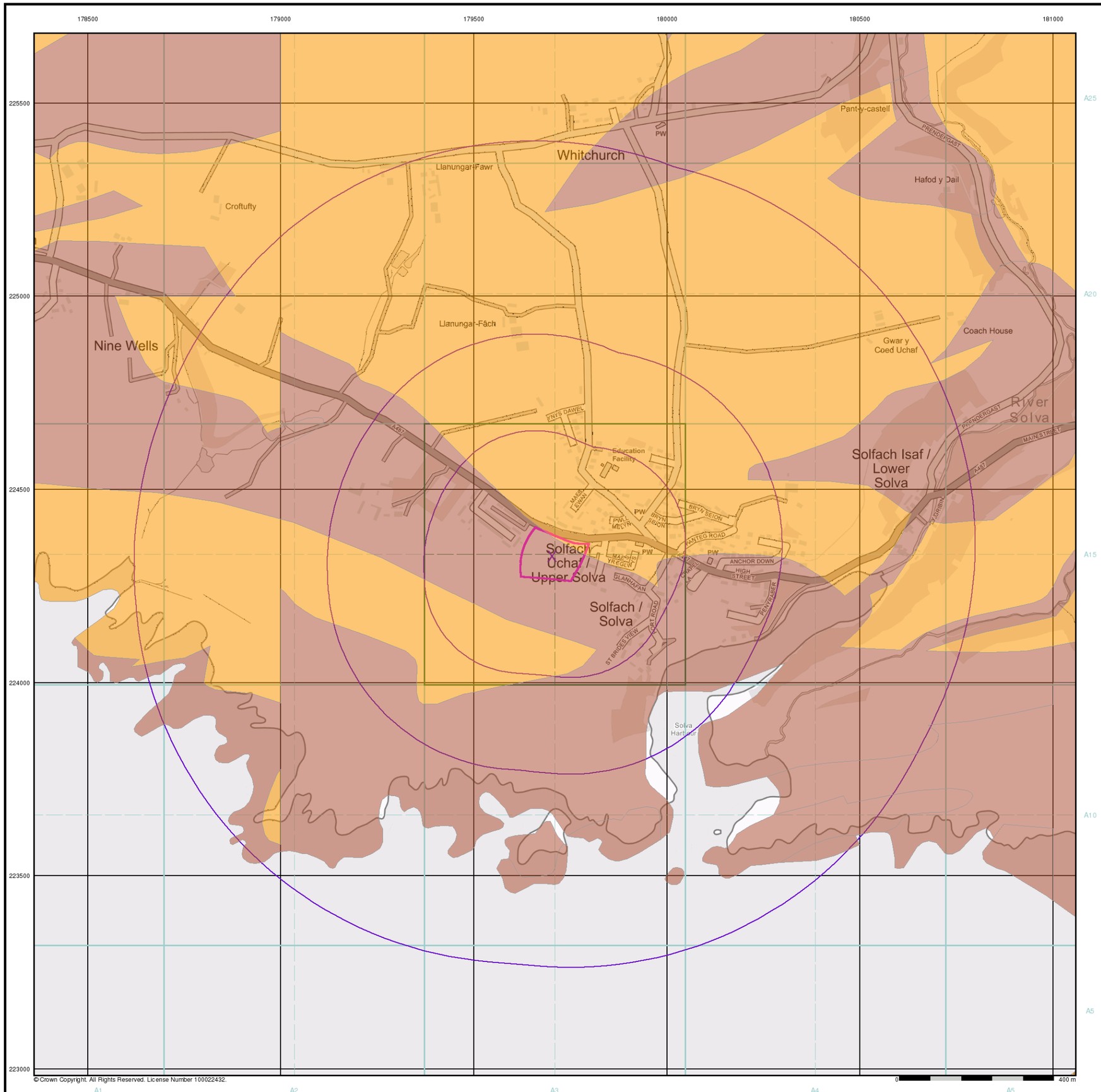


Intégral Géotechnique

General

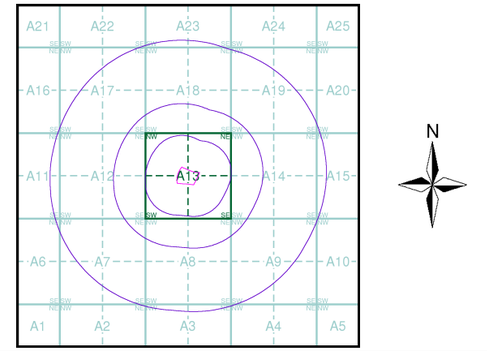
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg

- < 20
- 20 - 40
- 40 - 60
- 60 - 90
- 90 - 120
- 120 - 180
- > 180

Estimated Soil Chemistry Chromium - Slice A



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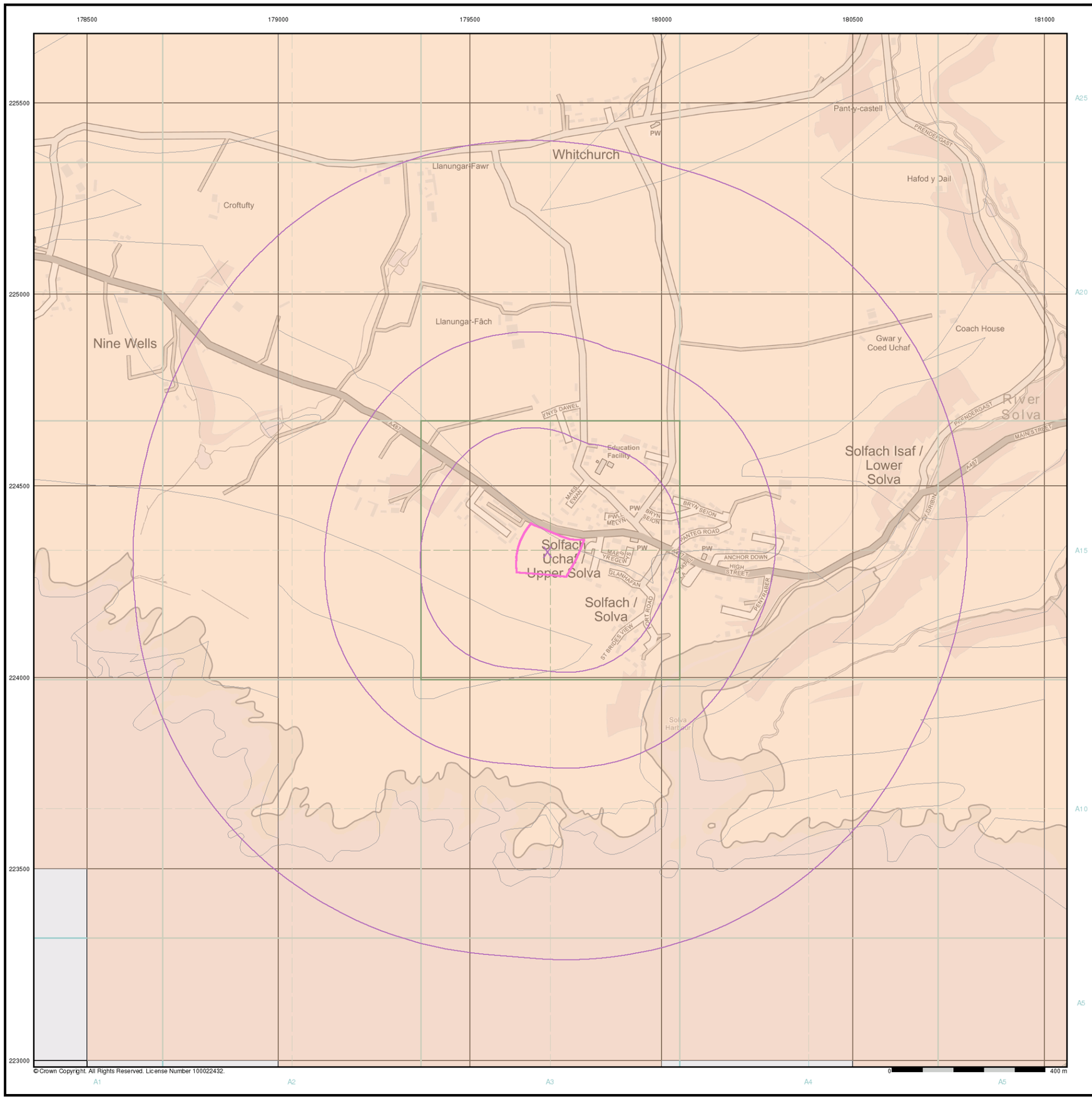


Intégral Géotechnique

General

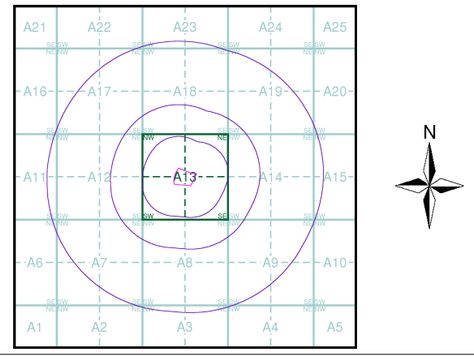
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg

- <100 mg/kg
- 100 - 200
- 200 - 300
- 300 - 600
- 600 - 1200
- >1200

Estimated Soil Chemistry Lead - Slice A



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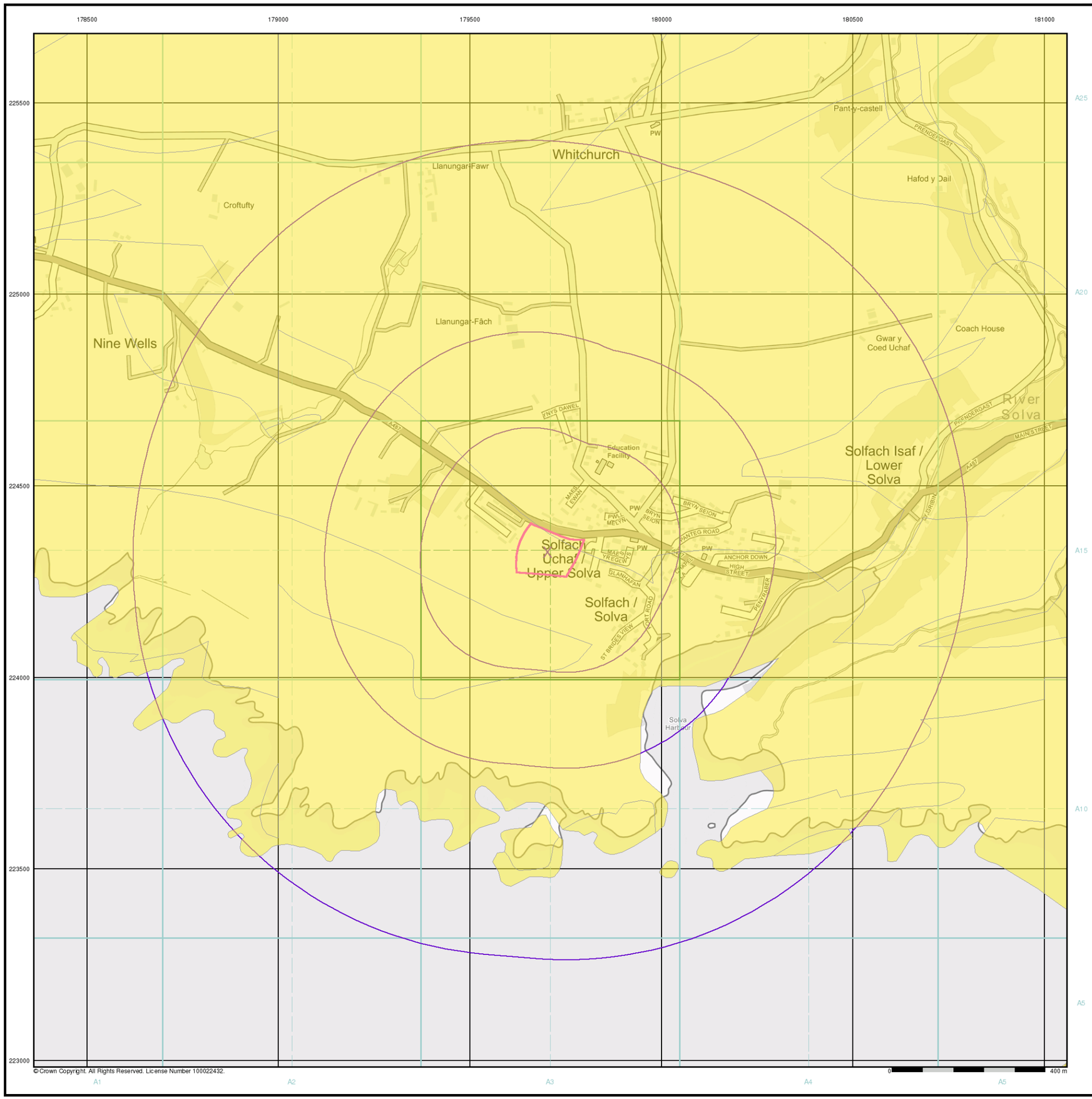


Intégral Géotechnique

General

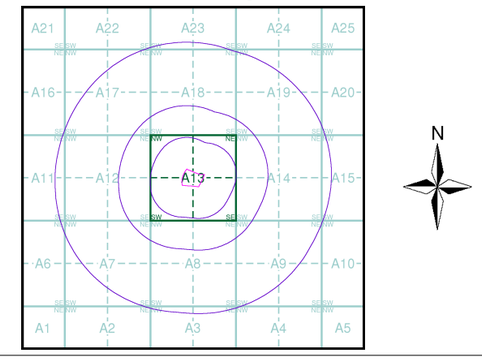
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg

- < 15
- 15 - 30
- 30 - 45
- 45 - 60
- 60 - 80
- 80 - 100
- > 100

Estimated Soil Chemistry Nickel - Slice A



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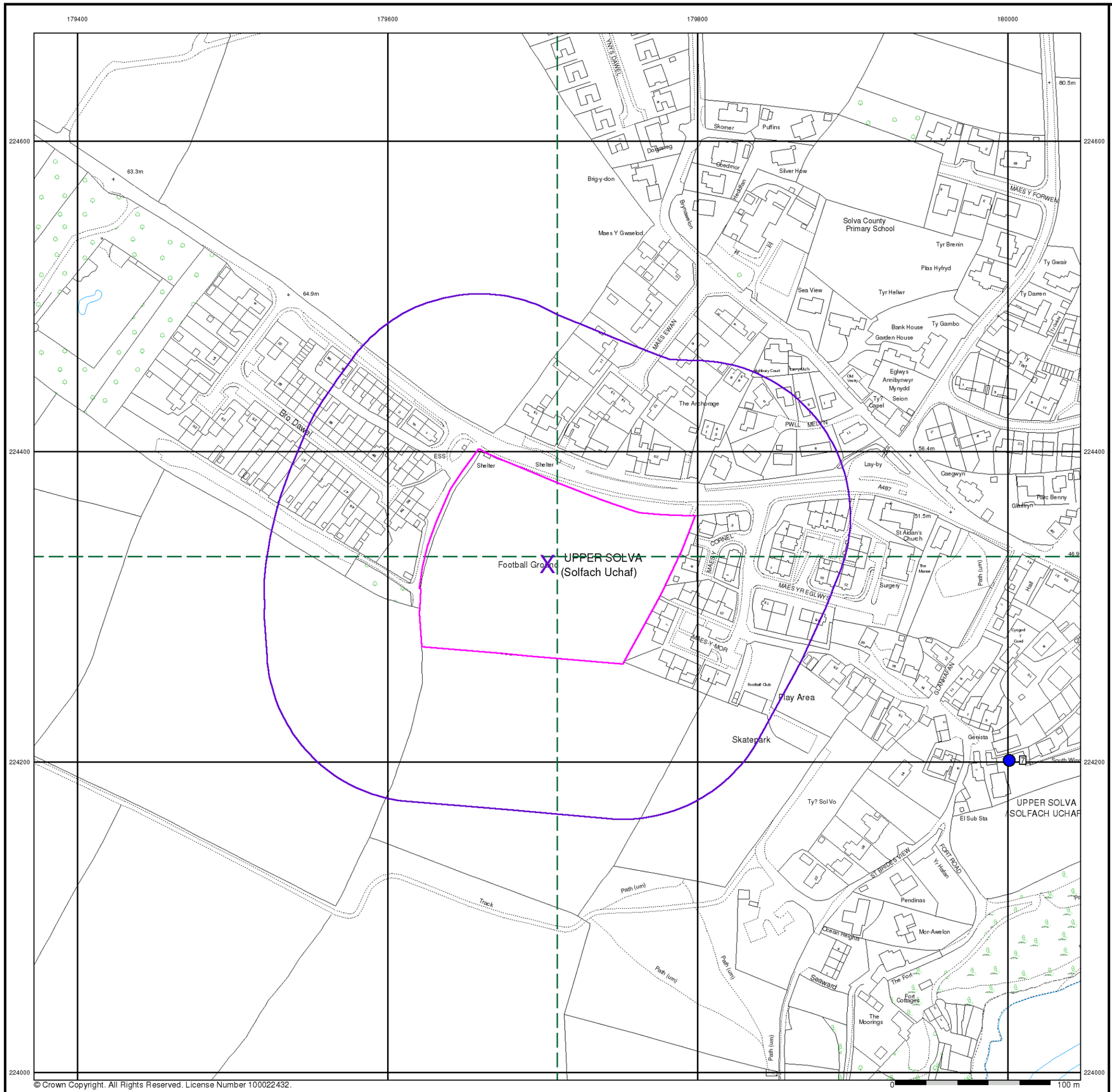


Intégral Géotechnique

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
- 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

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

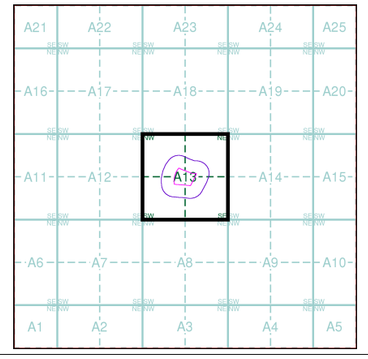
Geological

- BGS Recorded Mineral Site

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
- 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

Site Sensitivity Map - Segment A13



Order Details

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Customer Ref:	12998/LP
National Grid Reference:	179700, 224330
Slice:	A
Site Area (Ha):	1.68
Plot Buffer (m):	100

Site Details

Football Ground, Solva, Haverfordwest, SA62 6TY

Landmark INFORMATION GROUP
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Geology 1:50,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	MGR	Made Ground (Undivided)	Artificial Deposit	Not Supplied - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	FLUV	Fluvial Deposits	Sand and Gravel	Not Supplied - Holocene
	TILMP	Till, Mid Pleistocene	Diamicton	Not Supplied - Cromerian
	MBD	Marine Beach Deposits	Sand	Not Supplied - Quaternary
	PEAT	Peat	Peat	Not Supplied - Quaternary

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	UIIO	Unnamed Igneous Intrusion, Ordovician	Microtonalite, Porphyritic	Not Supplied - Ordovician
	MEN	Menevian Group	Mudstone	Not Supplied - St David's
	SOS	Solva Group	Sandstone and [Subequal/subordinate] Argillaceous Rocks, Interbedded	Not Supplied - St David's
	LF	Lingula Flags Formation	Sandstone and Mudstone	Not Supplied - St David's
	CRBS	Caerbwdy Sandstone Formation	Sandstone	Not Supplied - Comley
	CFBS	Caerfai Bay Shales Formation	Mudstone	Not Supplied - Comley
	SNSS	St Non's Sandstone Formation	Sandstone	Not Supplied - Comley
	SNSS	St Non's Sandstone Formation	Conglomerate	Not Supplied - Comley
	PVR	Ramsey Sound Group	Tuff	Not Supplied - Ediacaran
	PVC	Caerbwdy Group	Tuff	Not Supplied - Ediacaran
	PN	Pebidian Supergroup	Tuff	Not Supplied - Ediacaran
		Faults		

Intégral Géotechnique

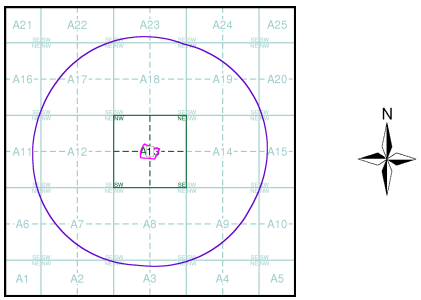
Geology 1:50,000 Maps

This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the 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. Not all layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:50,000 Maps Coverage

Map ID:	**1**
Map Sheet No:	**209**
Map Name:	**St. David's**
Map Date:	**1992**
Bedrock Geology:	**Available**
Superficial Geology:	**Available**
Artificial Geology:	**Available**
Faults:	**Not Supplied**
Landslip:	**Not Available**
Rock Segments:	**Not Supplied**

Geology 1:50,000 Maps - Slice A



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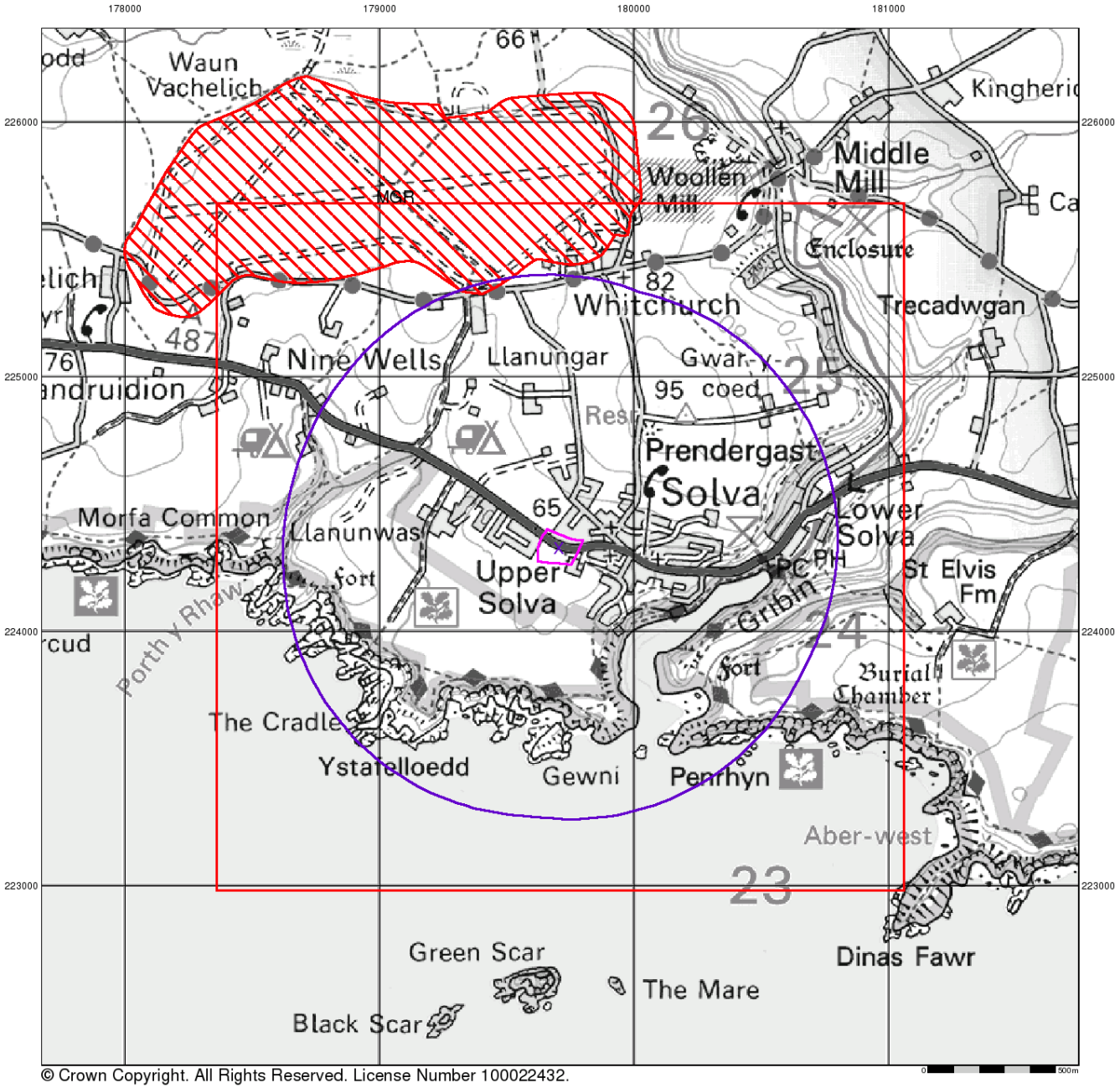


Artificial Ground and Landslip

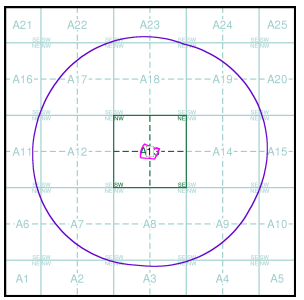
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions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

Artificial Ground and Landslip Map - Slice A



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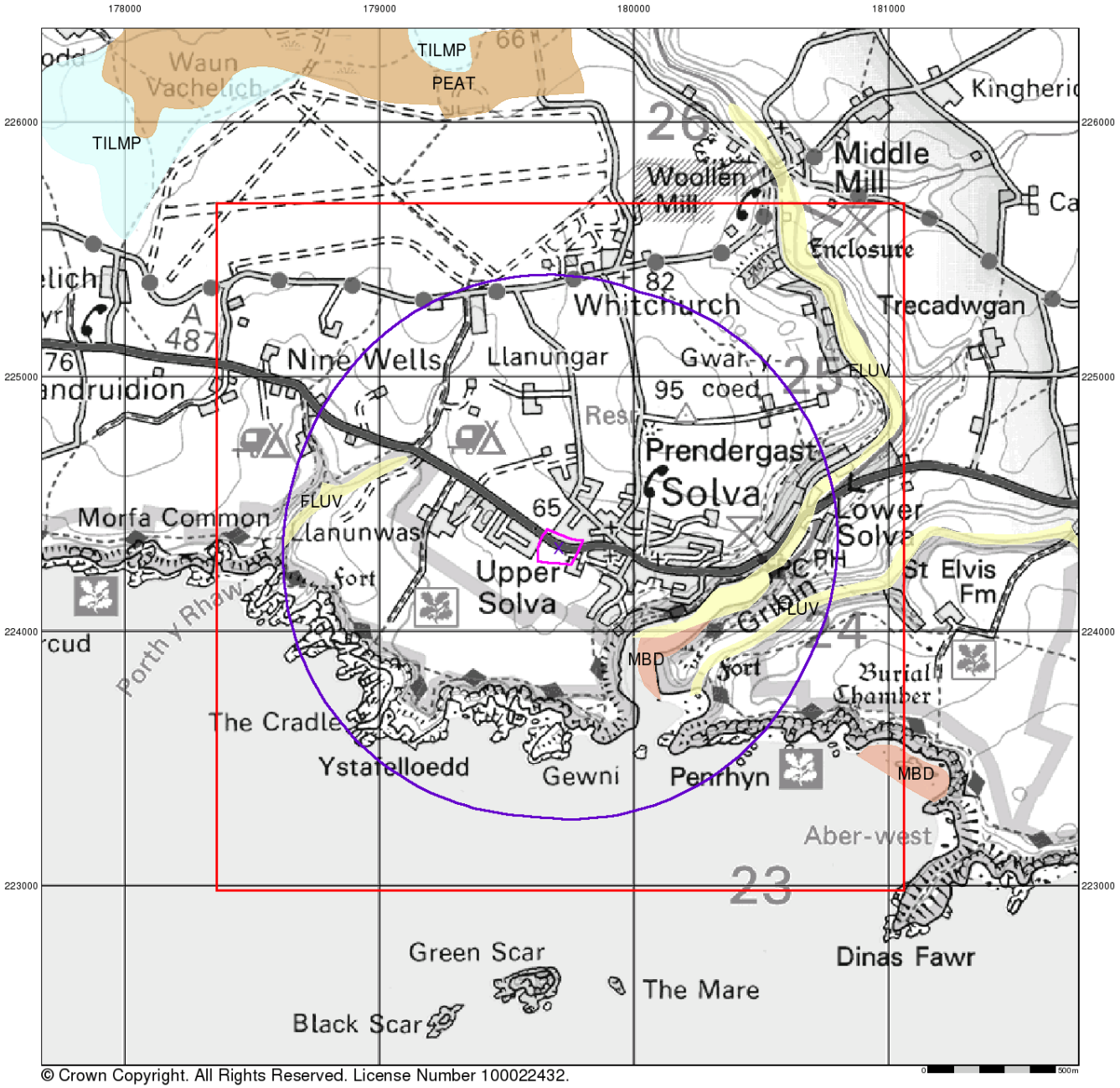


Intégral
Géotechnique

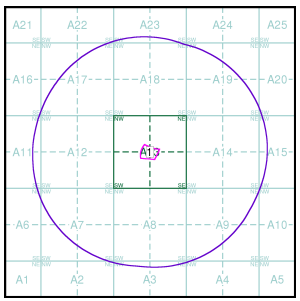
Superficial Geology

Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, 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



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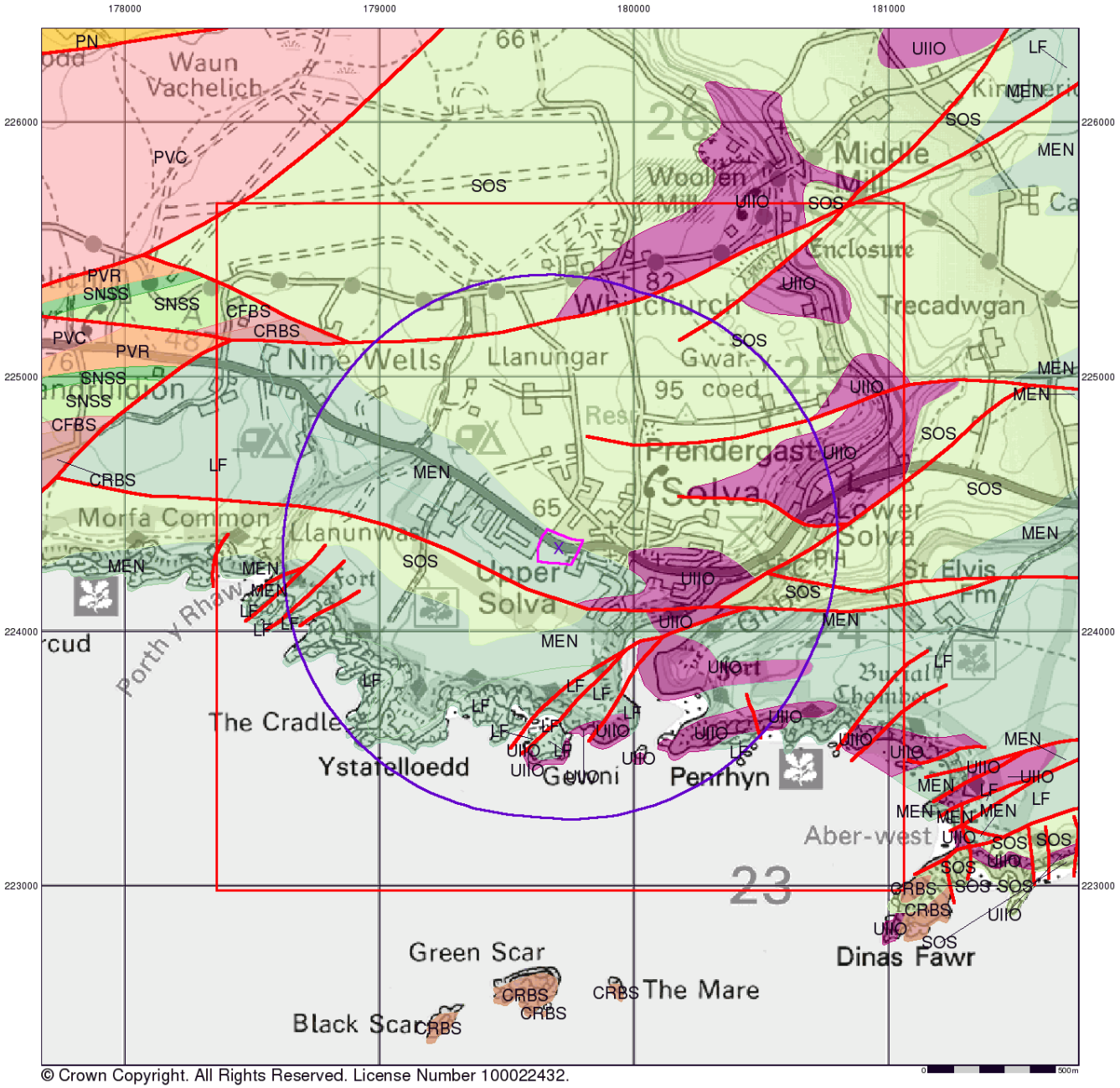


Intégral
Géotechnique

Bedrock and Faults

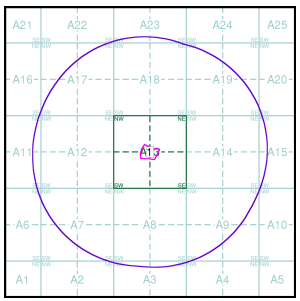
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

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 (e.g. normal, thrust), and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets, for example, coal seams are part of the bedrock sequence, most faults and mineral veins primarily affect the bedrock but cut across the strata and post date its deposition.

Bedrock and Faults Map - Slice A



Order Details:

Order Number:	291745849_1_1
Customer Reference:	12998/LP
National Grid Reference:	179700, 224330
Slice:	A
Site Area (Ha):	1.68
Search Buffer (m):	1000

Site Details:

Football Ground, Solva, Haverfordwest, SA62 6TY

Landmark INFORMATION GROUP
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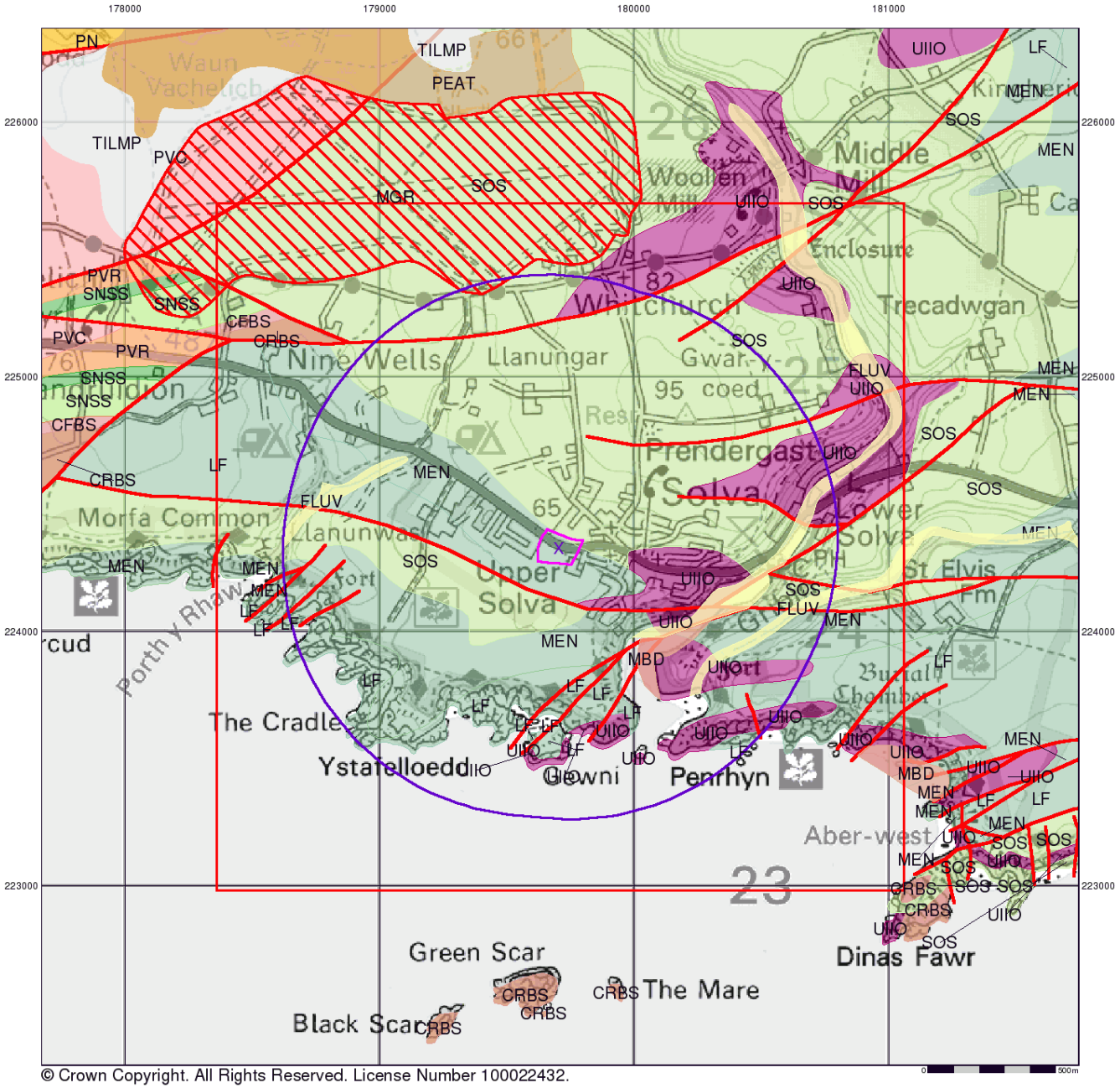


Intégral
Géotechnique

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.

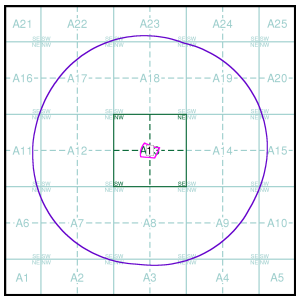
Additional Information

More information on 1:50,000 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



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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
Fenced
Un-Fenced
Minor Roads
Fenced
Un-Fenced
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
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)
R.D. Bdy. 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
Direction of Flow of Water
Shingle
Sand
Glasshouse
Pylon
Pylon
Electricity Transmission Line
Sloping Masonry
Cutting
Embankment
Standard Gauge Multiple Track
Road Under
Road Over
Level Crossing
Foot Bridge
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	Pol Sta	Police Station
Ch	Church	PO	Post Office
CH	Club House	PC	Public Convenience
F E Sta	Fire Engine Station	PH	Public House
FB	Foot Bridge	SB	Signal Box
Fn	Fountain	Spr	Spring
GP	Guide Post	TCB	Telephone Call Box
MP	Mile Post	TCP	Telephone Call Post
MS	Mile Stone	W	Well

1:10,000 Raster Mapping

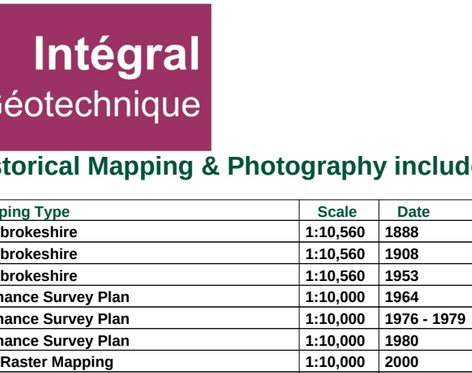
Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
Sand
Sand Pit
Slopes
Top of cliff
General detail
Underground detail
Overhead detail
Narrow gauge railway
Multi-track railway
Single track railway
County boundary (England only)
Civil, parish or community boundary
District, Unitary, Metropolitan, London Borough boundary
Constituency boundary
Area of wooded vegetation
Non-coniferous trees
Non-coniferous trees (scattered)
Coniferous trees
Coniferous trees (scattered)
Positioned tree
Orchard
Coppice or Osiers
Rough Grassland
Heath
Scrub
Marsh, Salt Marsh or Reeds
Water feature
Flow arrows
MHW(S) Mean high water (springs)
MLW(S) Mean low water (springs)
Telephone line (where shown)
Electricity transmission line (with poles)
BM 123.45 m Bench mark (where shown)
Triangulation station
Point feature (e.g. Guide Post or Mile Stone)
Pylon, flare stack or lighting tower
Site of (antiquity)
Glasshouse
General Building
Important Building

Intégral Géotechnique

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Pembrokeshire	1:10,560	1888	2
Pembrokeshire	1:10,560	1908	3
Pembrokeshire	1:10,560	1953	4
Ordnance Survey Plan	1:10,000	1964	5
Ordnance Survey Plan	1:10,000	1976 - 1979	6
Ordnance Survey Plan	1:10,000	1980	7
10K Raster Mapping	1:10,000	2000	8
10K Raster Mapping	1:10,000	2006	9
VectorMap Local	1:10,000	2021	10

Historical Map - Slice A



Order Details

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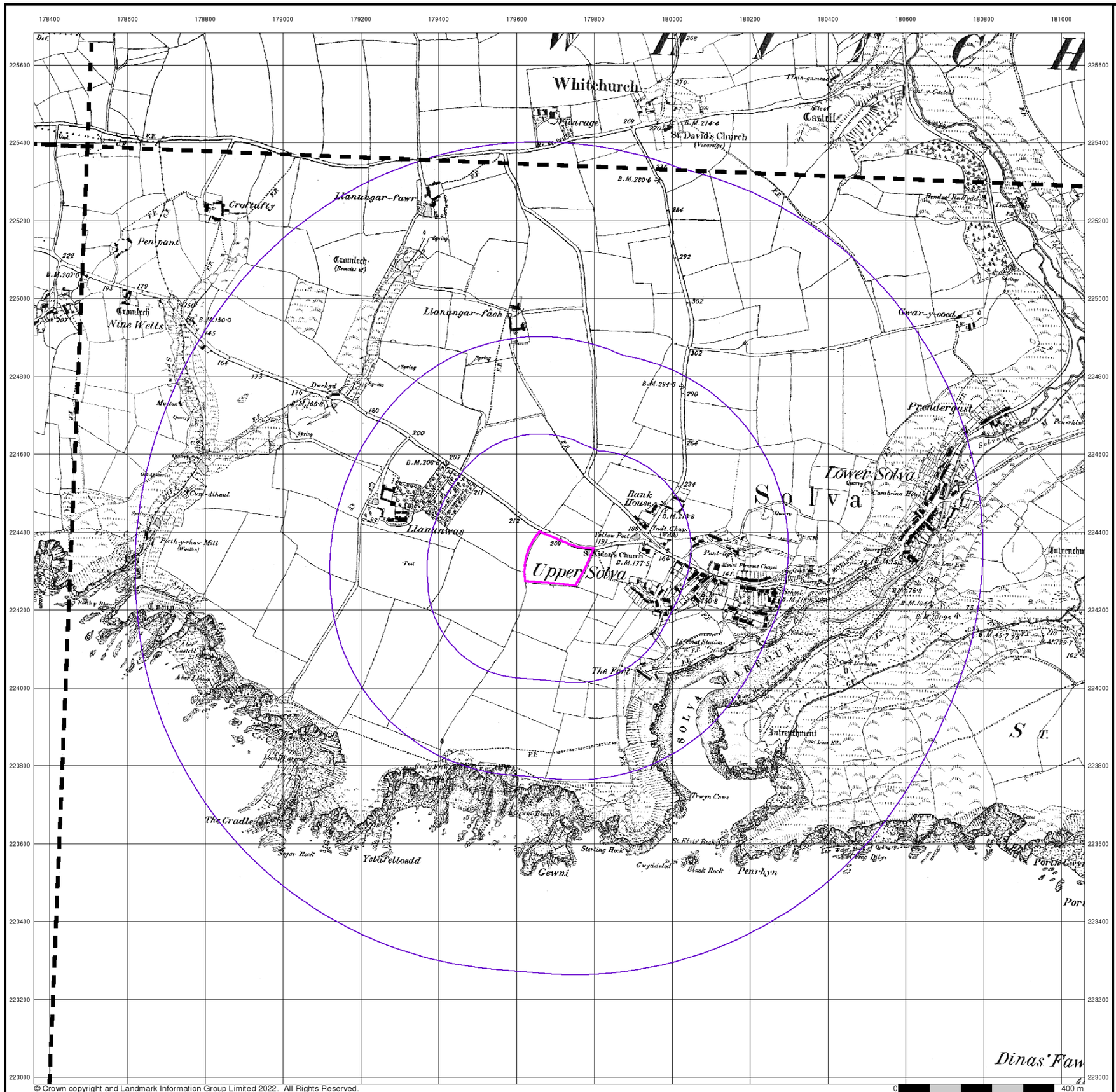


Intégral Géotechnique

Pembrokeshire

Published 1888

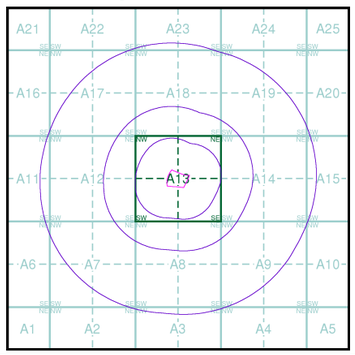
Source map scale - 1:10,560

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)

014SE 1888 1:10,560	015SW 1888 1:10,560
020NE 1888 1:10,560	021NW 1888 1:10,560

Historical Map - Slice A



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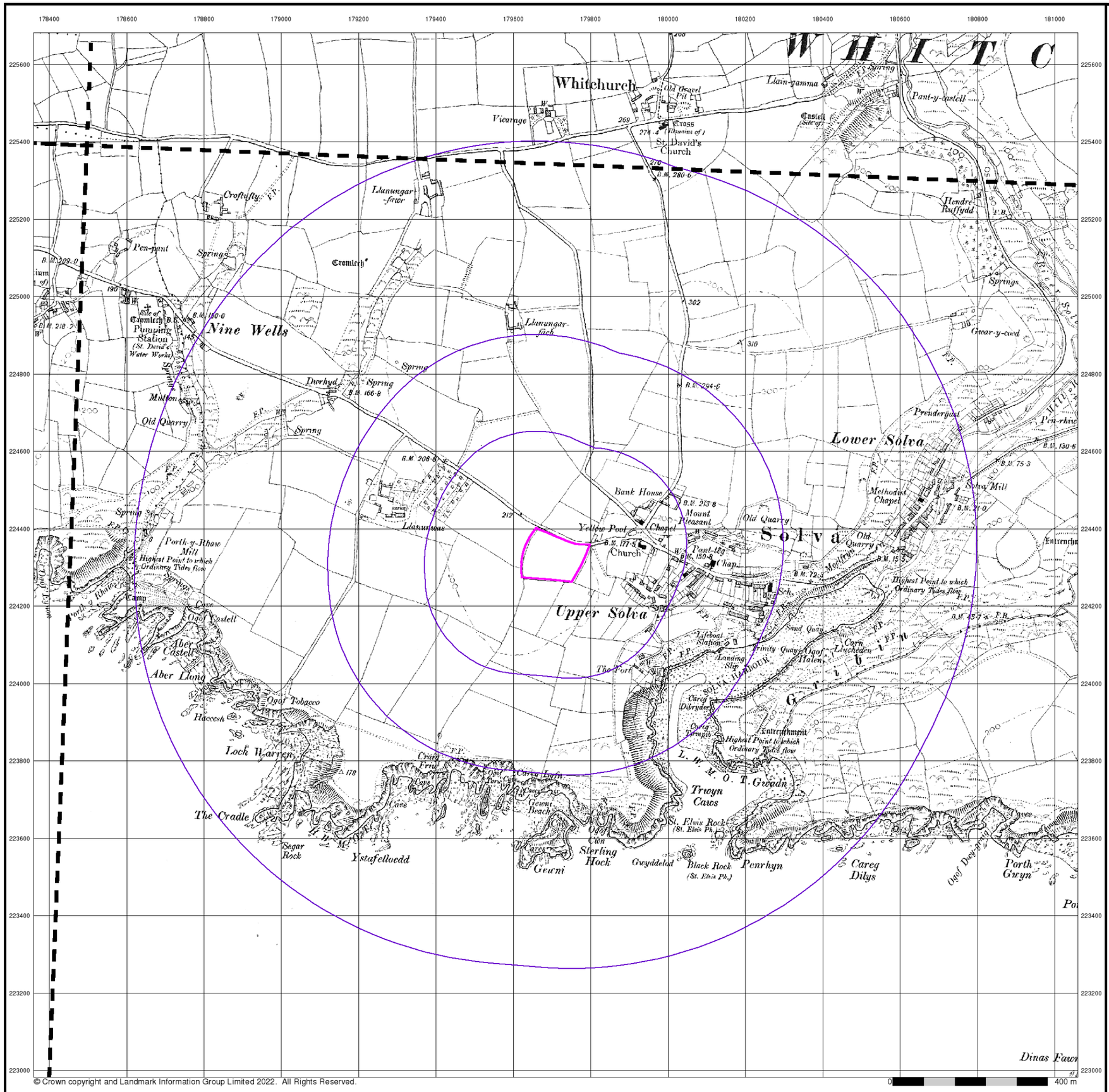

Intégral Géotechnique

Pembrokeshire

Published 1908

Source map scale - 1:10,560

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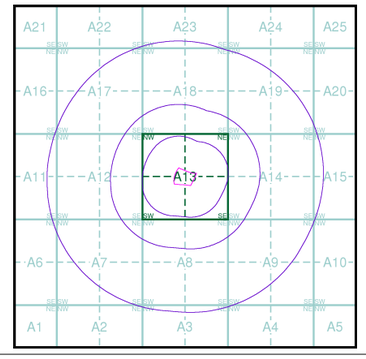
Map Name(s) and Date(s)

014SE 1908 1:10,560	015SW 1908 1:10,560
020NE 1908 1:10,560	021NW 1908 1:10,560

Historical Map - Slice A



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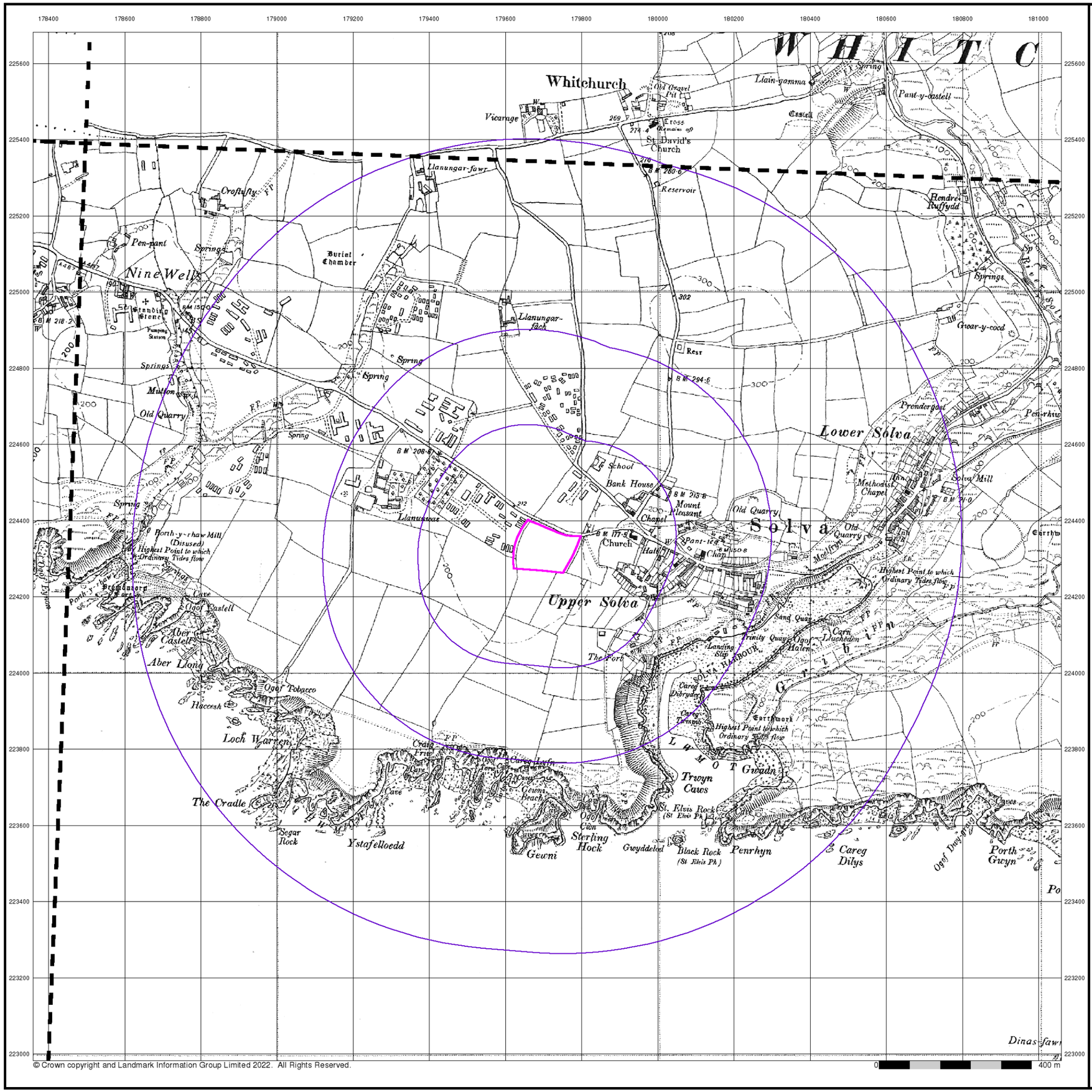


Intégral Géotechnique

Pembrokeshire

Published 1953

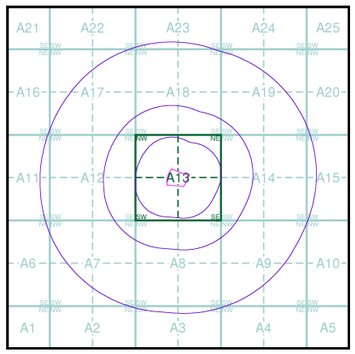
Source map scale - 1:10,560

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

014SE 1953 1:10,560	015SW 1953 1:10,560
020NE 1953 1:10,560	021NW 1953 1:10,560

Historical Map - Slice A



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Slice:	A
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Intégral Géotechnique

Ordnance Survey Plan

Published 1964

Source map scale - 1:10,000

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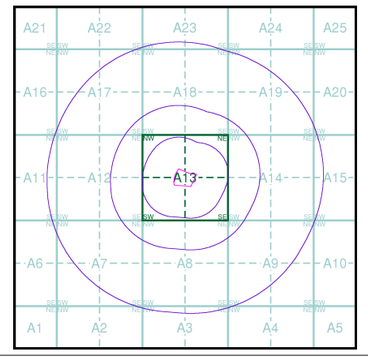
Map Name(s) and Date(s)

SM72NE 1964 1:10,560	SM82NW 1964 1:10,560
SM72SE 1964 1:10,560	SM82SW 1964 1:10,560

Historical Map - Slice A



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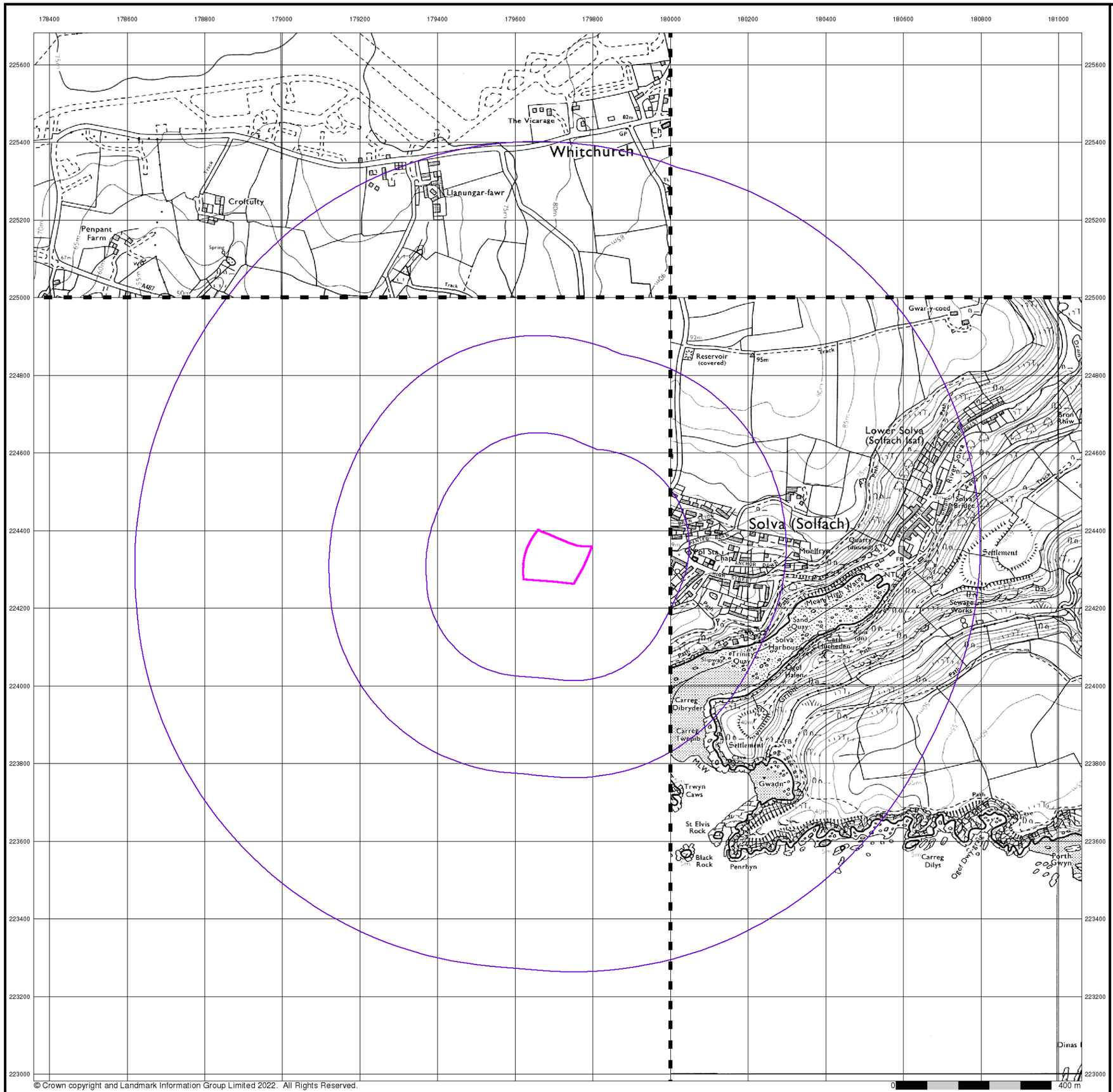


Intégral Géotechnique

Ordnance Survey Plan

Published 1976 - 1979

Source map scale - 1:10,000

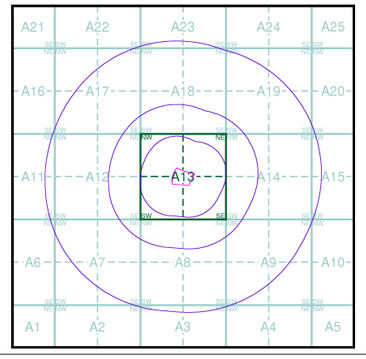
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some 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)

SM72NE
1976
1:10,000

SM82SW
1979
1:10,000

Historical Map - Slice A



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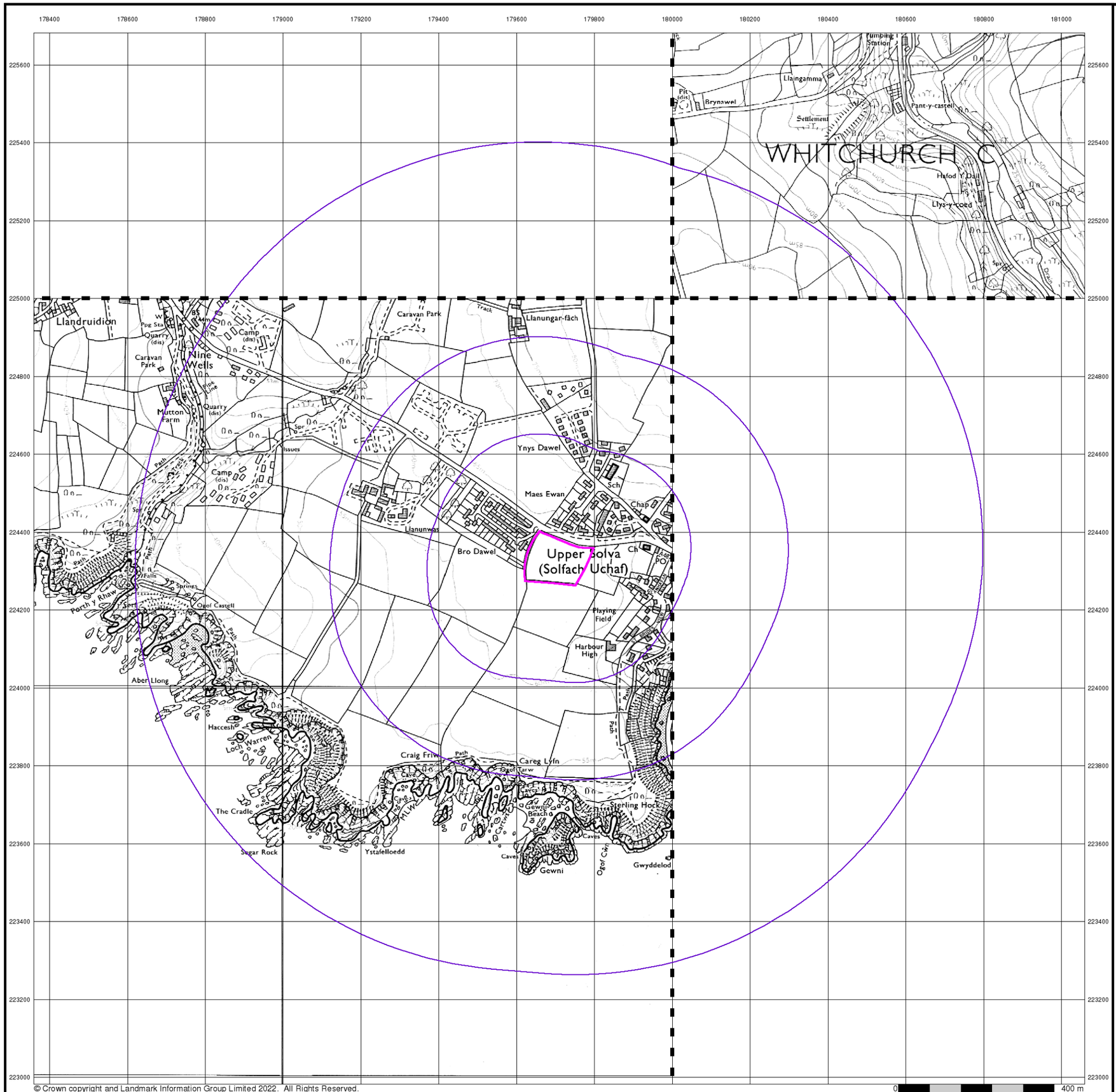


Intégral Géotechnique

Ordnance Survey Plan

Published 1980

Source map scale - 1:10,000

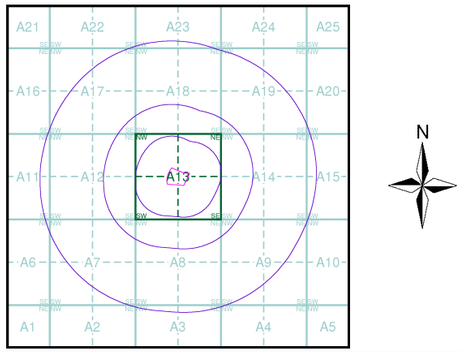
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some 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)

SM82NW
1980
1:10,000

SM72SE
1980
1:10,000

Historical Map - Slice A



Order Details

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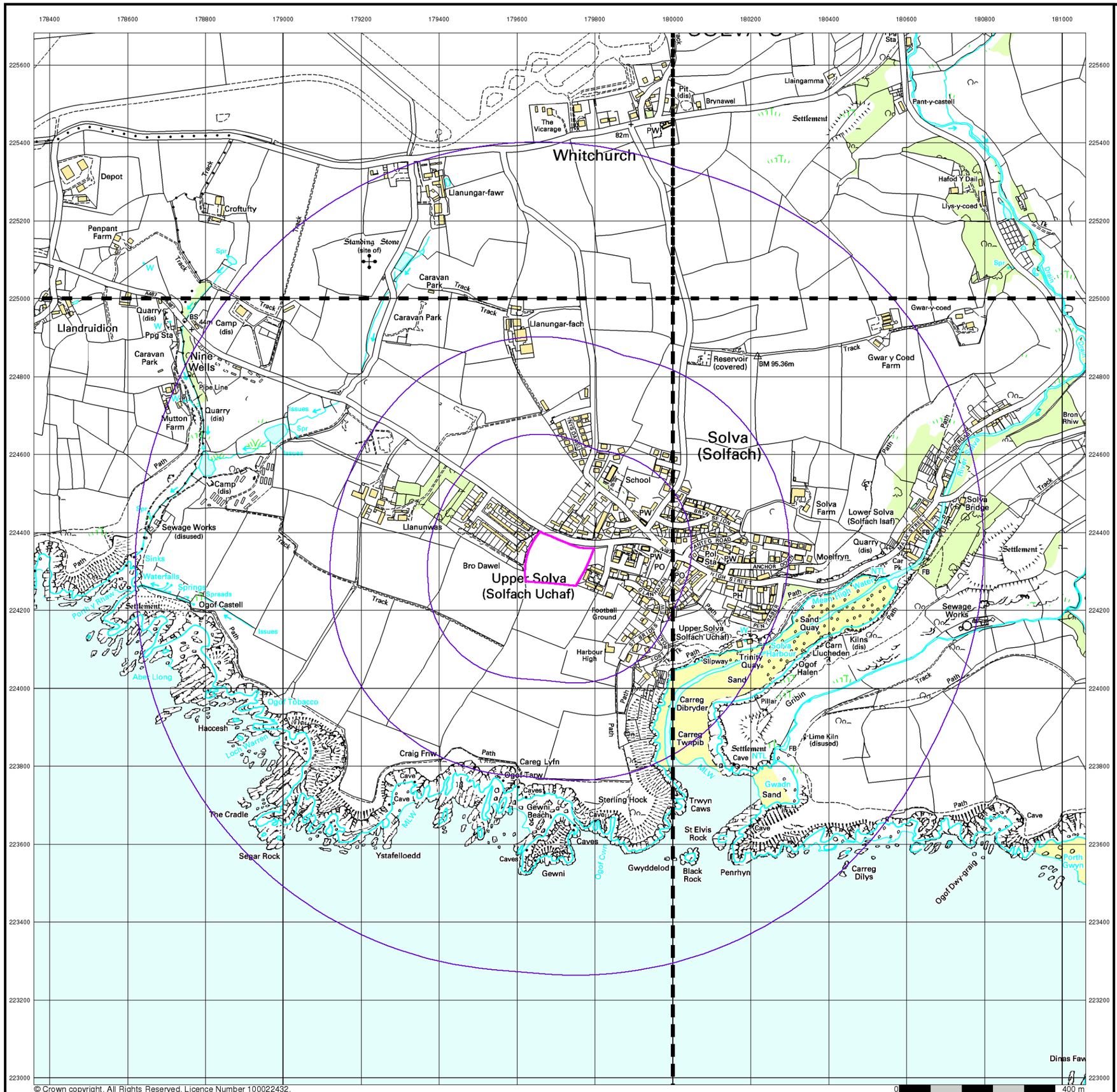


Intégral Géotechnique

10k Raster Mapping

Published 2000

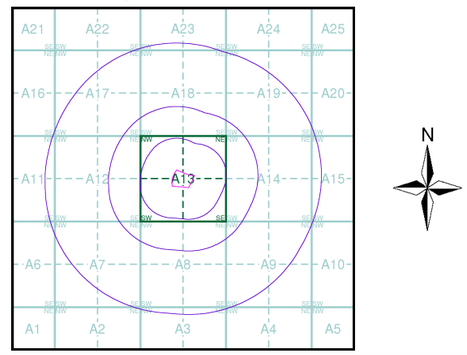
Source map scale - 1:10,000

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

Map Name(s) and Date(s)

SM72NE 2000 1:10,000	SM82NW 2000 1:10,000
SM72SE 2000 1:10,000	SM82SW 2000 1:10,000

Historical Map - Slice A



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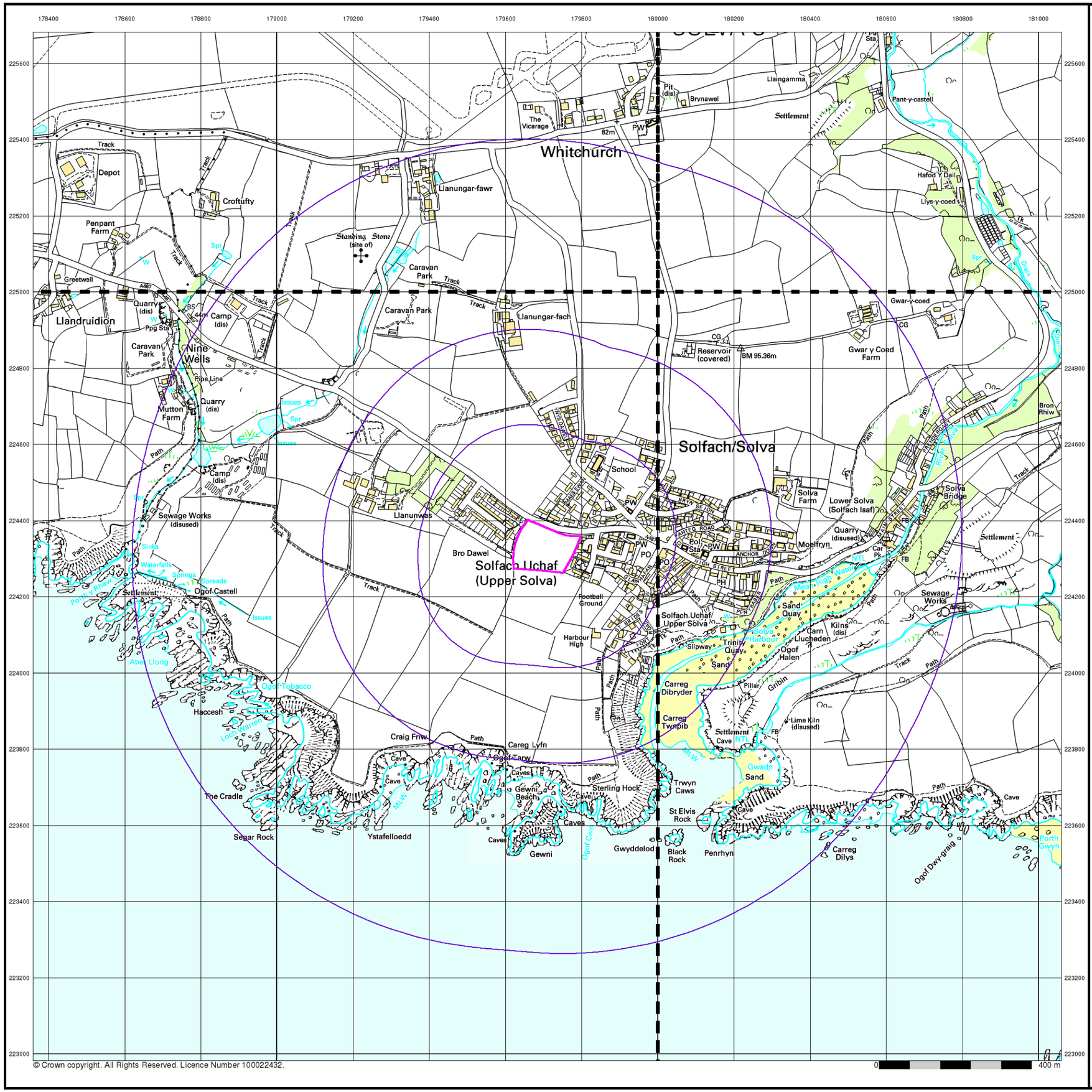


Intégral Géotechnique

10k Raster Mapping

Published 2006

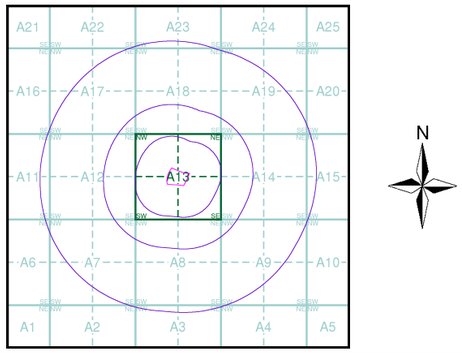
Source map scale - 1:10,000

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)

SM72NE 2006 1:10,000	SM82NW 2006 1:10,000
SM72SE 2006 1:10,000	SM82SW 2006 1:10,000

Historical Map - Slice A



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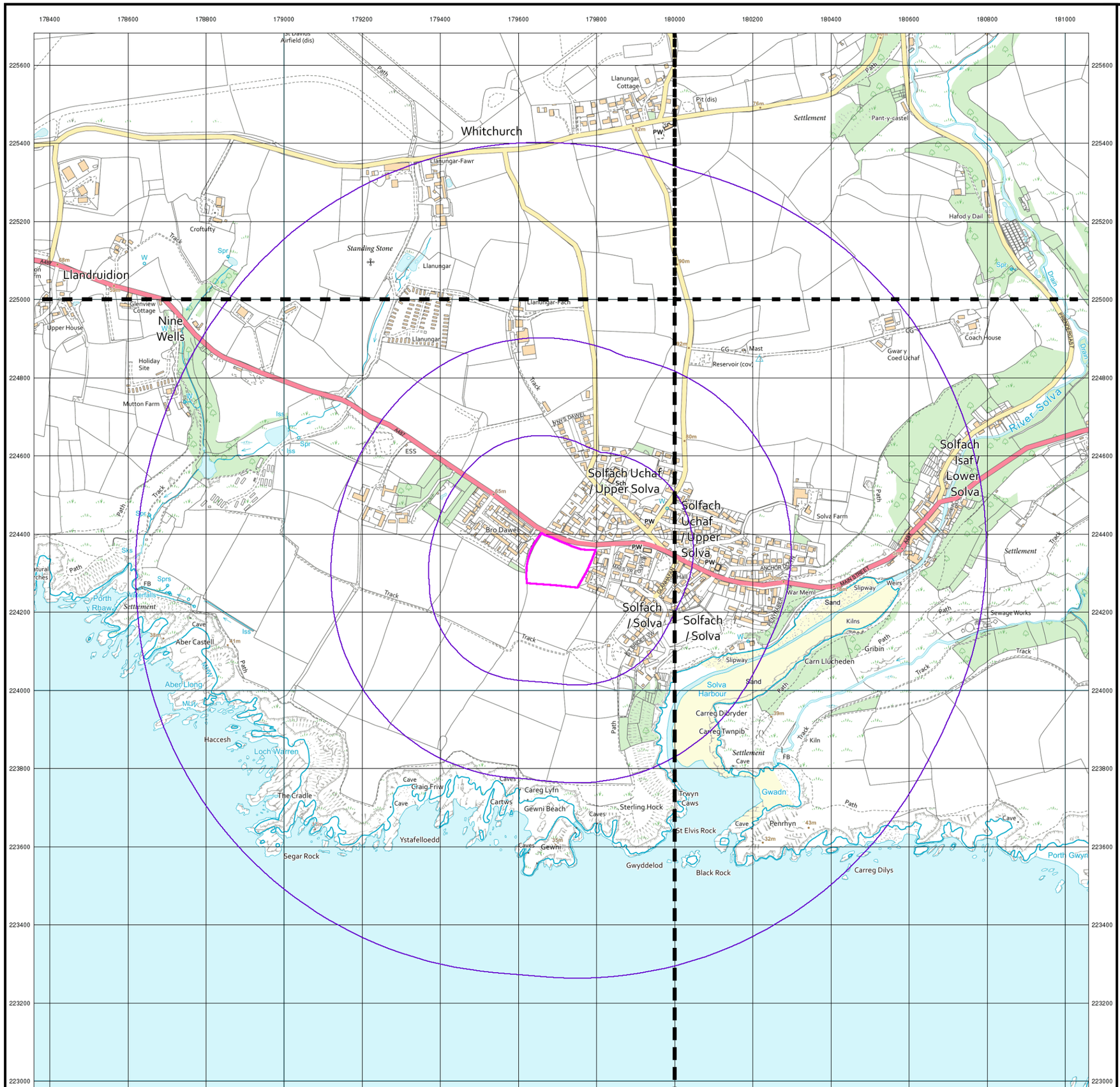


Intégral Géotechnique

VectorMap Local

Published 2021

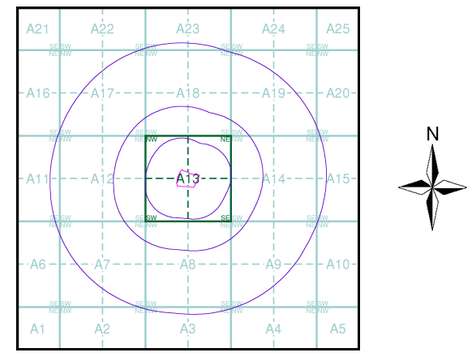
Source map scale - 1:10,000

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)

SM72NE 2021 Variable	SM82NW 2021 Variable
SM72SE 2021 Variable	SM82SW 2021 Variable

Historical Map - Slice A



Order Details

Order Number:	291745849_1_1
Customer Ref:	12998/LP
National Grid Reference:	179700, 224330
Slice:	A
Site Area (Ha):	1.68
Search Buffer (m):	1000

Site Details

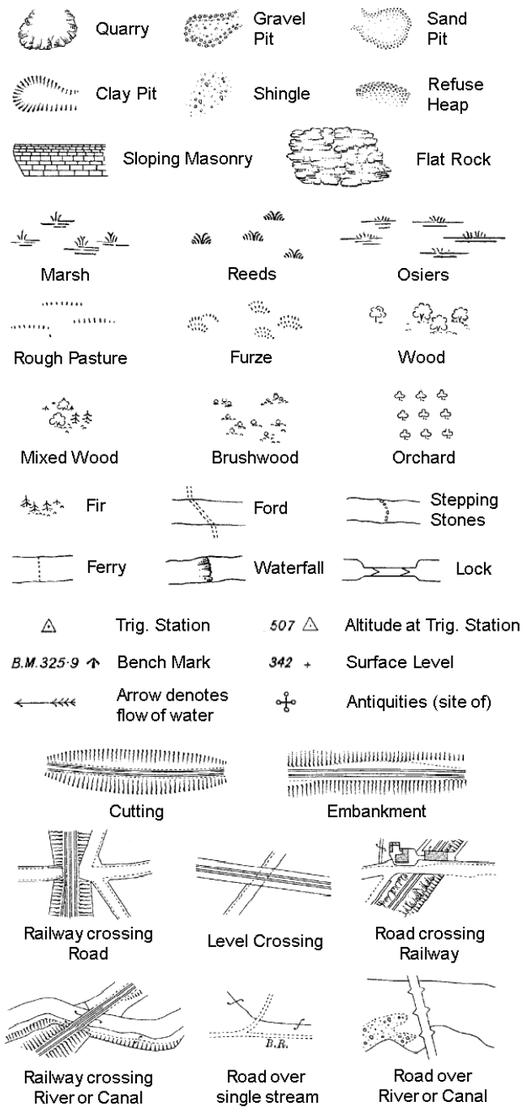
Football Ground, Solva, Haverfordwest, SA62 6TY

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Historical Mapping Legends

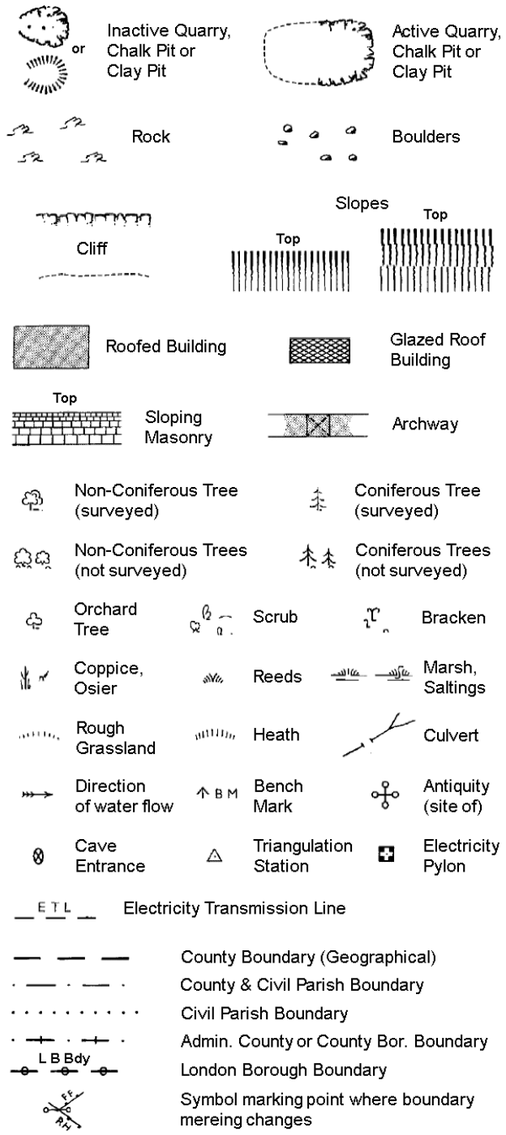
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)

B P B S	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	St.	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

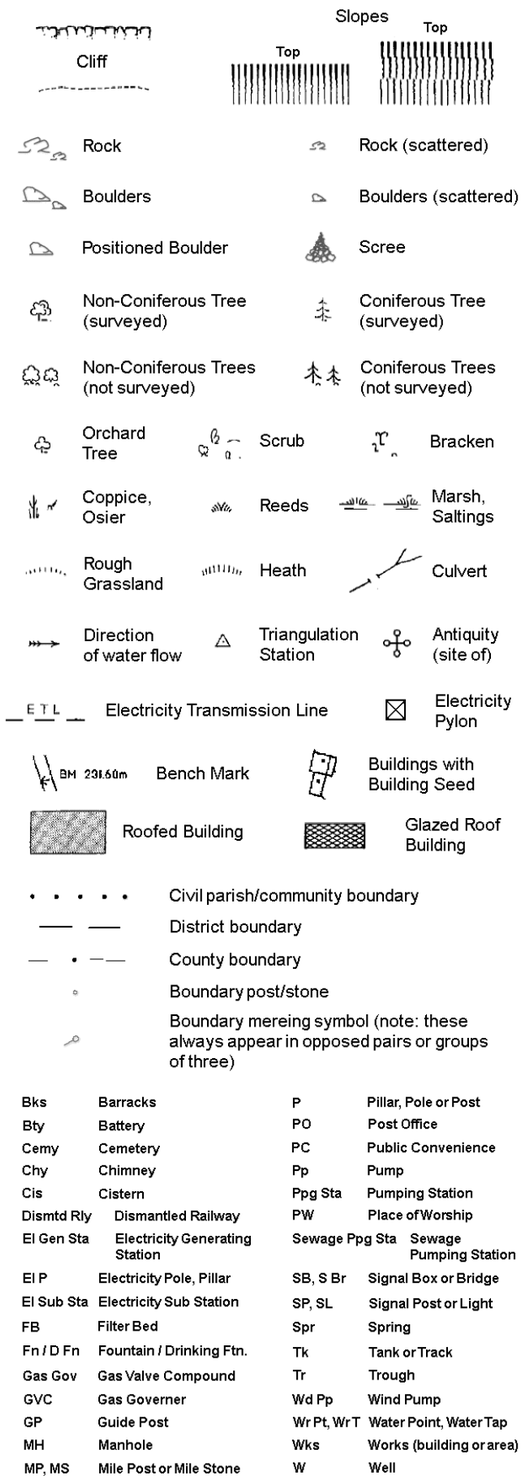
Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



County Boundary (Geographical)
County & Civil Parish Boundary
Civil Parish Boundary
Admin. County or County Bor. Boundary
L B Bdy 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
El 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



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)

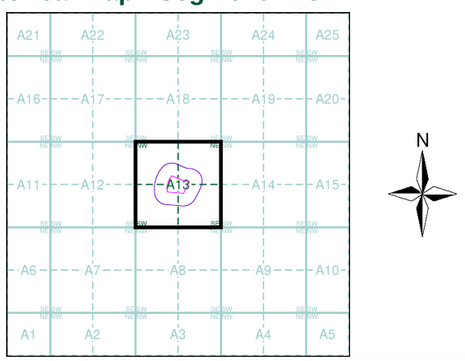
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El 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 Governer	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

Intégral Géotechnique

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Pembrokeshire	1:2,500	1889	2
Pembrokeshire	1:2,500	1908	3
Ordnance Survey Plan	1:2,500	1975	4
Large-Scale National Grid Data	1:2,500	1994	5
Historical Aerial Photography	1:2,500	2003	6

Historical Map - Segment A13



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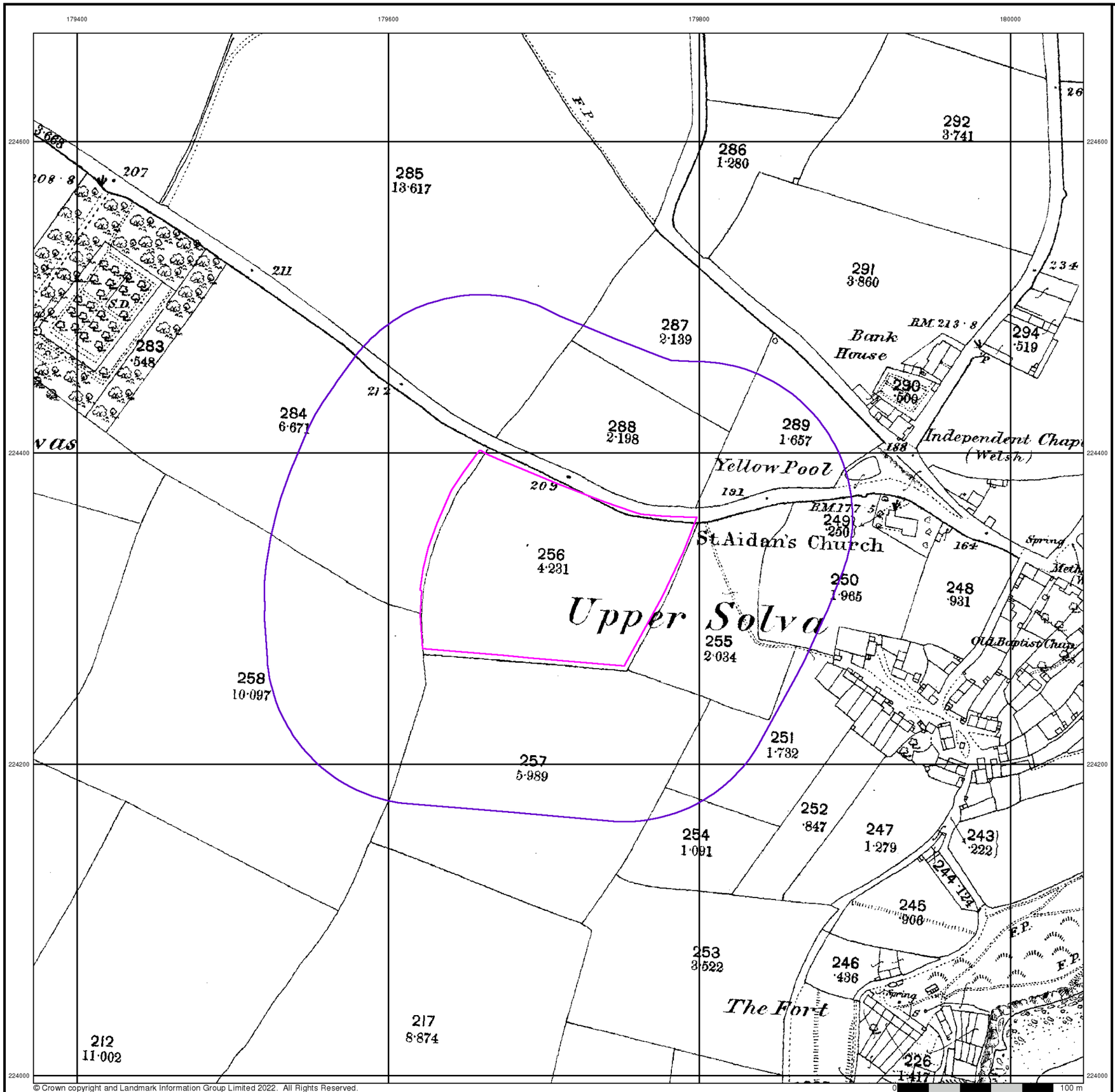


Intégral Géotechnique

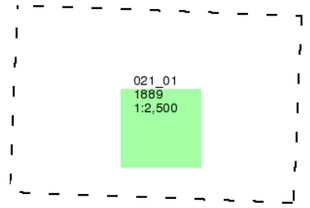
Pembrokeshire

Published 1889

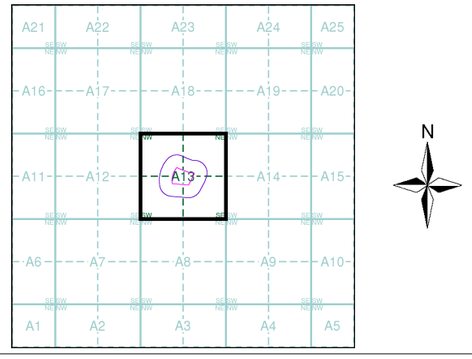
Source map scale - 1:2,500

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



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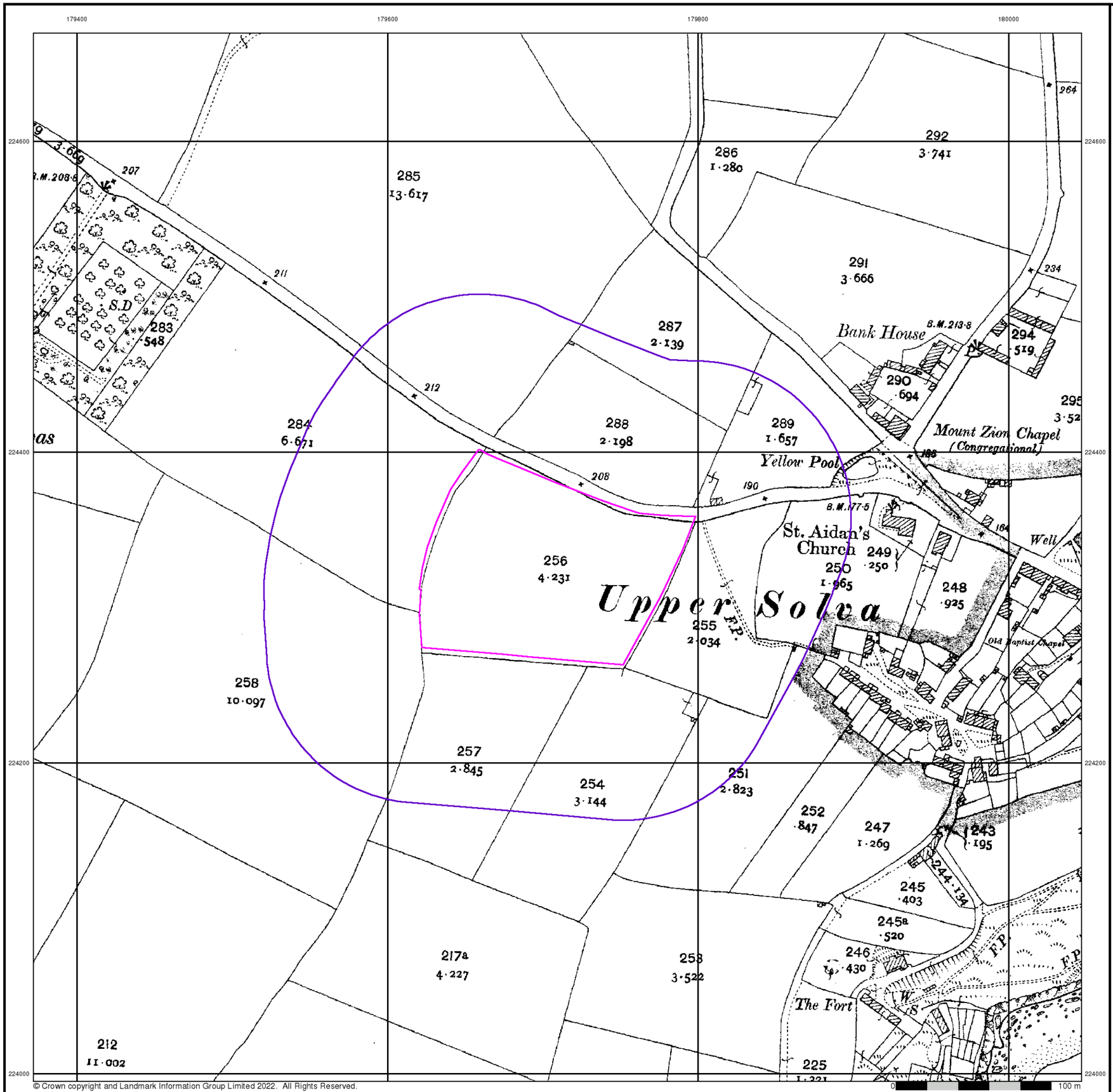


Intégral Géotechnique

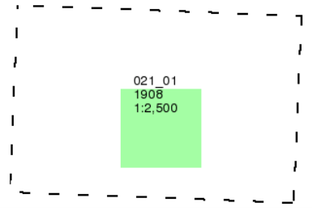
Pembrokeshire

Published 1908

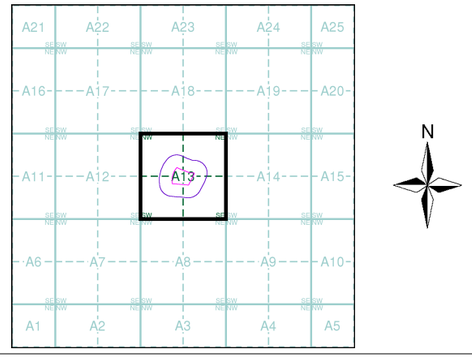
Source map scale - 1:2,500

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



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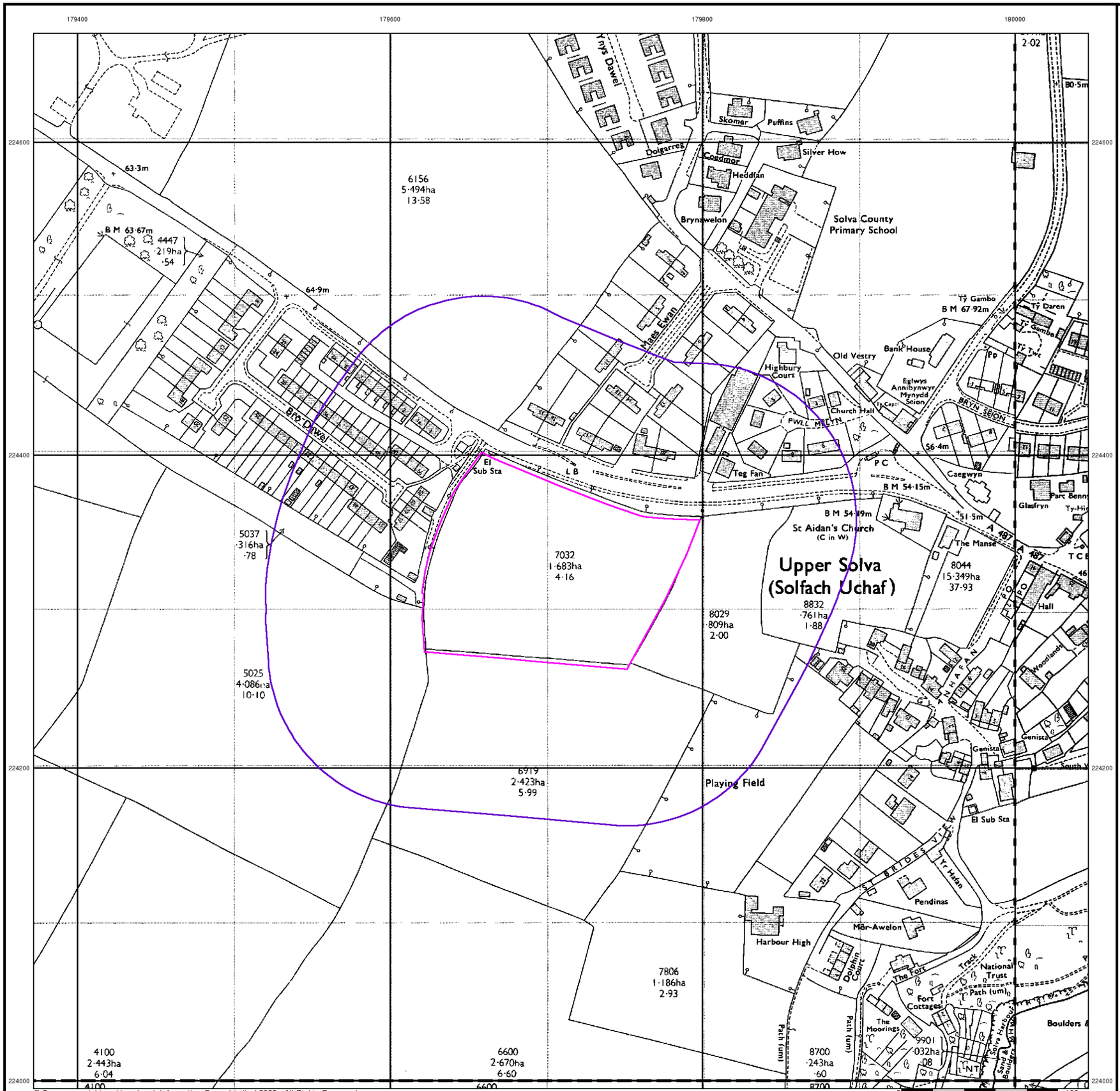


Intégral Géotechnique

Ordnance Survey Plan

Published 1975

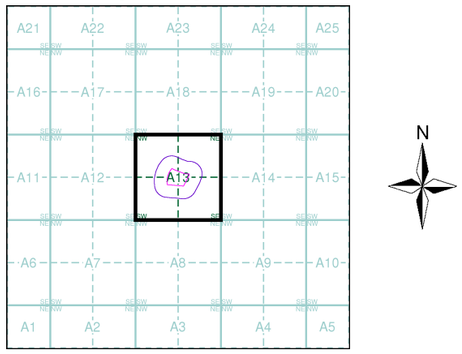
Source map scale - 1:2,500

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

Map Name(s) and Date(s)

SM7924 1975 1:2,500	SM8024 1975 1:2,500
SM7923 1975 1:2,500	SM8023 1975 1:2,500

Historical Map - Segment A13



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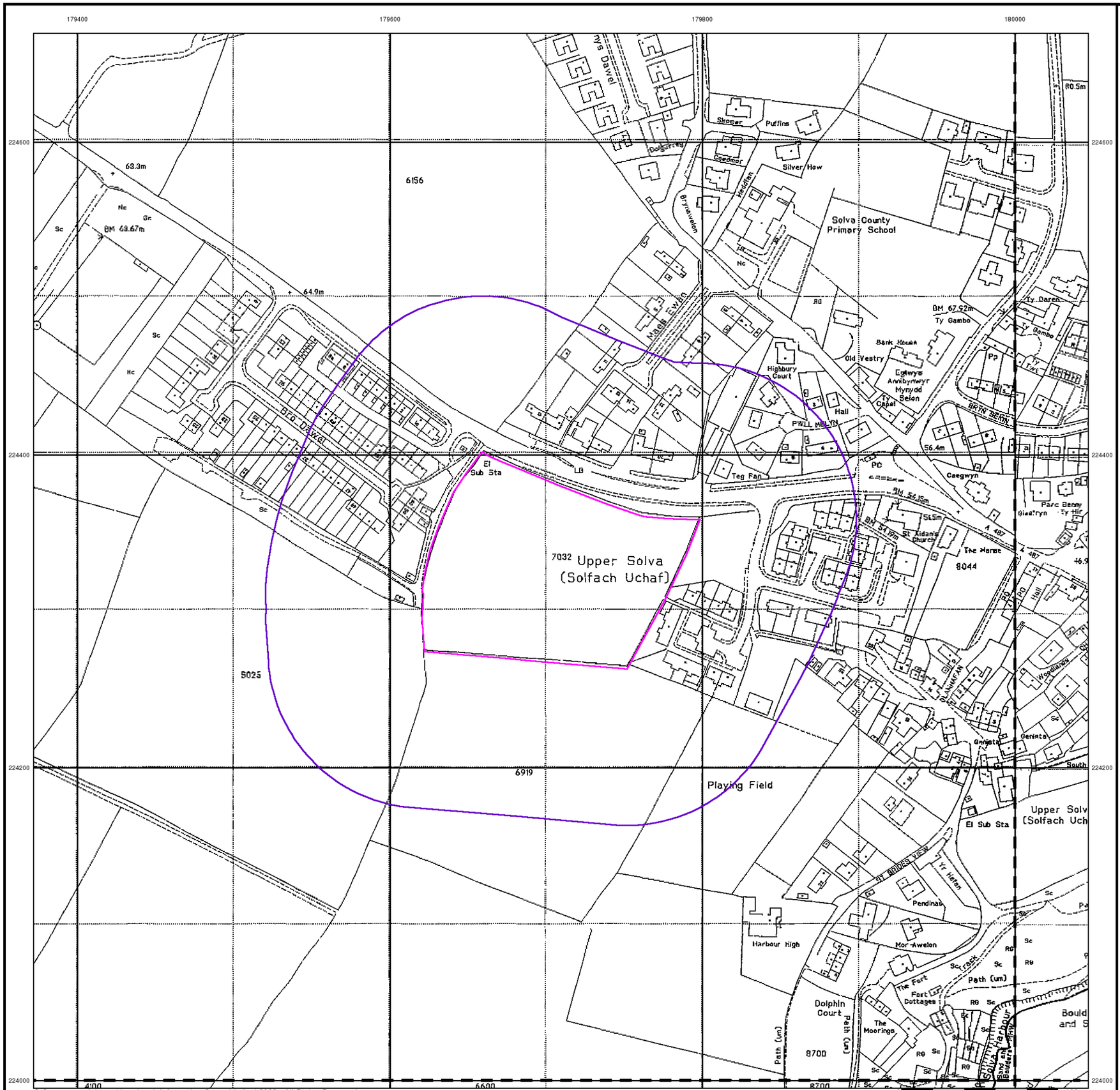


Intégral Géotechnique

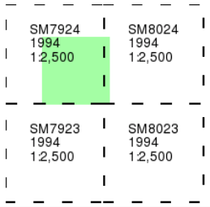
Large-Scale National Grid Data

Published 1994

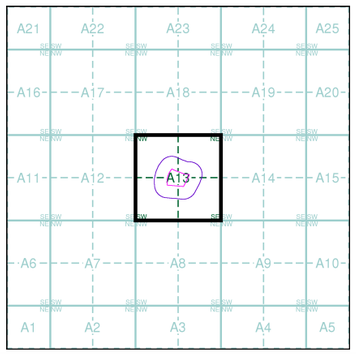
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



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Slice:	A
Site Area (Ha):	1.68
Search Buffer (m):	100

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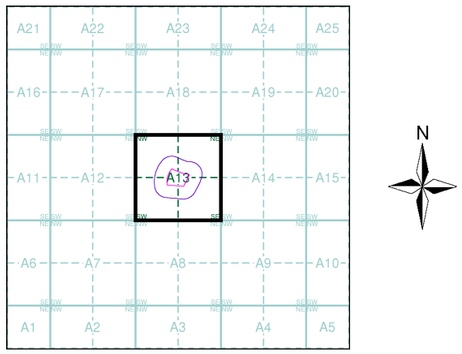
Intégral Géotechnique

Historical Aerial Photography

Published 2003

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



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Slice:	A
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Search Buffer (m):	100

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Intégral
Géotechnique

Envirocheck® Report:

Mining and Ground Stability Datasheet

Order Details:

Order Number:
291745849_1_1

Customer Reference:
12998/LP

National Grid Reference:
179700, 224330

Slice:
A

Site Area (Ha):
1.68

Search Buffer (m):
1000

Site Details:

Football Ground
Solva
Haverfordwest
SA62 6TY

Client Details:

MR H Pritchard
Integral Geotechnique
Integral House
7 Beddau Way
Castlegate Business Park
Caerphilly
CF83 2AX

Intégral Géotechnique

Contents

Report Version v53.0

Intégral Géotechnique

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m
Mining and Natural Cavities Data					
BGS Recorded Mineral Sites	pg 1			1	6
Coal Mining Affected Areas			n/a	n/a	n/a
Man Made Mining Cavities					
Mining Instability			n/a	n/a	n/a
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 2	Yes	Yes	n/a	n/a
Potential Mining Areas					
Historical Land Use Information (1:2,500)					
Extractive Industries or Potential Excavations from 1855-1909 (100m)				n/a	n/a
Extractive Industries or Potential Excavations from 1893-1915 (100m)				n/a	n/a
Extractive Industries or Potential Excavations from 1906-1937 (100m)				n/a	n/a
Extractive Industries or Potential Excavations from 1924-1949 (100m)				n/a	n/a
Extractive Industries or Potential Excavations from 1950-1980 (100m)				n/a	n/a
Subterranean Features (100m)				n/a	n/a
Historical Land Use Information (1:10,000)					
Air Shafts					
Disturbed Ground					
General Quarrying	pg 3			1	5
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Mineral Railway					
Mining & quarrying general					
Mining of coal & lignite					
Quarrying of sand & clay, operation of sand & gravel pits					
Former Marshes					
Potentially Infilled Land (Non-Water)	pg 3			1	1
Potentially Infilled Land (Water)	pg 3		1		
Ground Stability Data (1:50,000)					
CBSCB Compensation District			n/a	n/a	n/a
Brine Pumping Related Features					
Brine Subsidence Solution Area					
Potential for Collapsible Ground Stability Hazards	pg 4	Yes	Yes	n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 4	Yes	Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 4	Yes	Yes	n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 4	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 4	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 4	Yes	Yes	n/a	n/a
Salt Mining Related Features					

Intégral Géotechnique

Summary

Report Version v53.0

Intégral Géotechnique

Mining and Natural Cavities Data

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**BGS Recorded Mineral Sites** Site Name: Solva Location: St David'S, Pembrokeshire Source: British Geological Survey, National Geoscience Information Service Reference: 89880 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Cambrian Geology: Solva Group Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A14NW (E)	447	1	180231 224470
2	**BGS Recorded Mineral Sites** Site Name: Solva Location: Solva, St David'S, Pembrokeshire Source: British Geological Survey, National Geoscience Information Service Reference: 90849 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Ordovician Geology: Unnamed Igneous Intrusion, Ordovician Commodity: Igneous and Metamorphic Rock Positional Accuracy: Located by supplier to within 10m	A14SW (E)	576	1	180369 224285
3	**BGS Recorded Mineral Sites** Site Name: Lower Solva Location: Whitchurch, St David'S, Pembrokeshire Source: British Geological Survey, National Geoscience Information Service Reference: 89881 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Ordovician Geology: Unnamed Igneous Intrusion, Ordovician Commodity: Igneous and Metamorphic Rock Positional Accuracy: Located by supplier to within 10m	A14NE (E)	715	1	180489 224540
4	**BGS Recorded Mineral Sites** Site Name: Solva Location: Solva, St David'S, Pembrokeshire Source: British Geological Survey, National Geoscience Information Service Reference: 90848 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Cambrian Geology: Solva Group Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A14NE (E)	735	1	180533 224366
5	**BGS Recorded Mineral Sites** Site Name: Mutton Location: St David'S, Pembrokeshire Source: British Geological Survey, National Geoscience Information Service Reference: 89878 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Cambrian Geology: Lingula Flags Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A12NW (W)	930	1	178737 224610
6	**BGS Recorded Mineral Sites** Site Name: Mutton Location: St David'S, Pembrokeshire Source: British Geological Survey, National Geoscience Information Service Reference: 89877 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Cambrian Geology: Lingula Flags Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A17SW (W)	957	1	178743 224710

Mining and Natural Cavities Data

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
7	**BGS Recorded Mineral Sites** Site Name: Mutton Location: St David'S, Pembrokeshire Source: British Geological Survey, National Geoscience Information Service Reference: 89879 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Cambrian Geology: Lingula Flags Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A11NE (W)	967	1	178683 224551
	Coal Mining Affected Areas In an area which may not be affected by coal mining				
	Non Coal Mining Areas of Great Britain Risk: Highly Unlikely Source: British Geological Survey, National Geoscience Information Service	A13SW (N)	0	1	179703 224328
	Non Coal Mining Areas of Great Britain Risk: Highly Unlikely Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	202	1	180000 224328

Intégral Géotechnique

Historical Land Use Information (1:10,000)

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
8	**General Quarrying** Use: Not Supplied Date of Mapping: 1891	A14NW (E)	456	-	180243 224456
9	**General Quarrying** Use: Not Supplied Date of Mapping: 1891	A14SE (E)	593	-	180385 224280
10	**General Quarrying** Use: Not Supplied Date of Mapping: 1891	A14SE (E)	601	-	180392 224265
11	**General Quarrying** Use: Not Supplied Date of Mapping: 1891	A14NE (E)	725	-	180503 224524
12	**General Quarrying** Use: Not Supplied Date of Mapping: 1891	A12NW (W)	904	-	178757 224587
13	**General Quarrying** Use: Not Supplied Date of Mapping: 1891	A17SW (W)	933	-	178766 224704
14	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1979	A14NW (E)	456	-	180243 224456
15	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1980	A12NW (W)	904	-	178757 224587
16	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1908	A13NE (E)	113	-	179905 224392

Ground Stability Data (1:50,000)

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	CBSCB Compensation District The site does not fall within the brine compensation area.				
	Brine Subsidence Solution Area The site does not fall within the brine subsidence solution area.				
17	**Potential for Collapsible Ground Stability Hazards** Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (N)	0	1	179703 224328
18	**Potential for Collapsible Ground Stability Hazards** Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	202	1	180000 224328
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (N)	0	1	179703 224328
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	202	1	180000 224328
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (N)	0	1	179703 224328
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	202	1	180000 224328
19	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (N)	0	1	179703 224328
20	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	179725 224366
21	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	107	1	179644 224145
22	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	190	1	179818 224086
23	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	202	1	180000 224328
24	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	236	1	180000 224231
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (S)	154	1	179770 224108
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	183	1	179973 224304
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	206	1	180000 224321
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (N)	0	1	179703 224328
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	202	1	180000 224328
25	**Potential for Shrinking or Swelling Clay Ground Stability Hazards** Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (N)	0	1	179703 224328
26	**Potential for Shrinking or Swelling Clay Ground Stability Hazards** Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	190	1	179818 224086

Ground Stability Data (1:50,000)

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
27	**Potential for Shrinking or Swelling Clay Ground Stability Hazards** Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	236	1	180000 224231
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	179725 224366
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	107	1	179644 224145
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	202	1	180000 224328

Historical Map List

The following mapping has been analysed for Historical Land Use Information (1:2,500):

1:2,500	Mapsheet	Published Date
Pembrokeshire	021_01	1889
Pembrokeshire	021_01	1908
Ordnance Survey Plan	SM7923	1975
Ordnance Survey Plan	SM7924	1975
Ordnance Survey Plan	SM8023	1975
Ordnance Survey Plan	SM8024	1975

The following mapping has been analysed for Historical Land Use Information (1:10,000):

1:10,560	Mapsheet	Published Date
Pembrokeshire	014_SE	1891
Pembrokeshire	015_SW	1891
Pembrokeshire	020_NE	1891
Pembrokeshire	021_NW	1891
Pembrokeshire	014_SE	1908
Pembrokeshire	015_SW	1908
Pembrokeshire	020_NE	1908
Pembrokeshire	021_NW	1908
Pembrokeshire	014_SE	1953
Pembrokeshire	015_SW	1953
Pembrokeshire	020_NE	1953
Pembrokeshire	021_NW	1953
Ordnance Survey Plan	SM72NE	1964
Ordnance Survey Plan	SM72SE	1964
Ordnance Survey Plan	SM82NW	1964
Ordnance Survey Plan	SM82SW	1964
1:10,000	**Mapsheet**	**Published Date**
Ordnance Survey Plan	SM72NE	1976
Ordnance Survey Plan	SM82SW	1979
Ordnance Survey Plan	SM72SE	1980
Ordnance Survey Plan	SM82NW	1980

Data Currency

Mining and Cavities Data	Version	Update Cycle
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	November 2021	Bi-Annually
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	Annual Rolling Update
Man Made Mining Cavities Stantec UK Ltd	December 2021	Bi-Annually
Mining Instability Ove Arup & Partners	June 1998	Not Applicable
Natural Cavities Stantec UK Ltd	December 2021	Bi-Annually
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Historical Land Use Information (1:2,500)	**Version**	**Update Cycle**
Subterranean Features Landmark Information Group Limited	February 2020	Bi-Annually
Ground Stability Data (1:50,000)	**Version**	**Update Cycle**
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB) Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011 November 2020	As notified
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	April 2020	As notified
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Brine Subsidence Solution Area Johnson Poole & Bloomer	December 2020	Annual Rolling Update

Data Suppliers

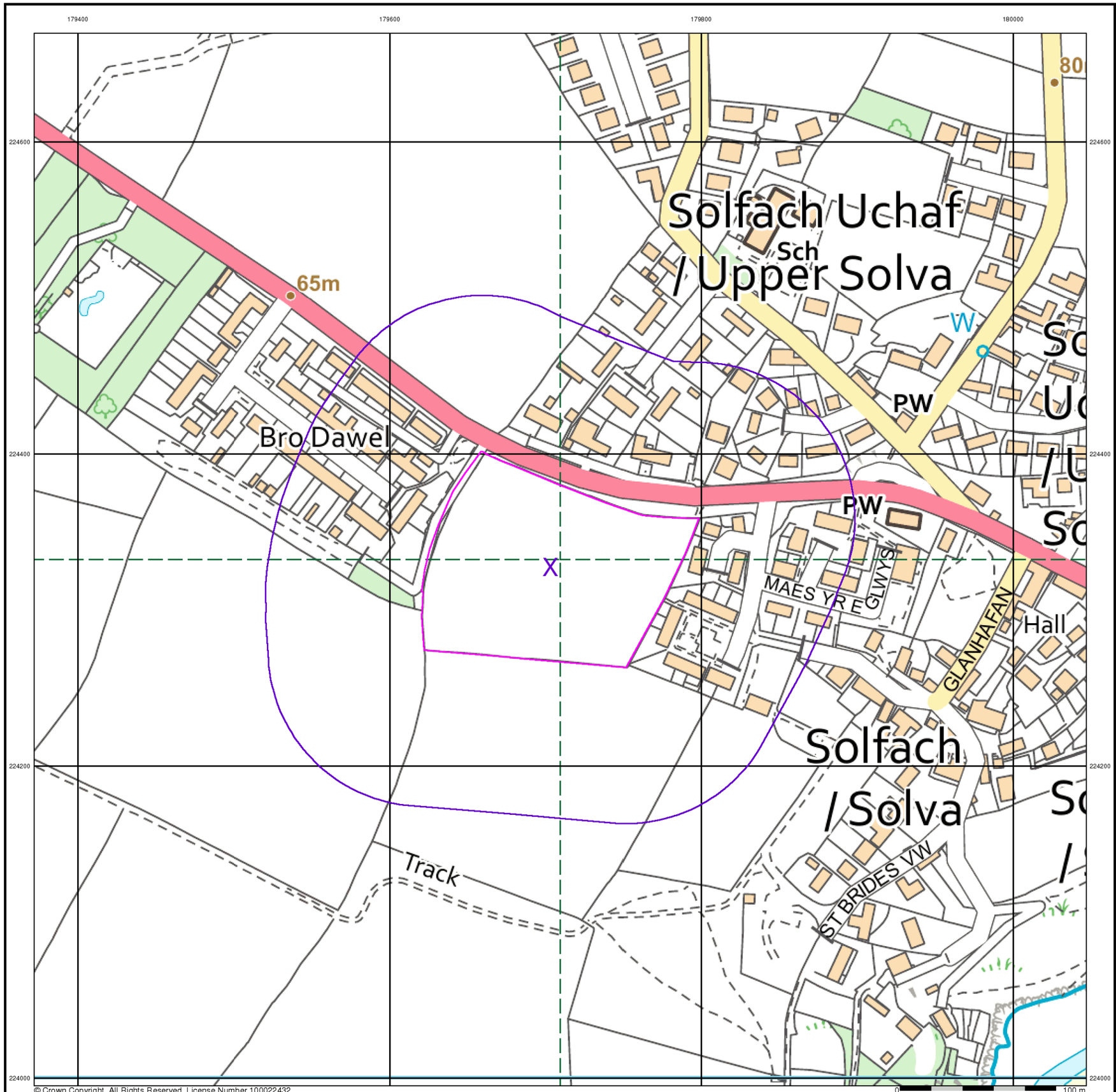
A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	Map data
British Geological Survey	British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
The Coal Authority	The Coal Authority
Ove Arup	ARUP
Stantec UK Ltd	Stantec
Wardell Armstrong	wardell armstrong your earth our world
Johnson Poole & Bloomer	JPB

Intégral Géotechnique

Useful Contacts

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
-	**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



Intégral Géotechnique

Historical Land Use Information (1:2,500)

General

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

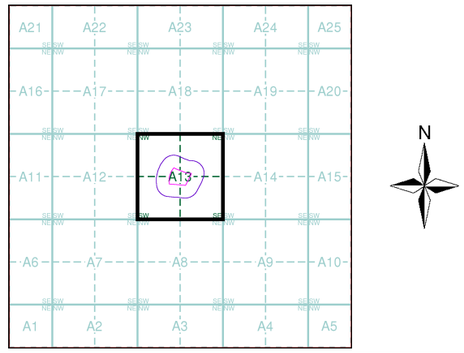
Potentially Contaminative Industrial Uses (Extractive Industries Activity)

	Point	Line	Polygon
Extractive Industries Activity from 1855 - 1909	▲	—	▭
Extractive Industries Activity from 1893 - 1915	▲	—	▨
Extractive Industries Activity from 1906 - 1937	▲	—	▭
Extractive Industries Activity from 1924 - 1949	▲	—	▨
Extractive Industries Activity from 1950 - 1980	▲	—	▭

Subterranean Features

	Point	Line	Polygon
Subterranean Features	▼	- - -	▭

Mining and Ground Stability - Segment A13



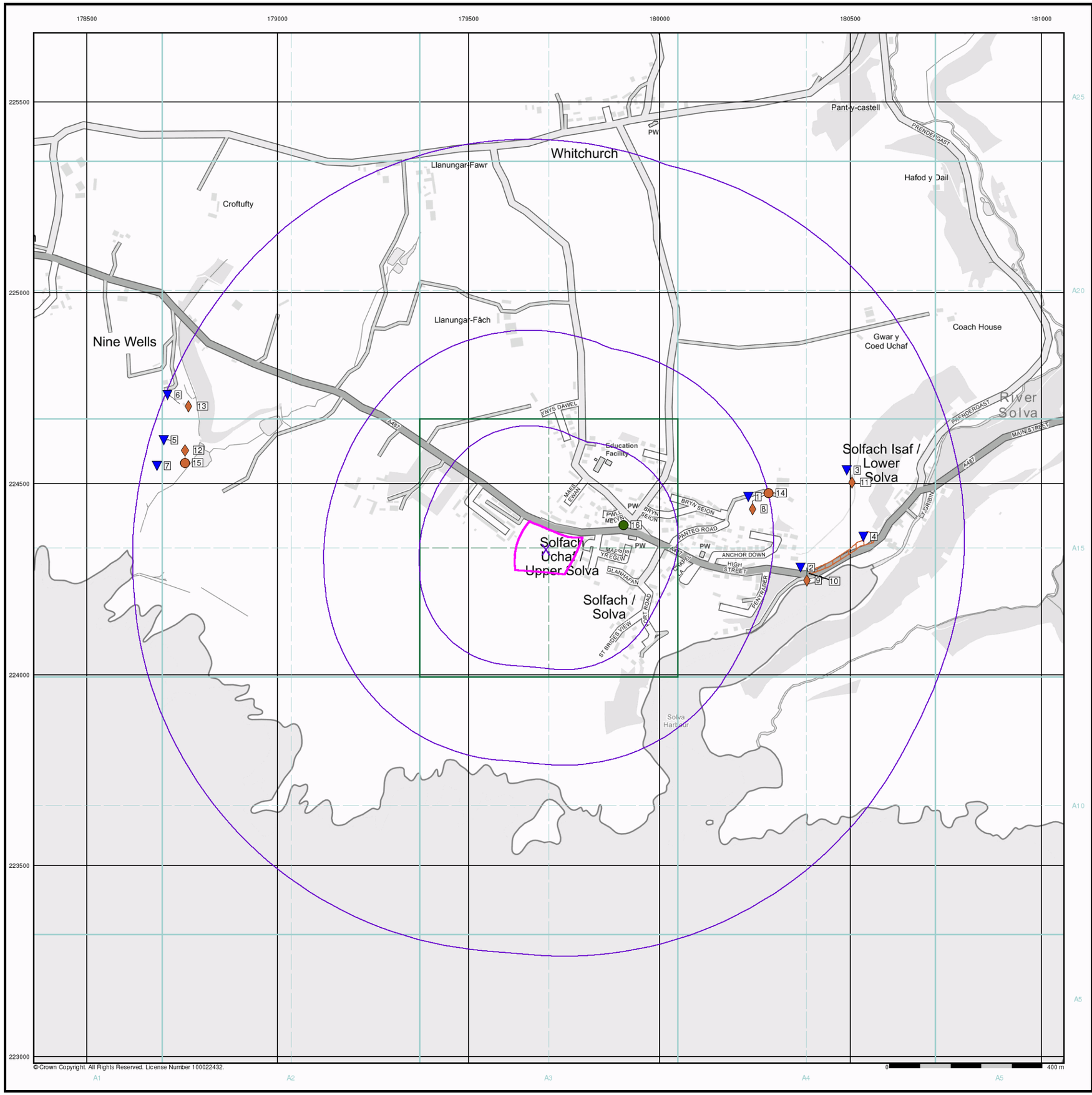
Order Details

Order Number:	291745849_1_1
Customer Ref:	12998/LP
National Grid Reference:	179700, 224330
Slice:	A
Site Area (Ha):	1.68
Plot Buffer (m):	100

Site Details

Football Ground, Solva, Haverfordwest, SA62 6TY

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Intégral Géotechnique

Historical Land Use Information (1:10,000)

General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Map ID

Several of Type at Location

Potentially Contaminative Industrial Uses (Past Land Uses - Mining)

	Point	Line	Polygon
Air Shafts	◆		
Disturbed Ground	◆		
General Quarrying	◆		
Heap, unknown constituents	◆		
Mineral Railway	◆		
Mining and Quarrying General	◆		
Mining of Coal & Lignite	◆		
Quarrying of Sand and Clay, Operation of Sand and Gravel Pits	◆		

Historical Land Use

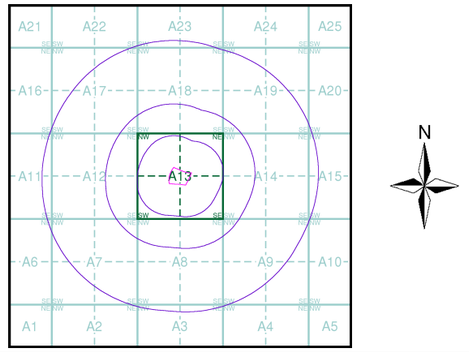
	Point	Line	Polygon
Potentially Infilled Land (Non-Water)	●		
Potentially Infilled Land (Water)	●		
Former Marsh	✠		

Mining Data

Potential Mining Area

BGS Recorded Mineral Site

Mining and Ground Stability - Slice A



Order Details

Order Number:	291745849_1_1
Customer Ref:	12998/LP
National Grid Reference:	179700, 224330
Slice:	A
Site Area (Ha):	1.68
Search Buffer (m):	1000

Site Details

Football Ground, Solva, Haverfordwest, SA62 6TY

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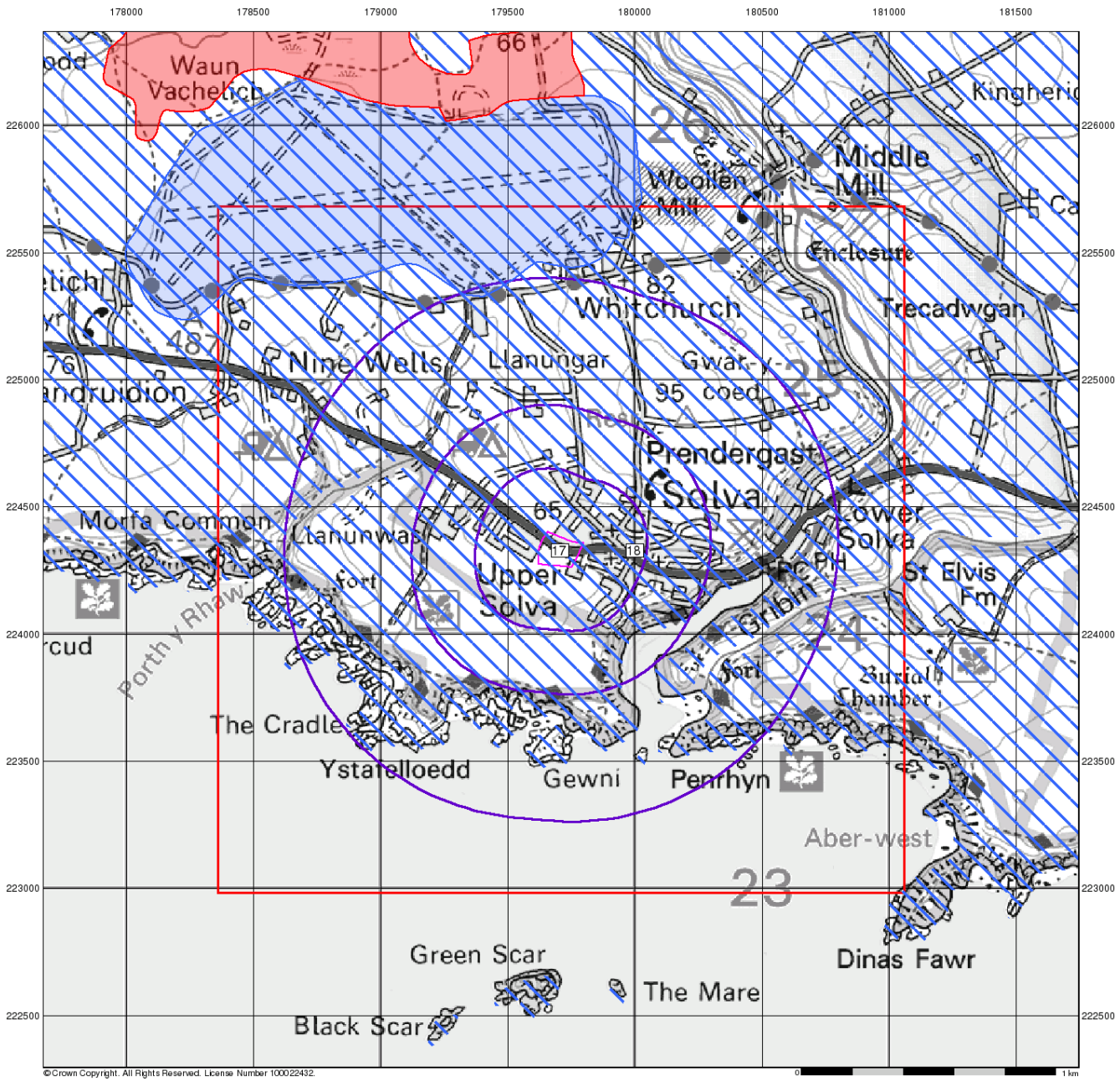


Intégral
Géotechnique

Ground Stability Data (1:50,000)

General

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

Potential for Compressible Ground Stability Hazards

High | Low | Moderate | Very Low

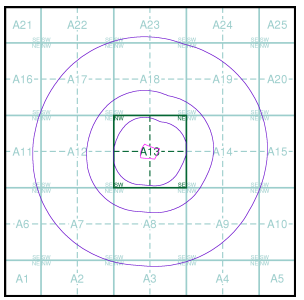
Potential for Collapsible Ground Stability Hazards

High | Low | Moderate | Very Low

Brine Pumping and Salt Mining

	Point	Polygon
Brine Pumping Related Feature	▲	▨
Salt Mining Related Feature	▲	▨

Mining and Ground Stability - Slice A



Order Details

Order Number:	291745849_1_1
Customer Ref:	12998/LP
National Grid Reference:	179700, 224330
Slice:	A
Site Area (Ha):	1.68
Search Buffer (m):	1000

Site Details

Football Ground, Solva, Haverfordwest, SA62 6TY

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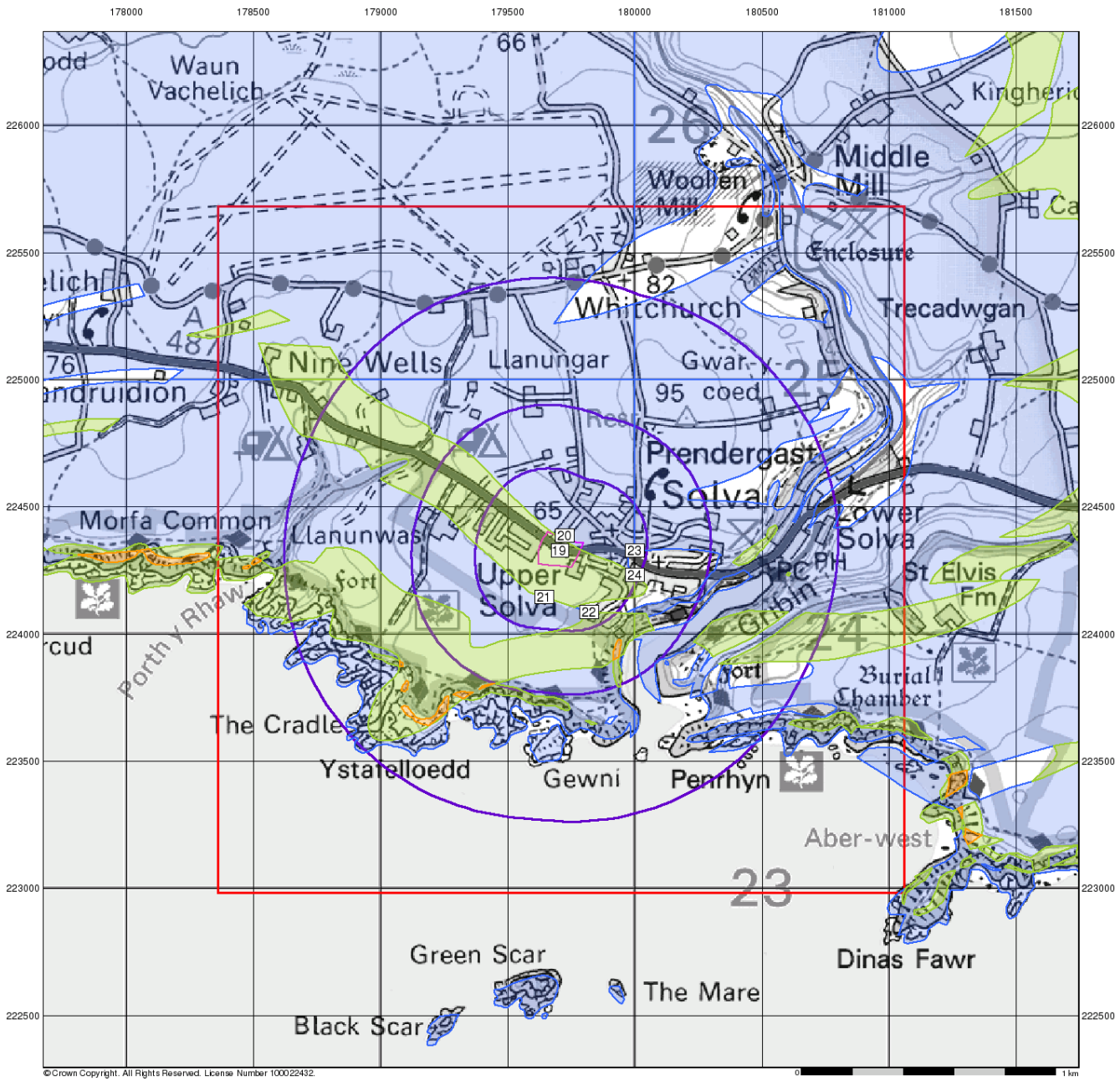


Intégral Géotechnique

Ground Stability Data (1:50,000)

General

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

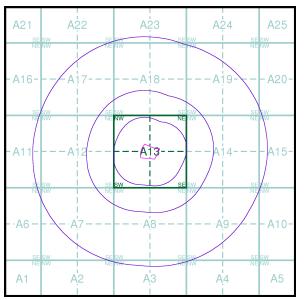
Potential for Landslide Ground Stability Hazards

High | Low | Moderate | Very Low

Potential for Ground Dissolution Stability Hazards

High | Low | Moderate | Very Low

Mining and Ground Stability - Slice A



Order Details

Order Number:	291745849_1_1
Customer Ref:	12998/LP
National Grid Reference:	179700, 224330
Slice:	A
Site Area (Ha):	1.68
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Site Details

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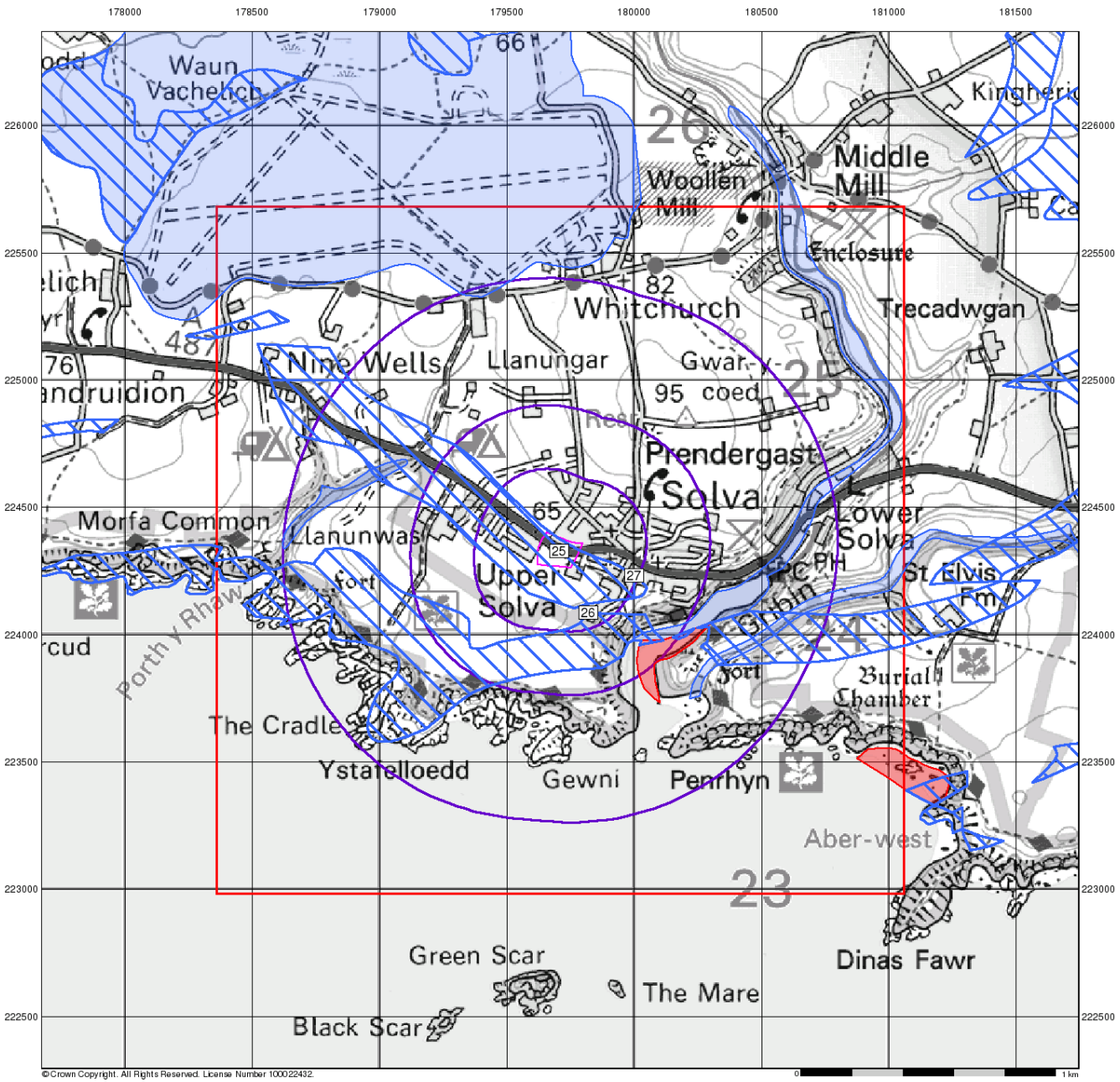
Web: www.envirocheck.co.uk



Intégral Géotechnique

Ground Stability Data (1:50,000)

General

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

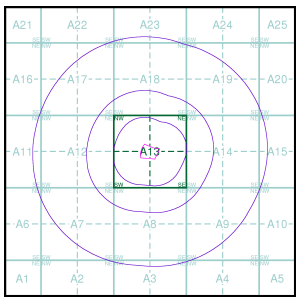
Potential for Running Sand Ground Stability Hazards

High | Low | Moderate | Very Low

Potential for Shrinking or Swelling Clay Ground Stability Hazards

High | Low | Moderate | Very Low

Mining and Ground Stability - Slice A



Order Details

Order Number:	291745849_1_1
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Site Area (Ha):	1.68
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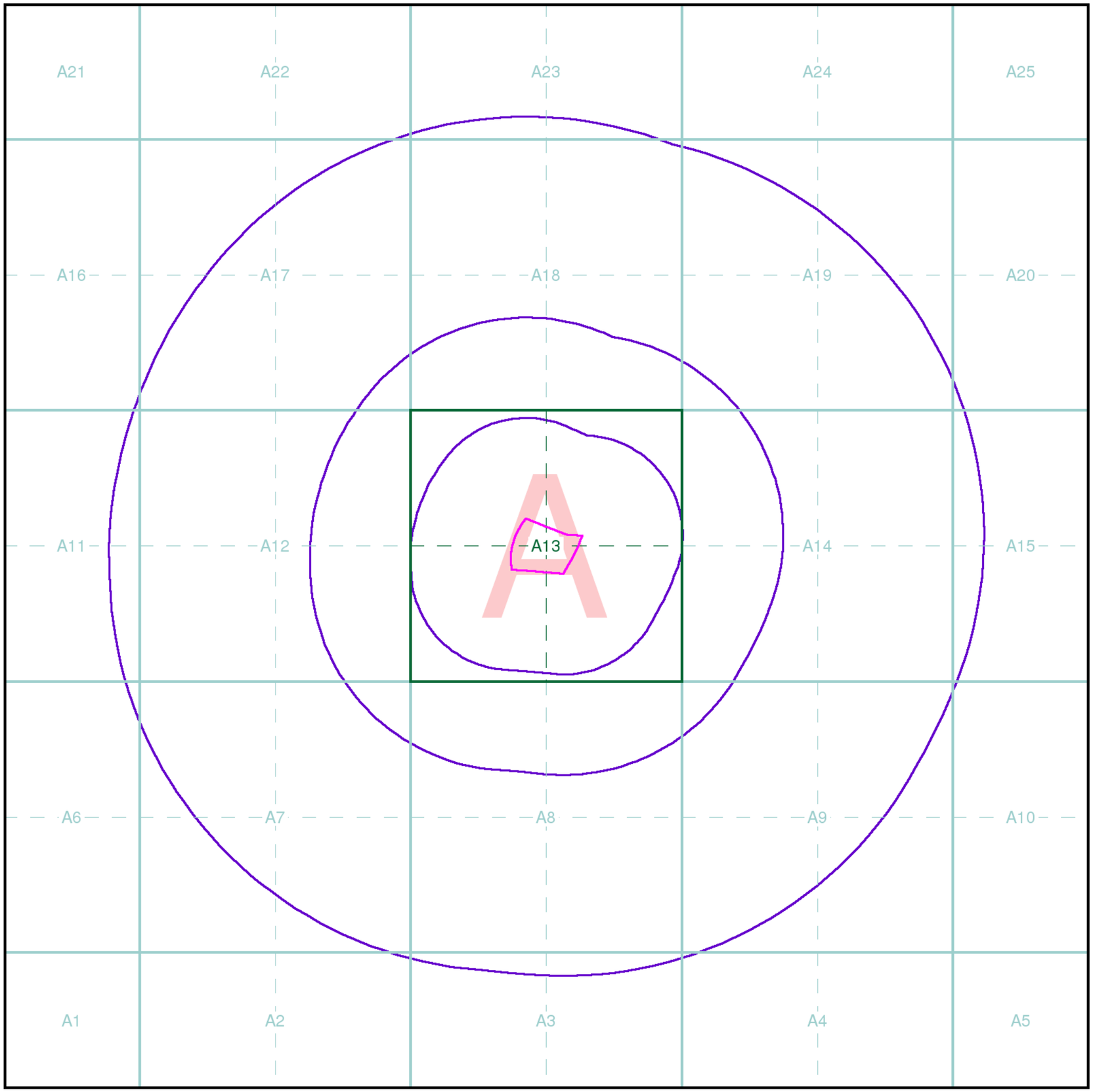

Intégral Géotechnique

Index Map

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

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

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

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

A selection of organisations who provide data within this report:

Map data

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Cyfoeth Naturiol Cymru
Natural Resources Wales

Envirocheck reports are compiled from 136 different sources of data.

Client Details

MR H Pritchard, Integral Geotechnique, Integral House, 7 Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX

Order Details

Order Number:	291745849_1_1
Customer Ref:	12998/LP
National Grid Reference:	179700, 224330
Site Area (Ha):	1.68
Search Buffer (m):	1000

Site Details

Football Ground, Solva, Haverfordwest, SA62 6TY

Full Terms and Conditions can be found on the following link:
http://www.landmarkinfo.co.uk/Terms/Show/515

Landmark INFORMATION GROUP
Tel: 0844 844 9952
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APPENDIX B

BGS RADON GEOREPORT

GeoReports

British Geological Survey

Laura Pullin
Integral Geotechnique (Wales) Ltd
Integral House
7 Beddau Way
Caerphilly
CF83 2AX

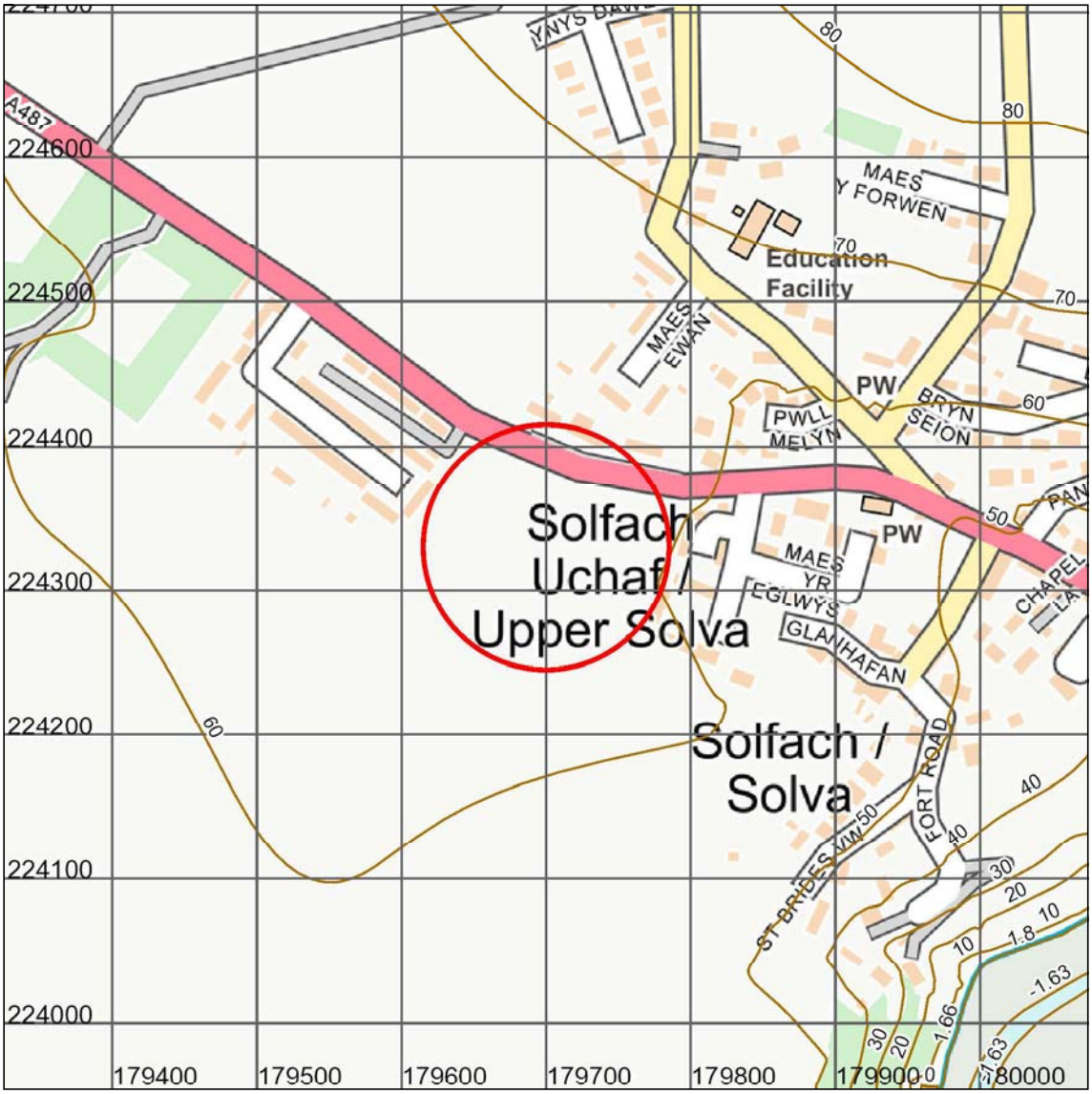
Radon Report

Advisory report on the requirement for radon protective measures in new buildings, conversions and extensions to existing buildings. The report also indicates whether a site is located within a radon Affected Area

Report Id: ***BGS_326143/34211***

Client reference: Upper Solva 12998

Search location



Contains OS data © Crown Copyright and database right 2022. OS OpenMap Local: Scale: 1:5 000 (1cm = 50 m)
Search location indicated in red

Area centred at: 179700,224330
Radius of site area: 85 metres

Radon Report: UK

When extensions are made to existing buildings in high radon areas, or new buildings are constructed in these areas, the Building Regulations for England, Wales, Scotland and Northern Ireland require that protective measures are taken against radon entering the building.

This report provides information on whether radon protective measures are required. Depending on the probability of buildings having high radon levels, the Regulations may require either:

1. No protective measures
2. Basic protective measures
3. Full protective measures

This is an advisory report on the requirement for radon protective measures in new buildings, conversions and extensions. The report also indicates whether a site is located within a radon Affected Area

Requirement for radon protective measures

The determination below follows advice in *BR211 Radon: Guidance on protective measures for new buildings (2015 edition), which also provides guidance on what to do if the* result *indicates that protective measures are required.*

Is the property in an area where radon protective measures are required for new buildings or extensions to existing ones as described in publication BR211 (2015 edition) Radon: Guidance on protective measures for new buildings?

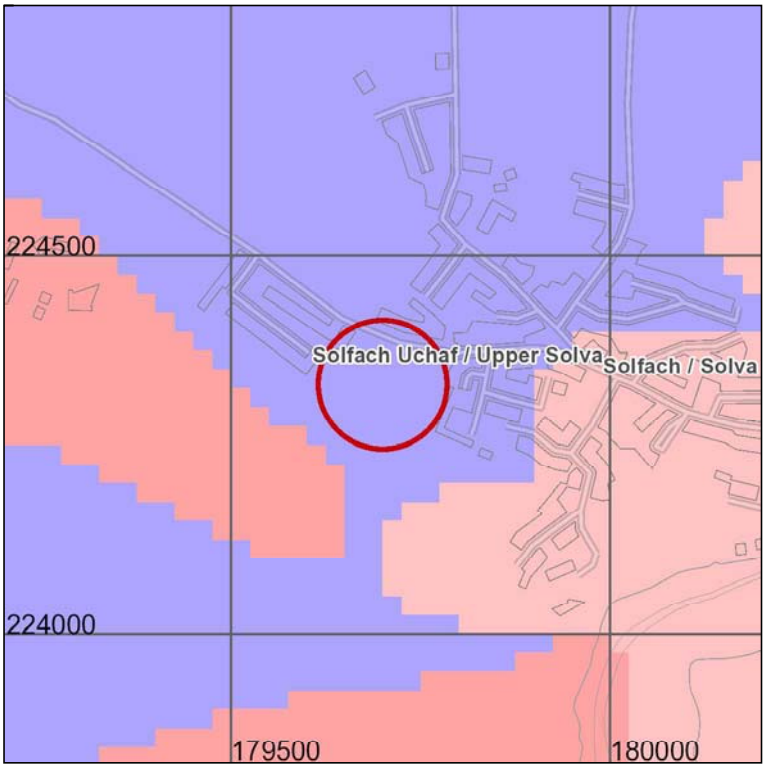
NO RADON PROTECTIVE MEASURES ARE REQUIRED FOR THE REPORT AREA.

More details of the protective measures required are available in *BR211 Radon: Guidance on protective measures for new buildings (2015 Edition)*. Additional information and guidance is available from the Building Research Establishment website (http://www.bre.co.uk/radon/).

Whether or not the radon level in a building is above or below the radon Action Level can only be established by having the building tested. The UKHSA provides a radon testing service which can be accessed at www.ukradon.org or by telephone (01235 822622).

If you require further information or guidance, you should contact your local authority building control officer or approved inspector.

Radon Affected Area



	% Homes estimated to be at or above the action level
	0-1%
	1-3%
	3-5%
	5-10%
	10-30%
	30-100%

Contains OS data © Crown Copyright and database right 2022
Scale: 1:10 000 (1cm = 100 m)
Search area indicated in red

Is the property in a radon Affected Area as defined by the UK Health Security Agency (UKHSA) and if so what percentage of homes are estimated to be above the Action Level? YES

Additional Information

THE PROPERTY IS IN A RADON AFFECTED AREAS WHERE 1 TO 3% OF HOMES ARE ESTIMATED TO BE AT OR ABOVE THE ACTION LEVEL.

The UKHSA recommends a radon 'Action Level' of 200 Becquerels per cubic metre of air (Bq m^{-3}) for the annual average of the radon gas concentration in a home. Where 1% or more of homes are estimated to exceed the Action Level the area should be regarded as a radon Affected Area.

This report informs you whether the property is in a radon Affected Area and the percentage of homes that are estimated to be at or above the radon Action Level at this location. Being in an Affected Area does not necessarily mean there is a radon problem in the property; the only way to find out whether the radon level is above or below the Action Level is to carry out a radon measurement.

The UKHSA advises that radon gas should be measured in all properties within radon Affected Areas and that homes with radon levels above the Action Level (200 Bq m^{-3}) should be remediated. Householders with levels between the Target Level (100 Bq m^{-3}) and Action Level should seriously consider reducing their radon level, especially if they are at greater risk, such as if they are current or ex smokers. Whether or not a home is in fact above or below the Action Level or Target Level can only be established by having the building tested. The UKHSA provides a validated radon testing service which can be accessed at www.ukradon.org.

The information in this report provides an answer to one of the standard legal enquiries on house purchase in England and Wales, known as Law Society CON29 Enquiries of the Local Authority (2016); 3.14 Radon Gas: Do records indicate that the property is in a “Radon Affected Area” as identified by the UKHSA. The data can also be used to advise house buyers and sellers in Scotland and Northern Ireland.

If you are buying a new build property in a Radon Affected Area, you should ask the builder whether radon protective measures were incorporated in the construction of the property.

If you are buying a currently occupied property in a radon Affected Area, you should ask the present owner whether radon levels have been measured in the property. If they have, ask whether the results were above the radon Action Level and if so, whether remedial measures were installed, radon levels were re-tested, and if the results of re-testing confirmed the effectiveness of the measures.

Further information on radon is available from the UKHSA at www.ukradon.org.

What is radon?

Radon is a naturally occurring radioactive gas, which is produced by the radioactive decay of radium which, in turn, is derived from the radioactive decay of uranium. Uranium is found in small quantities in all soils and rocks, although the amount varies from place to place. Radon released from rocks and soils is quickly diluted in the atmosphere. Concentrations in the open air are normally very low and do not present a hazard. Radon that enters enclosed spaces such as some buildings (particularly basements), caves, mines, and tunnels may reach high concentrations in some circumstances. The construction method and degree of ventilation will influence radon levels in individual buildings. A person's exposure to radon will also vary according to how particular buildings and spaces are used.
Inhalation of the radioactive decay products of radon gas increases the chance of developing lung cancer. If individuals are exposed to high concentrations for significant periods of time, there may be cause for concern. In order to limit the risk to individuals, the Government has adopted an Action Level for radon in homes of 200 becquerels per cubic metre (Bq m^{-3}). The Government advises householders that, where the radon level exceeds the Action Level, measures should be taken to reduce the concentration.

Radon in workplaces

The Ionising Radiation Regulations, 1999, require employers to take action when radon is present above a defined level in the workplace. Advice may be obtained from your local Health and Safety Executive Area Office or the Environmental Health Department of your local authority. The BRE publishes a guide (BR293)**: Radon in the workplace.** BRE publications may be obtained from the BRE Bookshop, Tel: 01923 664262, email: bookshop@bre.co.ukwebsite: www.brebookshop.com

Contact Details

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Email: enquiries@bgs.ac.uk

Wallingford Office
British Geological Survey
Maclean Building
Wallingford
Oxford
OX10 8BB
Email: enquiries@bgs.ac.uk

Edinburgh Office
British Geological Survey
Lyell Centre
Research Avenue South
Edinburgh
EH14 4AP
Tel: 0131 6671000
Email: enquiry@bgs.ac.uk

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General Terms & Conditions

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- The data, information and related records supplied in this Report by BGS can only be indicative and should not be taken as a substitute for specialist interpretations, professional advice and/or detailed site investigations. You must seek professional advice before making technical interpretations on the basis of the materials provided.
- Geological observations and interpretations are made according to the prevailing understanding of the subject at the time. The quality of such observations and interpretations may be affected by the availability of new data, by subsequent advances in knowledge, improved methods of interpretation, and better access to sampling locations.
- Raw data may have been transcribed from analogue to digital format, or may have been acquired by means of automated measuring techniques. Although such processes are subjected to quality control to ensure reliability where possible, some raw data may have been processed without human intervention and may in consequence contain undetected errors.
- Detail, which is clearly defined and accurately depicted on large-scale maps, may be lost when small-scale maps are derived from them.
- Although samples and records are maintained with all reasonable care, there may be some deterioration in the long term.
- The most appropriate techniques for copying original records are used, but there may be some loss of detail and dimensional distortion when such records are copied.
- Data may be compiled from the disparate sources of information at BGS's disposal, including material donated to BGS by third parties, and may not originally have been subject to any verification or other quality control process.
- Data, information and related records, which have been donated to BGS, have been produced for a specific purpose, and that may affect the type and completeness of the data recorded and any interpretation. The nature and purpose of data collection, and the age of the resultant material may render it unsuitable for certain applications/uses. You must verify the suitability of the material for your intended usage.
- If a report or other output is produced for you on the basis of data you have provided to BGS, or your own data input into a BGS system, please do not rely on it as a source of information about other areas or geological features, as the report may omit important details.
- The topography shown on any map extracts is based on the latest OS mapping and is not necessarily the same as that used in the original compilation of the BGS geological map, and to which the geological linework available at that time was fitted.
- Note that for some sites, the latest available records may be historical in nature, and while every effort is made to place the analysis in a modern geological context, it is possible in some cases that the detailed geology at a site may differ from that described.

Report issued by
BGS Enquiry Service

APPENDIX C

TRIAL PIT LOGS

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Project Name:	Project No.:	Trial Pit No.:
Football Ground Redevelopment	**12998**	**TP01** Sheet 1 of 1

Location:	Client:	Logged By:	Scale
Upper Solva	Ateb Group	LS	1:25

Equipment:	Coordinates:	**Dimensions**
JCB 3CX		1.80m
Date Excavated: 05/04/2022	Level:	Depth : 2.10m / 0.60m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
0.20	ES					Grass onto loose brown slightly clayey gravelly SAND. Gravel is fine to coarse angular and subrounded mudstone and sandstone. Medium cobble content of subrounded and subangular mudstone and sandstone (TOPSOIL).
			0.45			Loose orange brown clayey gravelly SAND. Gravel is fine to coarse angular and subangular sandstone Low boulder content of subrounded sandstone (0.4m x 0.3m x 0.3m).
			0.75			Medium dense orange brown clayey sandy GRAVEL and COBBLES. Gravel and cobbles are fine to coarse angular and subangular mudstone and sandstone.
			1.70			Medium dense yellow slightly gravelly SAND. Gravel is subrounded sandstone and sand is fine to coarse.
2.10	D		2.10			End of Trialpit at 2.10 m

1
2
3
4
5

Remarks:
1. Trial pit terminated at 2.1mbgl as target depth was reached. 2. Soil infiltration testing undertaken.

Groundwater: No groundwater encountered.

Stability: Minor instability within the sands.

Key:
D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
W - Water sample

AGS

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Project Name:	Project No.:	Trial Pit No.:
Football Ground Redevelopment	**12998**	**TP02** Sheet 1 of 1

Location:	Client:	Logged By:	Scale
Upper Solva	Ateb Group	LS	1:25

Equipment: JCB 3CX

Coordinates:

Dimensions 1.90m

Depth : 2.00m

0.60m

Date Excavated: 06/04/2022

Level:

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
0.20	ES					Grass onto loose red brown gravelly SAND. Gravel is fine to coarse angular and subangular sandstone. Medium cobble content of subangular and subrounded sandstone (TOPSOIL).
			0.35			Medium dense yellow brown clayey sandy GRAVEL and COBBLES. Gravel is fine to coarse angular and subangular mudstone (HIGHLY WEATHERED MUDSTONE).
			1.10			Extremely weak to weak brown and grey thinly bedded and laminated MUDSTONE. Main discontinuity appears sub vertical (D1) Typically 70 degrees with perpendicular suspected cleavage (D2). Recovered as fine to coarse gravel and cobbles of acicular and tabular mudstone/shale (WEATHERED MUDSTONE).
			2.00			End of Trialpit at 2.00 m

Remarks:

1. Trial pit terminated at 2.0mbgl as target depth was reached. 2. Soil infiltration testing undertaken.

Groundwater: No groundwater encountered.

Stability: Minor instability within the gravel and cobbles.

Key:

D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
W - Water sample

AGS

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Project Name:	Project No.:	Trial Pit No.:
Football Ground Redevelopment	**12998**	**TP03** Sheet 1 of 1

Location:	Client:	Logged By:	Scale
Upper Solva	Ateb Group	LS	1:25

Equipment: JCB 3CX

Coordinates:

Date Excavated: 05/04/2022

Level:

Dimensions

1.80m

Depth : 1.80m

0.60m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						Grass onto loose brown clayey gravelly SAND. Gravel is fine to coarse subangular to subrounded mudstone (TOPSOIL).
			0.30			Medium dense orange brown clayey sandy GRAVEL and COBBLES of tabular, angular and subangular mudstone. Gravel is fine to coarse angular and subangular mudstone (HIGHLY WEATHERED MUDSTONE).
			1.00			Extremely weak to weak brown and grey thinly bedded and laminated MUDSTONE. Main discontinuity appears sub vertical (D1) Typically 70 degrees with perpendicular suspected cleavage (D2). Recovered as fine to coarse gravel and cobbles of acicular, blocky and tabular mudstone/shale. (WEATHERED MUDSTONE).
						Slow progression of excavation.
			1.80			End of Trialpit at 1.80 m

Remarks:

1. Trial pit terminated at 2.0mbgl as target depth was reached. 2. Soil infiltration testing undertaken.

Groundwater: No groundwater encountered.

Stability: Minor instability within the gravel and cobbles.

Key:

D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
W - Water sample

AGS

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Project Name:	Project No.:	Trial Pit No.:
Football Ground Redevelopment	**12998**	**TP04** Sheet 1 of 1

Location:	Client:	Logged By:	Scale
Upper Solva	Ateb Group	LS	1:25

Equipment: JCB 3CX

Coordinates:

Date Excavated: 05/04/2022

Level:

Dimensions

1.90m

Depth : 2.10m

0.60m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						Grass onto loose brown clayey gravelly SAND. Gravel is fine to coarse subangular to subrounded mudstone (TOPSOIL).
0.30	ES		0.30			Loose orange brown yellow brown clayey slightly gravelly SAND. Gravel is fine to coarse angular and subangular sandstone and mudstone. Low boulder content of subrounded and blocky sandstone (0.4m x 0.3m x 0.3m).
			1.00			Extremely weak to weak brown and grey thinly bedded and laminated MUDSTONE. Main discontinuity appears sub vertical (D1) Typically 70 degrees with perpendicular suspected cleavage (D2). Recovered as fine to coarse gravel and cobbles of acicular and tabular mudstone/shale (WEATHERED MUDSTONE).
1.60	B					
			2.10			End of Trialpit at 2.10 m

Remarks:

1. Trial pit terminated at 2.10mbgl as target depth was reached. 2. Soil infiltration testing undertaken.

Groundwater: No groundwater encountered.

Stability: Minor instability within the gravel and cobbles.

Key:

D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
W - Water sample

AGS

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Project Name:	Project No.:	Trial Pit No.:
Football Ground Redevelopment	**12998**	**TP05** Sheet 1 of 1

Location:	Client:	Logged By:	Scale
Upper Solva	Ateb Group	LS	1:25

Equipment: JCB 3CX

Coordinates:

Date Excavated: 05/04/2022

Level:

Dimensions

Depth : 2.90m

1.80m

0.60m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						Grass onto loose brown clayey gravelly SAND. Gravel is fine to coarse subangular to subrounded mudstone (TOPSOIL).
			0.30			Medium dense orange brown sandy slightly clayey GRAVEL and COBBLES. Gravel is fine to coarse subangular, angular and tabular mudstone. Gravel is fine to coarse angular and subangular mudstone (HIGHLY WEATHERED MUDSTONE).
			1.50			Extremely weak to weak brown and grey thinly bedded and laminated MUDSTONE. Main discontinuity appears sub vertical (D1) Typically 70 degrees with perpendicular suspected cleavage (D2). Recovered as fine to coarse gravel and cobbles of acicular and tabular mudstone/shale (WEATHERED MUDSTONE).
			2.90			End of Trialpit at 2.90 m

1 2 3 4 5

Remarks:

1. Trial pit terminated at 2.9mbgl as target depth had been reached.

Groundwater: No groundwater encountered.

Stability: Minor instability in the gravel and cobbles.

Key:

D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
W - Water sample

AGS

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Project Name:	Project No.:	Trial Pit No.:
Football Ground Redevelopment	**12998**	**TP06** Sheet 1 of 1

Location:	Client:	Logged By:	Scale
Upper Solva	Ateb Group	LS	1:25

Equipment: JCB 3CX

Coordinates:

Date Excavated: 05/04/2022

Level:

Dimensions

Depth : 2.20m

1.80m

0.60m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
0.10	ES					Grass onto loose brown clayey gravelly SAND. Gravel is fine to coarse subangular to subrounded mudstone and rare ceramic (TOPSOIL).
			0.30			Medium dense beige and yellow brown sandy GRAVEL and COBBLES. Gravel is fine to coarse angular and subrounded mudstone. Cobbles are angular and subangular mudstone (HIGHLY WEATHERED MUDSTONE).
1.00	D					
			1.60			Extremely weak to weak brown and grey thinly bedded and laminated MUDSTONE. Main discontinuity appears sub vertical (D1) Typically 70 degrees with perpendicular suspected cleavage (D2). Recovered as fine to coarse gravel and cobbles of acicular and tabular mudstone/shale (WEATHERED MUDSTONE).
			2.20			End of Trialpit at 2.20 m

1 2 3 4 5

Remarks:

1. Trial pit terminated at 2.2mbgl as target depth was reached. 2. Soil infiltration testing undertaken.

Groundwater: No groundwater encountered.

Stability: Minor instability within the gravel and cobbles.

Key:

D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
W - Water sample

AGS

Intégral Géotechnique	Project Name:	Project No.:	Trial Pit No.:
Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	**Football Ground Redevelopment**	**12998**	**TP07** Sheet 1 of 1
Location: Upper Solva	Client: Ateb Group	Logged By: LS	Scale 1:25
Equipment: JCB 3CX	Coordinates:	**Dimensions** 1.90m Depth : 2.70m 0.60m	
Date Excavated: 06/04/2022	Level:		

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
0.20	ES		0.30			Grass onto loose brown clayey gravelly SAND. Gravel is fine to coarse subangular to subrounded mudstone (TOPSOIL).
						Soft, soft to firm yellow mottled orange brown silty slightly sandy gravelly CLAY. Gravel is fine to coarse angular and subangular mudstone.
1.50	D		1.20			Firm, firm to stiff sandy gravelly CLAY with cobbles of subangular mudstone. Gravel is fine to coarse subrounded and subangular mudstone (HIGHLY WEATHERED MUDSTONE).
			2.00			Extremely weak to weak brown and grey thinly bedded and laminated MUDSTONE. Main discontinuity appears sub vertical (D1) Typically 70 degrees with perpendicular suspected cleavage (D2). Recovered as fine to coarse gravel and cobbles of acicular and tabular mudstone/shale (WEATHERED MUDSTONE).
			2.70			End of Trialpit at 2.70 m

Remarks:

1. Trial pit terminated at 2.7mbgl as target depth had been reached.

Groundwater: No groundwater encountered.

Stability: Minor instability within the gravel and cobbles.

Key:

D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
W - Water sample

AGS

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Project Name:	Project No.:	Trial Pit No.:
Football Ground Redevelopment	**12998**	**TP08** Sheet 1 of 1

Location:	Client:	Logged By:	Scale
Upper Solva	Ateb Group	LS	1:25

Equipment: JCB 3CX

Coordinates:

Date Excavated: 05/04/2022

Level:

Dimensions

Depth : 2.35m

1.90m

0.60m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						Grass onto loose brown clayey gravelly SAND. Gravel is fine to coarse subangular to subrounded mudstone TOPSOIL).
			0.50			
						Medium dense beige and yellow brown sandy GRAVEL and COBBLES. Gravel is fine to coarse angular and subrounded mudstone. Cobbles are angular and subangular mudstone. Low boulder content of subrounded sandstone (HIGHLY WEATHERED MUDSTONE).
1.00	D					
			2.10			
						Extremely weak to weak brown and grey thinly bedded and laminated MUDSTONE. Main discontinuity appears sub vertical (D1) Typically 70 degrees with perpendicular suspected cleavage (D2). Recovered as fine to coarse gravel and cobbles of acicular and tabular mudstone/shale (WEATHERED MUDSTONE).
			2.35			End of Trialpit at 2.35 m

1
2
3
4
5

Remarks:

1. Trial pit terminated at 2.35mbgl as target depth was reached. 2. Soil infiltration testing undertaken.

Groundwater: No groundwater encountered.

Stability: Minor instability within the gravel and cobbles.

Key:

D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
W - Water sample

AGS

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Project Name:	Project No.:	Trial Pit No.:
Football Ground Redevelopment	**12998**	**TP09** Sheet 1 of 1

Location:	Client:	Logged By:	Scale
Upper Solva	Ateb Group	LS	1:25

Equipment: JCB 3CX

Coordinates:

Date Excavated: 06/04/2022

Level:

Dimensions

1.90m

Depth : 2.90m

0.60m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						Grass onto loose brown clayey gravelly SAND. Gravel is fine to coarse subangular to subrounded mudstone and rare ceramics (TOPSOIL).
			0.40			Medium dense beige and yellow brown sandy GRAVEL and COBBLES. Gravel is fine to coarse angular and subrounded mudstone. Cobbles are angular and subangular mudstone (HIGHLY WEATHERED MUDSTONE).
			1.80			Extremely weak to weak brown and grey thinly bedded and laminated MUDSTONE. Main discontinuity appears sub vertical (D1) Typically 70 degrees with perpendicular suspected cleavage (D2). Recovered as fine to coarse gravel and cobbles of acicular and tabular mudstone/shale (WEATHERED MUDSTONE).
			2.90			End of Trialpit at 2.90 m

Remarks:

1. Trial pit terminated at 2.9mbgl as target depth had been reached.

Groundwater: No groundwater encountered.

Stability: Minor instability within the gravel and cobbles.

Key:

D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
W - Water sample

AGS

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Project Name:	Project No.:	Trial Pit No.:
Football Ground Redevelopment	**12998**	**TP10** Sheet 1 of 1

Location:	Client:	Logged By:	Scale
Upper Solva	Ateb Group	LS	1:25

Equipment:	Coordinates:	**Dimensions**
JCB 3CX		1.90m
Date Excavated: 06/04/2022	Level:	Depth : 3.10m, 0.60m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
			0.35			Grass onto loose brown slightly clayey gravelly SAND. Gravel is fine to coarse angular and subrounded mudstone and sandstone. Medium cobble content of subrounded and subangular mudstone and sandstone (TOPSOIL).
0.60	ES					Loose to medium dense becoming medium dense orange brown and yellow slightly clayey gravelly SAND with a medium cobble content of subangular and subrounded sandstone. Occasional boulders of blocky and subrounded sandstone.
1.50	D					
			2.60			Weak highly weathered SANDSTONE. (Recovered as gravel and cobbles of subangular and blocky sandstone) With iron and manganese staining noted.
			3.10			End of Trialpit at 3.10 m

Remarks:
1. Trial pit terminated at 2.9mbgl as target depth had been reached.

Groundwater: No groundwater encountered.

Stability: Minor instability within sands, gravels and cobbles.

Key:
D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
W - Water sample

AGS

APPENDIX D

SOIL INFILTRATION TEST RESULTS

BRE365 SOIL INFILTRATION RATE TEST - TP01

12998 Football Ground, Upper Solva

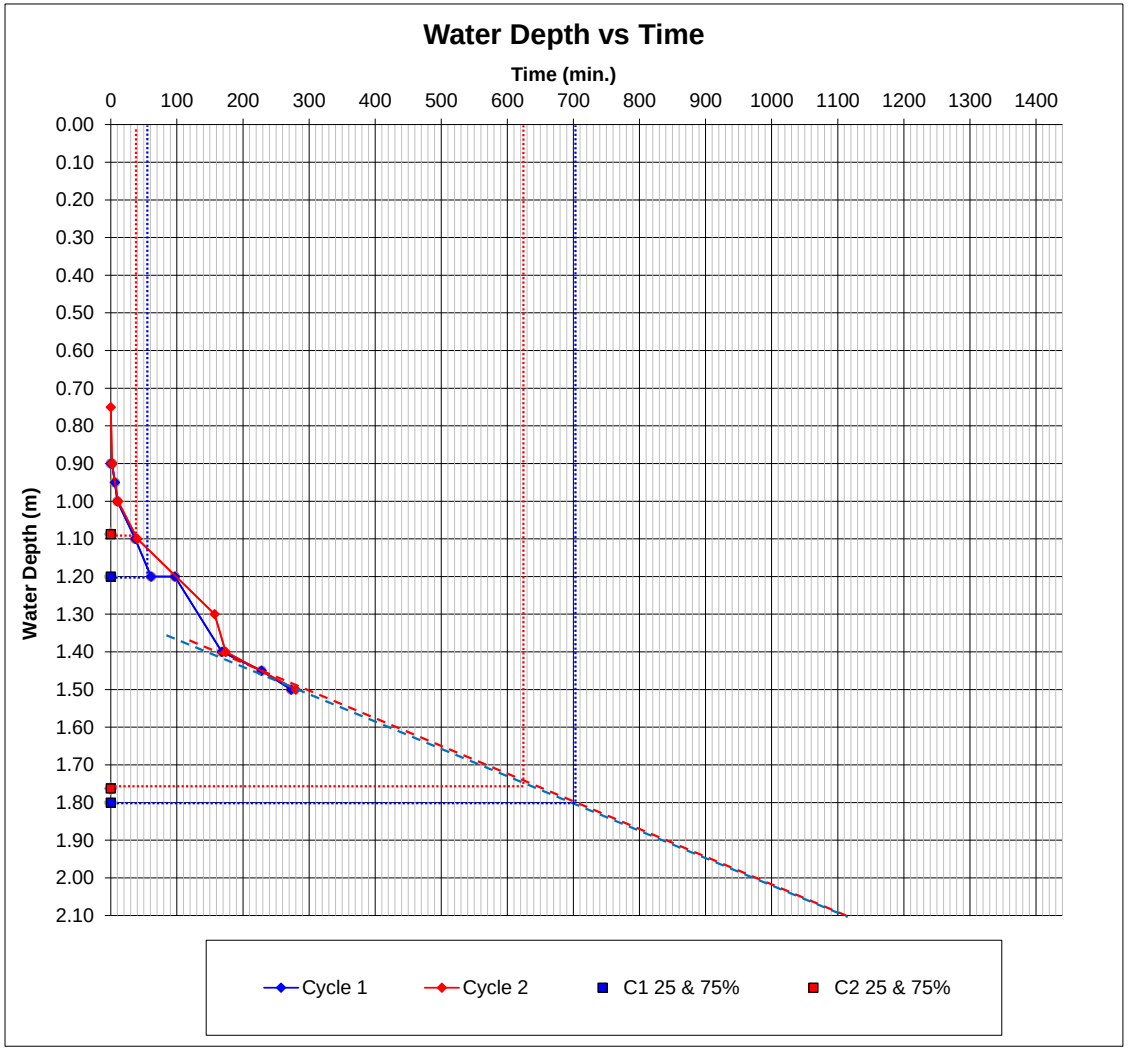
Trial Pit Information	
Length (m)	1.80
Width (m)	0.60
Depth (m)	2.10
Groundwater	Dry
Weather Conditions	Sunny
Date	05-Apr-22

Remarks

Results have been extrapolated.

Cycle 1		Cycle 2		Cycle 3	
Time (min)	Depth (m)	Time (min)	Depth (m)	Time (min)	Depth (m)
0	0.90	0	0.75		
2	0.90	2	0.90		
6	0.95	11	1.00		
10	1.00	40	1.10		
37	1.10	157	1.30		
61	1.20	174	1.40		
97	1.20	280	1.50		
168	1.40				
228	1.45				
273	1.50				

Final Excavation Depth (m)	Cycle 1	Cycle 2	Cycle 3
At end of testing cycle	2.10	2.10	
Water Depths (m)			
Water depth at start of test	0.90	0.75	
Water depth at end of test	1.50	1.50	
Effective depth (measured)	0.60	0.75	
% Effective storage depth	0.50	0.56	
Effective Storage Depths (m)			
Effective storage depth (100%)	1.20	1.35	
Effective storage depth (75%)	0.90	1.01	
Effective storage depth (50%)	0.60	0.68	
Effective storage depth (25%)	0.30	0.34	
Outflow Time (min)			
Time for measured outflow	273	280	
Time for 100% outflow	1111	1111	
Time for 75-25% outflow	645	590	
Volume of Outflow (m^3)			
Over measured effective depth	0.65	0.81	
Over 100% effective depth	1.30	1.46	
From 75% - 25% effective depth	0.65	0.73	
Surface Area (m^2)			
For 100% effective storage	6.84	7.56	
For 50% effective storage	3.96	4.32	
Over measured depth	3.96	4.68	
Soil Infiltration Rate (m/s)	Cycle 1	Cycle 2	Cycle 3
Over 100% effective depth	2.8E-06	2.9E-06	
Over measured depth	1.0E-05	1.0E-05	
Over 75% - 25% effective depth	**4.2E-06**	**4.8E-06**	



Design Soil Infiltration Rate: 4.2E-06 m/s

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BRE365 SOIL INFILTRATION RATE TEST - TP02

12998 Football Ground, Upper Solva

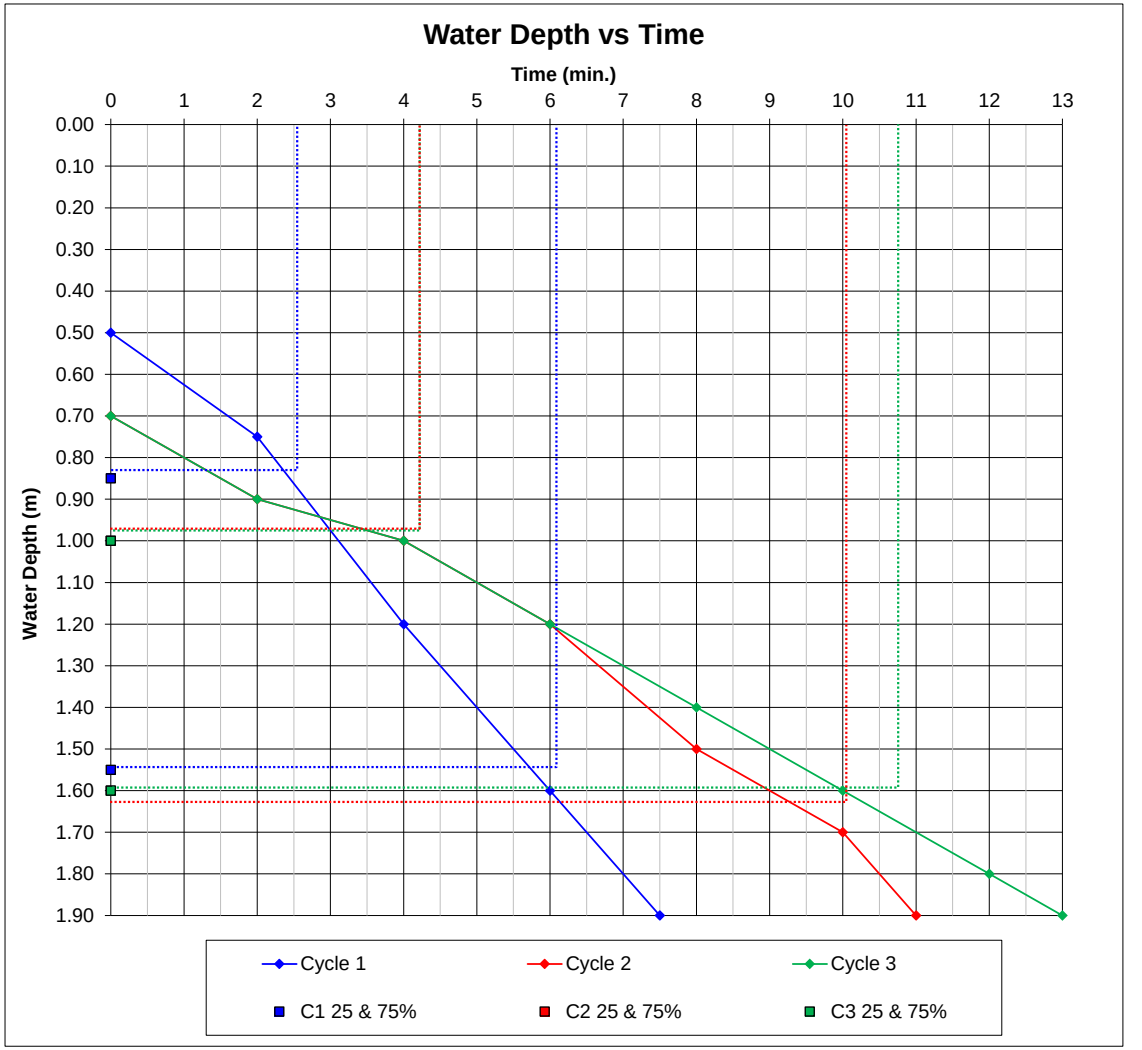
Trial Pit Information	
Length (m)	1.90
Width (m)	0.60
Depth (m)	1.90
Groundwater	Dry
Weather Conditions	Overcast
Date	06.04.2022

Remarks

All pits drained completely.

Cycle 1		Cycle 2		Cycle 3	
Time (min)	Depth (m)	Time (min)	Depth (m)	Time (min)	Depth (m)
0	0.50	0	0.70	0	0.70
2	0.75	2	0.90	2	0.90
4	1.20	4	1.00	4	1.00
6	1.60	6	1.20	6	1.20
7.5	1.90	8	1.50	8	1.40
		10	1.70	10	1.60
		11	1.90	12	1.80
				13	1.90

Final Excavation Depth (m)	Cycle 1	Cycle 2	Cycle 3
At end of testing cycle	1.90	1.90	1.90
Water Depths (m)			
Water depth at start of test	0.50	0.70	0.70
Water depth at end of test	1.90	1.90	1.90
Effective depth (measured)	1.40	1.20	1.20
% Effective storage depth	1.00	1.00	1.00
Effective Storage Depths (m)			
Effective storage depth (100%)	1.40	1.20	1.20
Effective storage depth (75%)	1.05	0.90	0.90
Effective storage depth (50%)	0.70	0.60	0.60
Effective storage depth (25%)	0.35	0.30	0.30
Outflow Time (min)			
Time for measured outflow	8	11	13
Time for 100% outflow	8	11	13
Time for 75-25% outflow	4	6	7
Volume of Outflow (m^3)			
Over measured effective depth	1.60	1.37	1.37
Over 100% effective depth	1.60	1.37	1.37
From 75% - 25% effective depth	0.80	0.68	0.68
Surface Area (m^2)			
For 100% effective storage	8.14	7.14	7.14
For 50% effective storage	4.64	4.14	4.14
Over measured depth	8.14	7.14	7.14
Soil Infiltration Rate (m/s)	**Cycle 1**	**Cycle 2**	**Cycle 3**
Over 100% effective depth	4.1E-04	2.9E-04	2.5E-04
Over measured depth	4.4E-04	2.9E-04	2.5E-04
Over 75% - 25% effective depth	**8.2E-04**	**4.6E-04**	**4.2E-04**



Design Soil Infiltration Rate: 4.2E-04 m/s

Intégral Géotechnique

BRE365 SOIL INFILTRATION RATE TEST - TP03

12998 Football Ground, Upper Solva

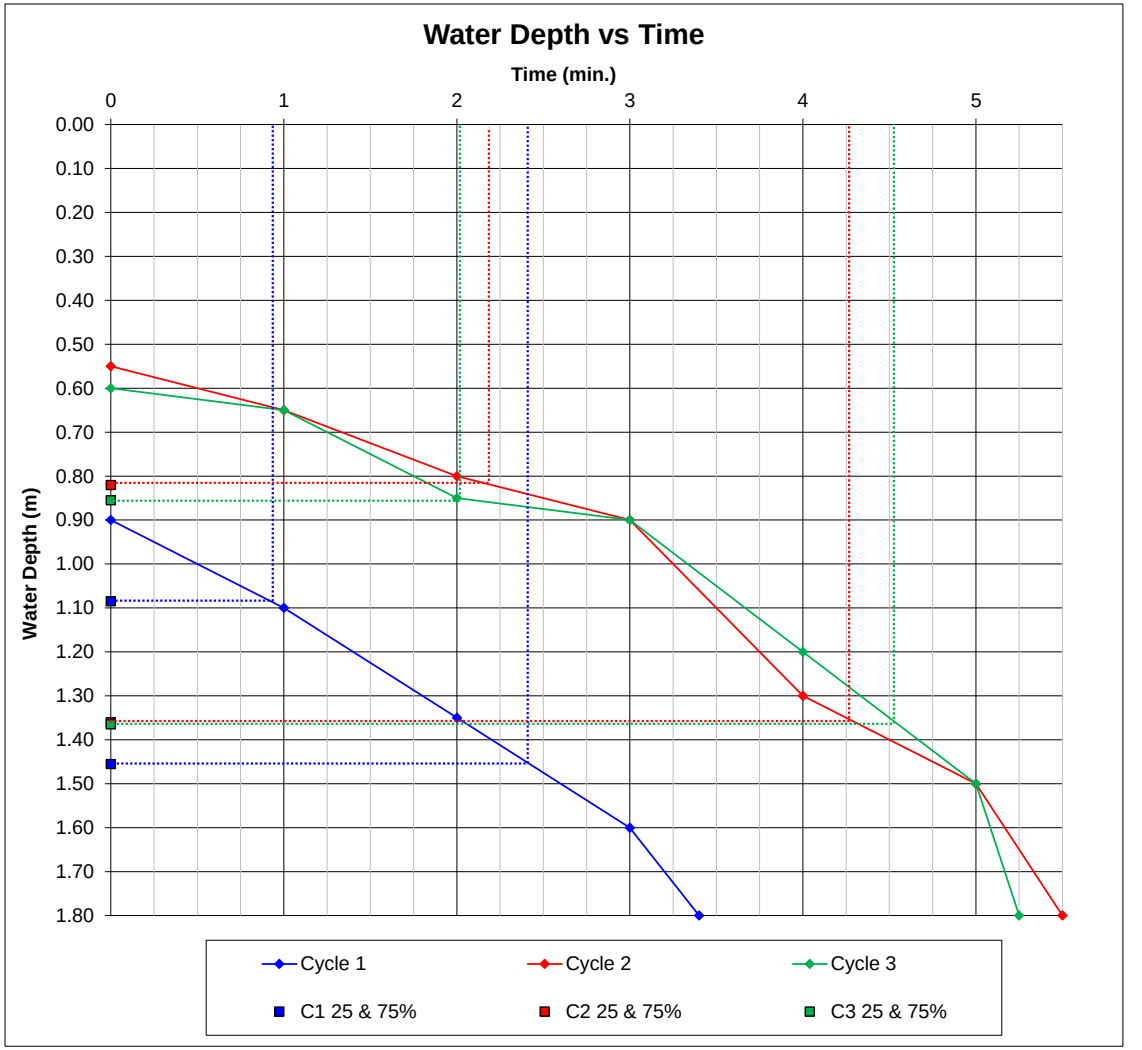
Trial Pit Information	
Length (m)	1.80
Width (m)	0.60
Depth (m)	1.80
Groundwater	Dry
Weather Conditions	Sunny
Date	05-Apr-22

Remarks

All pits drained completely.

Cycle 1		Cycle 2		Cycle 3	
Time (min)	Depth (m)	Time (min)	Depth (m)	Time (min)	Depth (m)
0	0.90	0	0.55	0	0.60
1	1.10	1	0.65	1	0.65
2	1.35	2	0.80	2	0.85
3	1.60	3	0.90	3	0.90
3.4	1.80	4	1.30	4	1.20
		5	1.50	5	1.50
		5.5	1.80	5.25	1.80

Final Excavation Depth (m)	Cycle 1	Cycle 2	Cycle 3
At end of testing cycle	1.64	1.63	1.62
Water Depths (m)			
Water depth at start of test	0.90	0.55	0.60
Water depth at end of test	1.80	1.80	1.80
Effective depth (measured)	0.90	1.25	1.20
% Effective storage depth	1.22	1.16	1.18
Effective Storage Depths (m)			
Effective storage depth (100%)	0.74	1.08	1.02
Effective storage depth (75%)	0.56	0.81	0.77
Effective storage depth (50%)	0.37	0.54	0.51
Effective storage depth (25%)	0.19	0.27	0.26
Outflow Time (min)			
Time for measured outflow	3	6	5
Time for 100% outflow	3	6	5
Time for 75-25% outflow	2	2	3
Volume of Outflow (m^3)			
Over measured effective depth	0.97	1.35	1.30
Over 100% effective depth	0.80	1.17	1.10
From 75% - 25% effective depth	0.40	0.58	0.55
Surface Area (m^2)			
For 100% effective storage	4.63	6.26	5.98
For 50% effective storage	2.86	3.67	3.53
Over measured depth	5.40	7.08	6.84
Soil Infiltration Rate (m/s)	**Cycle 1**	**Cycle 2**	**Cycle 3**
Over 100% effective depth	9.6E-04	5.2E-04	6.1E-04
Over measured depth	8.8E-04	5.8E-04	6.0E-04
Over 75% - 25% effective depth	**1.6E-03**	**1.3E-03**	**1.0E-03**



Design Soil Infiltration Rate: 1.0E-03 m/s

Intégral Géotechnique

BRE365 SOIL INFILTRATION RATE TEST - TP04

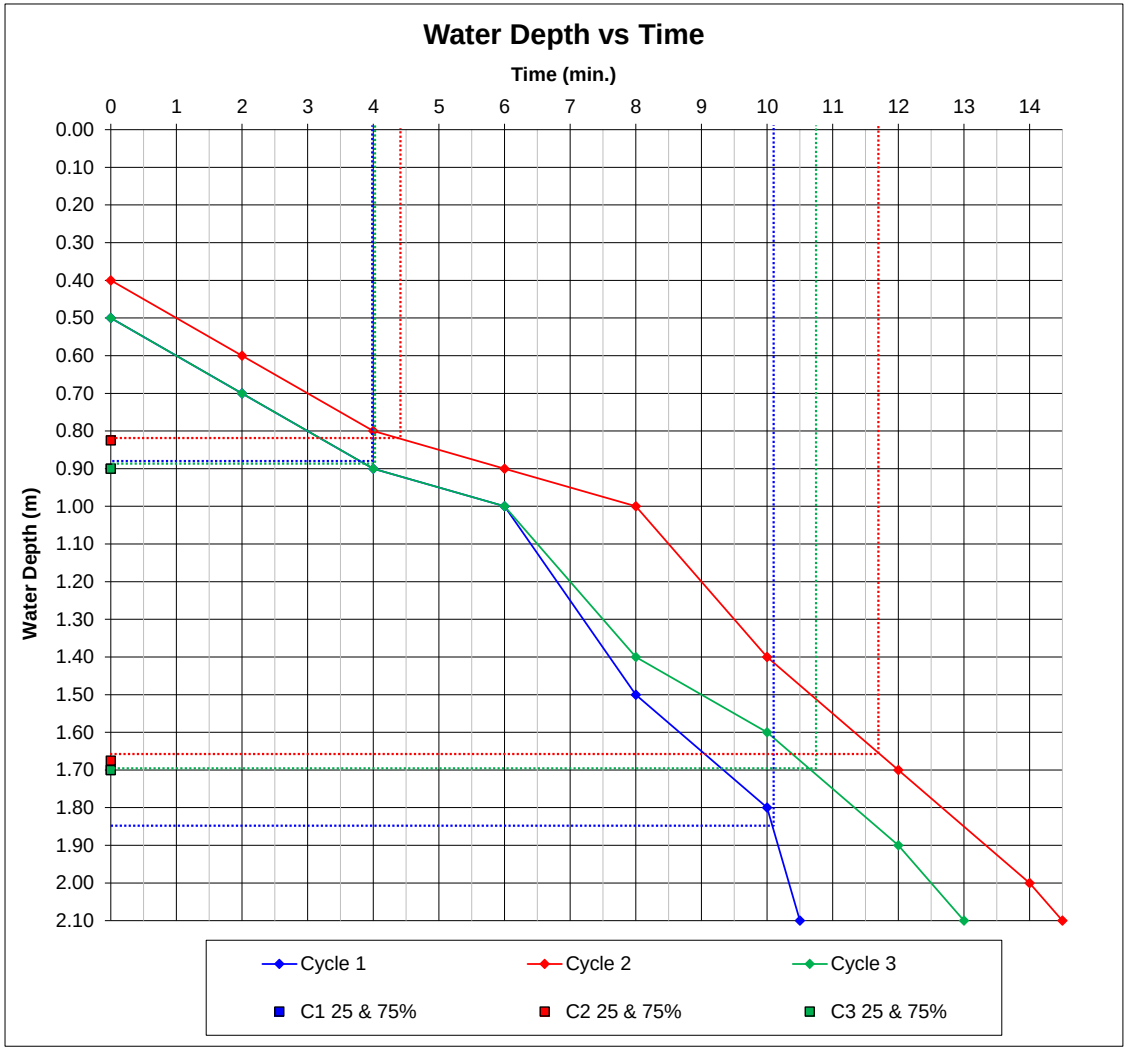
12998 Football Ground, Upper Solva

Trial Pit Information	
Length (m)	1.90
Width (m)	0.60
Depth (m)	2.10
Groundwater	Dry
Weather Conditions	Sunny
Date	05-Apr-22

Remarks
All pits drained completely.

Cycle 1		Cycle 2		Cycle 3	
Time (min)	Depth (m)	Time (min)	Depth (m)	Time (min)	Depth (m)
0	0.50	0	0.40	0	0.50
2	0.70	2	0.60	2	0.70
4	0.90	4	0.80	4	0.90
6	1.00	6	0.90	6	1.00
8	1.50	8	1.00	8	1.40
10	1.80	10	1.40	10	1.60
10.5	2.10	12	1.70	12	1.90
		14	2.00	13	2.10
		14.5	2.10		

Final Excavation Depth (m)	Cycle 1	Cycle 2	Cycle 3
At end of testing cycle	2.10	2.10	2.10
Water Depths (m)			
Water depth at start of test	0.50	0.40	0.50
Water depth at end of test	2.10	2.10	2.10
Effective depth (measured)	1.60	1.70	1.60
% Effective storage depth	1.00	1.00	1.00
Effective Storage Depths (m)			
Effective storage depth (100%)	1.60	1.70	1.60
Effective storage depth (75%)	1.20	1.28	1.20
Effective storage depth (50%)	0.80	0.85	0.80
Effective storage depth (25%)	0.40	0.43	0.40
Outflow Time (min)			
Time for measured outflow	11	15	13
Time for 100% outflow	11	15	13
Time for 75-25% outflow	6	7	7
Volume of Outflow (m^3)			
Over measured effective depth	1.82	1.94	1.82
Over 100% effective depth	1.82	1.94	1.82
From 75% - 25% effective depth	0.91	0.97	0.91
Surface Area (m^2)			
For 100% effective storage	9.14	9.64	9.14
For 50% effective storage	5.14	5.39	5.14
Over measured depth	9.14	9.64	9.14
Soil Infiltration Rate (m/s)	**Cycle 1**	**Cycle 2**	**Cycle 3**
Over 100% effective depth	3.0E-04	2.2E-04	2.6E-04
Over measured depth	3.2E-04	2.3E-04	2.6E-04
Over 75% - 25% effective depth	**4.9E-04**	**4.1E-04**	**4.3E-04**



Design Soil Infiltration Rate: 4.1E-04 m/s

Intégral Géotechnique

BRE365 SOIL INFILTRATION RATE TEST - TP06

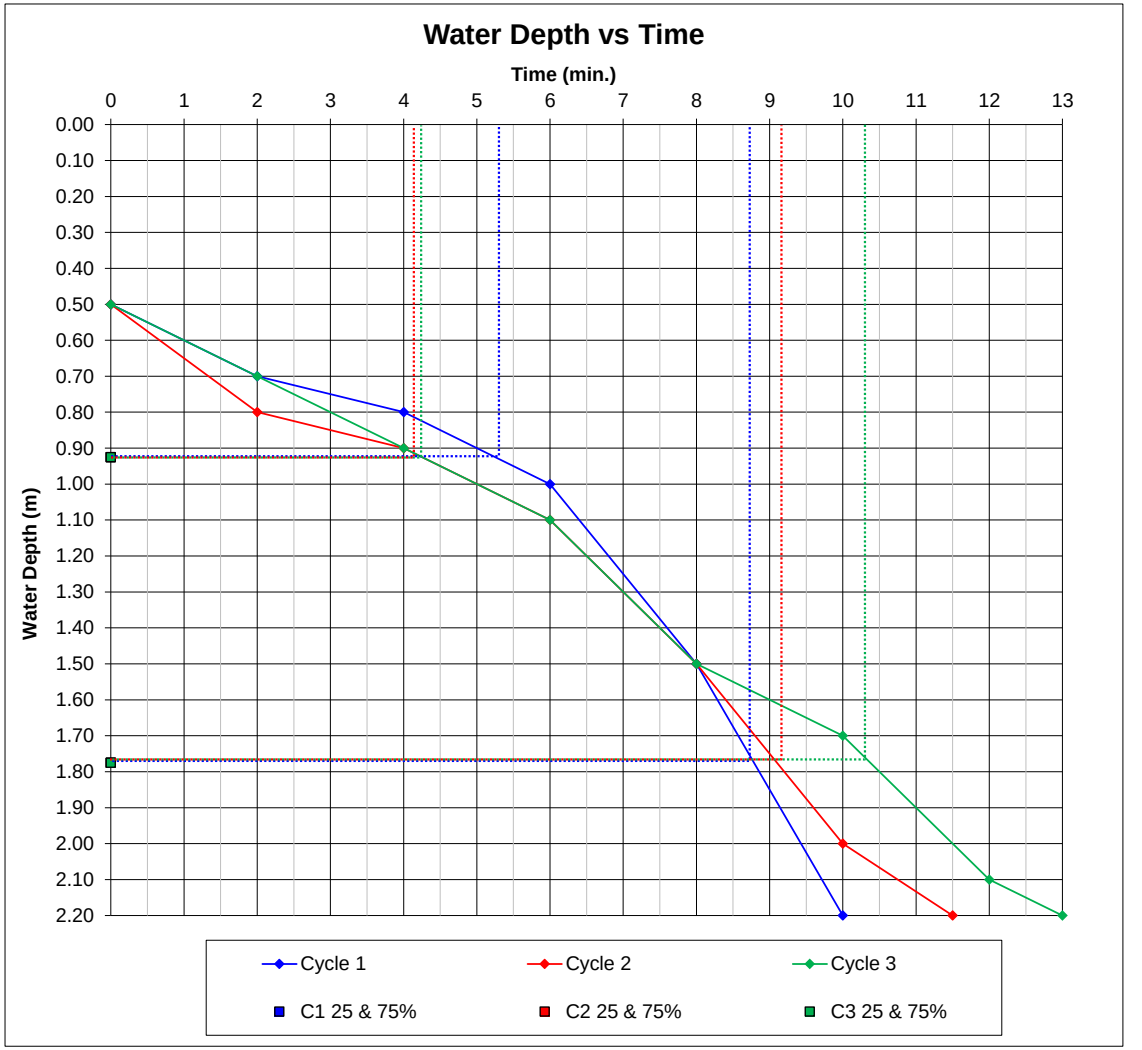
12998 Football Ground, Upper Solva

Trial Pit Information	
Length (m)	1.80
Width (m)	0.60
Depth (m)	2.20
Groundwater	Dry
Weather Conditions	Sunny
Date	05-Apr-22

Remarks
All pits drained completely.

Cycle 1		Cycle 2		Cycle 3	
Time (min)	Depth (m)	Time (min)	Depth (m)	Time (min)	Depth (m)
0	0.50	0	0.50	0	0.50
2	0.70	2	0.80	2	0.70
4	0.80	4	0.90	4	0.90
6	1.00	6	1.10	6	1.10
8	1.50	8	1.50	8	1.50
10	2.20	10	2.00	10	1.70
		11.5	2.20	12	2.10
				13	2.20

Final Excavation Depth (m)	Cycle 1	Cycle 2	Cycle 3
At end of testing cycle	2.20	2.20	2.20
Water Depths (m)			
Water depth at start of test	0.50	0.50	0.50
Water depth at end of test	2.20	2.20	2.20
Effective depth (measured)	1.70	1.70	1.70
% Effective storage depth	1.00	1.00	1.00
Effective Storage Depths (m)			
Effective storage depth (100%)	1.70	1.70	1.70
Effective storage depth (75%)	1.28	1.28	1.28
Effective storage depth (50%)	0.85	0.85	0.85
Effective storage depth (25%)	0.43	0.43	0.43
Outflow Time (min)			
Time for measured outflow	10	12	13
Time for 100% outflow	10	12	13
Time for 75-25% outflow	4	5	6
Volume of Outflow (m^3)			
Over measured effective depth	1.84	1.84	1.84
Over 100% effective depth	1.84	1.84	1.84
From 75% - 25% effective depth	0.92	0.92	0.92
Surface Area (m^2)			
For 100% effective storage	9.24	9.24	9.24
For 50% effective storage	5.16	5.16	5.16
Over measured depth	9.24	9.24	9.24
Soil Infiltration Rate (m/s)	**Cycle 1**	**Cycle 2**	**Cycle 3**
Over 100% effective depth	3.3E-04	2.8E-04	2.5E-04
Over measured depth	3.3E-04	2.9E-04	2.5E-04
Over 75% - 25% effective depth	**8.2E-04**	**5.9E-04**	**4.9E-04**



Design Soil Infiltration Rate: 4.9E-04 m/s

Intégral Géotechnique

BRE365 SOIL INFILTRATION RATE TEST - TP08

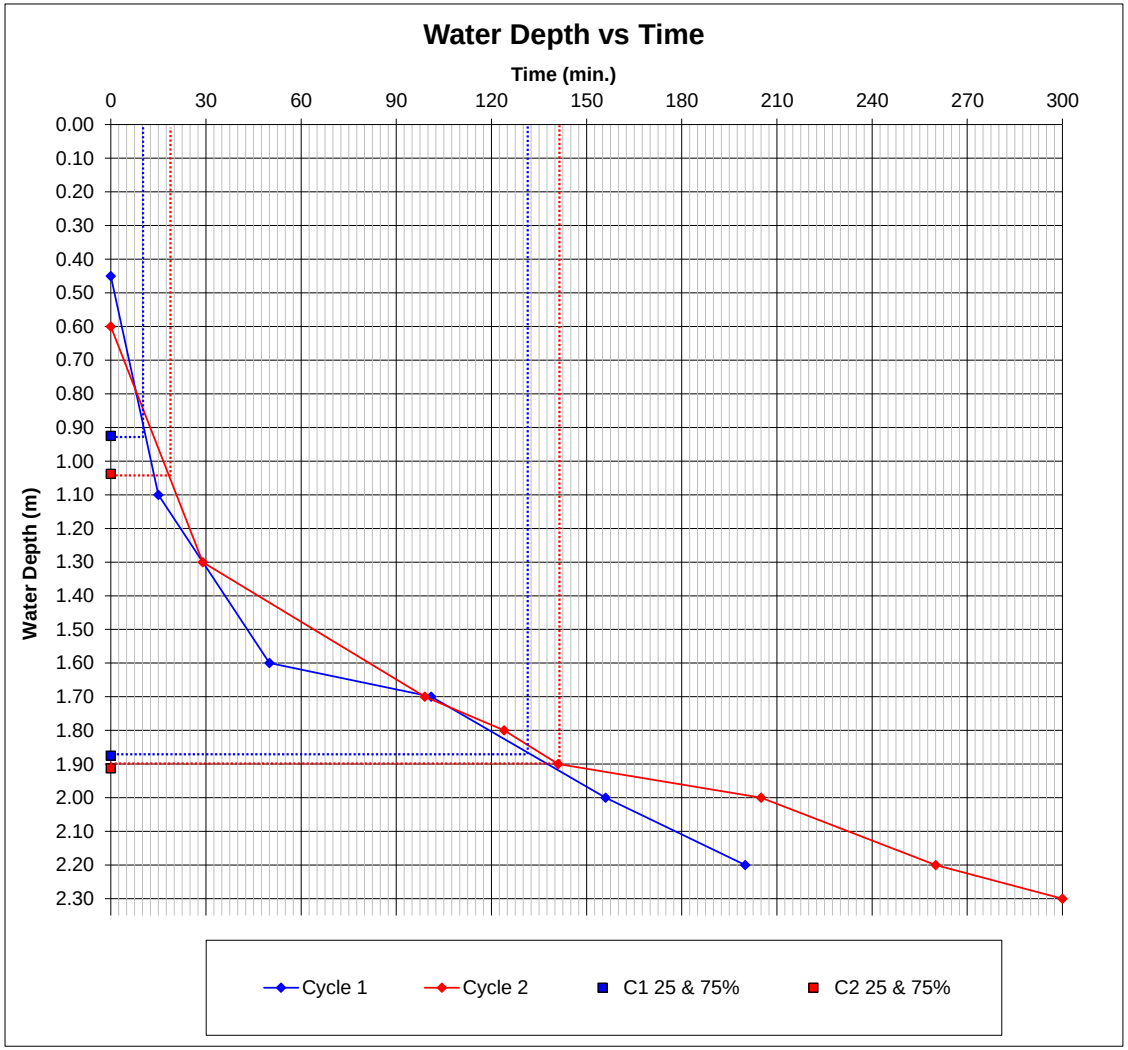
12998 Football Ground, Upper Solva

Trial Pit Information	
Length (m)	1.90
Width (m)	0.60
Depth (m)	2.35
Groundwater	Dry
Weather Conditions	Sunny
Date	05.04.22

Remarks

Cycle 1		Cycle 2		Cycle 3	
Time (min)	Depth (m)	Time (min)	Depth (m)	Time (min)	Depth (m)
0	0.45	0	0.60		
15	1.10	29	1.30		
50	1.60	99	1.70		
101	1.70	124	1.80		
156	2.00	141	1.90		
200	2.20	205	2.00		
		260	2.20		
		300	2.30		

Final Excavation Depth (m)	Cycle 1	Cycle 2	Cycle 3
At end of testing cycle	2.35	2.35	
Water Depths (m)			
Water depth at start of test	0.45	0.60	
Water depth at end of test	2.20	2.30	
Effective depth (measured)	1.75	1.70	
% Effective storage depth	0.92	0.97	
Effective Storage Depths (m)			
Effective storage depth (100%)	1.90	1.75	
Effective storage depth (75%)	1.43	1.31	
Effective storage depth (50%)	0.95	0.88	
Effective storage depth (25%)	0.48	0.44	
Outflow Time (min)			
Time for measured outflow	200	300	
Time for 100% outflow			
Time for 75-25% outflow	120	120	
Volume of Outflow (m^3)			
Over measured effective depth	2.00	1.94	
Over 100% effective depth	2.17	2.00	
From 75% - 25% effective depth	1.08	1.00	
Surface Area (m^2)			
For 100% effective storage	10.64	9.89	
For 50% effective storage	5.89	5.52	
Over measured depth	9.89	9.64	
Soil Infiltration Rate (m/s)	**Cycle 1**	**Cycle 2**	**Cycle 3**
Over 100% effective depth	#DIV/0!	#DIV/0!	
Over measured depth	1.7E-05	1.1E-05	
Over 75% - 25% effective depth	**2.6E-05**	**2.5E-05**	



Design Soil Infiltration Rate: 2.5E-05 m/s

Intégral Géotechnique

APPENDIX E

LABORATORY CHEMICAL TEST RESULTS

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f: 02920862176
e: lauren@integralgeotec.com

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 22-51160

Project / Site name:	Football Ground, Upper Solva	**Samples received on:**	08/04/2022
Your job number:	12998	**Samples instructed on/ Analysis started on:**	11/04/2022
Your order number:		**Analysis completed by:**	20/04/2022
Report Issue Number:	1	**Report issued on:**	21/04/2022
Samples Analysed:	5 soil samples		

Izabela Wójcik
Signed:

Izabela Wójcik
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-51160
Project / Site name: Football Ground, Upper Solva

Lab Sample Number				2235051	2235052	2235053	2235054	2235055
Sample Reference				TP01	TP02	TP06	TP07	TP10
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.20	0.10	0.20	0.60
Date Sampled				06/04/2022	06/04/2022	06/04/2022	06/04/2022	06/04/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	14	11	26	12	12
Total mass of sample received	kg	0.001	NONE	0.9	0.9	0.9	0.9	0.9
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	ASE	ASE	ASE	ASE	ASE
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	5.5	6.6	5.8	6	7.8
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	800	670	780	670	130
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0072	0.0078	0.017	0.016	0.011
Sulphide	mg/kg	1	MCERTS	4.9	1.5	1.5	2.8	1.6
Total Sulphur	mg/kg	50	MCERTS	400	300	440	340	< 50
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	2.7	1.7	3.3	2.3	0.2
Loss on Ignition @ 450oC	%	0.2	MCERTS	7.4	5.6	8.4	7	1.9
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80

Analytical Report Number: 22-51160
Project / Site name: Football Ground, Upper Solva

Lab Sample Number				2235051	2235052	2235053	2235054	2235055
Sample Reference				TP01	TP02	TP06	TP07	TP10
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.20	0.10	0.20	0.60
Date Sampled				06/04/2022	06/04/2022	06/04/2022	06/04/2022	06/04/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	35	33	31	31	28
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.61	0.64	0.68	0.68	0.75
Boron (water soluble)	mg/kg	0.2	MCERTS	0.7	0.8	0.5	0.3	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	24	23	28	25	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	31	31	30	34	28
Lead (aqua regia extractable)	mg/kg	1	MCERTS	63	36	41	53	17
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	16	19	21	21	26
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	45	40	40	41	34
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	70	74	66	66	57

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-51160
Project / Site name: Football Ground, Upper Solva

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2235051	TP01	None Supplied	0.2	Brown loam and clay with gravel and vegetation.
2235052	TP02	None Supplied	0.2	Brown loam and clay with gravel and vegetation.
2235053	TP06	None Supplied	0.1	Brown clay and loam with gravel and vegetation.
2235054	TP07	None Supplied	0.2	Brown loam and clay with gravel and vegetation.
2235055	TP10	None Supplied	0.6	Brown clay and sand with gravel.

Analytical Report Number : 22-51160
Project / Site name: Football Ground, Upper Solva

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In house method.	L047-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE

Analytical Report Number : 22-51160
Project / Site name: Football Ground, Upper Solva

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

APPENDIX F

LABORATORY GEOTECHNICAL TEST RESULTS

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Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Apex Testing Solutions Limited
Sturmi Way
Village Farm Industrial Estate
Pyle
Bridgend
CF33 6BZ

Attention: Andrew Grogan

CERTIFICATE OF ANALYSIS

Date of report Generation:	26 April 2022
Customer:	Apex Testing Solutions Limited
Sample Delivery Group (SDG):	220420-58
Your Reference:	D22186
Location:	Football Ground, Upper Solva
Report No:	643792
Order Number:	ATS 1625

We received 4 samples on Wednesday April 20, 2022 and 4 of these samples were scheduled for analysis which was completed on Tuesday April 26, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG: 220420-58 **Report Number:** 643792 **Superseded Report:**
Client Ref.: D22186 **Location:** Football Ground, Upper Solva

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26153849	TP01		2.10 - 2.20	19/04/2022
26153852	TP04		1.60 - 1.70	19/04/2022
26153855	TP06		1.00 - 1.10	19/04/2022
26153857	TP07		1.50 - 1.60	19/04/2022

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 220420-58 **Report Number:** 643792 **Superseded Report:**
Client Ref.: D22186 **Location:** Football Ground, Upper Solva

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			26153849	TP01		2.10 - 2.20	250g Amber Jar (ALE210)	S
			26153852	TP04		1.60 - 1.70	250g Amber Jar (ALE210)	S
			26153855	TP06		1.00 - 1.10	250g Amber Jar (ALE210)	S
			26153857	TP07		1.50 - 1.60	250g Amber Jar (ALE210)	S
Anions by Kone (soil)	All	NDPs: 0 Tests: 4	X	X	X	X		
pH	All	NDPs: 0 Tests: 4	X	X	X	X		
Sample description	All	NDPs: 0 Tests: 4	X	X	X	X		

CERTIFICATE OF ANALYSIS

SDG: 220420-58 **Report Number:** 643792 **Superseded Report:**
Client Ref.: D22186 **Location:** Football Ground, Upper Solva

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26153849	TP01	2.10 - 2.20	Light Brown	Sand	Vegetation	Stones
26153852	TP04	1.60 - 1.70	Light Brown	Sandy Clay	None	Stones
26153855	TP06	1.00 - 1.10	Light Brown	Clay	None	Stones
26153857	TP07	1.50 - 1.60	Light Brown	Sandy Loam	Vegetation	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG: 220420-58 **Report Number:** 643792 **Superseded Report:**
Client Ref.: D22186 **Location:** Football Ground, Upper Solva

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP01	TP04	TP06	TP07		
			Depth (m)	2.10 - 2.20	1.60 - 1.70	1.00 - 1.10	1.50 - 1.60		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	19/04/2022	19/04/2022	19/04/2022	19/04/2022		
			Sample Time	.	.	.	.		
			Date Received	20/04/2022	20/04/2022	20/04/2022	20/04/2022		
			SDG Ref	220420-58	220420-58	220420-58	220420-58		
			Lab Sample No.(s)	26153849	26153852	26153855	26153857		
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		17	13	7.7	12		
pH	1 pH Units	TM133		7.53 M	7.53 M	7.79 M	7.75 M		
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.0084 M	0.0191 M	0.0087 M	0.0141 M		

CERTIFICATE OF ANALYSIS

SDG: 220420-58 **Report Number:** 643792 **Superseded Report:**
Client Ref.: D22186 **Location:** Football Ground, Upper Solva

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM243		Mixed Anions In Soils By Kone

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

CERTIFICATE OF ANALYSIS

SDG: 220420-58 **Report Number:** 643792 **Superseded Report:**
Client Ref.: D22186 **Location:** Football Ground, Upper Solva

Test Completion Dates

Lab Sample No(s)	26153849	26153852	26153855	26153857
Customer Sample Ref.	TP01	TP04	TP06	TP07
AGS Ref.				
Depth	2.10 - 2.20	1.60 - 1.70	1.00 - 1.10	1.50 - 1.60
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Anions by Kone (soil)	25-Apr-2022	26-Apr-2022	25-Apr-2022	25-Apr-2022
pH	25-Apr-2022	25-Apr-2022	25-Apr-2022	25-Apr-2022
Sample description	20-Apr-2022	20-Apr-2022	20-Apr-2022	20-Apr-2022

Appendix

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

20. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials andd soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

TEST REPORT

Determination Of Water Content

ISO 17892-1: 2014

Project No:	D22186	**Client:**	Integral Geotechnique
Project Name:	12998 - Football Ground, Upper Solva	**Address:**	Integral House 7 Beddau Way Castlegate Business Park Caerphilly CF83 8PH
ATS Sample No:	27685		

Site Ref / Hole ID:	TP07	**Depth (m):**	1.50
Sample No:		**Sample Type:**	Disturbed
Sampling Certificate Received:	No	**Material Description:**	Greyish brown slightly gravelly CLAY
Location in Works:	N/A	**Material Source:**	Unknown
Date Sampled:	14 April 2022	**Material Supplier:**	Unknown
Sampled By:	LS	**Specification:**	BS1377
Date Received:	19 April 2022	**Date Tested:**	25 April 2022

Test Results

Moisture Content (%)	22.9

Remarks:

QA Ref.	**Apex Testing Solutions**		Approver	Date	Fig
EN ISO 17892-1:2014 E	Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	7771	*A Grogan*	25/04/2022	**MC**
			A Grogan, Laboratory Manager		

TEST REPORT

LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

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

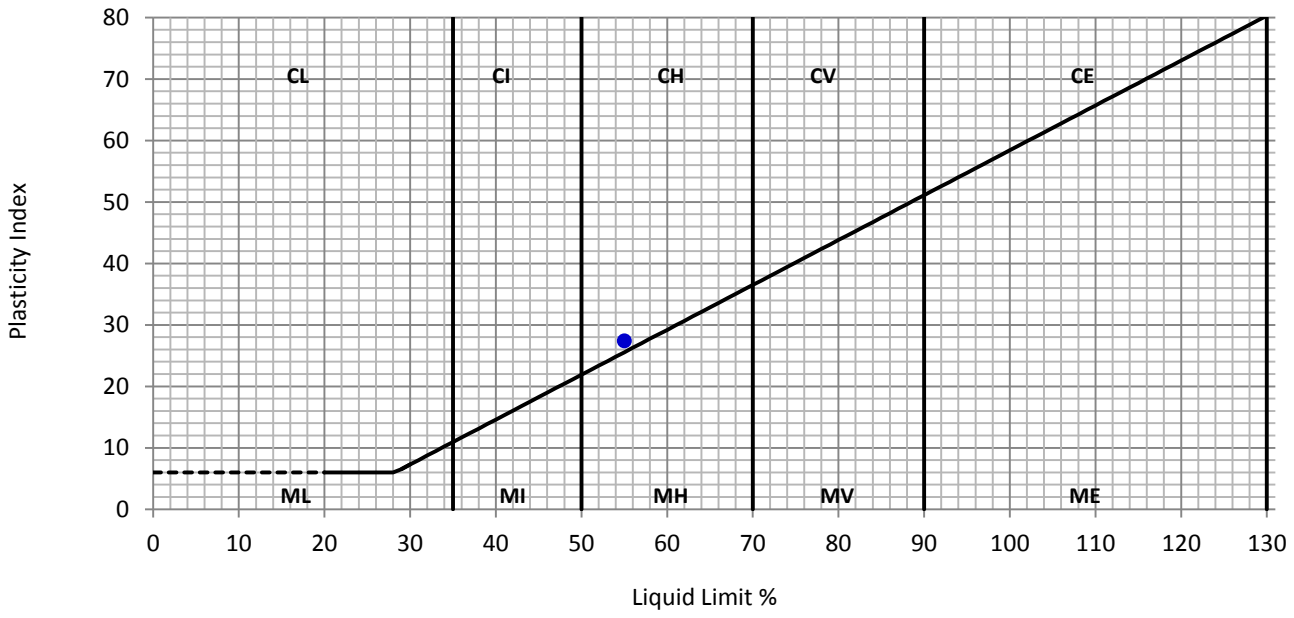
Project No:	D22186	**Client:**	Integral Geotechnique
Project Name:	12998 - Football Ground, Upper Solva	**Address:**	Integral House 7 Beddau Way Castlegate Business Park Caerphilly CF83 8PH
ATS Sample No:	27685		

Site Ref / Hole ID:	TP07	**Depth (m):**	1.50
Sample No:		**Sample Type:**	Disturbed
Sampling Certificate Received:	No	**Material Description:**	Greyish brown slightly gravelly CLAY
Location in Works:	N/A	**Material Source:**	Unknown
Date Sampled:	14 April 2022	**Material Supplier:**	Unknown
Sampled By:	LS	**Specification:**	BS1377
Date Received:	19 April 2022	**Date Tested:**	22 April 2022

Test Results

Liquid Limit	55	%
Plastic Limit	28	%
Plasticity Index	27	%

Preparation:	4.2.4 Sieved Specimen	
Proportion retained on 425µm sieve:	28	%



Remarks:

QA Ref.	**Apex Testing Solutions**		Approver	Date	Fig.
BS1377 - 2 Rev. 2.0	Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	7771	*A Grogan*	25/04/2022	**ATT**
			A Grogan, Laboratory Manager		

TEST REPORT

Determination Of Water Content

ISO 17892-1: 2014

Project No:	D22186	**Client:**	Integral Geotechnique
Project Name:	12998 - Football Ground, Upper Solva	**Address:**	Integral House 7 Beddau Way Castlegate Business Park Caerphilly CF83 8PH
ATS Sample No:	27684		

Site Ref / Hole ID:	TP06	**Depth (m):**	1.00
Sample No:		**Sample Type:**	Disturbed
Sampling Certificate Received:	No	**Material Description:**	Brown sandy very gravelly CLAY
Location in Works:	N/A	**Material Source:**	Unknown
Date Sampled:	14 April 2022	**Material Supplier:**	Unknown
Sampled By:	LS	**Specification:**	BS1377
Date Received:	19 April 2022	**Date Tested:**	25 April 2022

Test Results

Moisture Content (%)	9.7

Remarks:

QA Ref.	**Apex Testing Solutions**		Approver	Date	Fig
EN ISO 17892-1:2014 E	Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	7771	*A Grogan*	25/04/2022	**MC**
			A Grogan, Laboratory Manager		

TEST REPORT

LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

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

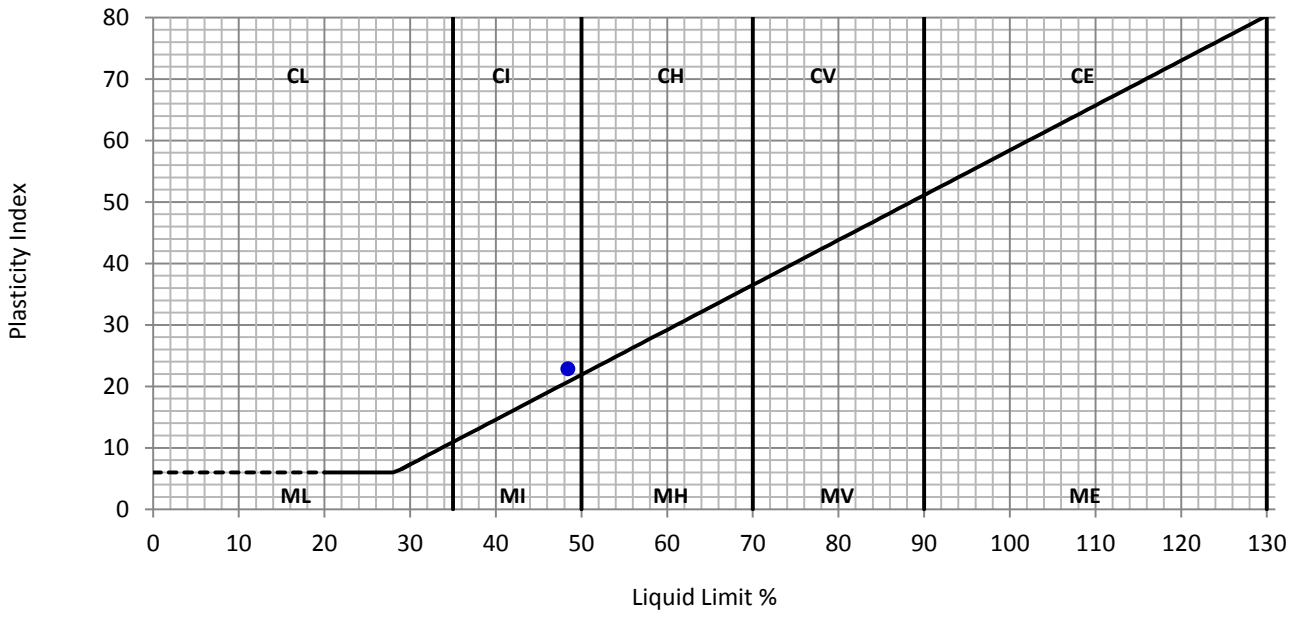
Project No:	D22186	**Client:**	Integral Geotechnique
Project Name:	12998 - Football Ground, Upper Solva	**Address:**	Integral House 7 Beddau Way Castlegate Business Park Caerphilly CF83 8PH
ATS Sample No:	27684		

Site Ref / Hole ID:	TP06	**Depth (m):**	1.00
Sample No:		**Sample Type:**	Disturbed
Sampling Certificate Received:	No	**Material Description:**	Brown sandy very gravelly CLAY
Location in Works:	N/A	**Material Source:**	Unknown
Date Sampled:	14 April 2022	**Material Supplier:**	Unknown
Sampled By:	LS	**Specification:**	BS1377
Date Received:	19 April 2022	**Date Tested:**	22 April 2022

Test Results

Liquid Limit	48.4	%
Plastic Limit	25.5	%
Plasticity Index	22.9	%

Preparation:	4.2.4 Sieved Specimen	
Proportion retained on 425µm sieve:	67	%



Remarks:

QA Ref.	**Apex Testing Solutions**		Approver	Date	Fig.
BS1377 - 2 Rev. 2.0	Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	7771	*A Grogan*	25/04/2022	**ATT**
			A Grogan, Laboratory Manager		

TEST REPORT

Determination Of Water Content

ISO 17892-1: 2014

Project No:	D22186	**Client:**	Integral Geotechnique
Project Name:	12998 - Football Ground, Upper Solva	**Address:**	Integral House 7 Beddau Way Castlegate Business Park Caerphilly CF83 8PH
ATS Sample No:	27683		

Site Ref / Hole ID:	TP04	**Depth (m):**	1.60
Sample No:		**Sample Type:**	Disturbed
Sampling Certificate Received:	No	**Material Description:**	Brown sandy gravelly CLAY
Location in Works:	N/A	**Material Source:**	Unknown
Date Sampled:	14 April 2022	**Material Supplier:**	Unknown
Sampled By:	LS	**Specification:**	BS1377
Date Received:	19 April 2022	**Date Tested:**	25 April 2022

Test Results

Moisture Content (%)	16.8

Remarks:

TEST REPORT

LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

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

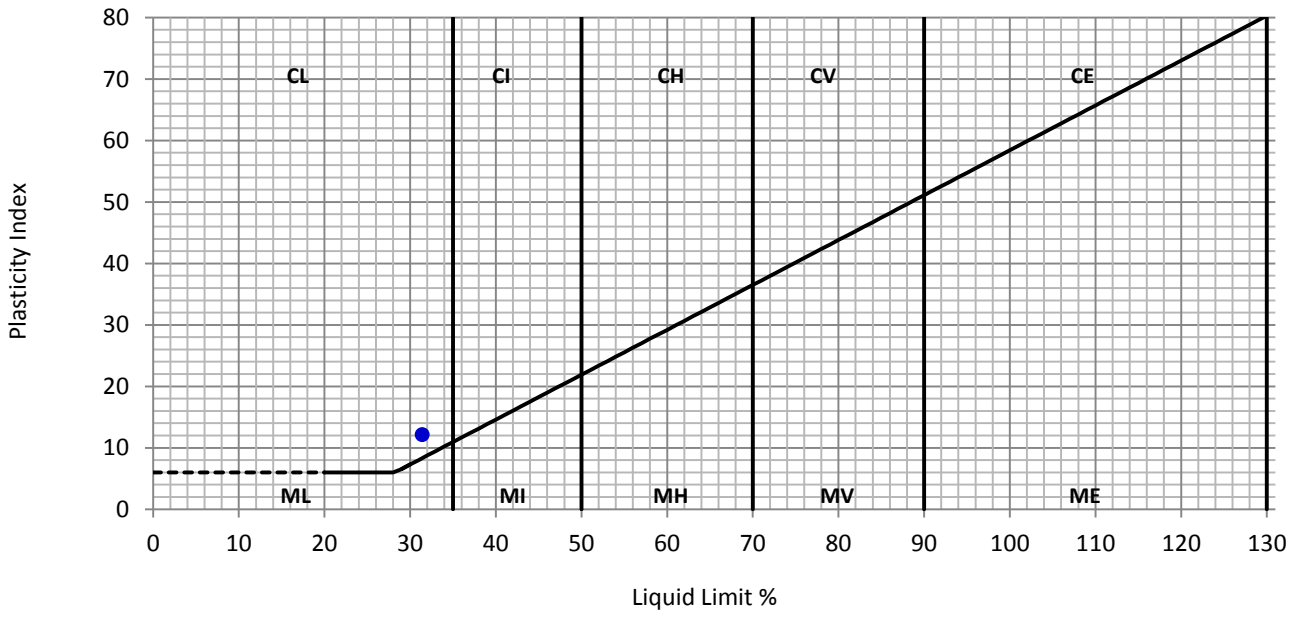
Project No:	D22186	**Client:**	Integral Geotechnique
Project Name:	12998 - Football Ground, Upper Solva	**Address:**	Integral House 7 Beddau Way Castlegate Business Park Caerphilly CF83 8PH
ATS Sample No:	27683		

Site Ref / Hole ID:	TP04	**Depth (m):**	1.60
Sample No:		**Sample Type:**	Disturbed
Sampling Certificate Received:	No	**Material Description:**	Brown sandy gravelly CLAY
Location in Works:	N/A	**Material Source:**	Unknown
Date Sampled:	14 April 2022	**Material Supplier:**	Unknown
Sampled By:	LS	**Specification:**	BS1377
Date Received:	19 April 2022	**Date Tested:**	22 April 2022

Test Results

Liquid Limit	31	%
Plastic Limit	19	%
Plasticity Index	12	%

Preparation:	4.2.4 Sieved Specimen	
Proportion retained on 425µm sieve:	34	%



Remarks:

QA Ref.	**Apex Testing Solutions**		Approver	Date	Fig.
BS1377 - 2 Rev. 2.0	Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	7771	*A Grogan*	25/04/2022	**ATT**
			A Grogan, Laboratory Manager		

TEST REPORT

Determination Of Water Content

ISO 17892-1: 2014

Project No:	D22186	**Client:**	Integral Geotechnique
Project Name:	12998 - Football Ground, Upper Solva	**Address:**	Integral House 7 Beddau Way Castlegate Business Park Caerphilly CF83 8PH
ATS Sample No:	27682		

Site Ref / Hole ID:	TP01	**Depth (m):**	2.10
Sample No:		**Sample Type:**	Disturbed
Sampling Certificate Received:	No	**Material Description:**	Light brown slightly gravelly silty SAND
Location in Works:	N/A	**Material Source:**	Unknown
Date Sampled:	14 April 2022	**Material Supplier:**	Unknown
Sampled By:	LS	**Specification:**	BS1377
Date Received:	19 April 2022	**Date Tested:**	25 April 2022

Test Results

Moisture Content (%)	22.8

Remarks:

QA Ref.	**Apex Testing Solutions**		Approver	Date	Fig
EN ISO 17892-1:2014 E	Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	7771	A Grogan	25/04/2022	**MC**
			A Grogan, Laboratory Manager		

TEST REPORT

LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

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

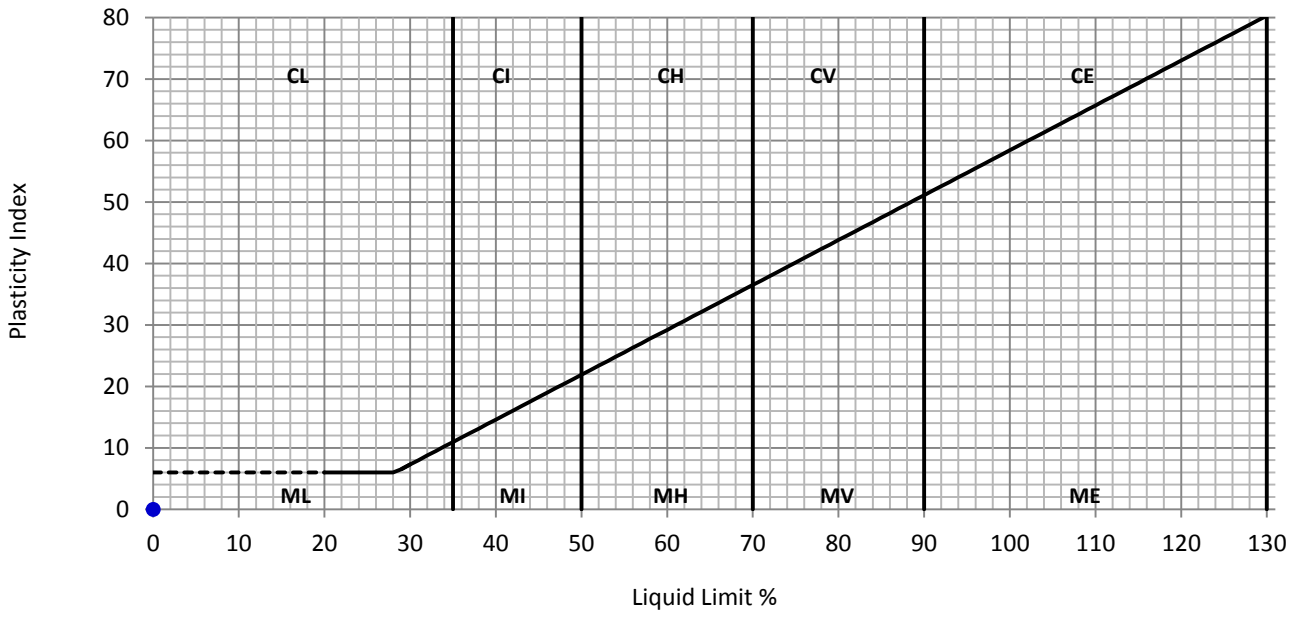
Project No:	D22186	**Client:**	Integral Geotechnique
Project Name:	12998 - Football Ground, Upper Solva	**Address:**	Integral House 7 Beddau Way Castlegate Business Park Caerphilly CF83 8PH
ATS Sample No:	27682		

Site Ref / Hole ID:	TP01	**Depth (m):**	2.10
Sample No:		**Sample Type:**	Disturbed
Sampling Certificate Received:	No	**Material Description:**	Light brown slightly gravelly silty SAND
Location in Works:	N/A	**Material Source:**	Unknown
Date Sampled:	14 April 2022	**Material Supplier:**	Unknown
Sampled By:	LS	**Specification:**	BS1377
Date Received:	19 April 2022	**Date Tested:**	22 March 2022

Test Results

Liquid Limit	0	%
Plastic Limit		%
Plasticity Index	#VALUE!	%

Preparation:	4.2.4 Sieved Specimen	
Proportion retained on 425µm sieve:	12	%



Remarks: **Sample is non- plastic**

QA Ref.	**Apex Testing Solutions**	Approver	Date	Fig.
BS1377 - 2 Rev. 2.0	Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096 7771	A Grogan	25/04/2022	**ATT**
		A Grogan, Laboratory Manager		

APPENDIX G

SUMMARY OF LABORATORY CHEMICAL TEST RESULTS

SUMMARY OF LABORATORY SOIL TEST RESULTS

Job No.: 12998
Site: Football Ground, Upper Solva
Soil Type: Natural Ground
Soil Organic Matter: 1%

METALS AND SEMI-METALS

No.	Location	Depth (m)	Arsenic (mg/kg)	Boron (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (Elemental) (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
1	TP01	0.20	35	0.7	0.61	< 0.2	24	< 4.0	31	63	< 0.3	16	< 1.0	45	70
2	TP02	0.20	33	0.8	0.64	< 0.2	23	< 4.0	31	36	< 0.3	19	< 1.0	40	74
3	TP06	0.10	31	0.5	0.68	< 0.2	28	< 4.0	30	41	< 0.3	21	< 1.0	40	66
4	TP07	0.20	31	0.3	0.68	< 0.2	25	< 4.0	34	53	< 0.3	21	< 1.0	41	66
5	TP10	0.60	28	< 0.2	0.75	< 0.2	24	< 4.0	28	17	< 0.3	26	< 1.0	34	57
6	TP4	0.30	28	0.7	0.6	< 0.2	23	< 4.0	34	34	< 0.3	16	< 1.0	36	61
	Screening Criteria Value		**37.0**	**290.0**	**1.7**	**11.0**	**-**	**6.0**	**2400.0**	**200.0**	**1.2**	**130.0**	**250.0**	**410.0**	**3700.0**
	Source of Screening Criteria Value		S4UL	S4UL	S4UL	S4UL	-	S4UL	S4UL	C4SL	S4UL	S4UL	S4UL	S4UL	S4UL

Intégral Géotechnique

SUMMARY OF LABORATORY SOIL TEST RESULTS

Job No.: 12998
Site: Football Ground, Upper Solva
Soil Type: Natural Ground
Soil Organic Matter: 1%

INORGANIC CHEMICALS & OTHERS

No.	Location	Depth (m)	Cyanide (mg/kg)	Loss on ignition, dried solids (%)	Moisture content at 30 C (%)	Phenol (mg/kg)	pH (pH units)	Water Soluble Sulphate (g/l)	Sulphate Total as SO4 (mg/kg)	Sulphide (mg/kg)	Total Sulphur (mg/kg)	TOC by Ignition in O2 (%)	Equivalent SOM (%)	Asbestos in Soil	Asbestos Quantification (%)
1	TP01	0.20	< 1.0	7.40	14.00	< 1.0	5.50	0.0072	800.00	4.90	400.00	2.70	4.64	Not-detected	#N/A
2	TP02	0.20	< 1.0	5.60	11.00	< 1.0	6.60	0.0078	670.00	1.50	300.00	1.70	2.92	Not-detected	#N/A
3	TP06	0.10	< 1.0	8.40	26.00	< 1.0	5.80	0.0170	780.00	1.50	440.00	3.30	5.68	Not-detected	#N/A
4	TP07	0.20	< 1.0	7.00	12.00	< 1.0	6.00	0.0160	670.00	2.80	340.00	2.30	3.96	Not-detected	#N/A
5	TP10	0.60	< 1.0	1.90	12.00	< 1.0	7.80	0.0110	130.00	1.60	< 50	0.20	0.34	Not-detected	#N/A
6	TP4	0.30	< 1.0	8.10	15.00	< 1.0	6.20	0.05	600.00	1.70	410.00	2.60	4.47	Not-detected	#N/A
	Screening Criteria Value		34.0	-	-	120.0	-	-	-	-	-	-	-	-	0.001
	Source of Screening Criteria Value		ATRISK	-	-	S4UL	-	-	-	-	-	-	-	-	IOM

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SUMMARY OF LABORATORY SOIL TEST RESULTS

Job No.: 12998
Site: Football Ground, Upper Solva
Soil Type: Natural Ground
Soil Organic Matter: 1%

POLYAROMATIC HYDROCARBONS (PAH)

No.	Location	Depth (m)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(ghi)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(ah)anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(123cd)pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
1	TP01	0.20	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2	TP02	0.20	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
3	TP06	0.10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4	TP07	0.20	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
5	TP10	0.60	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
6	TP4	0.30	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Screening Criteria Value		210.0	170.0	2400.0	7.2	2.2	2.6	320.0	77.0	15.0	0.24	280.0	170.0	27.0	2.3	95.0	620.0
	Source of Screening Criteria Value		S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL

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FIGURES

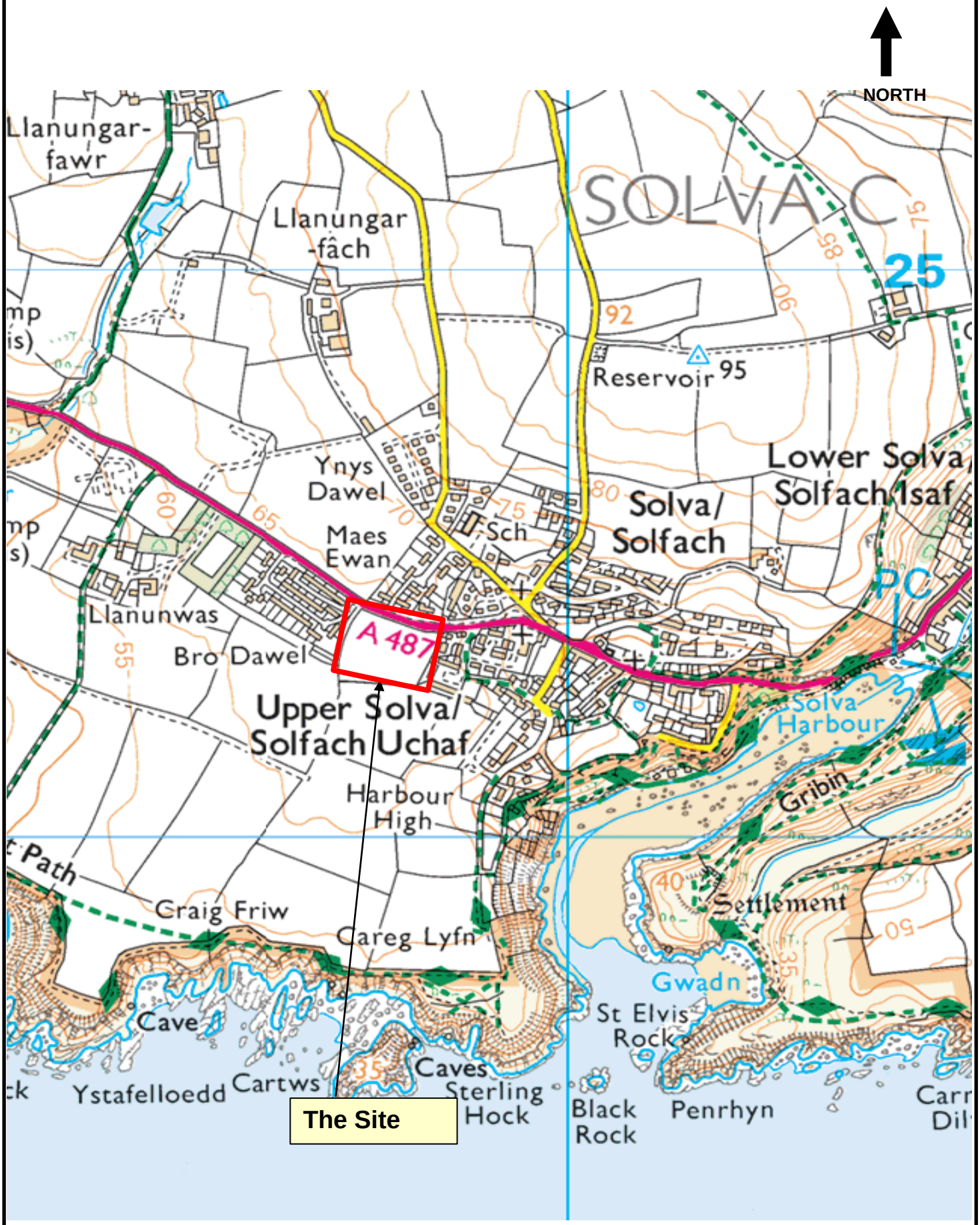

Figure 1: Site Location Plan

12998 - Football Ground Redevelopment, Upper Solva

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Intégral House
7 Beddau Way
Castlegate Business Park
Caerphilly
CF83 2AX
Tel: 029 2080 7991

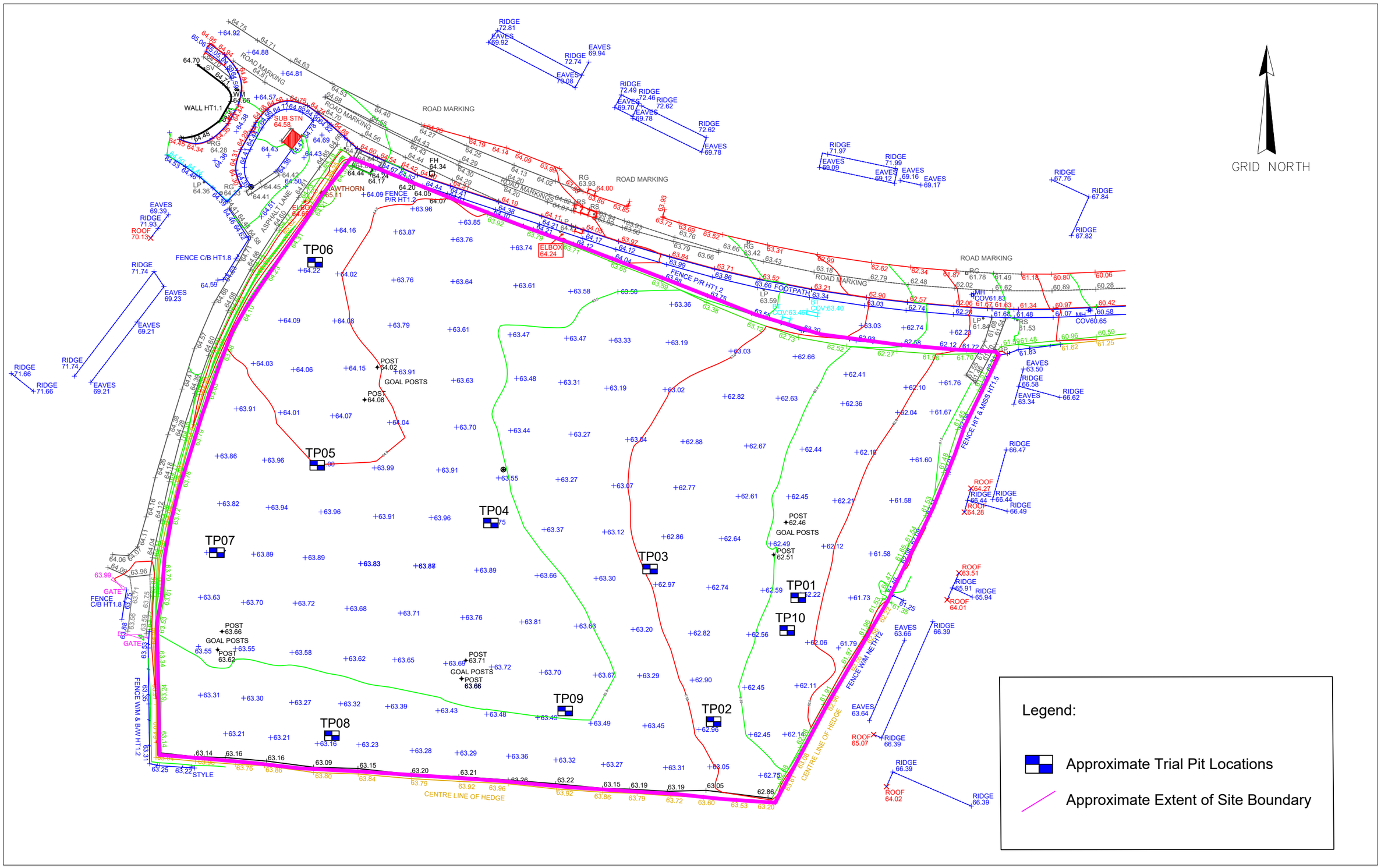

Figure 2: Site Plan

Project: Football Ground Redevelopment, Solva	Job No.: 12998	Intégral Géotechnique
Client: Ateb Group	Scale: 1:750 at A3	Integral House, 7 Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX. Tel: 029 2080 7991