

Tai Tarian

SANDFIELDS, ABERAVON

Site Investigation Report

12457/RAH/19/SI

CLIENT: Tai Tarian

PROJECT: Sandfields, Aberavon

TITLE: Site Investigation Report

JOB NO: 12457

DOCUMENT REF: 12457/RAH/19/SI

Revision	Purpose Description	Originated	Reviewed	Authorised	Date
0	Final	RAH	RB	HP	Sept '19

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1.0 INTRODUCTION

1.1 GENERAL

Tai Tarian are proposing to redevelop a site at Sandfields, Aberavon for residential end-use.

Quad Consult Ltd are the appointed Consulting Civil and Structural Engineers for the scheme.

Intégral Géotechnique (Wales) Limited have been appointed as the Geotechnical Engineers to undertake an intrusive 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 intrusive 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 proposed development will comprise a combination of refurbishment and redevelopment (demolition and reconstruction) of existing county flats. Reference has been made to Drawing No. L_03.1.1.16 by Dennis Hellyar Architects.

The site is split into two phases. Phase 1 comprises the north-western part of the site inclusive of six blocks of flats and Phase 2 comprises the south-eastern part of the site comprising three larger blocks of flats.

The current development plan for Phase 1 indicates that the existing blocks of flats are to be refurbished and a fourth storey of flats is to be constructed on all six blocks. An additional link of up to four storeys is to be constructed between each pair of blocks, joining each pair.

1.2 PROPOSED DEVELOPMENT (CONTINUED)

Formal parking areas are proposed adjacent to the existing blocks and the construction of porch areas is proposed at the entrance doors. The addition of a play area is also indicated in the south of the westernmost grassed area.

Phase 2 is proposed to undergo more significant redevelopment comprising the demolition of existing buildings and replacement with new blocks of flats.

1.3 SCOPE OF WORKS

Intégral Géotechnique were instructed by Quad Consult Ltd to complete a desk study on the full site area (Phase 1 and Phase 2), and an intrusive site investigation on the Phase 1 development area only.

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.

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 Report obtained from the British Geological Survey,
- A Coal Authority Mining Report,
- Geological maps of the area provided by the British Geological Survey,
- the Environment Agency groundwater vulnerability map and aquifer database for the area,
- Existing site investigation data.

The desk study information was used to make an initial assessment of the site and to design an intrusive investigation to be carried out by Intégral Géotechnique. The intrusive site investigation was designed in accordance with BS5930:2015, the Code of Practice for Site Investigations, BS10175:2011, 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 intrusive site investigation included:

- An intrusive investigation carried out on 30th August 2019 comprising five dynamic windowless sampling boreholes and two foundation inspection pits;

1.3 SCOPE OF WORKS (CONTINUED)

- Sampling of soils for laboratory chemical testing;
- Sampling of soils for laboratory 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 Limited, and the Local Authority Building Control or 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.

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 currently existing blocks of flats and underground services.

The Phase 2 site area was not investigated as part of this report.

2.0 THE SITE

2.1 SITE LOCATION AND DESCRIPTION

The site is located in Aberavon Sands, approximately 2km west-south-west of Port Talbot, at a National Grid Reference of 274650, 189780. See Figure 1 for a site location plan.

The site is irregular in shape, roughly comprising a reverse L shape. The site occupies an area of approximately 2.5 hectares. The Phase 1 and Phase 2 parcels of land are approximately the same size; Phase 1 comprises the north-western parcel of land containing six existing blocks of flats and the Phase 2 area comprises the south-eastern parcel of land containing 4 larger blocks of flats. All boundaries of the site are defined by roads, with the exception of the south-eastern boundary which is marked by a wall with an indoor bowls centre and a sports pitch to the east. A site plan is presented in Figure 2.

The site is situated on largely level ground at an approximate elevation of 11mAOD. The site and surrounding area has historically been landscaped, classified as Artificially Modified Ground, during the development of the Sandfields Estate in the 1950's/1960's.

The site is covered by a combination of hardstanding and grassed areas. Private access roads and parking areas running between or alongside blocks of flats are generally surfaced by tarmac or compacted gravels. The area immediately surrounding the blocks of flats is generally stone-paved and then much of the rest of the site comprises grassed areas and verges.

Active services are currently in use on-site, predominantly running alongside the edges of buildings. Site drainage may act as a preferential pathway for potential contaminants from leaks and spills.

2.2 SITE OPERATIONS

The site is currently occupied by residents in the existing (10No.) blocks of flats.

2.3 SURROUNDING LAND USE

The land surrounding the site comprises predominantly residential dwellings with an indoor bowls centre and sports pitch to the south-east and a leisure centre, cinema and hotel to the south-west.

2.4 AVAILABLE SITE INVESTIGATION DATA

12457/PD – Soil Infiltration Testing, May 2019

An investigation was completed by Intégral Géotechnique in May 2019 comprising the excavation of five hand-dug pits for the purpose of shallow infiltration testing. The trial pits were excavated in grassed areas to 1mbgl and subjected to three test cycles.

The trial pits encountered topsoil overlying made ground to depths of between 0.30m and 0.50mbgl underlain by loose brown sand in all locations.

Infiltration rates of between 1.2×10^{-4} m/s and 9.3×10^{-5} m/s were calculated.

Historic Borehole Records

Two historic borehole records (SS78NE60 and SS78NW4) are available in the vicinity of the site, one located 70m south-west of the site and another approximately 370m east of the site. These boreholes encountered brown sand to in the order of 19ft and 21ft (approximately 6m) underlain by varying superficial deposits comprising blue and dark grey sands and clays and gravels to depths of 97ft and 105ft (30 to 32m). This was underlain by bedrock of Coal Measures. The logs describe the bedrock as dark grey cliff with coal and sandstone which is interpreted to mean heavily jointed/fractured mudstones with occasional coal seams, sandstone bands and ironstone.

Copies of the Historic Borehole Logs are included as Appendix D.

2.5 CONSULTATIONS WITH REGULATORS

There have been no consultations with the regulators 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	1876, 1899, 1917, 1939, 1969, 2001
1:1,1250	1956-1957, 1956, 1961-1967, 1966-1976, 1966-1986, 1993-1995
1:10,560	1884-1885, 1900, 1921, 1938-1952, 1949
1:10,000	1964-1965, 1980-1982, 1993-1996, 1999, 2006, 2019

The earliest edition of the map dated 1876 indicated the site and the surrounding areas to be rough grassland and dunes known as Aberafon Burrows. The high-water mark of ordinary tides was indicated approximately 200m to the south-west of the site.

The 1899 edition of the map indicated that the site and the immediate surrounding areas had remained relatively unchanged. The Rhondda and Swansea Bay Railway had been constructed some 650m to the north-east and Sandfields had begun to develop beyond the railway line. Sand sidings were constructed to run from the railway towards the site and towards the sea.

The 1917-1919 edition of the site indicated the site to have remained an undeveloped part of Aberafon Burrows. Sandfields continued to expand to the north-east of the site. The sand siding which ran towards the site had been extended and led to a brick works building located approximately 150m to the north-east of the site.

The 1936-1940 edition of the map indicated that the site and the surrounding area remained undeveloped. Sandfields had extended beyond the railway line towards the site. The brick works building and the sand sidings were no longer present.

By the addition of the map dated 1952-1972 the site had been completely developed with a complex of flats including Morgannwg House, Flint House, Gwent House, Brecon House, Radnor House, Pembroke House, Cardigan House and Coronation House (circa 1960's). The boundaries of the site were formed by Moorland Road to the north-east, Dalton Road to the north-west and Bevin Avenue to the southwest. The area to the south-east was indicated to be rough grass and with a number of tanks within the area. Sandfields had extensively developed to the north-east and north-west of the site.

3.0 SITE HISTORY (CONTINUED)

The edition of the map dated 1956-1984 indicated the site to have remained unchanged. The area to the south-west had been developed for use as a car park and with new access roads indicated. A promenade had also been constructed approximately 130m to the south-west of the site, parallel to the high-water mark of medium tides. The area to the south-east of the site was now developed with an indoor sports centre and a lido. There was no longer evidence of tanks within the area.

The areas to the south-west of the site continued to develop over the years which followed with the edition of the map dated 1966-1991 indicating further developments including a public house, a hotel and municipal offices.

Development continued in the vicinity of the site over the subsequent years but the site itself remained unchanged with the configuration of the flats remaining as they were when they were constructed.

4.0 SITE ENVIRONMENTAL SETTING

4.1 PHYSICAL SETTING

The site is located within an existing mainly residential area on relatively level ground at an approximate elevation of 11m AOD. The beach and tide line are located approximately 180m south-west of the site.

4.2 GEOLOGY

The 1:50,000 scale geological map of the area indicates the site to be underlain by South Wales Middle Coal Measures Formation of the Carboniferous period. These rocks typically comprise grey productive coal-bearing mudstones/siltstones, with seatearths and minor sandstones.

Superficial deposits of blown sand of the Quaternary period are indicated to overlie the solid strata. Blown sand is sand that has been transported by wind, or sand consisting predominantly of wind-borne particles.

The BGS map indicates the site and surrounding area is covered by Landscaped Ground (Undivided) classified as Artificially Modified Ground. This is assumed to be associated with the historic reprofiling of the area.

A variable thickness of made ground is anticipated above the superficial deposits across the site due to the development that has taken place.

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

Table 1: Summary of Anticipated Site Geology		
Geological unit	Horizon	Description
Recent	Topsoil/subsoil and/or made ground	Various materials
Recent	Landscaped Ground	Reworked Blown Sand deposits
Quaternary	Blown Sand	Sand
Carboniferous	South Wales Middle Coal Measures Formation	Grey productive coal-bearing mudstones/siltstones, with seatearths and minor sandstones.

4.3 RADON

Information with regard to Radon Protective Measures is provided within the Envirocheck Report and the BGS Radon Report as presented in Appendix B. The BGS Radon Report states that the site is 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

A Coal Mining Report for the site has been obtained from the Coal Authority and a copy is included in Appendix C.

The Coal Authority states that the property is not within a surface area that could be affected by past underground coal mining.

The Coal Authority mining report confirms that there are no known coal mine entries within, or within 20 metres of, the site boundary.

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

There are no conjectural outcrops indicated in close proximity of the site boundary. The Coal Authority interactive viewer indicates that the site does not lie within a high-risk development area.

4.5 HYDROLOGY, HYDROGEOLOGY AND FLOOD RISK

The Envirocheck Report indicates that the nearest surface water feature is recorded 179m southwest of the site. The available maps indicate this to be the high-water mark of medium tides of Swansea Bay. The River Afan is located 906m to the east of the site.

The Environment Agency groundwater vulnerability map and aquifer database classifies the bedrock beneath the site as a Secondary 'A' Aquifer. Secondary 'A' Aquifers are permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.

The Environment Agency groundwater vulnerability map and aquifer database also classifies the superficial deposits beneath the site as a Secondary 'A' Aquifer.

4.5 HYDROLOGY, HYDROGEOLOGY AND FLOOD RISK (CONTINUED)

A perched water body could be encountered within the made ground.

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

There are no discharge consents recorded on site or within 900m of the site boundary.

The Envirocheck Report states that there are no water abstractions recorded within 1km 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
High-water Mark of Medium Tides	179m southwest	N/A	Not known	No	N/A
River Afan	906m east	Southwest	Not known	No	Swansea Bay
Surface run- off	On site	Flows into site drainage	N/A	No	Not known
Site Drainage	On site	Not known	N/A	No	Not known

4.5 HYDROLOGY, HYDROGEOLOGY AND FLOOD RISK (CONTINUED)

Table 3: Summary of Site Hydrogeology				
Geological Unit	Aquifer Classification	Aquifer Characteristics	Source Protection Zone	Groundwater Abstractions
Made ground	Not classified	Highly variable permeability and porosity. Perched water may be present with variable flow directions.	No	None
Blown Sand	Secondary A Aquifer	Variable moderate permeability and porosity with intergranular flow possible.	No	None
South Wales Middle Coal Measures Formation	Secondary A Aquifer	Variable moderate permeability mudstones/siltstones and sandstones.	No	None

The Groundwater Vulnerability map indicates that the secondary aquifer has a high vulnerability with a high pollutant speed and with well-connected fractures in the bedrock.

The Environment Agency Flood Risk Map presented within the Envirocheck Report indicates that the site is not at risk to extreme flooding from rivers or sea without defences.

The BGS Groundwater Flooding Susceptibility map of the site indicates that the site has potential for groundwater flooding of property situated below ground level. A small area within the south of the site also has limited potential for groundwater flooding to occur.

4.6 LANDFILL SITES

There are no BGS recorded or historical landfills located within 1km of the site boundary. There are also no Licensed Waste Management Facilities located within 900m of the site boundary.

There is an area of potentially infilled land (non-water) recorded within 250m of the site boundary. The area is located 139m to the north-east of the site at the location of the former brick works.

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 part of Aberavon Burrows until circa 1960's		
Material/Process	Contamination/Hazard	Evidence
No specific uses	No potential contaminants	Historical maps
Land Use: Construction of residential dwellings circa 1960's		
Material/Process	Contamination/Hazard	Evidence
Imported made ground/earthworks	Metals, semi metals, non-metals, PAH, asbestos	Historical maps

Existing Uses

The buildings on site are currently occupied and utilised as residential dwellings.

Adjacent Site Uses

Table 5: Potential Contaminants: Adjacent Site Uses		
Potential Contamination Source	Boundary	Associated Contaminants and Hazards
Residential	North western and north eastern	No Potential Contaminants
Residential and commercial	South western	No Potential Contaminants
Sports centre and pitches	South eastern	No Potential Contaminants

4.8 OTHER ENVIRONMENTAL ISSUES

Environmentally sensitive land has not been identified in close proximity of the site boundary.

4.8 OTHER ENVIRONMENTAL ISSUES (CONTINUED)

The Envirocheck Report indicates that there have been seven pollution incidents to controlled waters recorded within 500m of the site boundary. The nearest incident was recorded 220m south of the site and was a Category 3-Minor Incident involving rubbish. Another minor incident was recorded 222m to the west of the site involving industrial solid waste. A further two minor incidents were recorded 237m and 311m to the west of the site involving algae. The nearest Category 2-Significant Incident was recorded 392m north-west of the site involving crude sewage. Two further minor incidents involving sewage were recorded 490m to the west of the site.

The Envirocheck Report indicates that there has been one substantiated pollution incident recorded within 500m of the site boundary. The incident was recorded 61m to the south of the site and involved smoke which caused no impact on water, no impact on land but a major impact on air.

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

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, make decisions on, and take appropriate action to deal with land contamination, in accordance with the procedures specified in the Environment Agency document '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 the CLR-11 framework, risk is defined as:

'a combination of the probability, or frequency, of occurrence of a defined hazard and the magnitude of the consequence of the occurrence'.

The three essential elements to any risk are defined by CLR-11 as follows:

- A contaminant, or hazard, which is in, on, or under the land and has the potential to cause harm (Source)
- A means by which a receptor can be exposed to, or affected by a contaminant or hazard (Pathway)
- A receptor, i.e. something which could be adversely affected by a contaminant or hazard, such as human health or groundwater (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.

5.1 RISK ASSESSMENT FRAMEWORK (CONTINUED)

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.

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.

5.1 RISK ASSESSMENT FRAMEWORK (CONTINUED)

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.

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. Within Phase 1 of the proposed development, the existing development includes areas of public open space. No existing private gardens are present and the redevelopment works do not include any changes to the areas of public open space, with the exception of the construction of a play area. It is considered that the most sensitive end use is the public open spaces near residential housing end-use. Therefore, the critical sensitive receptor from a human health perspective is an on-site residential receptor.

Therefore, in accordance with S4UL/C4SL and CLEA guidance for a public open spaces near residential end use scenario, the critical sensitive receptor for a residential end use risk assessment is a female child, with exposure from >3 to <9 years.

The standard public open spaces near 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 'A' Aquifer of the Blown Sand deposits.

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 was an undeveloped area of Aberafon Burrows up until the construction of the buildings within the site by the 1960's. The configuration of the buildings on site remained largely unchanged over the years as development continued within the surrounding areas.

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; and
- 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 – indoor and outdoor;
- Ingestion of soil and dust – indoor and outdoor;
- Inhalation of soil derived dust – indoor and outdoor;
- Inhalation of vapours –outdoor only;
- Leaching of contaminants from made ground to groundwater; and
- Transportation of contaminants within groundwater.

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

- Ground gas generation and migration; and
- 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.

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 dust	✓
			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	✓

6.0 THE SITE INVESTIGATION

6.1 FIELDWORKS

An intrusive site investigation was designed in accordance with BS5930:2015, the Code of Practice for Site Investigations, BS10175:2011, 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 intrusive site investigation was also designed to provide information to support and refine the preliminary conceptual site model/conceptual exposure model.

An investigation comprising five dynamic windowless sampling boreholes and two foundation inspection pits, was undertaken on 30th August 2019. The investigation was undertaken in the Phase 1 site area only.

The boreholes were located across the site at locations specified by Quad Consult Ltd and drilled to a maximum depth of 5.0m below existing ground level. The boreholes were drilled using a Geo 032 tracked windowless sampling rig and in situ strength testing (SPTs with the solid cone) was carried out at 1m intervals. The purpose of the boreholes was to provide an insight into the shallow ground conditions and to gain an indication of the in-situ density of the soils.

The foundation inspection pits were excavated using a combination of hand digging and a 1.5tonne mini-digger. The pits were located along the edges of the existing flats in order to provide information on the existing foundations of the buildings. The pits were excavated to approximately 0.90mbgl at both locations and terminated at these depths to avoid undermining of the existing footings.

Representative soil samples were taken from the exploratory hole locations 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 dynamic windowless sampling boreholes and foundation inspection pits and prepared their detailed engineering logs in accordance with the requirements of BS5930:2015. 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.

6.1 FIELDWORKS (CONTINUED)

The approximate locations of the exploratory hole locations are shown on Figure 2, while their logs are presented in Appendices E and F.

6.2 FIELD OBSERVATIONS

No visual or olfactory evidence of any contamination was observed during the drilling of the windowless sample hole locations.

However, a fragment of suspected Asbestos Containing Material (ACM) was identified in hand dug pit HD2. Chemical testing on this sample confirmed that the fragment was asbestos cement tile (Chrysotile).

6.3 LABORATORY CHEMICAL TESTING

Representative soil samples were taken from the exploratory holes across the site, stored at the appropriate temperature and dispatched to the laboratories of i2 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.

Six samples of made ground and topsoil collected from depths of between ground level and 1mbgl were subjected to a testing suite comprising the determinands listed 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	

In addition to this, one sample of potential ACM was subjected to an asbestos screen.

6.3 LABORATORY CHEMICAL TESTING (CONTINUED)

The results of all the soil and bulk sample testing are presented in Appendix G.

6.4 LABORATORY GEOTECHNICAL TESTING

Four samples were subjected to geotechnical testing comprising analysis for pH and water-soluble sulphate.

The results of this testing are presented in Appendix G.

7.0 GROUND CONDITIONS

Dynamic windowless sampling across the Phase 1 area of the site has found that the ground conditions generally comprise a relatively shallow thickness of made ground overlying localised reworked materials overlying blown sand.

The site and surrounding area have been historically subjected to reprofiling. As such, the sand encountered beneath the site may represent “artificially modified ground” as indicated on BGS maps, comprising reprofiled blown sand or in fact, natural blown sand.

Six blocks of three-storey flats are currently present on-site.

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

TABLE 7 : SUMMARY OF GROUND CONDITIONS		
Depth (m)		Stratum
From	To	
GL	0.18/0.30	Topsoil Soft brown slightly gravelly sandy silty CLAY with rootlets and gravel of sandstone, limestone and quartz. <i>Encountered in WS02 and WS04 only.</i>
GL	0.04/0.05	Made Ground <u>Hardstanding</u> Tarmac or compacted gravel). <i>WS01, WS03 and WS05.</i>
0.04/0.05	0.15/0.20	<u>Sub-base</u> Light grey GRAVEL of sub-angular limestone. <i>Encountered in WS03 and WS05 only.</i>
0.04/0.20	0.36/0.60	<u>General Made Ground</u> Variable – Predominantly sand and gravel of limestone, quartzite, sandstone and concrete. Localised areas containing black sand with gravel of burnt shale. <i>WS01, WS02 and WS03</i>

7.0 GROUND CONDITIONS (CONTINUED)

TABLE 7 : SUMMARY OF GROUND CONDITIONS (CONTINUED)		
Depth (m)		Stratum
From	To	
0.20/0.42	0.55/1.0	Reworked Sand Loose light brown, brown and locally mottled light grey blown SAND deposits containing occasional gravel of limestone and sandstone. <i>Encountered in WS02 and WS05 only.</i>
0.3/1.0	>1.0/>5.0	Blown Sand Loose to very dense light brown fine to medium SAND.

7.1 TOPSOIL

Topsoil was encountered in the grassed areas of the site, therefore only recorded in WS02 and WS04. The topsoil was described as soft brown slightly gravelly slightly sandy silty clay with rootlets. Plastic fragments and foam fragments (i.e. Anthropogenic materials) were occasionally present. The gravel comprised limestone, sandstone and quartz.

7.2 MADE GROUND

Hardstanding

In all boreholes completed in the private road alignments, hardstanding comprising tarmac/ bitumen bound gravels or compacted gravel was encountered at ground level to between 0.04m and 0.05mbgl. The surface of the road alignments appeared to comprise a combination of these materials and the tarmac was often fragmented.

Sub-base type material

Grey gravel of angular limestone was encountered in WS03 and WS05 beneath the hardstanding to 0.15m and 0.20mbgl. This was interpreted to be a layer of placed sub-base type material.

7.2 MADE GROUND (CONTINUED)

General Made Ground

WS01, WS02 and WS03 encountered made ground ranging between sands and gravels and occasional clay. Variable layers were observed, but typically comprised a brown gravelly sand.

The gravel comprised limestone, quartzite, sandstone and concrete. Localised areas containing black sand with gravel of burnt shale or fragments of tarmac were also encountered.

Black sand/clay were encountered in WS01 and WS03. Noted to be ashy and containing burnt shale in WS01.

7.3 REWORKED MATERIALS

Light brown slightly gravelly sand, locally mottled dark grey, was interpreted to be reworked natural blown sand due to the presence of occasional limestone gravel. Reworked natural soils were encountered in WS02 and WS05 only, to depths of 0.55m and 1.0mbgl respectively.

7.4 BLOWN SAND

Light brown, fine to medium sand was encountered in all locations beneath either topsoil, made ground or reworked natural soils. The blown sand initiated between 0.3m and 1.0mbgl and extended to the base of all boreholes, proven to between >1.0m/>5.0mbgl.

The in-situ density of the sand was not consistent. In-situ SPT testing recorded N values of between 5 and >50, with no clear increase or trend in N values with depth at several locations. As such, the blown sand ranges between loose and very dense, generally recorded as loose to medium dense.

7.5 GROUNDWATER

Groundwater was not encountered during the drilling of any of the locations. Water was not noted to be standing in any of the boreholes after drilling, however WS02 and WS04 were noted to be wet or slightly wet at the base.

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.

7.6 SOIL INFILTRATION TESTING

Soil infiltration testing previously undertaken by Intégral Géotechnique indicates that the blown sand stratum has a reasonable infiltration potential. More information on the findings of this investigation is detailed in Report 12457/PD, dated May 2019.

7.7 FOUNDATION INSPECTION PITS

Foundation inspection pits excavated using a combination of hand digging and a 1.5tonne mini digger were completed at two locations along the edge of existing blocks of flats in order to determine the depth and condition of foundations to the existing buildings. The locations of the pits are shown on Figure 2 and cross sections summarising the findings are presented in Appendix F.

Hand dug pits HD1 and HD2 were undertaken along the walls to existing blocks, from ground level to 0.90m at both locations. The pits encountered a brick wall from ground level to 0.60m and 0.61m respectively, overlying a concrete foundation/footing to 0.85m in both locations. The concrete extended laterally (perpendicular away from the building and brick wall) by between 0.13m and 0.14m and was founded on apparently loose sand at both locations.

The foundations had been backfilled with made ground comprising sand containing some gravel, cobbles and anthropogenic materials with a thin layer of topsoil and paving slab at ground level. An ACM fragment was observed in HD2.

Groundwater was not encountered in either of the inspection pits.

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 public open spaces near residential housing end use.

Gardens are not proposed in the redevelopment of the site. Existing areas of Public Open Space (POS) are present and proposed areas of POS are indicated on the development layout plan Drawing No. L_03.1.1.16 by Dennis Hellyar Architects.

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 public open spaces near residential housing end use have been adopted, where considered appropriate.

Results of the testing indicate total organic carbon content (TOC) in the range of 0.2% to 2.1%, therefore Soil Organic Matter is calculated to range between 0.3% and 3.6%. Results have therefore been initially screened against respective guidelines for 1% soil organic matter (SOM) content and then, where necessary, results are compared against 2.5% SOM guideline values.

The results have been screened against the S4ULs (where appropriate) for Public Open Space near Residential Housing, as this is the site-specific proposed end use.

The soil test results have been summarised and are shown in Appendix H.

8.2 SOIL CONTAMINATION (CONTINUED)

8.2.1 *Made Ground and Reworked Soils*

Four samples of made ground and reworked soils collected from depths between 0.04m and 0.80mbgl have been subjected to the contaminant suite detailed in Section 6.3. The results of the laboratory testing indicate that most of the analysed chemical elements or compounds are present at concentrations below the appropriate thresholds. However, the initial screening indicates exceedences of several speciated PAH compounds at one location only.

A sample of gravelly sand collected from 0.04m to 0.20m in WS01 has recorded several PAH exceedances. Benzo(a)pyrene, Benz(b)fluoranthene and Dibenzo(ah)anthracene have all been recorded at concentrations greater than the threshold guidance values. None of the other samples of made ground or reworked soils have recorded any PAHs at concentrations greater than the Limit of Detection (LoD).

In addition to this, during the excavation of foundation inspection pit HD2, a fragment of potential Asbestos Containing Material (ACM) was identified. Sampling and analysis on this sample has confirmed that the material contained Chrysotile as hard cement type material. Sampling and analysis on made ground sand collected from this location did not identify any contaminants at levels greater than the guidance thresholds and asbestos was not detected in the soils.

8.2.2 *Topsoil*

Testing on two samples of topsoil collected from depths of between ground level and 0.30m in existing areas of POS has not identified any contaminants at elevated concentrations.

8.2.3 *In-situ Natural Ground*

No visual or olfactory evidence of contamination of the in-situ natural ground was identified during the drilling of the boreholes. At the time of writing this report no samples of natural ground had been tested. It is considered likely that concentrations of determinands within the natural ground are likely to be naturally occurring and as such, the natural ground is not considered to pose a 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. Pathways identified as a relevant pollutant linkage require appropriate risk assessment or mitigation measures (see Section 10).

Table 10: Revised Conceptual Exposure Model

Source		Receptor	Pathway	Potentially Active Pathway?	Relevant Pollutant Linkage	Justification/ Mitigation
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	✓	✓	Elevated concentrations of PAHs. ACM identified in made ground – risk assess.
			Ingestion of soil and dust	✓	✓	
			Inhalation of dust	✓	✓	
			Inhalation of vapours – indoor/outdoor	✓	×	No sufficiently volatile contaminants identified.
	Metals, semi-metals, inorganics, PAH	Groundwater quality	Leaching from made ground	✓	×	Significant soil contamination not identified – Risk assess.
	Metals, semi-metals, inorganics, PAH	Surface water quality	Transportation within groundwater	✓	×	Significant soil contamination not identified – Risk assess.
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 made ground – risk assess
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	×	×	Significant thicknesses of made ground not encountered and no landfills within 500m of site.

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”, e.g. 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.

It should be noted that the following risk assessments and recommendations are based on investigation in the Phase 1 site area only. Further investigation is required in the Phase 2 site area in order to characterise the risk of contamination in this part of the site.

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 soils. 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 largely covered by tarmacadam, concrete and grassed areas.

10.3.2 Future Site Users

The contamination test results and investigation observations show elevated concentration levels in the made ground (at shallow depths) of several polycyclic aromatic hydrocarbon compounds at one location only (WS01). Asbestos containing material (ACM) was also encountered in made ground at one location, in the form of asbestos (chrysotile) cement tile.

Given the localised elevated PAH concentrations within the general made ground, it is considered that a potential risk to human health may exist via the following relevant pollutant linkages:

- Dermal contact,
- Ingestion of soil or soil derived dust,
- Inhalation of soil borne dust.

The inhalation of vapours pathways (indoor and outdoor air) are not considered to be active since the contaminants of concern identified are not sufficiently volatile.

It is therefore considered necessary to protect end users from the elevated concentrations of PAH in the shallow made ground by breaking the relevant pollutant linkages in order to remove the potential risk.

The proposed development comprises the construction of a fourth storey on top of each existing residential block and the construction of up to a four-storey extension link between each pair of six blocks. Areas of car parking are also proposed. Within these areas, the underlying made ground will be covered by buildings and areas of hardstanding which would break any potential exposure pathways.

The existing areas of public open spaces are to remain unchanged, with the exception of the construction of a playground area.

10.3 HUMAN HEALTH RISK ASSESSMENT (CONTINUED)

Testing on samples of topsoil collected from the currently existing areas of POS has indicated that the contaminant levels within the topsoil/subsoil in these areas do not pose a risk to end users.

If made ground is encountered during redevelopment of the playground area, remedial mitigation measures may be required in order to break any potential exposure pathways. Depending on the proposed finished surface of the playground area, allowances should be made for the provision of a 600mm thick clean cover system, comprising 600mm topsoil/subsoil capping layer overlying a geotextile separation membrane. The capping thickness could be reduced if it is proposed to surface the playground area with a spongy rubber tarmac type material. In this instance, allowances should be made for placement of a suitable granular regulating layer (nominally 150mm thick) beneath the rubber tarmac type surface. This would then prevent exposure to any underlying made ground.

The above recommendations should be reviewed once details of the proposed playground construction are confirmed. Consideration may also be given to supplementary sampling and analysis in these areas, which may negate the need for a capping layer if testing confirms that the underlying made ground, if present, is unlikely to pose a risk to end users.

A fragment of ACM was encountered in foundation inspection pit HD2 within the backfilled materials (made ground - sand) overlying the existing foundation/footing. If these areas are proposed to be disturbed/exposed during construction, any identified ACM should be handpicked by an asbestos awareness trained contractor. Elevated contaminant concentrations were not identified in a sample of made ground collected from this location, therefore, the risk to end users is considered to be low.

The Phase 2 development site area has not yet been investigated; therefore, the above recommendations apply to the Phase 1 area only.

10.3.3 Construction workers

With future site development works involving the excavation and removal of the made ground, there would be a risk to workers from contaminants in the soils. Whilst loose asbestos was not encountered in the made ground soils or topsoil, appropriate measures are recommended for works involving the made ground materials which are known to be present beneath the site and have been found to contain a fragment of ACM, and localised exceedances of PAHs.

10.3 HUMAN HEALTH RISK ASSESSMENT (CONTINUED)

The following practical measures are required:

- During site stripping, all exposed formations should be visually inspected by asbestos awareness trained contractors and handpicked of any identified ACM. Additionally, any excavated made ground materials, any encountered buried foundations, service runs/ducts, pipework etc should also be visually inspected and handpicked of any identified ACM. These works should be carried out by a suitably licenced contractor in accordance with an appropriate risk assessment and managed in accordance with the requirements of the Control of Asbestos Regulations (2012).
- Any handpicked ACM should be disposed off-site at a suitable licensed facility as hazardous waste. Daily records and waste transfer notes should be kept in order to document the identification and subsequent removal of any ACM. These records and waste transfer notes should be made available for review as they will be required for potential remediation verification.
- Excavations will need to be regularly damped down to prevent any dust that may contain asbestos becoming airborne;
- Any excavated materials should be quarantined and regularly dampened down to prevent any dust may contain asbestos becoming airborne;
- Appropriate PPE/RPE to be worn by all workers;
- Asbestos/dust/air monitoring may be required during early site establishment.

All works to be carried out in accordance with an appropriate risk assessment and managed in accordance with the requirements of the Control of Asbestos Relations 2012.

A suitably licensed contractor will be required to deal with any identified asbestos containing materials and to advise the Health & Safety Executive of any notifiable works being undertaken.

Additionally, a system should be established by which any 'unusual' materials (including suspected asbestos containing materials) or potential hotspots of contamination 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 further guidance.

10.3 HUMAN HEALTH RISK ASSESSMENT (CONTINUED)

Normal good hygiene practices should also be adopted to protect the health and safety of redevelopment workers/site users from the localised PAH exceedances in the made ground 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.

10.4 RISKS TO VEGETATION

Results of the chemical testing completed on made ground and topsoil do not indicate the potential for adverse effects to vegetation. However, the physical nature of the existing made ground does not provide a suitable growing medium for vegetation.

If landscaped areas are proposed in areas where made ground is present, in order to promote plant growth, these areas will require the provision of a minimum 600mm thick capping layer of clean, inert subsoil and topsoil materials over a geotextile membrane.

10.5 GROUNDWATER RISK ASSESSMENT

Localised elevated concentrations of PAHs have been encountered in the made ground in one location only. This area is to be redeveloped with a new residential block, up to four storeys in height and areas of car parking. Elsewhere, the existing areas of POS are to remain, with the exception of a new playground area.

Groundwater has not been encountered in any of the boreholes to between 1.00m and 5.00mbgl.

Accordingly, due to the localised occurrence of these contaminants and the separation distance to groundwater, and the nature of the proposed development comprising either buildings and hardstanding or existing POS, the risk to controlled waters is considered to be negligible.

10.6 GROUND GAS RISK ASSESSMENT

Significant thicknesses of made ground have not been encountered during the investigation and there are no BGS recorded or historical landfills located within 1km of the site boundary. There are also no Licensed Waste Management Facilities located within 900m of the site boundary.

Accordingly, the risk of ground gas migration to the site is considered to be low.

The Envirocheck Report indicates that no radon protection measures are required in the construction of new dwellings.

10.7 RISKS TO BUILDINGS AND MATERIALS DURABILITY

10.7.1 Concrete Classification

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

Evidence to date does not indicate any specifically aggressive conditions, but it would be reasonable to expect a degree of sulphate and acidic aggressiveness from the made ground.

Made Ground

In accordance with BRE Digest SD1:2005 and adopting the assessment procedure specified therein for brownfield sites, the laboratory chemical test results indicate a characteristic value (taking the highest of the test results) for water soluble sulphate within the made ground of 100mg/l.

Using Table C2 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 made ground of 8.3 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 made ground.

10.7 RISKS TO BUILDINGS AND MATERIALS DURABILITY (CONTINUED)

Natural Ground

In accordance with BRE Digest SD1:2005 and adopting the assessment procedure specified therein for brownfield sites, the laboratory chemical test results indicate a characteristic value (taking the highest of the test results) for water soluble sulphate within the blown sand of 7.1mg/l.

Using Table C2 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 blown sand of 8.7 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 made ground.

10.7.2 Water Services

Water supply pipes will need to be protected from any contamination present within the ground. In particular, the presence of organic contaminants (such as PAH) should be addressed when selecting pipe materials. Measures to protect the pipes will include clean backfill to trenches and possibly alternative material selection. 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.

Based on current chemical test results, PAH concentrations (specifically Benzo(a)pyrene and Naphthalene) indicate alternative pipe material to PVC or PE pipe will be required. 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.

10.8 WASTE DISPOSAL (CONTINUED)

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 of the existing made ground are likely to be classified as non-hazardous with the exception of any Asbestos Containing Materials (ACM). The existing natural ground are likely to be classified as non-hazardous

Any ACMs such as the asbestos containing cement tile encountered in HD2 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.

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 intrusive investigation has been completed on Phase 1 site area only. Intrusive site investigation works will be required in the Phase 2 site area once access is available.

11.0 ENGINEERING CONSIDERATIONS AND RECOMMENDATIONS

11.1 DETAILS OF PROPOSED DEVELOPMENT

The proposed development will comprise a combination of refurbishment and redevelopment of existing county flats. Reference has been made to Drawing No. L_03.1.1.16 by Dennis Hellyar Architects.

The site is divided into two phases. Phase 1 comprises the north-western part of the site inclusive of six blocks of flats and Phase 2 comprises the south-eastern part of the site comprising three larger blocks of flats.

The current development plan for Phase 1 indicates that the existing blocks of flats are to be refurbished and a fourth storey of flats is to be constructed on all six blocks. An additional link of up to four storeys is to be constructed between each pair of blocks, joining each pair. Formal parking areas are proposed adjacent to the existing blocks and the construction of porch areas is proposed at the entrance doors. The addition of a play area is also indicated in the south of the westernmost grassed area.

The Phase 2 site area is proposed to undergo more significant redevelopment comprising the demolition of existing buildings and replacement with new blocks of flats.

It should be noted that the Phase 2 site area has not been investigated at this stage, therefore the following recommendations should be considered appropriate to the Phase 1 development area only.

11.2 SITE PREPARATION

Prior to works commencing on site, any services within the site area should be identified and either diverted or protected. Any diversion works should be carried out under the supervision of, and to the specification of, the appropriate statutory authorities. The resulting excavations should be backfilled with suitable granular material.

In addition, the surface drains that cross the site should be protected from any detrimental effects (including pollution and ground settlements) during construction works.

Six existing blocks of flats are currently present on-site. These are proposed to remain as present during the redevelopment of the Phase 1 area and a fourth storey is to be constructed on each block of flats.

11.2 SITE PREPARATION (CONTINUED)

Existing outbuildings/sheds are present between Morgannwg House and Flint House and between Gwent House and Brecon House. These are proposed to be demolished as part of the redevelopment and replaced with parking areas.

Prior to the demolition of the existing outbuildings/sheds, a building inventory and demolition strategy should be undertaken to ensure safe working methods and disposal of materials. After demolition of the buildings, all buried foundations (including infrastructure) and any other walls, buried slabs etc associated with the former buildings should be removed.

Consideration should be given to sorting and processing the generated demolition materials in order to provide granular fill. Allowances should be made for crushing the brick and concrete and processing to achieve a suitable grade (<125mm maximum particle size) and for the removal of any unacceptable materials, such as wood and metal. The crushed acceptable materials should be stockpiled on site for use as granular fill. All unacceptable materials should be removed from site and disposed of at a suitable landfill facility.

All exposed formations/sub formations should be visually inspected for asbestos containing materials (ACMs), particularly within the footprint of the existing buildings and underneath hardstanding areas.

Areas of site stripping should be minimised at all times during construction. The exposed areas should be protected from damage in wet weather (for example using a layer of blinding concrete or layer of single size granular material). Designated access routes should be well maintained and suitably designed and maintained working platforms should be provided for construction plant.

A system should be established for identification and dealing with any unforeseen contamination encountered during the site works (including the identification of any potential Asbestos Containing Materials). Any contamination, or suspected contamination, should be reported to the site manager, so that appropriate action may be taken, following specialist advice if necessary. Careful consideration of the re-use of made ground materials should be undertaken prior to undertaking any earthworks activities.

All materials to be disposed of off-site should be sent to a suitably licensed facility, Licensed tips may require additional testing of materials, such as waste acceptance criteria (WAC) testing, to ensure compliance with their current licence agreements.

11.3 FOUNDATIONS AND FLOOR SLABS

The ground conditions encountered were generally consistent beneath the site. The investigation encountered a veneer of made ground or topsoil underlain by loose to dense deposits of blown sand. Localised reworked soils were encountered beneath the made ground.

Proposed buildings/structures

Based on investigation undertaken to date, which targeted the Phase 1 area only, the proposed buildings can be founded on reinforced concrete strip foundations cast into the natural strata encountered from typically 0.3m/1.0m depth. Reinforced strip foundations can be adopted within loose, medium dense and dense sand deposits of blown sand.

The reinforced concrete strip foundations should be designed for a safe nett bearing pressure of 75kN/m² and a 1m lack of support under the line of the foundation and a 1m cantilever at building corners to accommodate localised soft spots or variability in in-situ density of the sands. The reinforcement should be designed by a structural engineer and should be provided to top and bottom faces of the foundation. SPT testing indicates that the in-situ density of the blown sand is variable, and therefore this bearing pressure should be adopted for foundations placed in loose, medium dense and dense sand.

At this intensity of loading, the total settlements should not exceed 25mm and any angular distortions caused by differential movements should be less than 1:750.

All strip/trench foundations for individual buildings should be constructed within uniform strata in order to minimise the potential for differential settlement.

No foundations should be founded within any made ground, fill or soft or loose compressible natural soils.

Foundations should penetrate the founding strata by a minimum 200mm and be at a minimum depth of 750mm below development level in order to protect against the effects of frost/heave and/or thermal shrinkage.

The floor slabs can be designed and constructed as ground bearing, provided the thickness of any underlying fill is less than 600mm. In areas where fill/made ground or reworked materials exceed 600mm, suspended floor slabs will be required. Suspended floor slabs may also be required in close proximity to the existing mature trees and hedge lines and in areas with obvious sign of desiccation, though the site investigation has not encountered conditions where this is considered necessary.

11.3 FOUNDATIONS AND FLOOR SLABS (CONTINUED)

No radon protective measures are required in the construction of new flats.

Redevelopment of existing buildings

It is understood that the existing blocks of flats in the Phase 1 area are proposed to be refurbished and extended with the construction of a fourth storey. As such, the existing foundations are proposed to remain in place.

The advice of a suitably qualified structural engineer should be sought with regard to the existing foundation conditions and their suitability for the addition of a fourth storey onto the six blocks of flats in Phase 1. Existing foundations appear to be mass concrete and have been placed within/onto loose blown sand deposits. Foundation inspection pits have been presented in Appendix F.

11.4 EXCAVATIONS AND FORMATIONS

Excavations formed on-site to depths of up to 5m should be feasible with normal soil excavating machinery based on the investigation findings in the Phase 1 site area. Allowances should be made for removal of remnant foundations or buried structures with the use of hydraulic breakers, or similar tools.

Spalling of made ground and blown sand deposits should be anticipated. The sides of excavations deeper than 1.0m (or shallower where necessary) should be supported by trench boxes or battered at gradients of typically 30°.

Groundwater was not encountered to depths of between 1 and 5mbgl in the windowless sampling boreholes, though several locations were recorded to be wet at the base of the borehole, post-drilling. Generally, any groundwater inflows/seepages encountered are likely to be limited in volume and these, together with any rainfall infiltrations, should be dealt with by conventional pumping techniques.

The exposed formations 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.

Soft spots or hard spots encountered during excavations should be removed and the reduced levels should be proof rolled and brought up to the required levels with either well compacted imported granular materials, or acceptable materials excavated from the site.

11.5 ACCESS ROADS AND CAR PARKING AREAS

Based on the findings of the ground investigation, there are likely to be variations in the nature and strength of the in-situ materials along access road alignments and at car parking formation levels. SPT testing indicates variable N values in the reworked soils and blown sand deposits and made ground materials were variable in competency.

Consequently, for design purposes, a range of California Bearing Ratio (CBR) values between 1% and 3% should be assumed site wide at this stage for road construction within the existing made ground, reworked soils and natural materials.

If the access road and car parking formations are to be within well compacted engineered fill and/or imported fill materials, then a California Bearing Ratio (CBR) value of 5% could be used for design purposes.

In-situ testing should be undertaken to confirm these recommendations.

Contingencies should be allowed for the removal and replacement of any 'soft spots/areas' and for their replacement with well compacted imported granular materials. 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.

It should be noted that the Local Authority Highways Department may require field CBR tests to be carried out in order 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 testing has been previously undertaken by Intégral Géotechnique. Reference should be made to Report 12457/PD, dated May 2019.

Infiltration rates ranging between 1.9×10^{-4} m/s and 9.3×10^{-5} m/s were calculated for the five shallow test locations.

11.7 RECOMMENDED FURTHER WORKS

The current investigation has targeted the Phase 1 site area only, further investigation is required in Phase 2 prior to construction.

APPENDIX A

ENVIROCHECK REPORT

Envirocheck[®] Report:

Datasheet

Order Details:

Order Number:

216203689_1_1

Customer Reference:

12457/RAH

National Grid Reference:

274590, 189800

Slice:

A

Site Area (Ha):

2.47

Search Buffer (m):

1000

Site Details:

Site at 274650, 189780

Client Details:

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

Report Section	Page Number
Summary	-
Agency & Hydrological	1
Waste	13
Hazardous Substances	15
Geological	16
Industrial Land Use	21
Sensitive Land Use	-
Data Currency	33
Data Suppliers	38
Useful Contacts	39

Introduction

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

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Report Version v53.0

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 2				7
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 4		1		
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 4		Yes		
Pollution Incidents to Controlled Waters	pg 4		3	4	6
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances	pg 6				5
River Quality	pg 7				2
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register	pg 7		1		3
Water Abstractions	pg 8				(*14)
Water Industry Act Referrals					
Groundwater Vulnerability Map	pg 11	Yes	n/a	n/a	n/a
Bedrock Aquifer Designations	pg 11	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 11	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences	pg 11		Yes	n/a	n/a
Flooding from Rivers or Sea without Defences	pg 11		Yes	n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines	pg 12				5

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites					
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)	pg 13				2
Local Authority Landfill Coverage	pg 13	1	n/a	n/a	n/a
Local Authority Recorded Landfill Sites	pg 13				1
Potentially Infilled Land (Non-Water)	pg 13		1		2
Potentially Infilled Land (Water)	pg 13				25
Registered Landfill Sites					
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)	pg 15				1
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)	pg 15				1
Planning Hazardous Substance Consents	pg 15				1
Planning Hazardous Substance Enforcements					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 16	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 16	Yes	Yes		Yes
BGS Recorded Mineral Sites					
BGS Urban Soil Chemistry	pg 17		Yes	Yes	Yes
BGS Urban Soil Chemistry Averages	pg 19	Yes			
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas	pg 19	Yes	n/a	n/a	n/a
Mining Instability	pg 19	Yes	n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential for Collapsible Ground Stability Hazards				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 19	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 19		Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards				n/a	n/a
Radon Potential - Radon Affected Areas	pg 20	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 21		2	1	82
Fuel Station Entries	pg 28		1		1
Points of Interest - Commercial Services	pg 28		2	1	9
Points of Interest - Education and Health	pg 29				8
Points of Interest - Manufacturing and Production	pg 30				5
Points of Interest - Public Infrastructure	pg 30		4		7
Points of Interest - Recreational and Environmental	pg 31		2	3	2
Gas Pipelines					
Underground Electrical Cables					

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

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (N)	0	1	274591 189900
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SW (S)	0	1	274591 189750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	0	1	274591 189797
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (N)	39	1	274591 190000
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SW (SW)	89	1	274500 189600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SW (S)	90	1	274550 189550
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SW (SW)	99	1	274450 189650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	112	1	274400 190000
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SW (S)	120	1	274600 189500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SW (S)	124	1	274500 189550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SW (SW)	126	1	274450 189600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SW (SW)	143	1	274400 189700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SW (SW)	147	1	274400 189650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SW (W)	193	1	274350 189700
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SW (W)	194	1	274350 189750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A18SE (N)	239	1	274700 190150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SW (W)	244	1	274300 189750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A12NE (W)	247	1	274250 189797
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NW (E)	276	1	275000 189797
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A14NW (E)	314	1	275000 189950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A14NW (NE)	339	1	275000 190000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (SE)	395	1	275000 189500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (W)	442	1	274050 190000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (S)	444	1	274750 189200
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A9NW (SE)	472	1	275000 189350
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A12NE (W)	491	1	274000 190000
1	Discharge Consents Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Gasworks Sewer Junction Chamber Po, Chamber Port Talbot Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: BB4025503 Permit Version: 1 Effective Date: 19th July 1978 Issued Date: 19th July 1978 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Unnamed Status: Surrendered Positional Accuracy: Located by supplier to within 100m	A14SE (E)	906	2	275600 189550
1	Discharge Consents Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Gasworks Sewer Junction Chamber Po, Chamber Port Talbot Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Bb4025503 Permit Version: 1 Effective Date: 19th July 1978 Issued Date: 19th July 1978 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Unnamed Status: Surrendered Positional Accuracy: Located by supplier to within 10m	A14SE (E)	906	2	275600 189550
1	Discharge Consents Operator: Westbury Homes (Wales) Ltd Property Type: Domestic Property (Multiple) Location: Port Talbot Residential Development, Newbridge Road Authority: Natural Resources Wales Catchment Area: River Afan Reference: Bp0105101 Permit Version: 2 Effective Date: 3rd November 1988 Issued Date: 3rd November 1988 Revocation Date: 29th September 1992 Discharge Type: Unspecified Discharge: Not Supplied Environment: Receiving Water: River Afan Status: Consent expired Positional Accuracy: Located by supplier to within 100m	A14SE (E)	920	2	275600 189500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	Discharge Consents Operator: Westbury Homes (Wales) Ltd Property Type: Domestic Property (Multiple) Location: Port Talbot Residential Development, Newbridge Road Authority: Natural Resources Wales Catchment Area: River Afan Reference: Bp0105101 Permit Version: 1 Effective Date: 1st January 1901 Issued Date: 1st January 1901 Revocation Date: 2nd November 1988 Discharge Type: Unspecified Discharge: Not Supplied Environment: Receiving Water: River Afan Status: Authorisation revoked Positional Accuracy: Located by supplier to within 100m	A14SE (E)	920	2	275600 189500
2	Discharge Consents Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: S'Dfields Sewer J'Ction Chambe Port, Port Talbot Authority: Natural Resources Wales Catchment Area: River Afan Reference: BB4025502 Permit Version: 1 Effective Date: 19th July 1978 Issued Date: 19th July 1978 Revocation Date: 31st March 2004 Discharge Type: Unspecified Discharge: Freshwater Stream/River Environment: Receiving Water: Unnamed Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 100m	A9NE (SE)	917	2	275510 189310
3	Discharge Consents Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Cso 104 Newbridge Road Pumping Stat, Newbridge Road Pumping Station, Port Talbot, Neath Port Talbot Cbc Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Bb4025501 Permit Version: 2 Effective Date: 1st April 2004 Issued Date: 31st March 2004 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: The River Afan Status: Effective Positional Accuracy: Located by supplier to within 10m	A15SW (E)	927	2	275632 189598
3	Discharge Consents Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Cso 104 Newbridge Road Pumping Stat, Newbridge Road Pumping Station, Port Talbot, Neath Port Talbot Cbc Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Bb4025501 Permit Version: 2 Effective Date: 1st April 2004 Issued Date: 31st March 2004 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: The River Afan Status: Effective Positional Accuracy: Located by supplier to within 10m	A15SW (E)	927	2	275632 189598

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
4	Local Authority Pollution Prevention and Controls Name: Murco Petroleum Limited Location: Princes Margaret Way, PORT TALBOT, West Glamorgan, SA12 7PE Authority: Neath Port Talbot County Borough Council, Environmental Health Department Permit Reference: E3/1/76 Dated: 26th February 1999 Process Type: Local Authority Pollution Prevention and Control Description: PG1/14 Petrol filling station Status: Permitted Positional Accuracy: Manually positioned to the address or location	A12NE (NW)	245	3	274243 189960
	Nearest Surface Water Feature	A13SW (SW)	179	-	274373 189609
5	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Aberafon Beach Authority: Environment Agency, Welsh Region Pollutant: Rubbish Note: Not Supplied Incident Date: 16th October 1996 Incident Reference: 30237 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (S)	220	4	274600 189400
6	Pollution Incidents to Controlled Waters Property Type: Not Given Location: On High Tide Line, To Left Of Slipway Authority: Environment Agency, Welsh Region Pollutant: Industrial Solid Waste Note: Not Supplied Incident Date: 11th February 1997 Incident Reference: 31115 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	A13NW (W)	222	4	274300 189800
7	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Aberafon, PORT TALBOT Authority: Environment Agency, Welsh Region Pollutant: Algae Note: Aberafan Beach; Natural Occurrence Incident Date: 5th June 1997 Incident Reference: 32508 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Natural Causes Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12NE (W)	237	4	274250 189900
8	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, Welsh Region Pollutant: Algae Note: Natural Occurrence; Aberafan Beach Incident Date: 17th September 1998 Incident Reference: 36711 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Natural Causes Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12NE (W)	311	4	274200 189800
9	Pollution Incidents to Controlled Waters Property Type: Water Company Sewage: Storm Overflow Location: Coastguard, Building And Steps Authority: Environment Agency, Welsh Region Pollutant: Crude Sewage Note: Inadequate Design/Capacity Incident Date: 21st November 1994 Incident Reference: 21791 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Overflow Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A12NE (NW)	392	4	274101 190001

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
10	Pollution Incidents to Controlled Waters Property Type: Not Given Location: 100 Yards From Bp End, Passes Maes Yr Coed House Club Authority: Environment Agency, Welsh Region Pollutant: Sewage - Treated Effluent Note: Natural Causes Incident Date: 11th June 1996 Incident Reference: 28680 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Natural Causes Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12NE (W)	490	4	274001 189996
10	Pollution Incidents to Controlled Waters Property Type: Not Given Location: 100 Yards From Bp, End Past Afan, Lido Authority: Environment Agency, Welsh Region Pollutant: Sewage - Treated Effluent Note: Natural Causes Incident Date: 11th June 1996 Incident Reference: 28680 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Natural Causes Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12NE (W)	490	4	274001 190001
11	Pollution Incidents to Controlled Waters Property Type: Domestic/Residential Location: Little Warren Authority: Environment Agency, Welsh Region Pollutant: Agricultural: Carcasses Note: Deliberate Act Incident Date: 24th November 1994 Incident Reference: 21796 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Direct Discharge Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8SE (S)	627	4	274700 189000
12	Pollution Incidents to Controlled Waters Property Type: Bank Erosion Location: Aberafan East Authority: Environment Agency, Welsh Region Pollutant: Crude Sewage Note: Natural Causes Incident Date: 8th May 1996 Incident Reference: 28280 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Natural Causes Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8SW (S)	720	4	274600 188900
13	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, Welsh Region Pollutant: Algae Note: Natural Occurrence; Aberafan Beach Incident Date: 21st August 1998 Incident Reference: 36565 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Natural Causes Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A17SW (NW)	738	4	273800 190200
14	Pollution Incidents to Controlled Waters Property Type: Building Sites Location: Old Gas Works, Site Victoria Road, Port Authority: Environment Agency, Welsh Region Pollutant: Farm Effluent/Slurry Note: Accidental Spillage/Leakage Incident Date: 14th March 1996 Incident Reference: 27548 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Runoff Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14SE (E)	880	4	275600 189700

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
15	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Afan Sewage, Pumping Station Authority: Environment Agency, Welsh Region Pollutant: Light Oil Note: Not Supplied Incident Date: 27th April 1995 Incident Reference: 23819 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)	908	4	275600 189545
16	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Fractured Sewer In, River Bed B. Gas Pipeline Work, PORT TALBOT Authority: Environment Agency, Welsh Region Pollutant: Crude Sewage Note: River Afan; Direct Introduction Incident Date: 29th January 1998 Incident Reference: 34696 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Accidental Spillage/Leakage Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A15SW (E)	993	4	275700 189600
17	Registered Radioactive Substances Name: Abertawe Bro Morgannwg University Nhs Trust Location: Neath Port Talbot Hospital, Afan Way, Port Talbot, West Glamorgan, Sa12 6nr Authority: Natural Resources Wales Permit Reference: Bt5377 Dated: 29th November 2002 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Authorisation under RSA Status: Authorisation superseded by a substantial or non substantial variation Positional Accuracy: Manually positioned to the road within the address or location	A19SW (NE)	693	2	275011 190457
18	Registered Radioactive Substances Name: Abertawe Bro Morgannwg University Nhs Trust Location: Neath Port Talbot Hospital, Afan Way, Port Talbot, West Glamorgan, Sa12 6nr Authority: Natural Resources Wales Permit Reference: Bw8917 Dated: 1st December 2003 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Minor variation to authorisation under RSA Status: Authorisation superseded by a substantial or non substantial variation Positional Accuracy: Manually positioned to the address or location	A19NE (NE)	892	2	275298 190490
19	Registered Radioactive Substances Name: Abertawe Bro Morgannwg University Local Health Board Location: Neath Port Talbot Hospital, Baglen Way, PORT TALBOT, West Glamorgan, SA12 7BX Authority: Natural Resources Wales Permit Reference: CD9852 Dated: 23rd September 2009 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Authorisation under RSA Status: Application has been authorised and any conditions apply to the operator Positional Accuracy: Automatically positioned to the address	A19NE (NE)	946	2	275402 190466
19	Registered Radioactive Substances Name: Abertawe Bro Morgannwg University Nhs Trust Location: Neath Port Talbot Hospital, Afan Way, PORT TALBOT, West Glamorgan, SA12 6NR Authority: Natural Resources Wales Permit Reference: CC9687 Dated: 29th October 2008 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Minor variation to authorisation under RSA Status: Authorisation either revoked or cancelled Positional Accuracy: Manually positioned to the address or location	A19NE (NE)	946	2	275402 190466

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
19	Registered Radioactive Substances Name: Abertawe Bro Morgannwg University Nhs Trust Location: Neath Port Talbot Hospital, Afan Way, PORT TALBOT, West Glamorgan, SA12 6NR Authority: Natural Resources Wales Permit Reference: CC9695 Dated: 29th October 2008 Process Type: Registration under S7 RSA for the keeping and use of Radioactive materials (was RSA60 S1) Description: Minor variation to a registration under the Act of an open source which is also the subject of an authorisation Status: Authorisation either revoked or cancelled Positional Accuracy: Manually positioned to the address or location	A19NE (NE)	946	2	275402 190466
	River Quality Name: Not Supplied GQA Grade: Unclassified Tidal River Reach: Not Supplied Estimated Distance (km): Not Supplied Flow Rate: Not Supplied Flow Type: Not Supplied Year: 1995	A9NE (SE)	935	4	275541 189326
	River Quality Name: Not Supplied GQA Grade: Unclassified Tidal River Reach: Not Supplied Estimated Distance (km): Not Supplied Flow Rate: Not Supplied Flow Type: Not Supplied Year: 1995	A9NE (E)	942	4	275591 189413
20	Substantiated Pollution Incident Register Authority: Natural Resources Wales Incident Date: 16th December 2009 Incident Reference: 741055 Water Impact: Category 4 - No Impact Air Impact: Category 1 - Major Incident Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Atmospheric Pollutants and Effects: Smoke	A13SE (S)	61	2	274649 189577
21	Substantiated Pollution Incident Register Authority: Natural Resources Wales Incident Date: 4th January 2005 Incident Reference: 285528 Water Impact: Category 4 - No Impact Air Impact: Category 4 - No Impact Land Impact: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Organic Chemicals/Products: Other Organic Chemical Or Product	A14SE (E)	756	2	275472 189676
22	Substantiated Pollution Incident Register Authority: Natural Resources Wales Incident Date: 26th March 2009 Incident Reference: 664863 Water Impact: Category 4 - No Impact Air Impact: Category 2 - Significant Incident Land Impact: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Atmospheric Pollutants and Effects: Smoke Pollutant: Contaminated Water: Firefighting Run-Off	A19NW (NE)	770	2	275002 190567
23	Substantiated Pollution Incident Register Authority: Natural Resources Wales Incident Date: 28th July 2001 Incident Reference: 19961 Water Impact: Category 2 - Significant Incident Air Impact: Category 4 - No Impact Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: General Biodegradable Materials and Wastes Pollutant: Inert Materials and Wastes Coal	A12SW (W)	942	2	273620 189500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Tata Steel Uk Limited Licence Number: 21/58/61/0009 Permit Version: 101 Location: River Afan To Port Talbot Docks Authority: Natural Resources Wales Abstraction: Metal: Evaporative Cooling 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: 12th November 2010 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A15SE (E)	1260	2	275980 189690
	Water Abstractions Operator: Tata Steel Uk Limited Licence Number: 21/58/61/0009 Permit Version: 101 Location: River Afan To Port Talbot Docks Authority: Natural Resources Wales Abstraction: Metal: Process Water 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: 12th November 2010 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A15SE (E)	1260	2	275980 189690
	Water Abstractions Operator: Corus Uk Strip Products Licence Number: 21/58/61/0009 Permit Version: 100 Location: River Afan To Port Talbot Docks Authority: Environment Agency, Welsh Region Abstraction: Metal: Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: River Afan To Port Talbot Docks Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A15SE (E)	1260	4	275980 189690
	Water Abstractions Operator: Corus Uk Strip Products Licence Number: 21/58/61/0009 Permit Version: 100 Location: River Afan To Port Talbot Docks Authority: Environment Agency, Welsh Region Abstraction: Metal: Process Water 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-Jan to 31-Dec Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A15SE (E)	1260	4	275980 189685

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Tata Steel Uk Limited Licence Number: 21/58/61/0009 Permit Version: Not Supplied Location: Land At British Steel, Port Talbot Authority: Natural Resources Wales Abstraction: Metal: Evaporative Cooling 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: 01 January Authorised End: 31 December Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A15SE (E)	1260	2	275980 189690
	Water Abstractions Operator: Tata Steel Uk Limited Licence Number: 21/58/61/0009 Permit Version: Not Supplied Location: Land At British Steel, Port Talbot Authority: Natural Resources Wales Abstraction: Metal: Process Water 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: 01 January Authorised End: 31 December Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A15SE (E)	1260	2	275980 189690
	Water Abstractions Operator: Environment Agency Licence Number: Wa/058/0061/007 Permit Version: Not Supplied Location: Not Supplied Authority: Natural Resources Wales Abstraction: Impounding Abstraction Type: Not Supplied Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 January Authorised End: 31 December Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A15SE (E)	1330	2	276054 189756
	Water Abstractions Operator: Civil And Marine Ltd Licence Number: 21/58/61/0042 Permit Version: 5 Location: Port Talbot Docks Port Talbot Authority: Natural Resources Wales Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Port Talbot Docks, Port Talbot Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st May 2014 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A10SE (SE)	1756	2	276230 188880

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Civil And Marine Ltd Licence Number: 21/58/61/0042 Permit Version: 4 Location: Port Talbot Docks Port Talbot Authority: Environment Agency, Welsh Region Abstraction: Other Industrial/Commercial/Public Services: Dust Suppression Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Port Talbot Docks, Port Talbot Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 21st May 2010 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A10SE (SE)	1756	4	276230 188880
	Water Abstractions Operator: Civil And Marine Ltd Licence Number: 21/58/61/0042 Permit Version: 4 Location: Port Talbot Docks Port Talbot Authority: Environment Agency, Welsh Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Port Talbot Docks, Port Talbot Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 21st May 2010 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A10SE (SE)	1756	4	276230 188880
	Water Abstractions Operator: Civil And Marine Ltd Licence Number: 21/58/61/0042 Permit Version: Not Supplied Location: Abstraction From Port Talbot Dock Authority: Natural Resources Wales Abstraction: Other Industrial/Commercial/Public Services: Process Water 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	A10SE (SE)	1756	2	276230 188880
	Water Abstractions Operator: Civil And Marine Ltd Licence Number: 21/58/61/0042 Permit Version: 3 Location: Civil & Marine Slag Cement Ltd Quay At Port Talbot Docks Authority: Environment Agency, Welsh Region Abstraction: Other Industrial/Commercial/Public Services: Dust Suppression Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Land At Civil & Marine Slag Cement Ltd Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 12th September 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A10SE (SE)	1775	4	276240 188860

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Civil And Marine Ltd Licence Number: 21/58/61/0042 Permit Version: 2 Location: Civil & Marine Slag Cement Ltd Quay At Port Talbot Docks Authority: Environment Agency, Welsh Region Abstraction: Other Industrial/Commercial/Public Services: Dust Suppression Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Land At Civil & Marine Slag Cement Ltd Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 10th October 2007 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A10SE (SE)	1775	4	276240 188860
	Water Abstractions Operator: Civil & Marine Slag Cement Ltd Licence Number: 21/58/61/0042 Permit Version: 1 Location: Civil & Marine Slag Cement Ltd Quay At Port Talbot Docks Authority: Environment Agency, Welsh Region Abstraction: Other Industrial/Commercial/Public Services: Dust Suppression Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Land At Civil & Marine Slag Cement Ltd Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2003 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A10SE (SE)	1775	4	276240 188860
	Groundwater Vulnerability Map Combined Classification: Secondary Superficial Aquifer - High Vulnerability Combined Vulnerability: High Combined Aquifer: Productive Bedrock Aquifer, Productive Superficial Aquifer Pollutant Speed: High Bedrock Flow: Well Connected Fractures Dilution: >550 mm/year Baseflow Index: >70% Superficial Patchiness: <90% Superficial Thickness: >10m Superficial Recharge: No Data	A13NW (NW)	0	2	274591 189797
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - A	A13NW (NW)	0	2	274591 189797
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - A	A13NW (NW)	0	2	274591 189797
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SW (SW)	145	2	274415 189614
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13SW (SW)	146	2	274411 189617
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
24	OS Water Network Lines Watercourse Form: Tidal river Watercourse Length: 697.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Afan Catchment Name: Afan Primacy: 1	A14SE (E)	906	5	275569 189455
25	OS Water Network Lines Watercourse Form: Tidal river Watercourse Length: 126.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Afan Catchment Name: Afan Primacy: 2	A9NE (SE)	945	5	275528 189285
26	OS Water Network Lines Watercourse Form: Tidal river Watercourse Length: 125.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Afan Catchment Name: Afan Primacy: 1	A9NE (SE)	951	5	275545 189302
27	OS Water Network Lines Watercourse Form: Tidal river Watercourse Length: 423.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Afan Catchment Name: Afan Primacy: 1	A9NE (SE)	992	5	275516 189185
28	OS Water Network Lines Watercourse Form: Tidal river Watercourse Length: 788.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Afan Catchment Name: Afan Primacy: 1	A3NE (S)	996	5	274718 188630

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
29	Licensed Waste Management Facilities (Locations) Licence Number: EP3198FW Location: Neath And Port Talbot Hospital, Neath & Port Talbot Hospital, Baglan Way, Port Talbot, N P T, Neath Port Talbot, SA12 7BX Operator Name: Veolia Energy & Utilities Services UK Plc Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: Not Supplied Licence Status: Effective Issued: 3rd June 2016 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A19SE (NE)	992	2	275501 190422
29	Licensed Waste Management Facilities (Locations) Licence Number: 34208 Location: Neath & Port Talbot Hospital, Baglan Way, Port Talbot, SA12 7BX Operator Name: Dalkia Utilities Services Plc Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: Clinical Waste Transfer Stations Licence Status: Modified Issued: 6th June 2003 Last Modified: 7th March 2013 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A19SE (NE)	992	2	275501 190422
	Local Authority Landfill Coverage Name: Neath Port Talbot County Borough Council - Has supplied landfill data		0	3	274591 189797
30	Local Authority Recorded Landfill Sites Location: Baglan Landfill (Hospital Site) Reference: Not Supplied Authority: Neath Port Talbot County Borough Council, Environmental Health Department Last Reported Status: Not Supplied Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Located by supplier to within 100m Boundary Quality: Not Applicable	A19SE (NE)	900	3	275400 190400
31	Potentially Infilled Land (Non-Water) Bearing Ref: NE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A13NE (NE)	139	-	274787 189934
32	Potentially Infilled Land (Non-Water) Bearing Ref: SE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A8NE (SE)	558	-	274941 189173
33	Potentially Infilled Land (Non-Water) Bearing Ref: E Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A14SW (E)	572	-	275256 189573
34	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1884	A8NE (S)	505	-	274791 189151
35	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A8SE (SE)	647	-	274912 189050
36	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A14SE (E)	686	-	275391 189624
37	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19NW (NE)	769	-	275051 190525
38	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1884	A19NW (NE)	781	-	275073 190520

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
39	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1900	A19NW (NE)	816	-	274961 190653
40	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19NW (NE)	826	-	275115 190542
41	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1921	A19NW (NE)	827	-	274956 190668
42	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A19NW (NE)	839	-	274980 190668
43	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19SE (NE)	843	-	275398 190312
44	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A14SE (E)	880	-	275553 189487
45	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19NW (N)	886	-	274943 190743
46	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A18NE (N)	890	-	274823 190801
47	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19SE (NE)	897	-	275343 190459
48	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A14SE (E)	903	-	275574 189479
49	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19SE (NE)	910	-	275484 190303
50	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A9NE (SE)	917	-	275532 189349
51	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19NW (NE)	924	-	275265 190558
52	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19NW (NE)	946	-	275182 190645
53	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19NW (NE)	953	-	275144 190688
54	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19NW (NE)	954	-	275226 190621
55	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19NW (NE)	974	-	275057 190778
56	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19NW (NE)	984	-	275059 190789
57	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1921	A15SW (E)	987	-	275694 189597
58	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19NW (NE)	993	-	275227 190666

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
59	Control of Major Accident Hazards Sites (COMAH) Name: Transco Plc Location: Aberavon Gas Works, Victoria Road, PORT TALBOT, West Glamorgan, SA13 1PN Reference: Not Supplied Type: Lower Tier Status: Record Ceased To Be Supplied Under COMAH Regulations Positional Accuracy: Manually positioned to the address or location	A15SW (E)	938	6	275655 189670
60	Notification of Installations Handling Hazardous Substances (NIHHS) Name: Transco Location: Aberavon Gas Works, Victoria Road, PORT TALBOT, West Glamorgan, SA13 1PN Status: Not Active Positional Accuracy: Unknown	A15SW (E)	944	6	275660 189662
61	Planning Hazardous Substance Consents Name: British Gas Plc Location: Wales, Aberavon Gas Works, Victoria Road, PORT TALBOT, West Glamorgan, SA12 6DB Authority: Neath Port Talbot County Borough Council, Planning Department Application Ref: P2013/0135 Hazardous Substance: Unknown at time of report Maximum Quantity: 61.8 Application date: 27th November 1992 Decision: Application revoked or cancelledCancelled Positional Accuracy: Located by supplier to within 10m	A15SW (E)	933	7	275650 189670

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Pennine Middle Coal Measures Formation And South Wales Middle Coal Measures Formation (Undifferentiated)	A13NW (NW)	0	1	274591 189797
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic: 35 - 45 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel: 15 - 30 mg/kg Concentration:	A13NW (NW)	0	1	274591 189797
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic: 15 - 25 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel: 30 - 45 mg/kg Concentration:	A13SW (SW)	172	1	274384 189604
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic: no data Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: no data Concentration: Lead Concentration: <100 mg/kg Nickel: no data Concentration:	A7NE (SW)	568	1	274070 189366
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic: 15 - 25 mg/kg Concentration: Cadmium: no data Concentration: Chromium: 60 - 90 mg/kg Concentration: Lead Concentration: no data Nickel: 30 - 45 mg/kg Concentration:	A12SE (SW)	574	1	274000 189500
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic: no data Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: no data Concentration: Lead Concentration: <100 mg/kg Nickel: no data Concentration:	A12SE (SW)	613	1	273958 189500
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic: 25 - 35 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel: 15 - 30 mg/kg Concentration:	A19SW (NE)	628	1	275186 190233

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 35 - 45 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel 30 - 45 mg/kg Concentration:	A9SW (SE)	735	1	275000 189000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel 30 - 45 mg/kg Concentration:	A9NE (SE)	937	1	275512 189274
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 35 - 45 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel 15 - 30 mg/kg Concentration:	A4NW (S)	981	1	275000 188721
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium no data Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: no data Nickel 30 - 45 mg/kg Concentration:	A11NE (W)	986	1	273500 189945
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 274760, 189790 Soil Sample Type: Topsoil Sample Area: Swansea Arsenic Measured 14.70 mg/kg Concentration: Cadmium Measured 0.40 mg/kg Concentration: Chromium Measured 53.10 mg/kg Concentration: Lead Measured 113.80 mg/kg Concentration: Nickel Measured 26.10 mg/kg Concentration:	A13SE (E)	37	1	274760 189790
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 274750, 189270 Soil Sample Type: Topsoil Sample Area: Swansea Arsenic Measured 23.70 mg/kg Concentration: Cadmium Measured 0.90 mg/kg Concentration: Chromium Measured 53.10 mg/kg Concentration: Lead Measured 158.60 mg/kg Concentration: Nickel Measured 22.50 mg/kg Concentration:	A8NE (S)	379	1	274750 189270

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 274270, 190250 Soil Sample Type: Topsoil Sample Area: Swansea Arsenic Measured 13.90 mg/kg Concentration: Cadmium Measured 0.50 mg/kg Concentration: Chromium Measured 54.30 mg/kg Concentration: Lead Measured 295.70 mg/kg Concentration: Nickel Measured 21.20 mg/kg Concentration:	A18SW (NW)	383	1	274270 190250
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 274780, 190300 Soil Sample Type: Topsoil Sample Area: Swansea Arsenic Measured 18.40 mg/kg Concentration: Cadmium Measured 0.90 mg/kg Concentration: Chromium Measured 62.90 mg/kg Concentration: Lead Measured 119.00 mg/kg Concentration: Nickel Measured 25.40 mg/kg Concentration:	A18SE (N)	423	1	274780 190300
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 275210, 190210 Soil Sample Type: Topsoil Sample Area: Swansea Arsenic Measured 12.00 mg/kg Concentration: Cadmium Measured 0.60 mg/kg Concentration: Chromium Measured 81.40 mg/kg Concentration: Lead Measured 41.50 mg/kg Concentration: Nickel Measured 16.80 mg/kg Concentration:	A19SW (NE)	633	1	275210 190210
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 274730, 190770 Soil Sample Type: Topsoil Sample Area: Swansea Arsenic Measured 35.40 mg/kg Concentration: Cadmium Measured 1.30 mg/kg Concentration: Chromium Measured 78.60 mg/kg Concentration: Lead Measured 234.60 mg/kg Concentration: Nickel Measured 37.10 mg/kg Concentration:	A18NE (N)	834	1	274730 190770
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 274220, 190760 Soil Sample Type: Topsoil Sample Area: Swansea Arsenic Measured 19.60 mg/kg Concentration: Cadmium Measured 0.80 mg/kg Concentration: Chromium Measured 67.70 mg/kg Concentration: Lead Measured 179.50 mg/kg Concentration: Nickel Measured 24.00 mg/kg Concentration:	A17NE (N)	854	1	274220 190760

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Urban Soil Chemistry Averages Source: British Geological Survey, National Geoscience Information Service Sample Area: Swansea Count Id: 368 Arsenic Minimum Concentration: 8.00 mg/kg Arsenic Average Concentration: 79.00 mg/kg Arsenic Maximum Concentration: 2161.00 mg/kg Cadmium Minimum Concentration: 0.10 mg/kg Cadmium Average Concentration: 2.90 mg/kg Cadmium Maximum Concentration: 61.90 mg/kg Chromium Minimum Concentration: 13.00 mg/kg Chromium Average Concentration: 72.00 mg/kg Chromium Maximum Concentration: 562.00 mg/kg Lead Minimum Concentration: 23.00 mg/kg Lead Average Concentration: 413.00 mg/kg Lead Maximum Concentration: 10000.00 mg/kg Nickel Minimum Concentration: 8.00 mg/kg Nickel Average Concentration: 52.00 mg/kg Nickel Maximum Concentration: 384.00 mg/kg	A13NW (NW)	0	1	274591 189797
	Coal Mining Affected Areas Description: In an area which may be affected by coal mining activity. It is recommended that a coal mining report is obtained from the Coal Authority. Contact details are included in the Useful Contacts section of this report.	A13NW (NW)	0	8	274591 189797
	Mining Instability Mining Evidence: Inconclusive Coal Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	A13NW (NW)	0	-	274591 189797
	Non Coal Mining Areas of Great Britain No Hazard				
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	274591 189797
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	39	1	274591 190000
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	274591 189797
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	39	1	274591 190000
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	274591 189797
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	39	1	274591 190000
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	274591 189797
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	39	1	274591 190000
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	274591 189797

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	39	1	274591 190000
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	135	1	274403 189644
	Potential for Running Sand Ground Stability Hazards Hazard Potential: High Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	154	1	274389 189629
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	274591 189797
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	39	1	274591 190000
	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	A13NW (NW)	0	1	274591 189797
	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	A13NW (NW)	0	1	274591 189797

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
62	Contemporary Trade Directory Entries Name: Texaco Location: Princess Margaret Way, Port Talbot, West Glamorgan, SA12 7PE Classification: Petrol Filling Stations Status: Active Positional Accuracy: Manually positioned to the address or location	A12NE (NW)	243	-	274245 189958
62	Contemporary Trade Directory Entries Name: Murco Service Station Location: Princes Margaret Way, Port Talbot, SA12 7PE Classification: Petrol Filling Stations Status: Active Positional Accuracy: Automatically positioned to the address	A12NE (NW)	246	-	274242 189961
63	Contemporary Trade Directory Entries Name: Theatre Quest Location: 4, Morrison Road, Port Talbot, West Glamorgan, SA12 6TG Classification: Hi-Fi Equipment Manufacturers & Distributors Status: Inactive Positional Accuracy: Automatically positioned to the address	A18SE (N)	486	-	274782 190375
64	Contemporary Trade Directory Entries Name: Port Talbot General Hospital Location: Hospital Road, Port Talbot, West Glamorgan, SA12 6PD Classification: Hospitals Status: Inactive Positional Accuracy: Automatically positioned to the address	A14NW (E)	540	-	275247 189915
64	Contemporary Trade Directory Entries Name: Port Talbot General Hospital Location: Hospital Road, Port Talbot, West Glamorgan, SA12 6PD Classification: Hospitals Status: Inactive Positional Accuracy: Automatically positioned to the address	A14NW (E)	540	-	275247 189915
65	Contemporary Trade Directory Entries Name: Generation Plastering Building Location: Home, Port Talbot, West Glamorgan, sa12 6tq Classification: Builders' Tools & Equipment Manufacturers Status: Inactive Positional Accuracy: Manually positioned within the geographical locality	A18NE (N)	566	-	274740 190485
66	Contemporary Trade Directory Entries Name: S A 12 Ironing Location: 13, Mariners Quay, Port Talbot, West Glamorgan, SA12 6AN Classification: Ironing & Home Laundry Services Status: Active Positional Accuracy: Automatically positioned to the address	A8SE (S)	572	-	274873 189115
67	Contemporary Trade Directory Entries Name: Dale Electronics Location: 63, Vivian Park Drive, Port Talbot, West Glamorgan, SA12 6RP Classification: Domestic Appliances - Servicing, Repairs & Parts Status: Active Positional Accuracy: Automatically positioned to the address	A18NE (N)	588	-	274823 190469
68	Contemporary Trade Directory Entries Name: S P K Enterprises Location: 43, Addison Road, Port Talbot, West Glamorgan, SA12 6HZ Classification: Sports Equipment Manufacturers & Distributors Status: Inactive Positional Accuracy: Automatically positioned to the address	A14NE (E)	606	-	275301 189975
68	Contemporary Trade Directory Entries Name: Carver Metals Location: B S C Workshops, Addison Rd, Port Talbot, West Glamorgan, SA12 6HZ Classification: Jewellery Manufacturers & Repairers Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location	A14NE (E)	638	-	275339 189956
69	Contemporary Trade Directory Entries Name: Select Joinery Manufacturers Location: Unit 1 B S I Workshops, Addison Rd, Port Talbot, West Glamorgan, SA12 6HZ Classification: Joinery Manufacturers Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location	A14NE (E)	627	-	275324 189970
69	Contemporary Trade Directory Entries Name: Cando Laundry Services Location: Unit 2, Addison Road, Port Talbot, SA12 6HZ Classification: Laundries & Launderettes Status: Active Positional Accuracy: Automatically positioned to the address	A14NE (E)	630	-	275312 190019

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
69	Contemporary Trade Directory Entries Name: Andreas Haaf Printers Location: Unit 18, Port Talbot Workshops, Addison Road, Port Talbot, West Glamorgan, SA12 6HZ Classification: Printers Status: Active Positional Accuracy: Automatically positioned to the address	A14NE (E)	659	-	275347 190008
69	Contemporary Trade Directory Entries Name: Special Moments Ltd Location: Unit 19, Port Talbot Workshops, Addison Road, Port Talbot, West Glamorgan, SA12 6HZ Classification: Greeting Card Publishers & Wholesalers Status: Inactive Positional Accuracy: Manually positioned to the address or location	A14NE (E)	670	-	275364 189985
69	Contemporary Trade Directory Entries Name: Test Fixture Supplies Location: Unit 16 Port Talbot Workshops, Addison Rd, Port Talbot, West Glamorgan, SA12 6HZ Classification: Electronic Component Manufacturers & Distributors Status: Inactive Positional Accuracy: Manually positioned to the address or location	A14NE (E)	675	-	275370 189982
69	Contemporary Trade Directory Entries Name: Copier Exchange Location: Unit 20, Addison Rd Workshops, Addison Rd, Port Talbot, West Glamorgan, SA12 6HZ Classification: Photocopiers Status: Inactive Positional Accuracy: Manually positioned to the address or location	A14NE (E)	682	-	275378 189982
69	Contemporary Trade Directory Entries Name: Green In Mind Location: Unit 20, Port Talbot Workshops, Addison Road, PORT TALBOT, West Glamorgan, SA12 6HZ Classification: Furniture - Repairing & Restoring Status: Active Positional Accuracy: Automatically positioned to the address	A14NE (E)	683	-	275378 189982
69	Contemporary Trade Directory Entries Name: Pyramid Manufacturing Location: Unit 5, Port Talbot Workshops, Addison Rd, Port Talbot, West Glamorgan, SA12 6HZ Classification: Manufacturers Status: Inactive Positional Accuracy: Manually positioned to the address or location	A14NE (E)	689	-	275378 190008
69	Contemporary Trade Directory Entries Name: Leo Assemblies Location: Unit 5, Port Talbot Workshops, Addison Road, PORT TALBOT, West Glamorgan, SA12 6HZ Classification: Transformer Manufacturers Status: Active Positional Accuracy: Automatically positioned to the address	A14NE (E)	690	-	275378 190009
70	Contemporary Trade Directory Entries Name: D J Engineering Location: B S C Workshops, Addison Rd, Port Talbot, West Glamorgan, SA12 6HZ Classification: Engineers - General Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location	A14NE (E)	653	-	275359 189932
70	Contemporary Trade Directory Entries Name: E S Cleaning Services Location: 32, Maesgwyn Street, Port Talbot, West Glamorgan, SA12 6PF Classification: Carpet, Curtain & Upholstery Cleaners Status: Inactive Positional Accuracy: Automatically positioned to the address	A14NE (E)	657	-	275372 189892
70	Contemporary Trade Directory Entries Name: Active Automation Services Ltd Location: Addison Rd, Port Talbot, West Glamorgan, SA12 6HZ Classification: Electronic Engineers Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location	A14NE (E)	664	-	275376 189904
70	Contemporary Trade Directory Entries Name: T Lang & Sons Aberavon Ltd Location: 29, Maesgwyn Street, Port Talbot, West Glamorgan, SA12 6PF Classification: Mot Testing Centres Status: Active Positional Accuracy: Automatically positioned to the address	A14NE (E)	667	-	275385 189869

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
70	Contemporary Trade Directory Entries Name: All Seasons Manufacturing Ltd Location: Addison Rd, Port Talbot, West Glamorgan, SA12 6HZ Classification: Clothing & Fabrics - Manufacturers Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location	A14NE (E)	678	-	275396 189872
71	Contemporary Trade Directory Entries Name: T Lang & Sons Ltd Location: Unit 3, Addison Road, Port Talbot, SA12 6HZ Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A14NE (E)	657	-	275327 190057
71	Contemporary Trade Directory Entries Name: Fairfield Garage Location: Graham Davies House, Addison Road, Port Talbot, SA12 6HZ Classification: Mot Testing Centres Status: Active Positional Accuracy: Automatically positioned to the address	A14NE (E)	657	-	275327 190057
72	Contemporary Trade Directory Entries Name: J D Marine & Sons Location: 58, Mariners Quay, Port Talbot, SA12 6AN Classification: Marine Engineering Equipment Manufacturers Status: Active Positional Accuracy: Automatically positioned to the address	A9SW (SE)	686	-	275021 189074
73	Contemporary Trade Directory Entries Name: Sparks Fire Protection Ltd Location: Unit 41, Port Talbot Workshops, Addison Road, Port Talbot, West Glamorgan, SA12 6HZ Classification: Disability Equipment - Manufacturers & Suppliers Status: Inactive Positional Accuracy: Automatically positioned to the address	A14NE (E)	690	-	275392 189954
73	Contemporary Trade Directory Entries Name: Kindrace Ltd Location: Addison Road, Port Talbot, West Glamorgan, SA12 6HZ Classification: Transformer Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address	A14NE (E)	699	-	275394 189987
73	Contemporary Trade Directory Entries Name: Sparks F P Ltd Location: Unit 9, Port Talbot Workshops, Addison Road, Port Talbot, SA12 6HZ Classification: Disability Equipment - Manufacturers & Suppliers Status: Inactive Positional Accuracy: Automatically positioned to the address	A14NE (E)	701	-	275395 189989
74	Contemporary Trade Directory Entries Name: Greenwood Plant Services Ltd Location: Addison Rd, Port Talbot, West Glamorgan, SA12 6HZ Classification: Waste Disposal Services Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location	A14NE (E)	702	-	275425 189824
75	Contemporary Trade Directory Entries Name: Afan Tyre Discount Centre Ltd Location: Aberavon Gas Works Estate, Victoria Road, Port Talbot, West Glamorgan, SA12 6DB Classification: Tyre Dealers Status: Active Positional Accuracy: Automatically positioned to the address	A14SE (E)	713	-	275429 189678
75	Contemporary Trade Directory Entries Name: Filtration & Separation Ltd Location: Unit 9, Aberavon Gas Works Estate, Victoria Road, Port Talbot, West Glamorgan, SA12 6DB Classification: Filter Manufacturers & Suppliers Status: Inactive Positional Accuracy: Automatically positioned in the proximity of the address	A14SE (E)	756	-	275472 189676
76	Contemporary Trade Directory Entries Name: Quay Engineering Service Ltd Location: 4, Sitwell Way, Port Talbot, West Glamorgan, SA12 6BL Classification: Metal Products - Fabricated Status: Inactive Positional Accuracy: Automatically positioned to the address	A9NW (SE)	725	-	275252 189270

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
77	Contemporary Trade Directory Entries Name: Stand Banner Location: Unit 46, Port Talbot Workshops, Addison Road, Port Talbot, SA12 6HZ Classification: Printers Status: Active Positional Accuracy: Automatically positioned to the address	A14NE (E)	725	-	275430 189947
77	Contemporary Trade Directory Entries Name: Cymru Industrial Supplies Ltd Location: Unit 47, Port Talbot Workshops, Addison Road, Port Talbot, SA12 6HZ Classification: Engineering Materials Status: Active Positional Accuracy: Automatically positioned to the address	A14NE (E)	730	-	275436 189941
77	Contemporary Trade Directory Entries Name: Cymru Industrial Supplies Ltd Location: Unit 47, Port Talbot Workshops, Addison Road, Port Talbot, SA12 6HZ Classification: Hose, Tubing & Fittings Status: Inactive Positional Accuracy: Automatically positioned to the address	A14NE (E)	730	-	275436 189941
77	Contemporary Trade Directory Entries Name: Paul'S M O T Centre Location: Unit 48, Port Talbot Workshops, Addison Road, Sandfields, SA12 6HZ Classification: Mot Testing Centres Status: Active Positional Accuracy: Automatically positioned to the address	A14NE (E)	734	-	275442 189935
78	Contemporary Trade Directory Entries Name: Puncture- Shield Location: 2, Webb Place, Port Talbot, West Glamorgan, SA12 6AG Classification: Tyre Repairs & Retreading Status: Inactive Positional Accuracy: Automatically positioned to the address	A9NE (SE)	730	-	275341 189392
79	Contemporary Trade Directory Entries Name: Chroma Domestic Cleaning Services Location: 22, Sitwell Way, Port Talbot, SA12 6BL Classification: Cleaning Services - Domestic Status: Active Positional Accuracy: Automatically positioned to the address	A9NW (SE)	736	-	275204 189181
80	Contemporary Trade Directory Entries Name: A Class Caravan Services Location: 10, Stair Street, Port Talbot, West Glamorgan, SA12 6BJ Classification: Caravans - Servicing & Repairs Status: Inactive Positional Accuracy: Automatically positioned to the address	A14NE (E)	750	-	275435 190028
80	Contemporary Trade Directory Entries Name: Akins Garage & Autocare Location: Frederick Street, Port Talbot, West Glamorgan, SA12 6BX Classification: Garage Services Status: Active Positional Accuracy: Manually positioned to the address or location	A14NE (E)	780	-	275474 190002
81	Contemporary Trade Directory Entries Name: M H M Location: Unit 3, Aberavon Road, Baglan Industrial Park, Port Talbot, West Glamorgan, SA12 7DJ Classification: Generators - Sales & Service Status: Active Positional Accuracy: Automatically positioned to the address	A19NW (NE)	775	-	275065 190519
82	Contemporary Trade Directory Entries Name: Direct Stationery M F G Ltd Location: Acacia Avenue, Port Talbot, West Glamorgan, SA12 7DP Classification: Stationery Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NE (N)	775	-	274711 190714
83	Contemporary Trade Directory Entries Name: Talbot Flyers Location: 5, Station Terrace, Port Talbot, West Glamorgan, SA12 6BZ Classification: Distribution Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A14NE (E)	796	-	275503 189948

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
84	Contemporary Trade Directory Entries Name: Power Clean Services Location: 86, Southdown Road, Port Talbot, West Glamorgan, SA12 7HS Classification: Carpet, Curtain & Upholstery Cleaners Status: Inactive Positional Accuracy: Automatically positioned to the address	A23SW (N)	859	-	274360 190805
85	Contemporary Trade Directory Entries Name: Isotemp (Ductwork) Ltd Location: Baglan Way, Baglan Ind Pk, Port Talbot, West Glamorgan, SA12 7BY Classification: Ventilators & Ventilation Systems Status: Inactive Positional Accuracy: Manually positioned within the geographical locality	A19NW (NE)	860	-	275036 190654
86	Contemporary Trade Directory Entries Name: Componant Print Ltd Location: Unit 15, Aberafon Road, Baglan Industrial Park, Port Talbot, West Glamorgan, SA12 7DJ Classification: Screen Process Printers Status: Inactive Positional Accuracy: Automatically positioned to the address	A19NW (N)	881	-	274966 190725
86	Contemporary Trade Directory Entries Name: Components Finishers Ltd Location: Unit 15, Aberafon Road, Baglan Industrial Park, Port Talbot, West Glamorgan, SA12 7DJ Classification: Spraying - Paint & Coatings Status: Inactive Positional Accuracy: Automatically positioned to the address	A19NW (N)	881	-	274966 190725
87	Contemporary Trade Directory Entries Name: Jenncott Shoulder Padding Co Location: Unit 26/27, Aberafon Road, Baglan Industrial Park, Port Talbot, West Glamorgan, SA12 7DJ Classification: Clothing Accessory Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NE (N)	893	-	274909 190768
87	Contemporary Trade Directory Entries Name: N D Printing Ltd Location: Unit 26, Aberafon Road, Baglan Industrial Park, Port Talbot, West Glamorgan, SA12 7DJ Classification: Printers Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NE (N)	910	-	274921 190781
87	Contemporary Trade Directory Entries Name: Pugh Colour Printers Ltd Location: Unit 26, Aberafon Road, Baglan Industrial Park, Port Talbot, West Glamorgan, SA12 7DJ Classification: Printers Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NE (N)	910	-	274921 190781
87	Contemporary Trade Directory Entries Name: Plexus Lpg Conversions Location: Unit 26, Aberafon Road, Baglan Industrial Park, Port Talbot, West Glamorgan, SA12 7DJ Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NE (N)	910	-	274921 190781
87	Contemporary Trade Directory Entries Name: Lifting Gear & Safety Location: Unit 26, Aberafon Road, Baglan Industrial Park, Port Talbot, SA12 7DJ Classification: Lifting Equipment Status: Active Positional Accuracy: Automatically positioned to the address	A18NE (N)	910	-	274921 190781
87	Contemporary Trade Directory Entries Name: D H Logistics Services Ltd Location: Unit 25, Aberafon Road, Baglan Industrial Park, Port Talbot, West Glamorgan, SA12 7DJ Classification: Car Component Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NE (N)	928	-	274935 190795

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
87	Contemporary Trade Directory Entries Name: Component Print Ltd Location: Unit 24, Aberafon Road, Baglan Industrial Park, Port Talbot, West Glamorgan, SA12 7DJ Classification: Printers Status: Inactive Positional Accuracy: Automatically positioned to the address	A24SW (N)	943	-	274947 190806
88	Contemporary Trade Directory Entries Name: Bartlett Engineering S W Ltd Location: Unit 7, Aberavon Road, Baglan Industrial Park, PORT TALBOT, West Glamorgan, SA12 7DJ Classification: Engineers - General Status: Active Positional Accuracy: Automatically positioned to the address	A19NW (NE)	898	-	275095 190657
89	Contemporary Trade Directory Entries Name: Car & Van Value Location: Acacia Av, Port Talbot, West Glamorgan, SA12 7DP Classification: Car Dealers Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location	A23SW (N)	899	-	274558 190860
90	Contemporary Trade Directory Entries Name: A Cochlin & Co Location: 98, Southdown Road, Port Talbot, West Glamorgan, SA12 7HS Classification: Domestic Appliances - Servicing, Repairs & Parts Status: Active Positional Accuracy: Automatically positioned to the address	A23SW (N)	902	-	274380 190852
91	Contemporary Trade Directory Entries Name: Scrap Yard In Port Tolbot Htt Location: Unit 30, Port Talbot, West Glamorgan, sa12 7dj Classification: Car Breakers & Dismantlers Status: Inactive Positional Accuracy: Manually positioned within the geographical locality	A19NW (NE)	906	-	274984 190743
91	Contemporary Trade Directory Entries Name: Cam Engineering Location: Unit 17, Aberafon Road, Baglan Industrial Park, Port Talbot, West Glamorgan, SA12 7DJ Classification: Machine Tools - Manufacturers & Distributors Status: Inactive Positional Accuracy: Automatically positioned to the address	A19NW (NE)	906	-	274984 190743
91	Contemporary Trade Directory Entries Name: Howdens Joinery Co Location: Unit 17, Aberavon Road, Baglan Industrial Park, Port Talbot, West Glamorgan, SA12 7DJ Classification: Builders' Merchants Status: Active Positional Accuracy: Automatically positioned to the address	A19NW (NE)	906	-	274984 190743
91	Contemporary Trade Directory Entries Name: Vizor Tempered Glass Ltd Location: Unit 21, Baglan Way, Baglan Industrial Park, Port Talbot, West Glamorgan, SA12 7BY Classification: Glass Products - Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address	A19NW (NE)	947	-	275024 190768
91	Contemporary Trade Directory Entries Name: M H M Location: Unit 3, Aberavon Road, Baglan Industrial Park, Port Talbot, West Glamorgan, SA12 7DJ Classification: Power Transmission Equipment Status: Inactive Positional Accuracy: Manually positioned within the geographical locality	A19NW (NE)	948	-	275024 190768
91	Contemporary Trade Directory Entries Name: Screwfix Location: Baglan Industrial Estate, Aberavon Road, Baglan Industrial Park, Port Talbot, West Glamorgan, SA12 7DJ Classification: Builders' Merchants Status: Active Positional Accuracy: Automatically positioned to the address	A19NW (NE)	989	-	275059 190795
91	Contemporary Trade Directory Entries Name: K E Supplies Location: Baglan Industrial Park, Port Talbot, West Glamorgan, SA12 7DJ Classification: Cleaning Materials & Equipment Status: Active Positional Accuracy: Automatically positioned to the address	A19NW (NE)	989	-	275059 190795

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
92	Contemporary Trade Directory Entries Name: Boat Bits Location: 1, Glyn Street, Port Talbot, West Glamorgan, SA12 6NF Classification: Chandlers Status: Inactive Positional Accuracy: Automatically positioned to the address	A15NW (E)	932	-	275654 189850
92	Contemporary Trade Directory Entries Name: Celtic Leather & Fabric Upholstery Ltd Location: 1, Henshaw Street, Port Talbot, West Glamorgan, SA12 6NH Classification: Furniture Manufacturers - Home & Office Status: Inactive Positional Accuracy: Automatically positioned to the address	A15NW (E)	964	-	275685 189843
92	Contemporary Trade Directory Entries Name: Universal Heat Transfer Ltd Location: 3, Henshaw Street, Port Talbot, West Glamorgan, SA12 6NH Classification: Heat Exchangers Status: Inactive Positional Accuracy: Automatically positioned to the address	A15NW (E)	965	-	275687 189837
92	Contemporary Trade Directory Entries Name: Port Talbot Exhaust & Service Centre Location: 5, Henshaw Street, Port Talbot, West Glamorgan, SA12 6NH Classification: Exhaust & Shock Absorber Centres Status: Inactive Positional Accuracy: Automatically positioned to the address	A15NW (E)	966	-	275688 189831
92	Contemporary Trade Directory Entries Name: Dragon Heat Transfer Ltd Location: Unit 3, Henshaw St, Port Talbot, West Glamorgan, SA12 6NH Classification: Car Radiator Servicing & Repairs Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location	A15NW (E)	974	-	275696 189846
92	Contemporary Trade Directory Entries Name: Premier Sports & Leisure Apparel Ltd Location: Unit 3a Henshaw St, Port Talbot, West Glamorgan, SA12 6NH Classification: Clothing & Fabrics - Manufacturers Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location	A15NW (E)	976	-	275698 189834
93	Contemporary Trade Directory Entries Name: P L T Printing Ltd Location: 53, Marine Drive, Port Talbot, SA12 7NW Classification: Printers Status: Active Positional Accuracy: Automatically positioned to the address	A17NW (NW)	934	-	273872 190634
93	Contemporary Trade Directory Entries Name: Becky'S Location: 53, Marine Drive, Port Talbot, West Glamorgan, SA12 7NW Classification: Ironing & Home Laundry Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A17NW (NW)	935	-	273872 190634
94	Contemporary Trade Directory Entries Name: Neath General Hospital Location: Baglan Way, Port Talbot, West Glamorgan, SA12 7BX Classification: Hospitals Status: Active Positional Accuracy: Automatically positioned to the address	A19NE (NE)	946	-	275402 190466
94	Contemporary Trade Directory Entries Name: The Princess Of Wales Hospital Location: Port Talbot, West Glamorgan, SA12 7bx Classification: Hospitals Status: Active Positional Accuracy: Manually positioned within the geographical locality	A19NE (NE)	946	-	275402 190466
94	Contemporary Trade Directory Entries Name: Neath General Hospital Location: Baglan Way, Port Talbot, West Glamorgan, SA12 7BX Classification: Hospitals Status: Inactive Positional Accuracy: Manually positioned within the geographical locality	A19NE (NE)	946	-	275402 190466
95	Contemporary Trade Directory Entries Name: Afan Vale Sandwich Fillings Ltd Location: Unit 30 Baglan Way, Baglan Ind Pk, Port Talbot, West Glamorgan, SA12 7BY Classification: Food Products - Manufacturers Status: Inactive Positional Accuracy: Manually positioned to the address or location	A23SE (N)	951	-	274892 190839

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
95	Contemporary Trade Directory Entries Name: Amps Location: Unit 32, Aberafon Road, Baglan Industrial Park, Port Talbot, West Glamorgan, SA12 7DJ Classification: Electronic Engineers Status: Inactive Positional Accuracy: Automatically positioned to the address	A23SE (N)	984	-	274921 190863
96	Contemporary Trade Directory Entries Name: K Roberts Motors Location: 63, Sandfields Road, Port Talbot, SA12 6LR Classification: Garage Services Status: Active Positional Accuracy: Automatically positioned to the address	A15NW (E)	967	-	275642 190096
96	Contemporary Trade Directory Entries Name: Fairfield Garage Location: 63, Sandfields Road, Port Talbot, West Glamorgan, SA12 6LR Classification: Mot Testing Centres Status: Inactive Positional Accuracy: Automatically positioned to the address	A15NW (E)	967	-	275642 190096
97	Contemporary Trade Directory Entries Name: Morris Windows Location: Factory, Henshaw St, Port Talbot, West Glamorgan, SA12 6NH Classification: PVC-U Products - Manufacturers & Suppliers Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location	A15NW (E)	979	-	275702 189822
97	Contemporary Trade Directory Entries Name: Body Repair Centre Location: Henshaw St, Port Talbot, West Glamorgan, SA12 6NH Classification: Car Body Repairs Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location	A15NW (E)	979	-	275702 189820
98	Contemporary Trade Directory Entries Name: Volac International Location: Unit 12, Aberafon Road, Baglan Industrial Park, Port Talbot, West Glamorgan, SA12 7DJ Classification: Pet Foods & Animal Feeds Status: Active Positional Accuracy: Automatically positioned to the address	A19NW (NE)	984	-	275136 190734
99	Contemporary Trade Directory Entries Name: Priority Pneumatic Location: 47, Southville Road, Port Talbot, West Glamorgan, SA12 7DT Classification: Pneumatic Systems & Equipment Status: Inactive Positional Accuracy: Automatically positioned to the address	A23SW (N)	997	-	274328 190938
100	Fuel Station Entries Name: Port Talbot Service Station Location: Princess Margaret Way, Aberavon, Port Talbot, Neath Port Talbot, SA12 7PE Brand: Texaco Premises Type: Petrol Station Status: Open Positional Accuracy: Manually positioned to the address or location	A12NE (NW)	245	-	274243 189960
101	Fuel Station Entries Name: Fairfield Garage Proteus Location: 63, Sandfields Road, Port Talbot, Neath Port Talbot, SA12 6LR Brand: Obsolete Premises Type: Not Applicable Status: Obsolete Positional Accuracy: Automatically positioned to the address	A15NW (E)	967	-	275642 190096
102	Points of Interest - Commercial Services Name: Port Talbot Service Station Location: Princess Margaret Way, Aberavon, Port Talbot, SA12 7PE Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A12NE (NW)	245	9	274243 189960
102	Points of Interest - Commercial Services Name: Car Wash Location: Princess Margaret Way, Aberavon, Port Talbot, West Glamorgan, SA12 7PE Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A12NE (NW)	245	9	274243 189960

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
103	Points of Interest - Commercial Services Name: Seabourne Transport Ltd Location: 63 Sandown Road, Port Talbot, SA12 6PT Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A14NW (E)	258	9	274948 189927
104	Points of Interest - Commercial Services Name: Fairfield Garage Location: Graham Davies House, Addison Road, Port Talbot, SA12 6HZ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14NE (E)	652	9	275326 190046
104	Points of Interest - Commercial Services Name: T Lang & Sons Ltd Location: Unit 3, Addison Road, Port Talbot, SA12 6HZ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14NE (E)	657	9	275327 190057
104	Points of Interest - Commercial Services Name: T Lang & Sons Ltd T/A Fairfield Garage Location: Unit 3, Addison Road, Port Talbot, SA12 6HZ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14NE (E)	685	9	275371 190016
105	Points of Interest - Commercial Services Name: T Lang & Sons Aberavon Ltd Location: 29 Maesgwyn Street, Port Talbot, SA12 6PF Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14NE (E)	667	9	275385 189868
105	Points of Interest - Commercial Services Name: Paul's M O T Centre Location: Unit 48 Port Talbot Workshops, Addison Road, Port Talbot, SA12 6HZ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14NE (E)	734	9	275442 189935
105	Points of Interest - Commercial Services Name: Akins Garage & Autocare Location: Frederick Street, Port Talbot, SA12 6BX Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14NE (E)	780	9	275474 190002
105	Points of Interest - Commercial Services Name: Talbot Flyers Location: 5 Station Terrace, Port Talbot, SA12 6BZ Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A14NE (E)	796	9	275502 189947
106	Points of Interest - Commercial Services Name: K Roberts Motors Location: 63 Sandfields Road, Port Talbot, SA12 6LR Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15NW (E)	967	9	275641 190096
106	Points of Interest - Commercial Services Name: Fairfield Garage Location: 63 Sandfields Road, Port Talbot, SA12 6LR Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15NW (E)	967	9	275642 190096
107	Points of Interest - Education and Health Name: Port Talbot General Hospital Location: Hospital Road, Port Talbot, SA12 6PD Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A14NW (E)	540	9	275247 189915
108	Points of Interest - Education and Health Name: Neath Port Talbot Hospital Location: Baglan Way, Port Talbot, SA12 7BX Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A19NE (NE)	946	9	275402 190466

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
108	Points of Interest - Education and Health Name: Neath Port Talbot Hospital Location: Baglan Way, Port Talbot, SA12 7BX Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A19NE (NE)	946	9	275402 190466
108	Points of Interest - Education and Health Name: Neath Port Talbot Hospital Location: Baglan Way, Port Talbot, SA12 7BX Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A19NE (NE)	946	9	275402 190466
108	Points of Interest - Education and Health Name: Neath Port Talbot Hospital Location: Baglan Way, Port Talbot, SA12 7BX Category: Health Practitioners and Establishments Class Code: Accident & Emergency Department Positional Accuracy: Positioned to address or location	A19NE (NE)	946	9	275402 190466
108	Points of Interest - Education and Health Name: Neath Port Talbot Hospital Location: Baglan Way, Port Talbot, SA12 7BX Category: Health Practitioners and Establishments Class Code: Accident & Emergency Department Positional Accuracy: Positioned to address or location	A19NE (NE)	946	9	275402 190466
108	Points of Interest - Education and Health Name: Neath Port Talbot Hospital Location: Baglan Way, Port Talbot, SA12 7BX Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A19NE (NE)	946	9	275402 190466
108	Points of Interest - Education and Health Name: Groeswen Hospital Location: Margam Road, Port Talbot, SA4 2LH Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A19NE (NE)	953	9	275395 190484
109	Points of Interest - Manufacturing and Production Name: Port Talbot Workshops Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A14NE (E)	698	9	275403 189943
110	Points of Interest - Manufacturing and Production Name: Factory Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A18NE (N)	789	9	274736 190722
110	Points of Interest - Manufacturing and Production Name: Factory Location: SA12 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to address or location	A18NE (N)	796	9	274743 190727
111	Points of Interest - Manufacturing and Production Name: Tank Location: SA12 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A14SE (E)	807	9	275531 189761
112	Points of Interest - Manufacturing and Production Name: Tank Location: SA12 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A23SW (N)	957	9	274588 190916
113	Points of Interest - Public Infrastructure Name: Murco Service Station Location: Princes Margaret Way, Port Talbot, SA12 7PE Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A12NE (NW)	242	9	274245 189952

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
113	Points of Interest - Public Infrastructure Name: Texaco Location: Princes Margaret Way, Port Talbot, SA12 7PE Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A12NE (NW)	242	9	274245 189951
113	Points of Interest - Public Infrastructure Name: Port Talbot Murco Service Station Location: Princess Margaret Way, Aberavon, Port Talbot, West Glamorgan, SA12 7PE Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A12NE (NW)	245	9	274243 189960
113	Points of Interest - Public Infrastructure Name: Port Talbot Murco Service Station Location: Princes Margaret Way, Port Talbot, SA12 7PE Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A12NE (NW)	247	9	274242 189965
114	Points of Interest - Public Infrastructure Name: Mortuary Location: Not Supplied Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A14NW (E)	549	9	275239 189981
115	Points of Interest - Public Infrastructure Name: Sandfields Police Station Location: Dew Road, Port Talbot, West Glamorgan, SA12 7HE Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A18NW (N)	608	9	274421 190561
115	Points of Interest - Public Infrastructure Name: Sandfields Police Station Location: Dew Road, Sandfields, Port Talbot, SA12 7HE Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A18NW (N)	610	9	274420 190562
116	Points of Interest - Public Infrastructure Name: Outfall Location: SA12 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A14SE (E)	914	9	275607 189547
116	Points of Interest - Public Infrastructure Name: Outfall Location: SA12 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A15SW (E)	931	9	275635 189593
117	Points of Interest - Public Infrastructure Name: Bus Depot Location: SA12 Category: Public Transport, Stations and Infrastructure Class Code: Bus and Coach Stations, Depots and Companies Positional Accuracy: Positioned to an adjacent address or location	A23SW (N)	942	9	274564 190903
118	Points of Interest - Public Infrastructure Name: Weir Location: SA12 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A9NE (SE)	992	9	275524 189196
119	Points of Interest - Recreational and Environmental Name: Playground Location: Seaward Avenue (Rhodfa Tuar Mor), SA12 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A13NW (NW)	121	9	274387 189997
119	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	A13NW (NW)	122	9	274382 189991

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
120	Points of Interest - Recreational and Environmental Name: Playground Location: Sandown Road (Heol Sandown), SA12 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A14NW (E)	294	9	274976 189953
120	Points of Interest - Recreational and Environmental Name: Playground Location: Sandown Road (Heol Sandown), SA12 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A14NW (NE)	300	9	274978 189962
120	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	A14NW (E)	331	9	275011 189965
121	Points of Interest - Recreational and Environmental Name: Skateboard Park Location: The Princess Margaret Way (Ffordd Y Dywysoges Margared), SA12 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A17SW (NW)	695	9	273868 190247
122	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	A9NE (SE)	817	9	275386 189304

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices City and County of Swansea - Environmental Health Department Neath Port Talbot County Borough Council - Environmental Health Department	January 2015 March 2015	Annual Rolling Update Annual Rolling Update
Discharge Consents Environment Agency - Welsh Region Natural Resources Wales	August 2014 July 2019	Quarterly Quarterly
Enforcement and Prohibition Notices Environment Agency - Welsh Region	March 2013	Annual Rolling Update
Integrated Pollution Controls Environment Agency - Welsh Region	October 2008	Variable
Integrated Pollution Prevention And Control Natural Resources Wales Environment Agency - Welsh Region	April 2019 July 2019	Quarterly Quarterly
Local Authority Integrated Pollution Prevention And Control Swansea Bay Port Health Authority Neath Port Talbot County Borough Council - Environmental Health Department City and County of Swansea - Environmental Health Department	April 2014 August 2012 June 2014	Variable Variable Variable
Local Authority Pollution Prevention and Controls Swansea Bay Port Health Authority City and County of Swansea - Environmental Health Department Neath Port Talbot County Borough Council - Environmental Health Department	April 2014 June 2014 March 2014	Annually Annual Rolling Update Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements Swansea Bay Port Health Authority City and County of Swansea - Environmental Health Department Neath Port Talbot County Borough Council - Environmental Health Department	April 2014 June 2014 March 2014	Variable Variable Variable
Nearest Surface Water Feature Ordnance Survey	January 2019	
Pollution Incidents to Controlled Waters Environment Agency - Welsh Region	December 1998	Not Applicable
Prosecutions Relating to Authorised Processes Environment Agency - Welsh Region Natural Resources Wales	March 2013 March 2013	Annual Rolling Update Annual Rolling Update
Prosecutions Relating to Controlled Waters Environment Agency - Welsh Region Natural Resources Wales	March 2013 March 2013	Annual Rolling Update Annual Rolling Update
Registered Radioactive Substances Natural Resources Wales Environment Agency - Welsh Region	January 2015 June 2016	Annually
River Quality Environment Agency - Head Office	November 2001	Not Applicable
Substantiated Pollution Incident Register Environment Agency Wales - South West Area Natural Resources Wales	July 2019 July 2019	Quarterly Quarterly
Water Abstractions Environment Agency - Welsh Region Natural Resources Wales	July 2019 July 2019	Quarterly Quarterly
Water Industry Act Referrals Natural Resources Wales Environment Agency - Welsh Region	July 2019 October 2017	Quarterly Quarterly
Groundwater Vulnerability Map Natural Resources Wales	June 2018	Annually

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

Waste	Version	Update Cycle
BGS Recorded Landfill Sites British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites Natural Resources Wales	July 2017	Quarterly
Integrated Pollution Control Registered Waste Sites Environment Agency - Welsh Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries) Environment Agency Wales - South West Area Natural Resources Wales	July 2018 July 2018	Quarterly Quarterly
Licensed Waste Management Facilities (Locations) Environment Agency Wales - South West Area Natural Resources Wales	July 2019 July 2019	Quarterly Quarterly
Local Authority Landfill Coverage City and County of Swansea - Environmental Health Department Neath Port Talbot County Borough Council - Environmental Health Department	May 2000 May 2000	Not Applicable Not Applicable
Local Authority Recorded Landfill Sites City and County of Swansea - Environmental Health Department Neath Port Talbot County Borough Council - Environmental Health Department	May 2000 September 2003	Not Applicable Not Applicable
Potentially Infilled Land (Non-Water) Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water) Landmark Information Group Limited	December 1999	Not Applicable
Registered Landfill Sites Environment Agency Wales - South West Area	March 2003	Not Applicable
Registered Waste Transfer Sites Environment Agency Wales - South West Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites Environment Agency Wales - South West Area	March 2003	Not Applicable
Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH) Health and Safety Executive	April 2018	Bi-Annually
Explosive Sites Health and Safety Executive	March 2017	Annually
Notification of Installations Handling Hazardous Substances (NIHHS) Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements City and County of Swansea - Planning Department Neath Port Talbot County Borough Council - Planning Department	January 2016 October 2015	Variable Variable
Planning Hazardous Substance Consents City and County of Swansea - Planning Department Neath Port Talbot County Borough Council - Planning Department	January 2016 October 2015	Variable Variable

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Estimated Soil Chemistry British Geological Survey - National Geoscience Information Service	October 2015	Annually
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	April 2019	Bi-Annually
BGS Urban Soil Chemistry British Geological Survey - National Geoscience Information Service	October 2015	Annually
BGS Urban Soil Chemistry Averages British Geological Survey - National Geoscience Information Service	October 2015	Annually
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	Annual Rolling Update
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	Annually
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	Annually

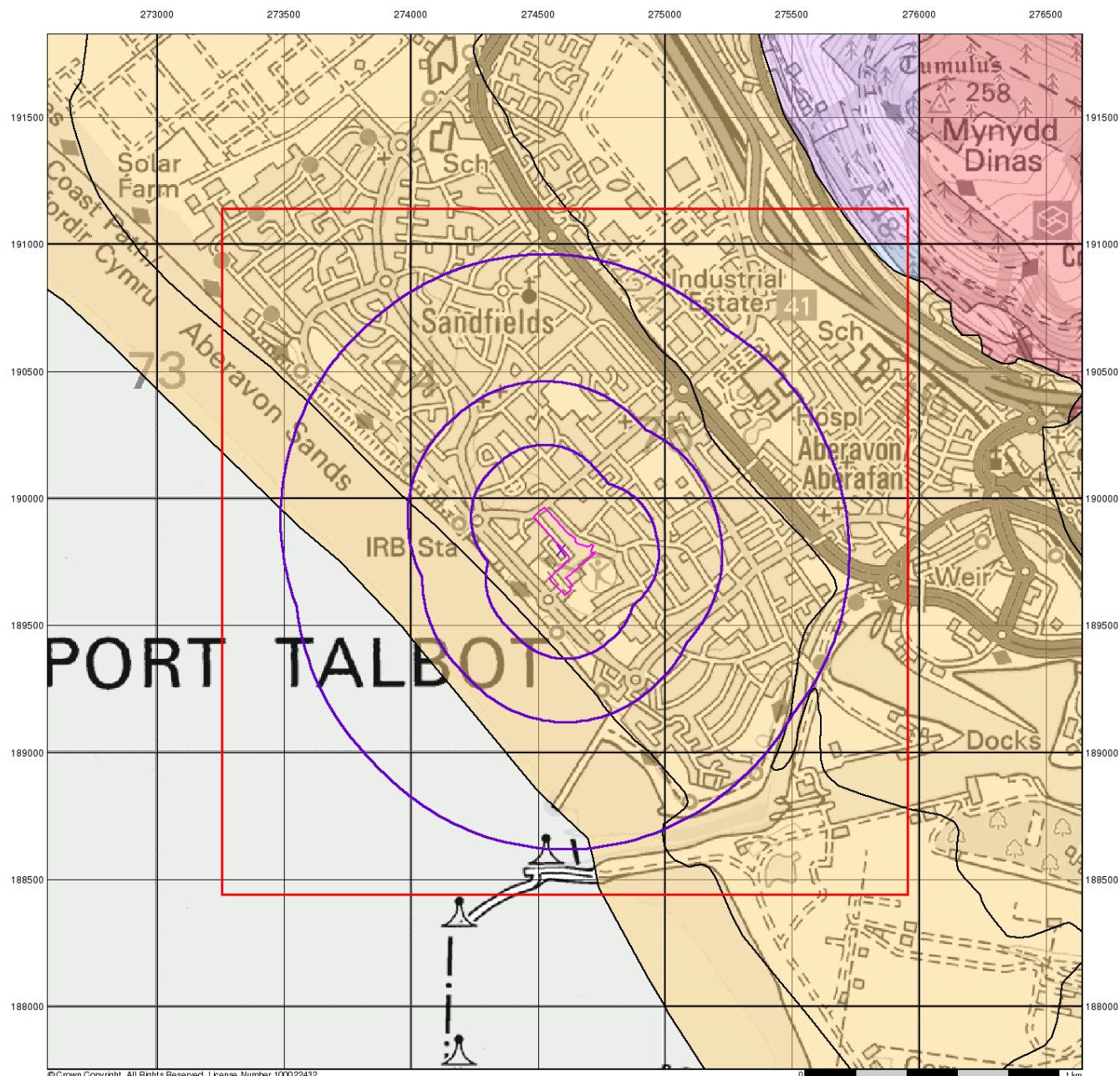
Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	July 2019	Quarterly
Fuel Station Entries Catalist Ltd - Experian	May 2019	Quarterly
Gas Pipelines National Grid	July 2014	
Points of Interest - Commercial Services PointX	July 2019	Quarterly
Points of Interest - Education and Health PointX	July 2019	Quarterly
Points of Interest - Manufacturing and Production PointX	July 2019	Quarterly
Points of Interest - Public Infrastructure PointX	July 2019	Quarterly
Points of Interest - Recreational and Environmental PointX	July 2019	Quarterly
Underground Electrical Cables National Grid	December 2015	
Sensitive Land Use	Version	Update Cycle
Ancient Woodland Natural Resources Wales	August 2018	Bi-Annually
Areas of Adopted Green Belt City and County of Swansea	March 2019	As notified
Areas of Outstanding Natural Beauty Natural Resources Wales	June 2019	Bi-Annually
Environmentally Sensitive Areas The National Assembly for Wales - GI Services (Department of Planning & Countryside)	January 2017	
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves City and County of Swansea Neath Port Talbot County Borough Council	August 2018 August 2018	Bi-Annually Bi-Annually
Marine Nature Reserves Natural Resources Wales	August 2018	Bi-Annually
National Nature Reserves Natural Resources Wales	June 2019	Bi-Annually
National Parks Natural Resources Wales	August 2018	Annually
Nitrate Vulnerable Zones Natural Resources Wales The National Assembly for Wales - GI Services (Department of Planning & Countryside)	July 2019 October 2005	Bi-Annually
Ramsar Sites Natural Resources Wales	July 2019	Bi-Annually
Sites of Special Scientific Interest Natural Resources Wales	March 2019	Bi-Annually
Special Areas of Conservation Natural Resources Wales	August 2018	Bi-Annually
Special Protection Areas Natural Resources Wales	August 2018	Bi-Annually

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	 British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
Centre for Ecology and Hydrology	 Centre for Ecology & Hydrology NATURAL ENVIRONMENT RESEARCH COUNCIL
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Peter Brett Associates	

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	Neath Port Talbot County Borough Council - Environmental Health Department Room 322, Neath Civic Centre, Neath, West Glamorgan, SA11 3QZ	Telephone: 01639 763333 Fax: 01693 763444 Website: www.neath-porttalbot.gov.uk
4	Environment Agency - National Customer Contact Centre (NCCC) PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
5	Ordnance Survey Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
6	Health and Safety Executive 5S.2 Redgrave Court, Merton Road, Bootle, L20 7HS	Website: www.hse.gov.uk
7	Neath Port Talbot County Borough Council - Planning Department Port Talbot Civic Centre, Port Talbot, SA13 1PJ	Telephone: 01639 763333 Fax: 01639 763444 Website: www.neath-porttalbot.gov.uk
8	The Coal Authority - Property Searches 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG	Telephone: 0345 762 6848 Fax: 01623 637 338 Email: groundstability@coal.gov.uk Website: www2.groundstability.com
9	PointX 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
-	Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	Landmark Information Group Limited Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

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



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Intégral Géotechnique

Groundwater Vulnerability

General

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

Agency and Hydrological

Bedrock Aquifers

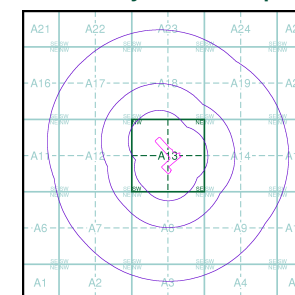
- High Vulnerability, Principal Aquifer
- High Vulnerability, Secondary Aquifer
- Medium Vulnerability, Principal Aquifer
- Medium Vulnerability, Secondary Aquifer
- Low Vulnerability, Principal Aquifer
- Low Vulnerability, Secondary Aquifer

Superficial Aquifers

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

- Unproductive Aquifer
- Soluble Rock

Site Sensitivity Context Map - Slice A



Order Details

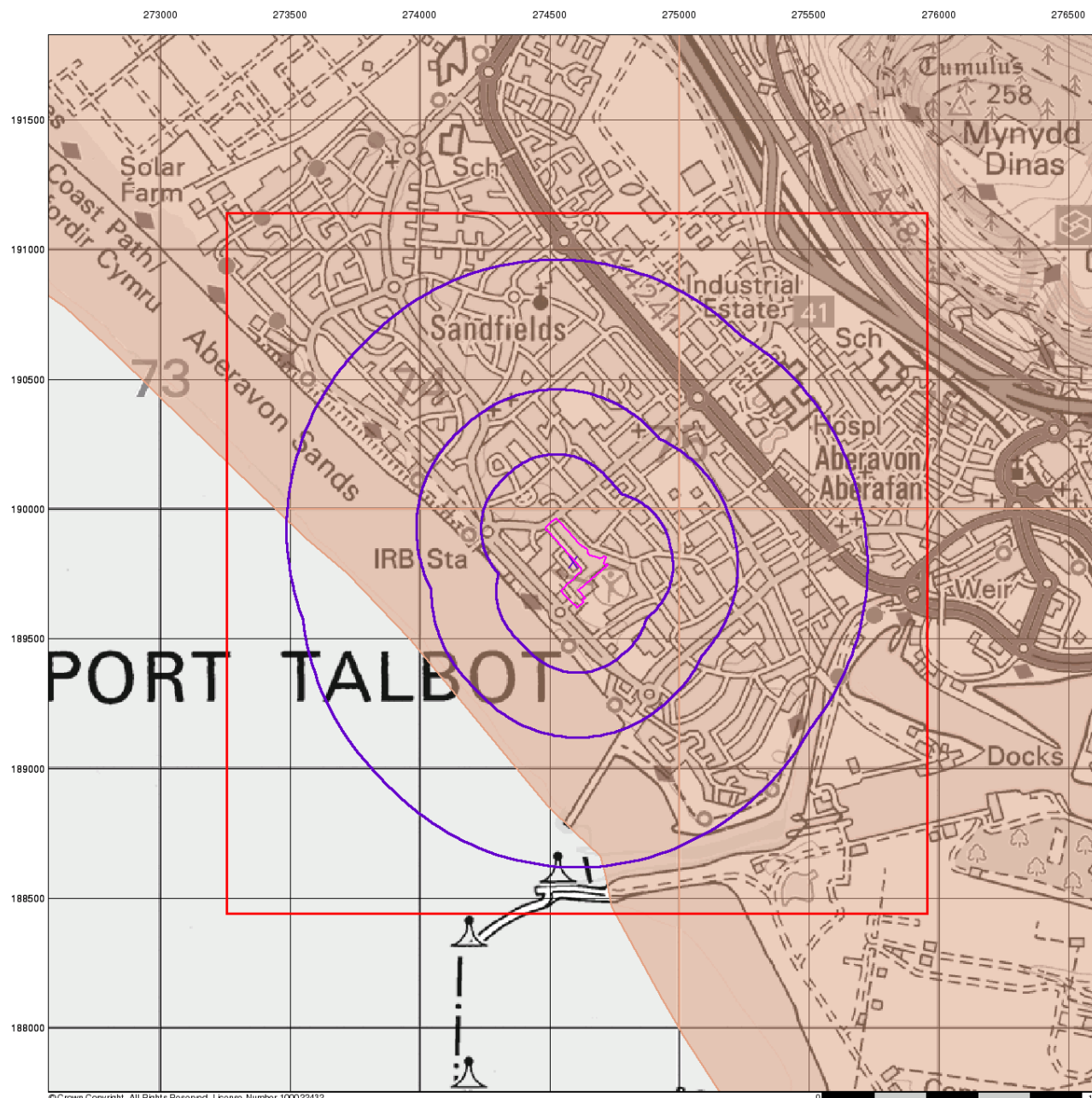
Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details

Site at 274650, 189780

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Intégral Géotechnique

Bedrock Aquifer Designation

General

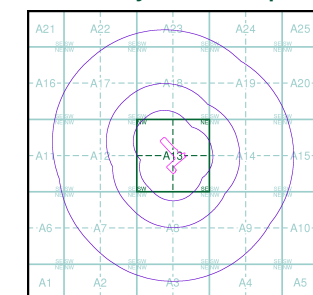
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

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



Order Details

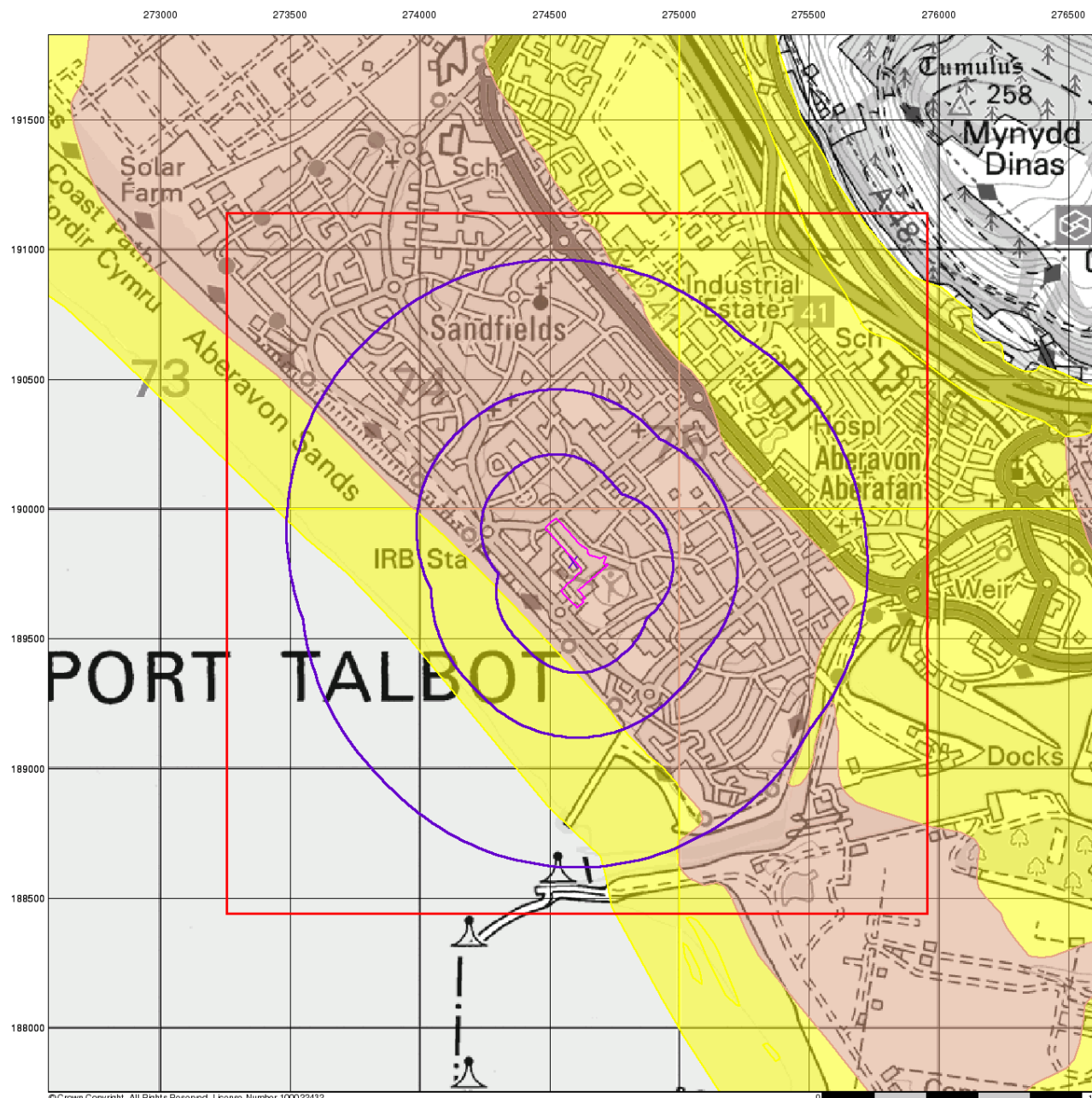
Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details

Site at 274650, 189780

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Intégral Géotechnique

Superficial Aquifer Designation

General

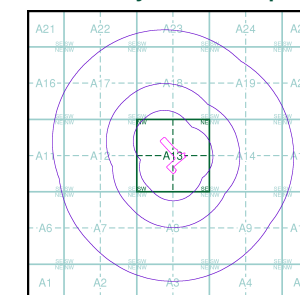
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

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



Order Details

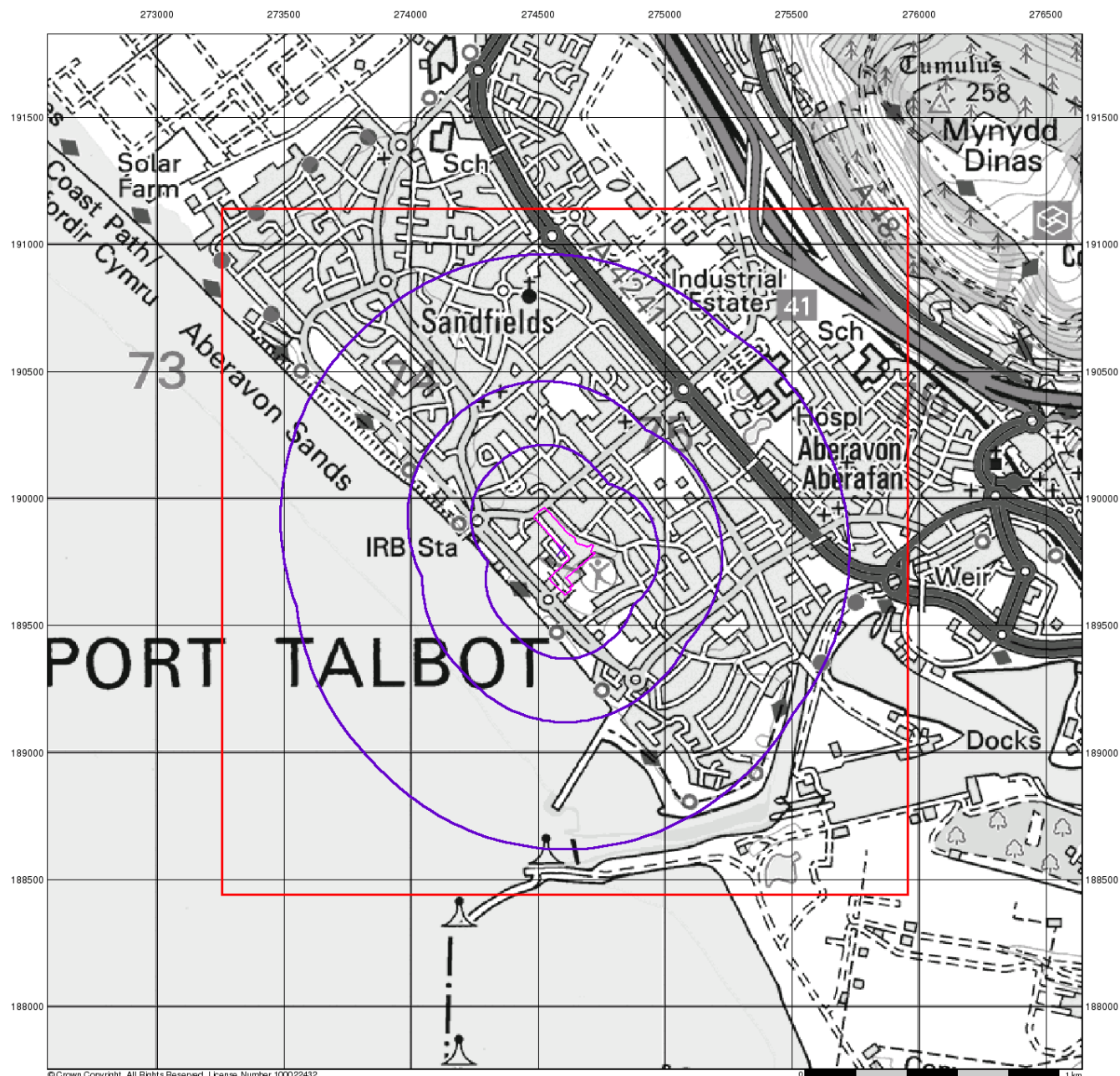
Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details

Site at 274650, 189780

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Intégral Géotechnique

Source Protection Zones

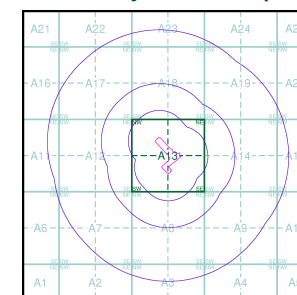
General

- 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



Order Details

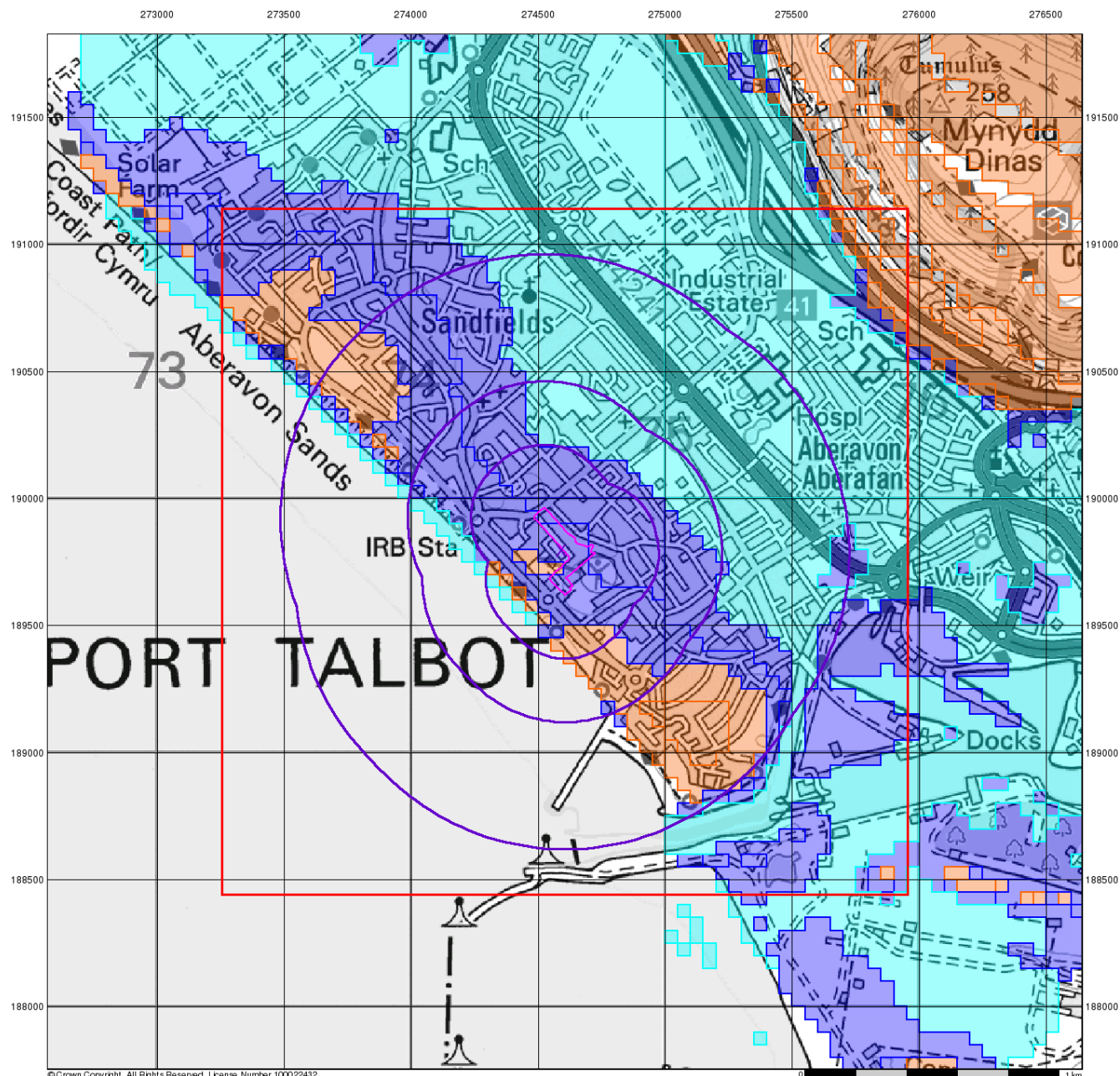
Order Number: 216203689_1_1
 Customer Ref: 12457/RAH
 National Grid Reference: 274590, 189800
 Slice: A
 Site Area (Ha): 2.47
 Search Buffer (m): 1000

Site Details

Site at 274650, 189780

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Intégral Géotechnique

BGS Flood GFS Data

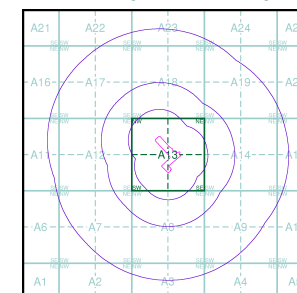
General

- 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



Order Details

Order Number: 216203689_1_1
 Customer Ref: 12457/RAH
 National Grid Reference: 274590, 189800
 Slice: A
 Site Area (Ha): 2.47
 Search Buffer (m): 1000

Site Details

Site at 274650, 189780

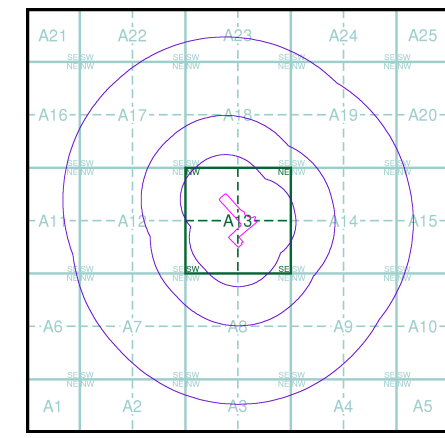
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Intégral Géotechnique

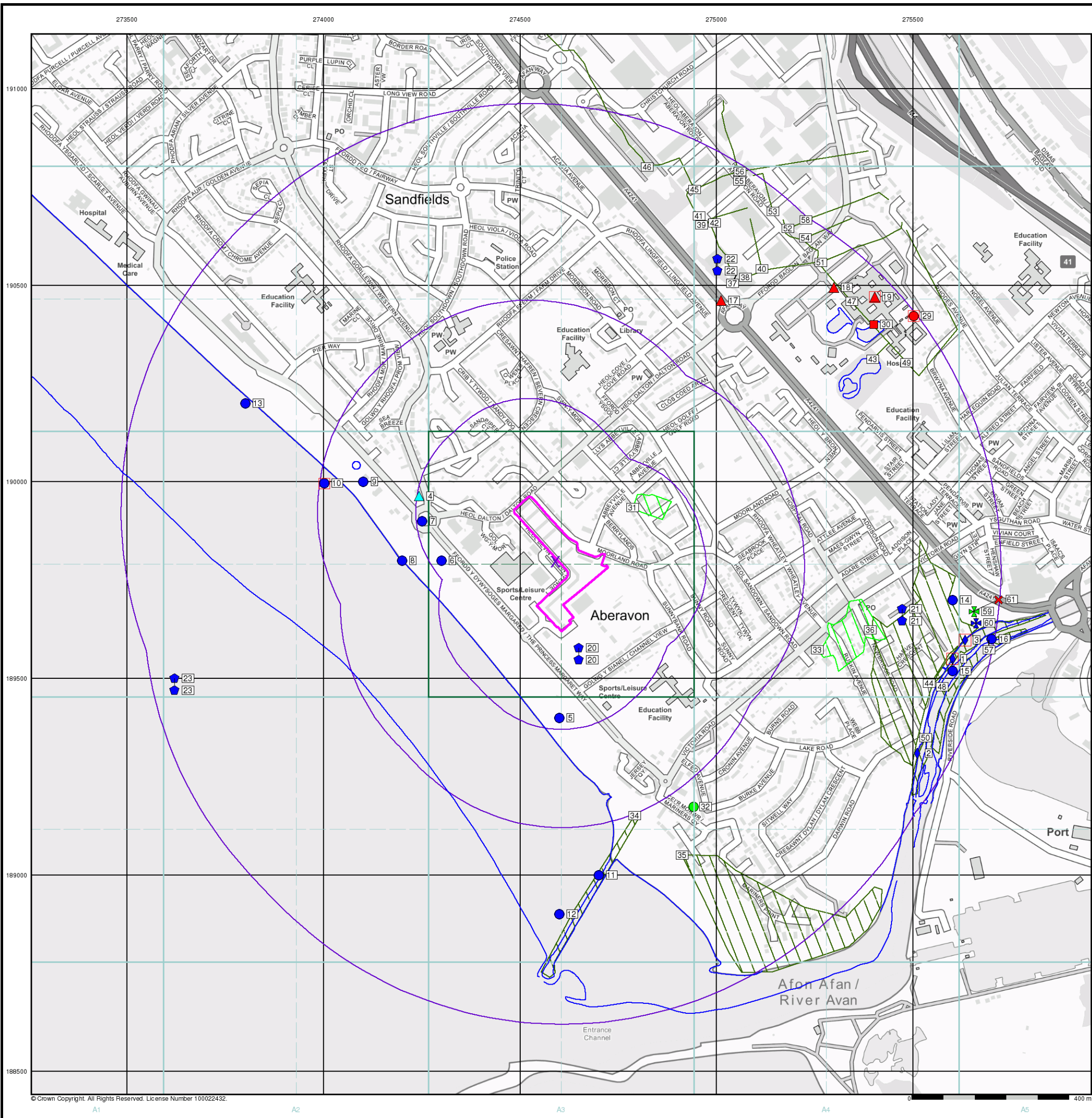
- General**
 - Specified Site
 - Specified Buffer(s)
 - Bearing Reference Point
 - Map ID
 - Several of Type at Location
- Agency and Hydrological**
 - Contaminated Land Register Entry or Notice (Location)
 - Contaminated Land Register Entry or Notice
 - Discharge Consent
 - Enforcement or Prohibition 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
 - BGS Recorded Mineral Site
- Waste**
 - BGS Recorded Landfill Site (Location)
 - EA Historic Landfill (Buffered Point)
 - EA Historic Landfill (Polygon)
 - Integrated Pollution Control Registered Waste Site
 - Licensed Waste Management Facility (Landfill Boundary)
 - Licensed Waste Management Facility (Location)
 - Local Authority Recorded Landfill Site (Location)
 - Local Authority Recorded Landfill Site
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Registered Landfill Site (Location)
 - Registered Landfill Site (Point Buffered to 100m)
 - Registered Landfill Site (Point Buffered to 250m)
 - Registered Waste Transfer Site (Location)
 - Registered Waste Transfer Site
 - Registered Waste Treatment or Disposal Site (Location)
 - Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Slice A



Order Details
Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details
Site at 274650, 189780



Intégral Géotechnique

Industrial Land Use Map

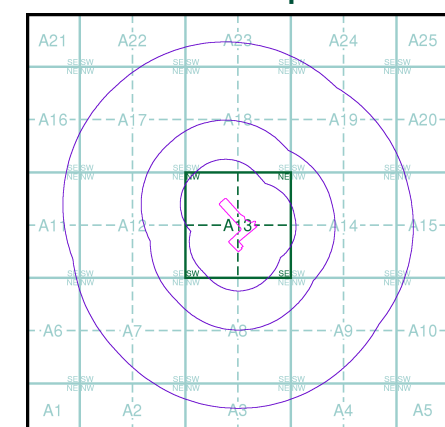
General

- 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

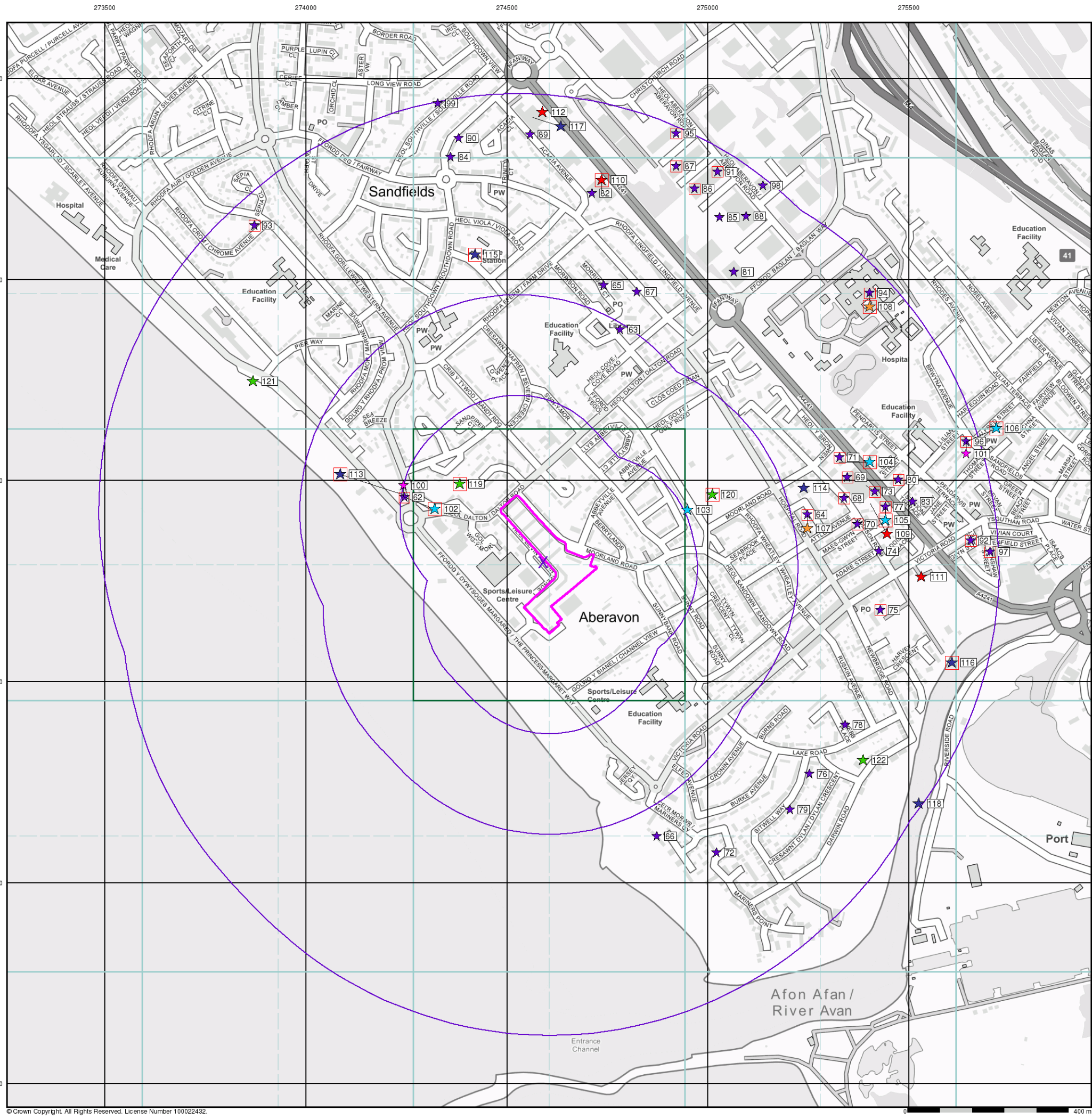
Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details

Site at 274650, 189780

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Intégral Géotechnique

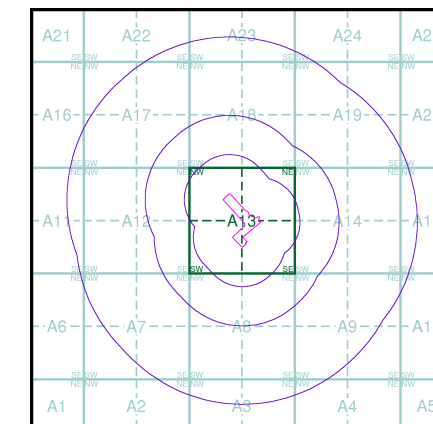
General

- 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



Order Details

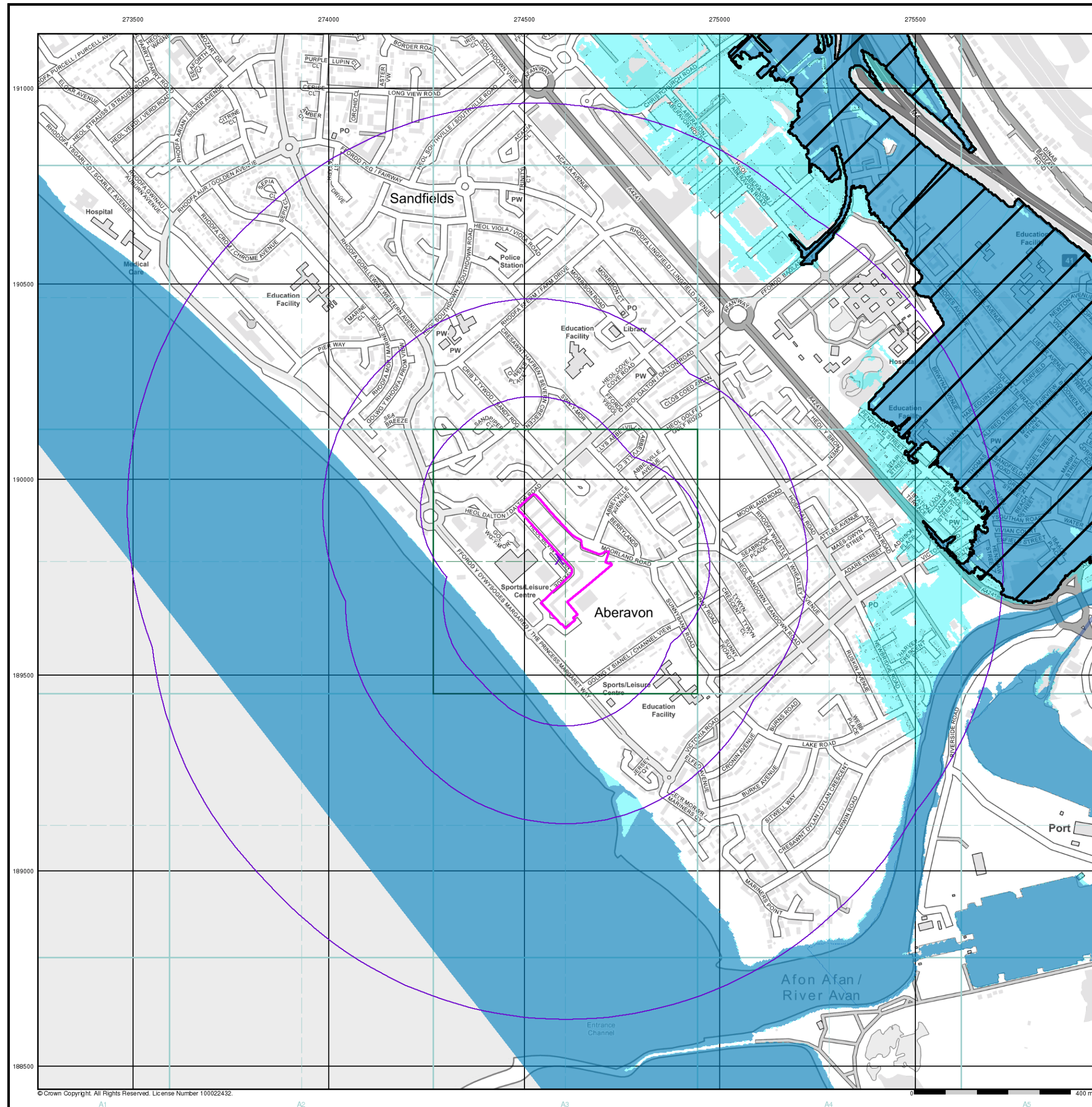
Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details

Site at 274650, 189780

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General

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

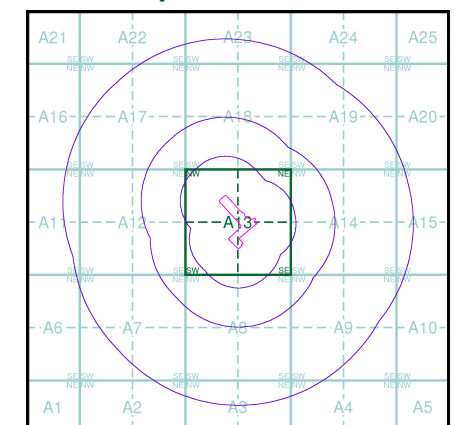
Agency and Hydrological (Boreholes)

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

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

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

Borehole Map - Slice A



Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details

Site at 274650, 189780

Intégral Géotechnique

General

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

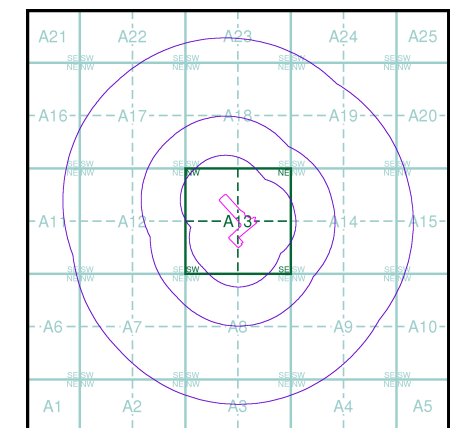
OS Water Network Data

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

Contours (height in meters)

- Standard Contour 105 100 95
- Master Contour
- Spot Height 167.3
- MLW Mean Low Water
- MHW Mean High Water

OS Water Network Map - Slice A



Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details

Site at 274650, 189780

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General

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

Risk of Flooding from Surface Water

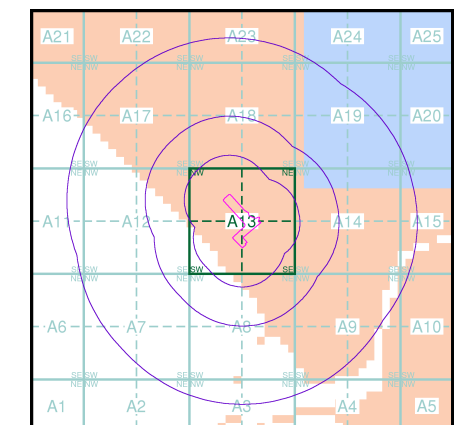
- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

Suitability

See the suitability map below

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

E/NRW Suitability Map - Slice A



Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details

Site at 274650, 189780

Intégral Géotechnique

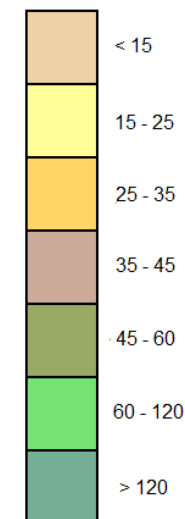
General

Specified Site Specified Buffer(s) Bearing Reference Point

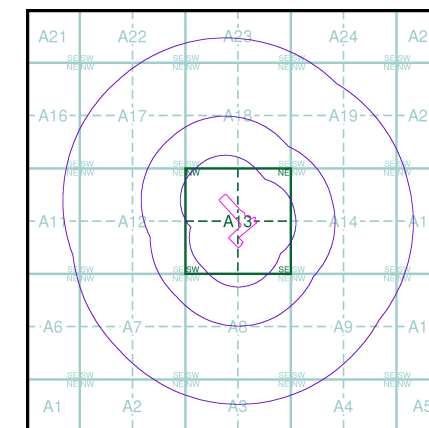
Urban Soil Chemistry Arsenic

BGS Urban Soil Chemistry Measured Concentration Values (mg/kg)

Arsenic Concentrations mg/kg



Urban Soil Chemistry Arsenic - Slice A



Order Details

Order Details: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search buffer (m): 1000

Site Details

Site at 274650, 189780

Landmark
INFORMATION GROUP

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

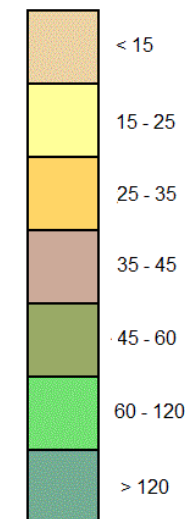
Intégral Géotechnique

General

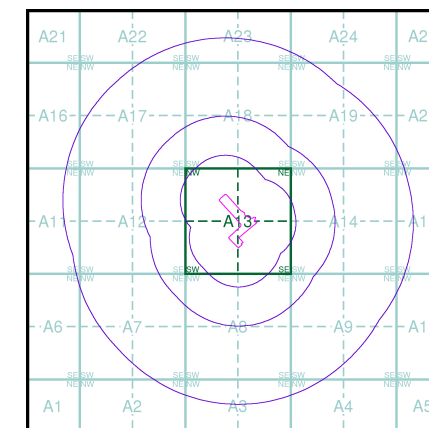
Specified Site Specified Buffer(s) Bearing Reference Point

Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg



Estimated Soil Chemistry Arsenic - Slice A



Order Details

Order Details: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search buffer (m): 1000

Site Details

Site at 274650, 189780

Landmark
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Intégral Géotechnique

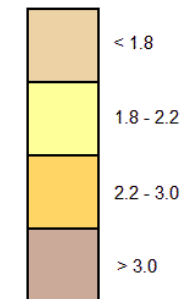
General

Specified Site Specified Buffer(s) Bearing Reference Point

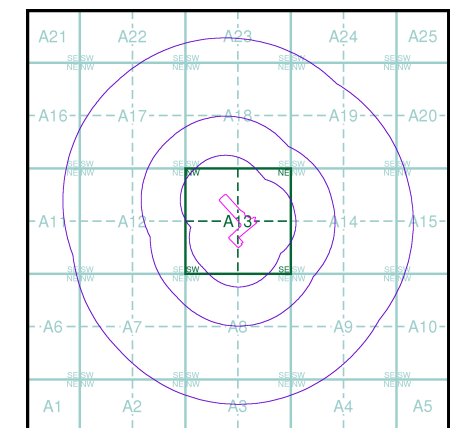
Urban Soil Chemistry Cadmium

BGS Urban Soil Chemistry Measured Concentration Values (mg/kg)

Cadmium Concentrations mg/kg



Urban Soil Chemistry Cadmium - Slice A



Order Details

Order Details: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search buffer (m): 1000

Site Details

Site at 274650, 189780

Landmark
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Tel: 0844 844 9952
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Web: www.envirocheck.co.uk

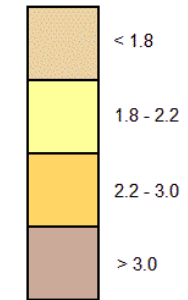
Intégral Géotechnique

General

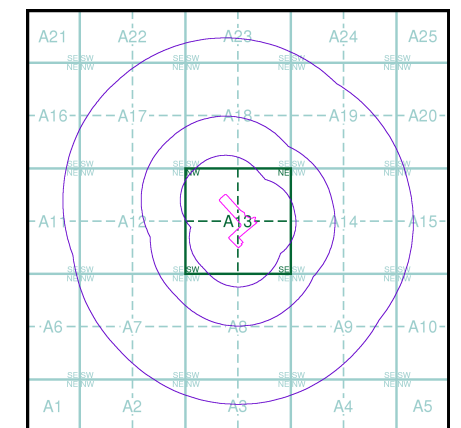
Specified Site Specified Buffer(s) Bearing Reference Point

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg



Estimated Soil Chemistry Cadmium - Slice A



Order Details

Order Details: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search buffer (m): 1000

Site Details

Site at 274650, 189780

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Web: www.envirocheck.co.uk

Intégral Géotechnique

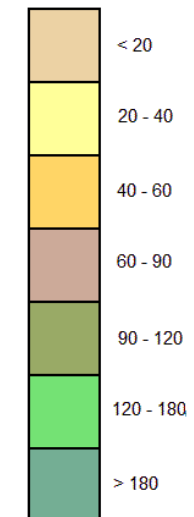
General

Specified Site Specified Buffer(s) Bearing Reference Point

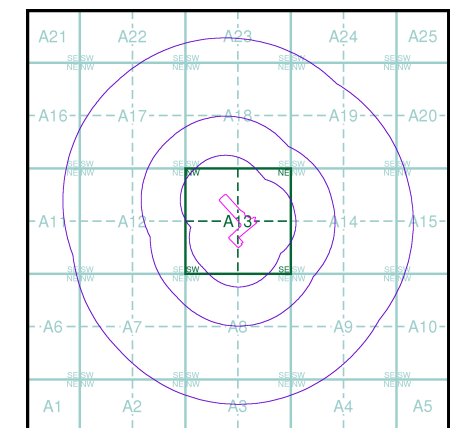
Urban Soil Chemistry Chromium

BGS Urban Soil Chemistry Measured Concentration Values (mg/kg)

Chromium Concentrations mg/kg



Urban Soil Chemistry Chromium - Slice A



Order Details

Order Details: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search buffer (m): 1000

Site Details

Site at 274650, 189780

Landmark
INFORMATION GROUP

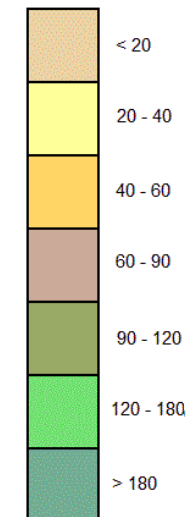
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

General

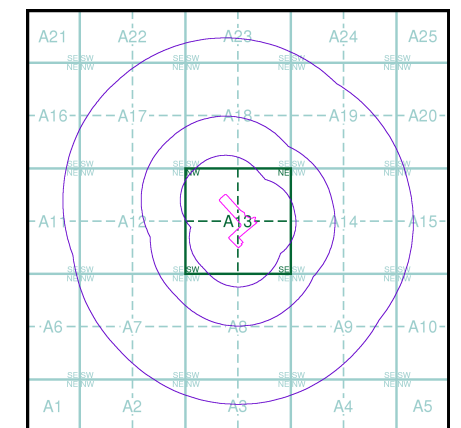
Specified Site Specified Buffer(s) Bearing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg



Estimated Soil Chemistry Chromium - Slice A



Order Details

Order Details: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search buffer (m): 1000

Site Details

Site at 274650, 189780

Intégral Géotechnique

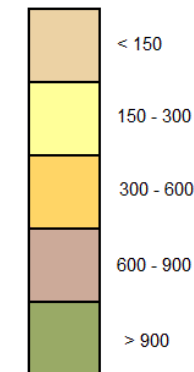
General

Specified Site Specified Buffer(s) Bearing Reference Point

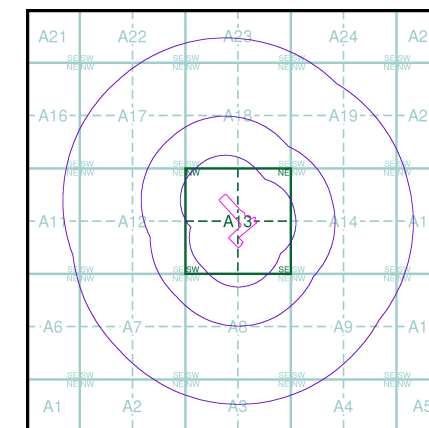
Urban Soil Chemistry Lead

BGS Urban Soil Chemistry Measured Concentration Values (mg/kg)

Lead Concentrations mg/kg



Urban Soil Chemistry Lead - Slice A



Order Details

Order Details: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search buffer (m): 1000

Site Details

Site at 274650, 189780

Landmark
INFORMATION GROUP

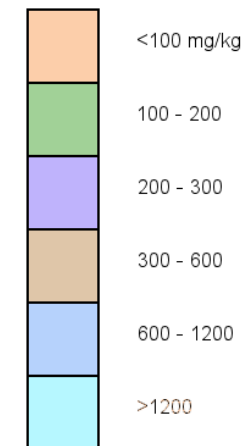
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

General

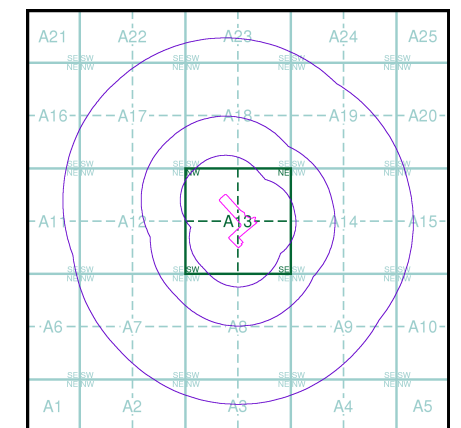
Specified Site Specified Buffer(s) Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg



Estimated Soil Chemistry Lead - Slice A



Order Details

Order Details: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search buffer (m): 1000

Site Details

Site at 274650, 189780

Intégral Géotechnique

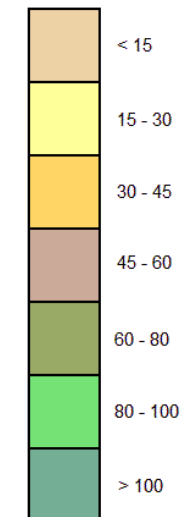
General

Specified Site Specified Buffer(s) Bearing Reference Point

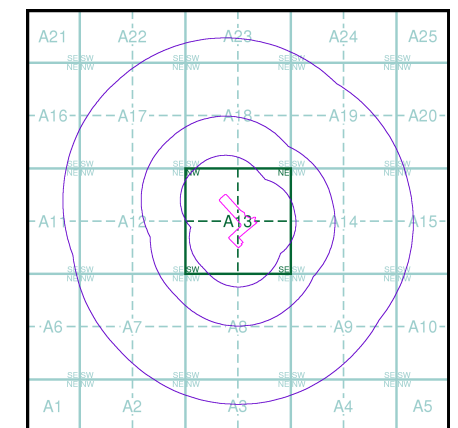
Urban Soil Chemistry Nickel

● BGS Urban Soil Chemistry Measured Concentration Values (mg/kg)

Nickel Concentrations mg/kg



Urban Soil Chemistry Nickel - Slice A



Order Details

Order Details: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search buffer (m): 1000

Site Details

Site at 274650, 189780

Landmark
INFORMATION GROUP

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

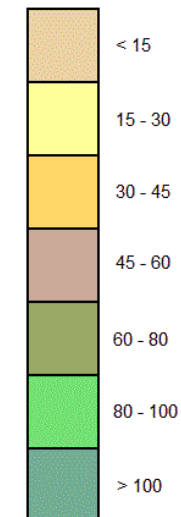
Intégral Géotechnique

General

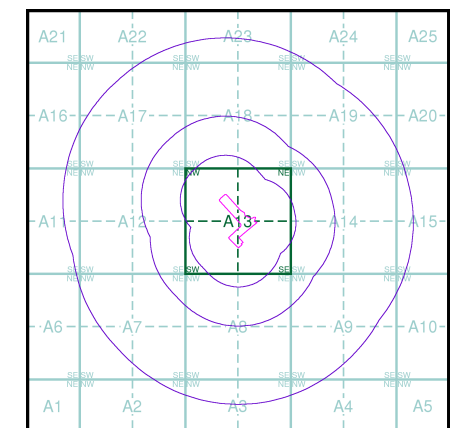
Specified Site Specified Buffer(s) Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg



Estimated Soil Chemistry Nickel - Slice A



Order Details

Order Details: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search buffer (m): 1000

Site Details

Site at 274650, 189780

Landmark
INFORMATION GROUP

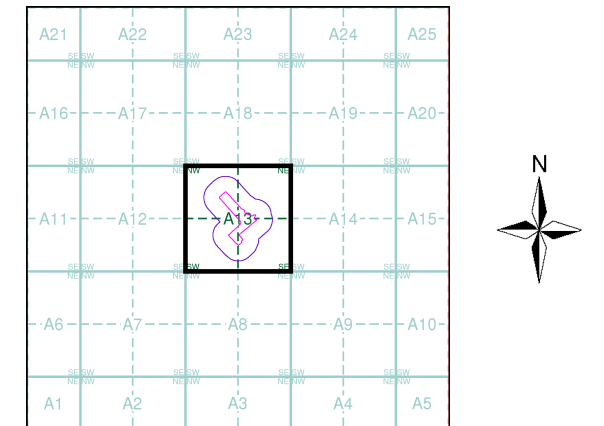
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Intégral Géotechnique

General

- Specified Site
 - Specified Buffer(s)
 - Bearing Reference Point
 - Map ID
 - Several of Types at Location
 - Pylon
 - Overhead Transmission Line
- ## Agency and Hydrological
- Contaminated Land Register Entry or Notice (Location)
 - Contaminated Land Register Entry or Notice
 - Discharge Consent
 - Enforcement or Prohibition Notice
 - Integrated Pollution Control
 - Integrated Pollution Prevention Control
 - Local Authority Integrated Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control Enforcement
 - 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
 - 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 (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

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Plot Buffer (m): 100

Site Details

Site at 274650, 189780

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
	LSGR	Landscaped Ground (Undivided)	Artificially Modified Ground	Not Supplied - Holocene
	MGR	Made Ground (Undivided)	Artificial Deposit	Not Supplied - Holocene
	SLIP	Landslide Deposit	Unknown/Unclassified Entry	Not Supplied - Quaternary

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	SUPNM	Superficial Theme Not Mapped [For Digital Map Use Only]	Unknown/Unclassified Entry	Not Supplied - Not Supplied
	TFD	Tidal Flat Deposits	Clay, Silt and Sand	Not Supplied - Holocene
	TILLD	Till, Devensian	Diamicton	Not Supplied - Devensian
	BSA	Blown Sand	Sand	Not Supplied - Quaternary
	MBD	Marine Beach Deposits	Sand	Not Supplied - Quaternary
	MBD	Marine Beach Deposits	Sand and Gravel	Not Supplied - Quaternary
	RSBD	Raised Storm Beach Deposits	Sand and Gravel	Not Supplied - Quaternary
	STOB	Storm Beach Deposits	Gravel	Not Supplied - Quaternary
	HEAD	Head	Clay, Silt, Sand and Gravel	Not Supplied - Quaternary
	ALF	Alluvial Fan Deposits	Sand and Gravel	Not Supplied - Quaternary

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	BD	Brithdir Member	Sandstone	Not Supplied - Westphalian
	SWUCM	South Wales Upper Coal Measures Formation	Mudstone, Siltstone and Sandstone	Not Supplied - Westphalian
	LLFB	Llynfi Member	Sandstone	Not Supplied - Westphalian
	LLFB	Llynfi Member	Mudstone, Siltstone and Sandstone	Not Supplied - Westphalian

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	RA	Rhondda Member	Mudstone, Siltstone and Sandstone	Not Supplied - Westphalian
	RA	Rhondda Member	Sandstone	Not Supplied - Westphalian
	SWMCM	South Wales Middle Coal Measures Formation	Mudstone, Siltstone and Sandstone	Not Supplied - Westphalian
	SWLCM	South Wales Lower Coal Measures Formation	Mudstone, Siltstone and Sandstone	Not Supplied - Westphalian
		Faults		
		Rock Segments		

Intégral Géotechnique

Geology 1:50,000 Maps

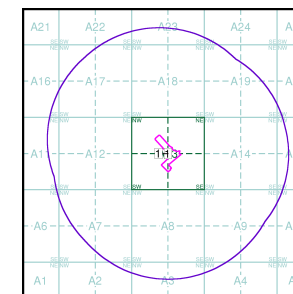
This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published 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: 247
Map Name: Swansea
Map Date: 2011
Bedrock Geology: Available
Superficial Geology: Available
Artificial Geology: Available
Faults: Not Supplied
Landslip: Available
Rock Segments: Not Supplied

Geology 1:50,000 Maps - Slice A



Order Details:

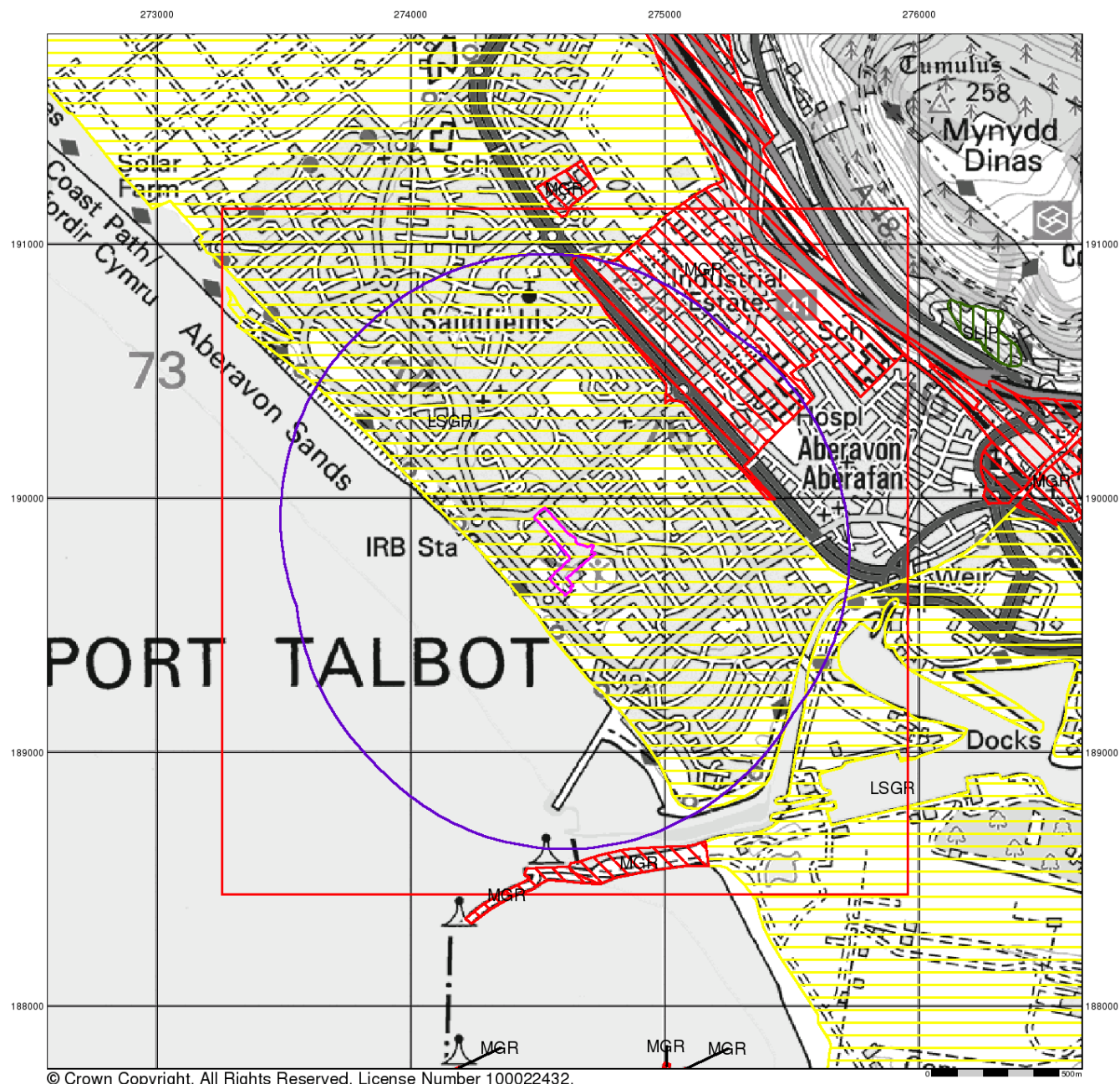
Order Number: 216203689_1_1
Customer Reference: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details:

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Intégral Géotechnique

Artificial Ground and Landslip

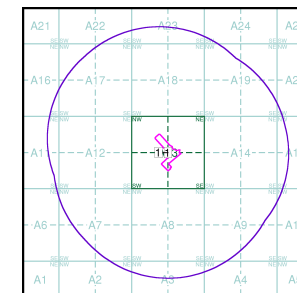
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions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



Order Details:

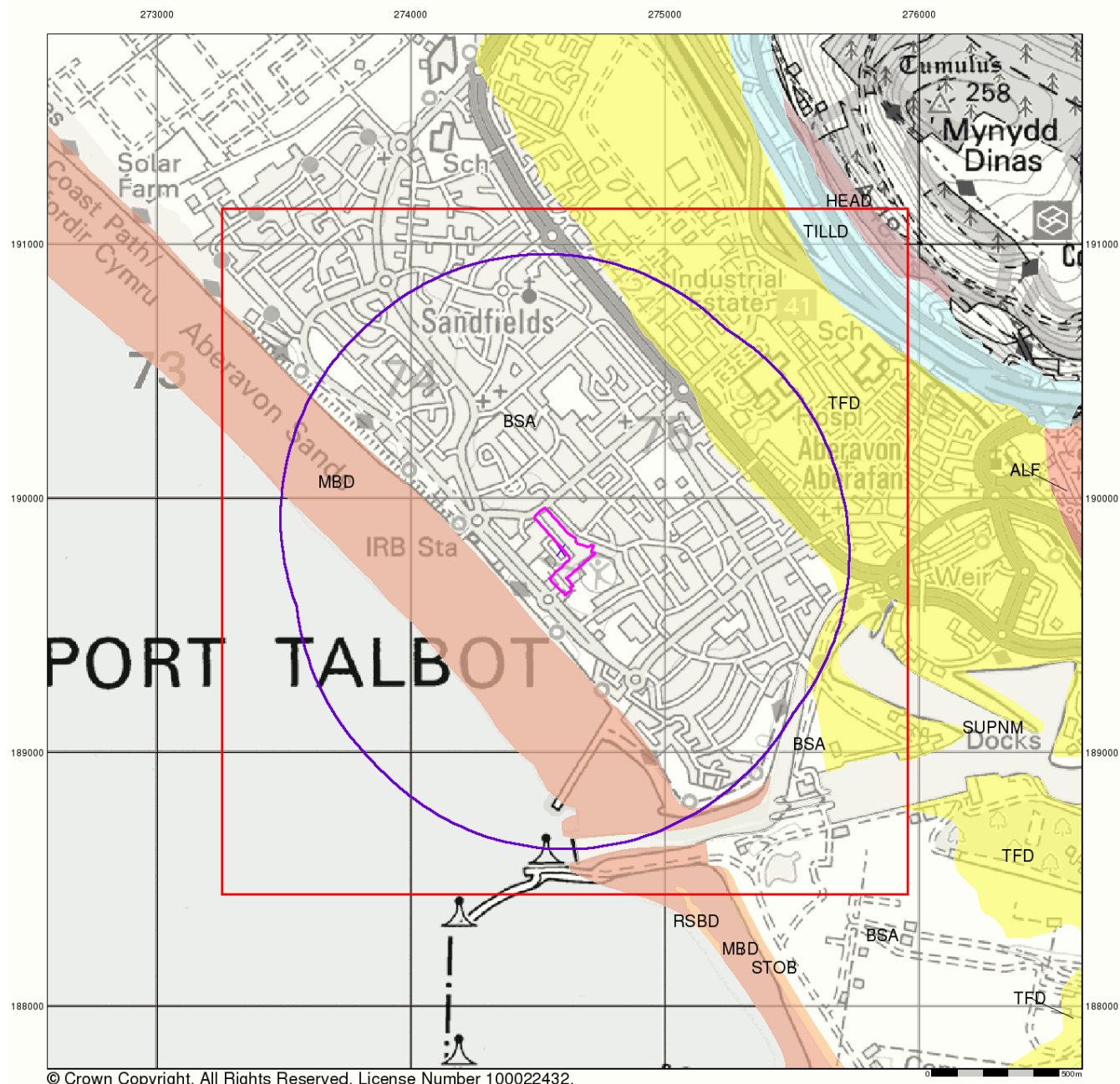
Order Number: 216203689_1_1
 Customer Reference: 12457/RAH
 National Grid Reference: 274590, 189800
 Slice: A
 Site Area (Ha): 2.47
 Search Buffer (m): 1000

Site Details:

Site at 274650, 189780

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Intégral Géotechnique

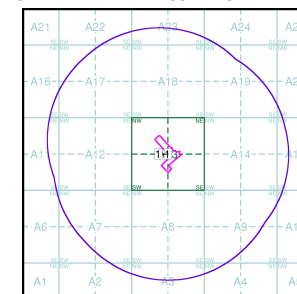
Superficial Geology

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



Order Details:

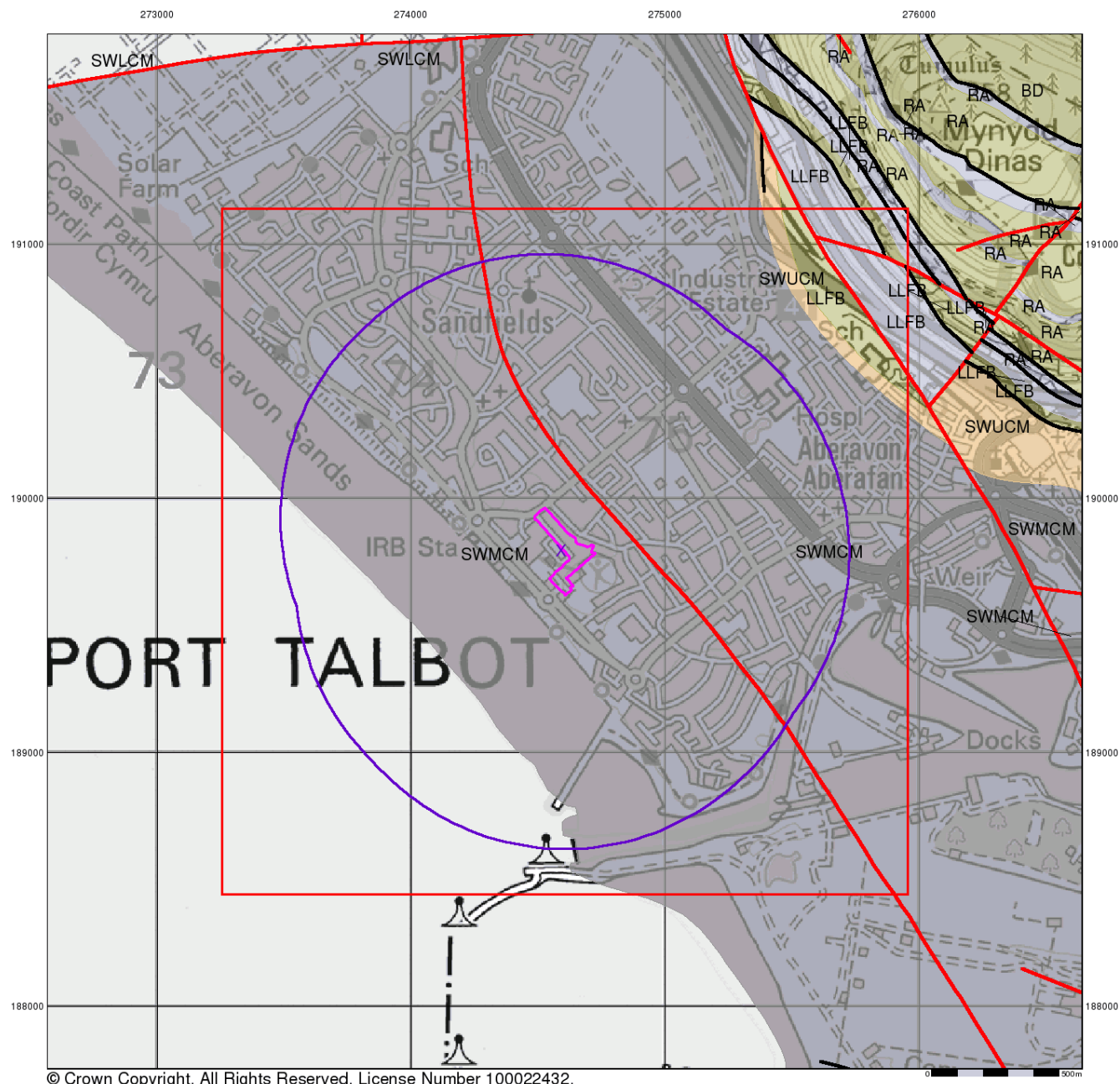
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Customer Reference: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details:

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Intégral Géotechnique

Bedrock and Faults

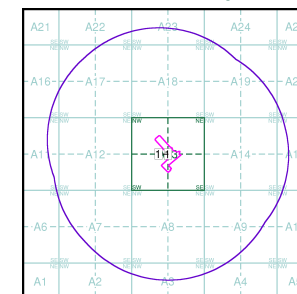
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

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:

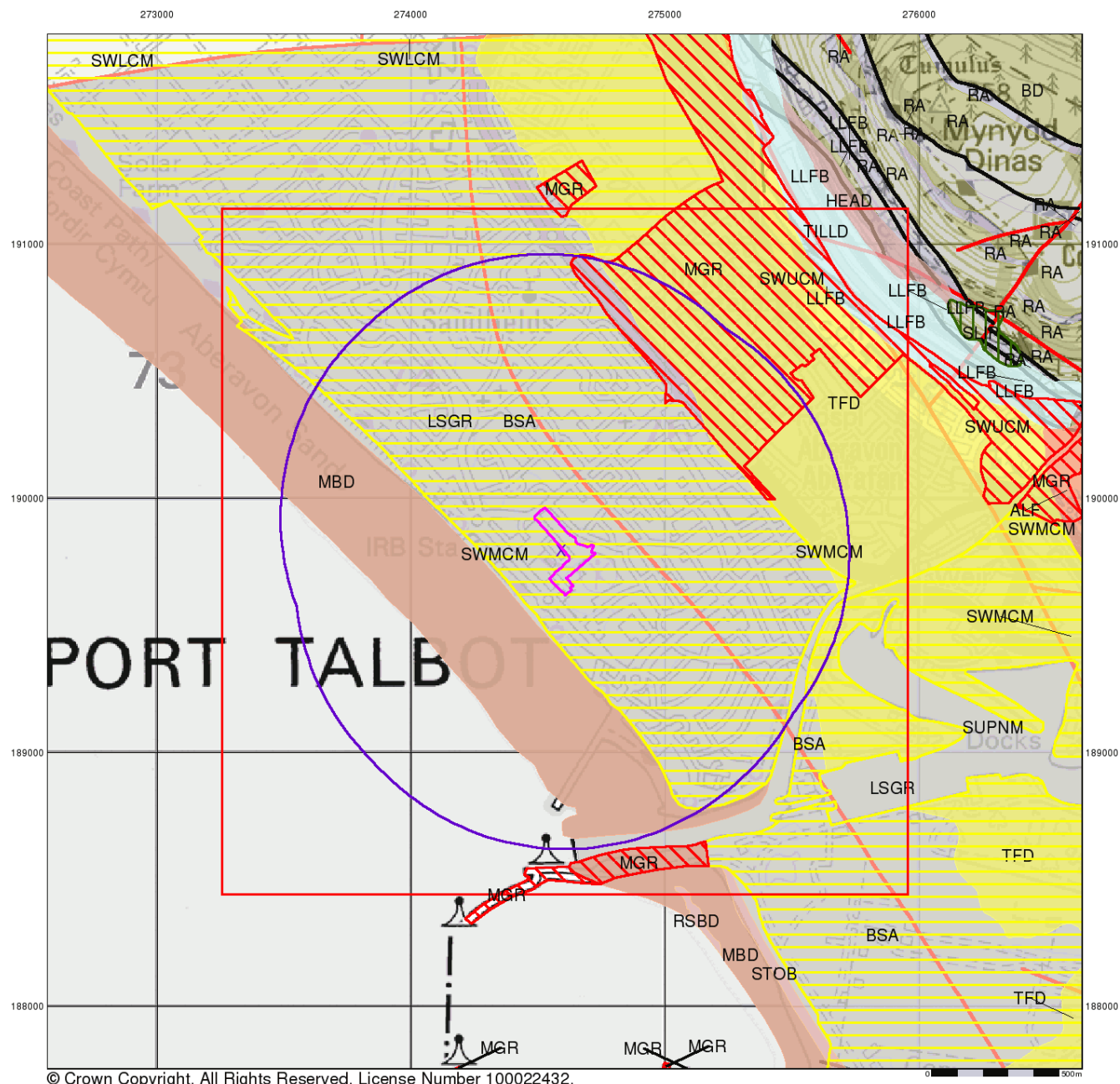
Order Number: 216203689_1_1
Customer Reference: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details:

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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.

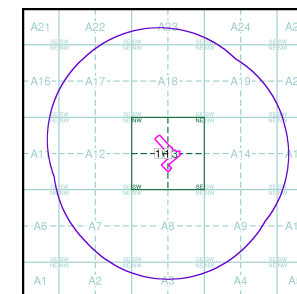
Additional Information

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



Order Details:

Order Number: 216203689_1_1
Customer Reference: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details:

Site at 274650, 189780

Landmark
INFORMATION GROUP

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Historical Mapping Legends

Ordnance Survey County Series 1:10,560

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

Ordnance Survey Plan 1:10,000

	Chalk Pit, Clay Pit or Quarry		Gravel Pit
	Sand Pit		Disused Pit or Quarry
	Refuse or Slag Heap		Lake, Loch or Pond
	Dunes		Boulders
	Coniferous Trees		Non-Coniferous Trees
	Orchard		Scrub
	Bracken		Heath
	Marsh		Reeds
	Building		Glasshouse
	Sloping Masonry		Pylon
	Cutting		Embankment
	Road Under		Road Over
	Level Crossing		Foot Bridge
	Standard Gauge Multiple Track		Standard Gauge Single Track
	Siding, Tramway or Mineral Line		Narrow Gauge
	Geographical County		Administrative County, County Borough or County of City
	Municipal Borough, Urban or Rural District, Burgh or District Council		Borough, Burgh or County Constituency
	Civil Parish		
	BP, BS		Ch
	CH		F E Sta
	FB		Fn
	GP		MP
	MS		Pol Sta
	PO		PC
	PH		SB
	Spr		TCB
	TCP		W

1:10,000 Raster Mapping

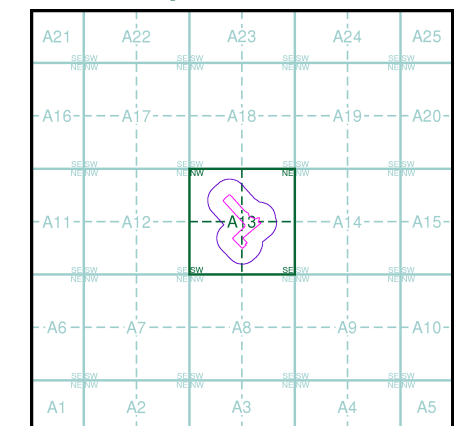
	Gravel Pit		Refuse tip or slag heap
	Rock		Rock (scattered)
	Boulders		Boulders (scattered)
	Shingle		Mud
	Sand		Sand Pit
	Slopes		Top of cliff
	General detail		Underground detail
	Overhead detail		Narrow gauge railway
	Multi-track railway		Single track railway
	County boundary (England only)		Civil, 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
	Mean high water (springs)		Mean low water (springs)
	Telephone line (where shown)		Electricity transmission line (with poles)
	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
Glamorganshire	1:10,560	1884 - 1885	2
Glamorganshire	1:10,560	1900	3
Glamorganshire	1:10,560	1921	4
Glamorganshire	1:10,560	1921	5
Glamorganshire	1:10,560	1938 - 1952	6
Historical Aerial Photography	1:10,560	1949	7
Glamorganshire	1:10,560	1951	8
Ordnance Survey Plan	1:10,000	1964 - 1965	9
Ordnance Survey Plan	1:10,000	1974	10
Ordnance Survey Plan	1:10,000	1980 - 1982	11
Ordnance Survey Plan	1:10,000	1993 - 1996	12
10K Raster Mapping	1:10,000	1999	13
10K Raster Mapping	1:10,000	2006	14
VectorMap Local	1:10,000	2019	15

Historical Map - Slice A



Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details

Site at 274650, 189780

Landmark
INFORMATION GROUP

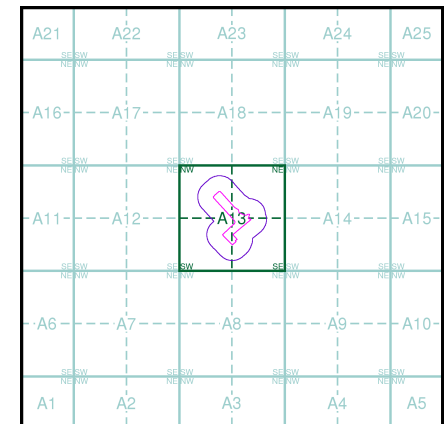
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

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)

02400 1884 1:10,560	02500 1884 1:10,560
033A00 1885 1:10,560	03300 1885 1:10,560

Historical Map - Slice A



Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
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Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details

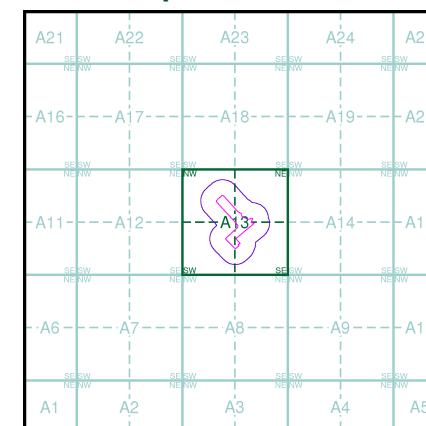
Site at 274650, 189780

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)

024SE 1900 1:10,560	025SW 1900 1:10,560
033ANE 1900 1:10,560	033NW 1900 1:10,560

Historical Map - Slice A



Order Details

Order Number: 216203689_1_1
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Site Details

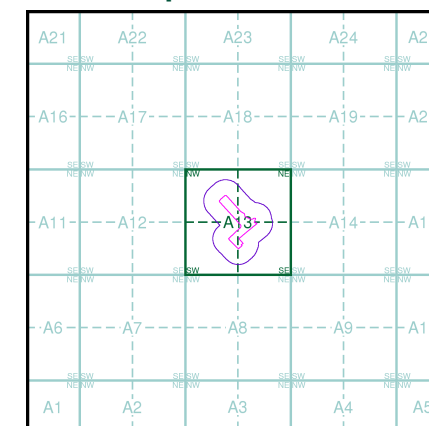
Site at 274650, 189780

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Map Name(s) and Date(s)

024SE 1921 1:10,560	025SW 1921 1:10,560
	033NW 1921 1:10,560

Historical Map - Slice A

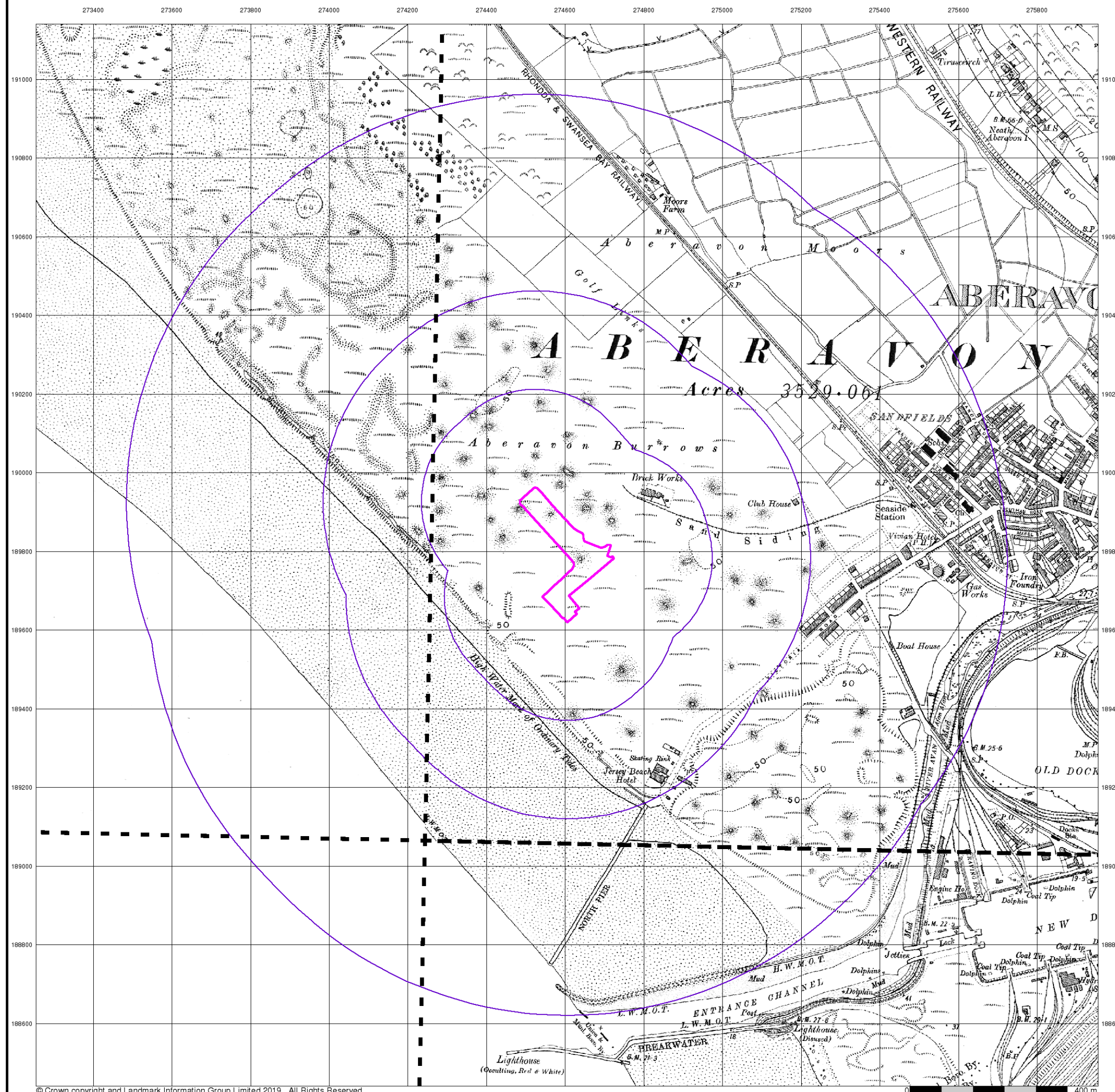


Order Details

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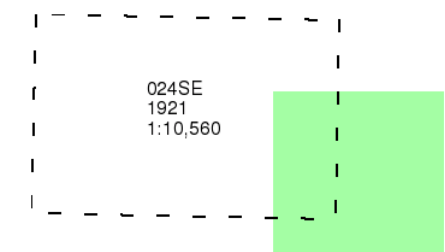
Site Details

Site at 274650, 189780

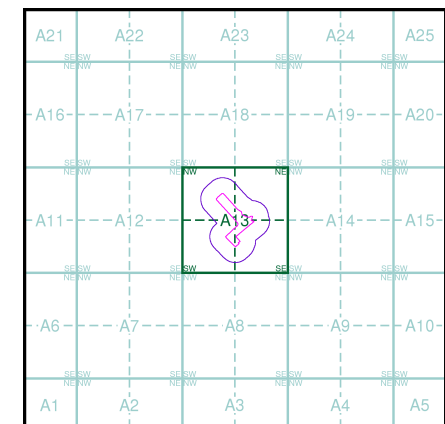


The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some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

Map Name(s) and Date(s)



Historical Map - Slice A



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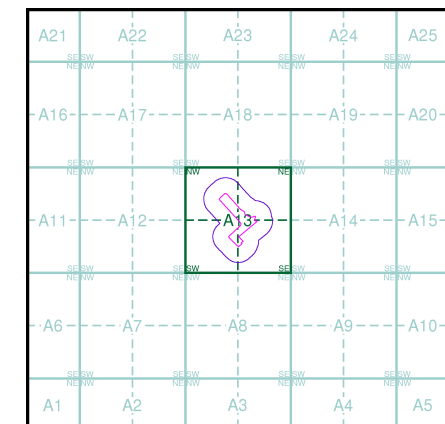
Site at 274650, 189780

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)

024SE 1951 1:10,560	025SW 1952 1:10,560
	033NW 1938 1:10,560

Historical Map - Slice A

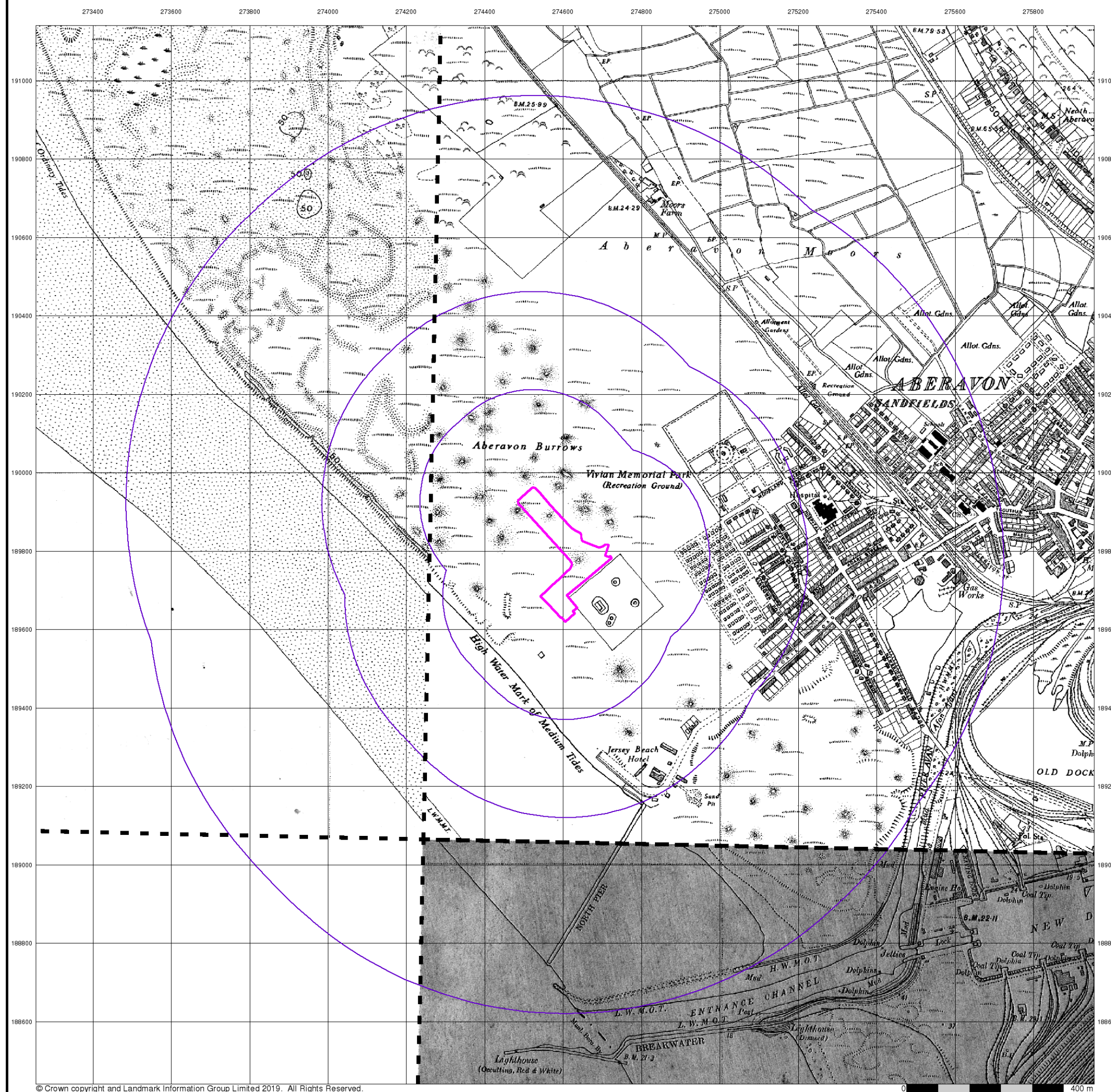


Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details

Site at 274650, 189780



Historical Aerial Photography

Published 1949

Source map scale - 1:10,560

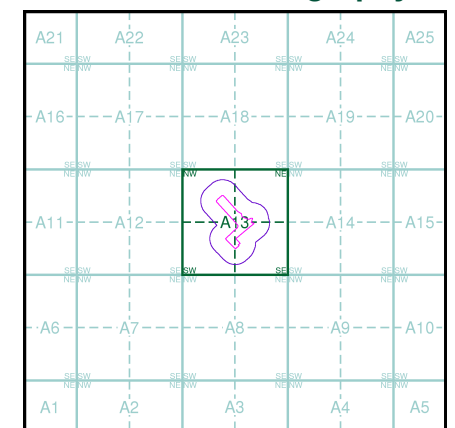
The Historical Aerial Photos were produced by the Ordnance Survey at a scale of 1:1,250 and 1:10,560 from Air Force photography. They were produced between 1944 and 1951 as an interim measure, pending preparation of conventional mapping, due to post war resource shortages. New security measures in the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

© Landmark Information Group and/or Data Suppliers 2010.

Map Name(s) and Date(s)

SS79SW 1949 1:10,560	SS79SE 1949 1:10,560
SS78NW 1949 1:10,560	SS78NE 1949 1:10,560

Historical Aerial Photography - Slice A



LIBRARY
HSILIRB

Order Details

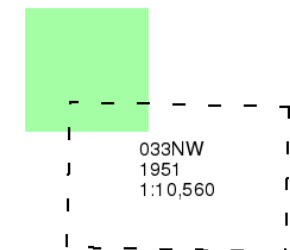
Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details

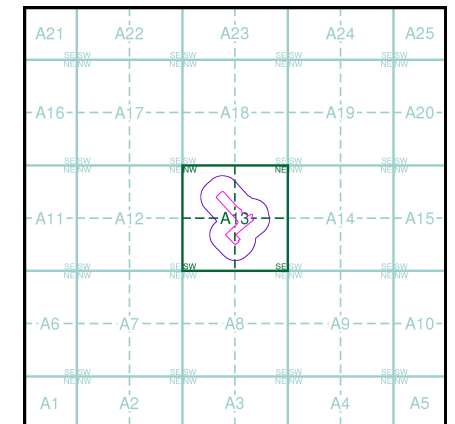
Site at 274650, 189780

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

Map Name(s) and Date(s)



Historical Map - Slice A

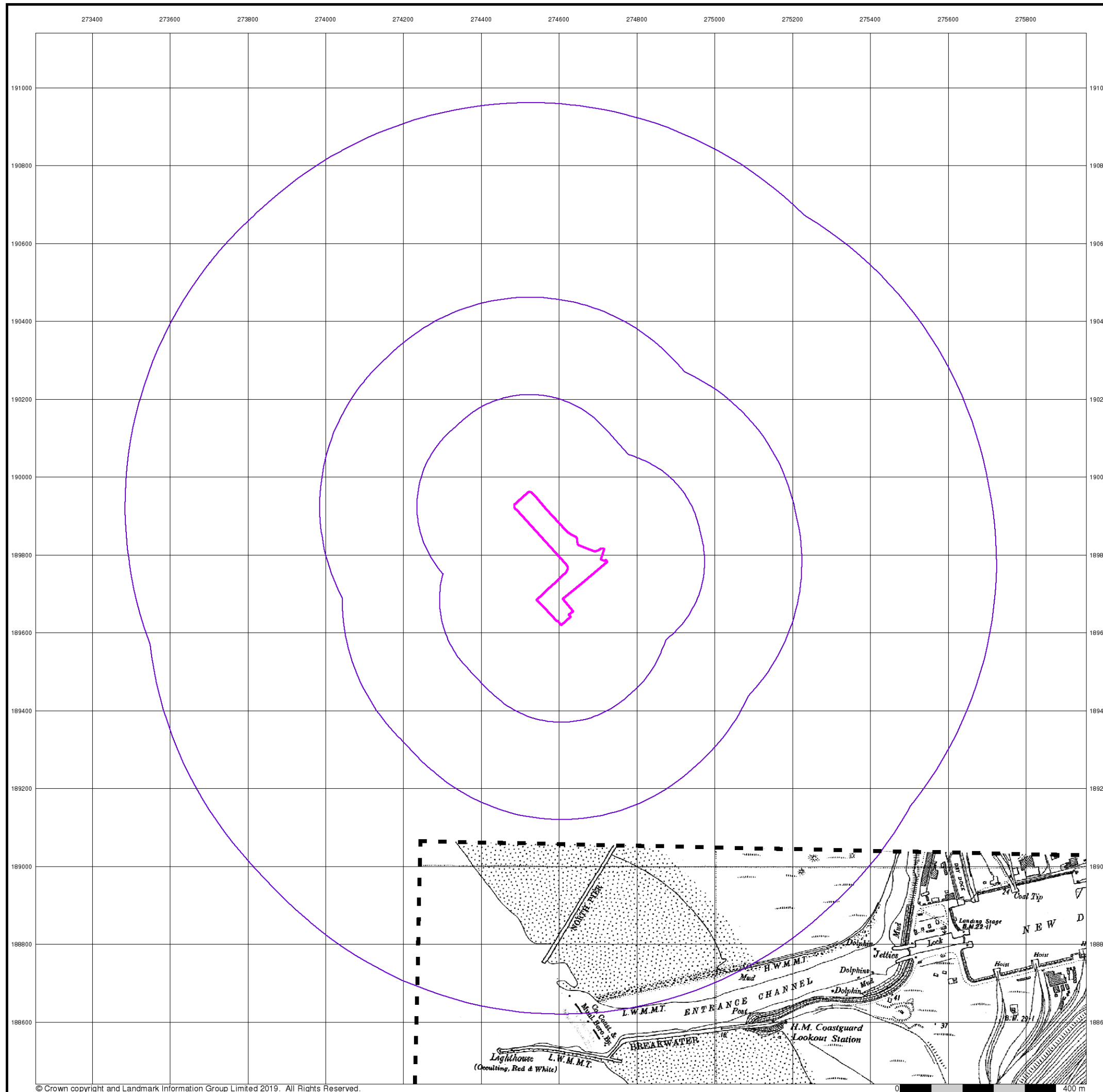


Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details

Site at 274650, 189780



Ordnance Survey Plan

Published 1964 - 1965

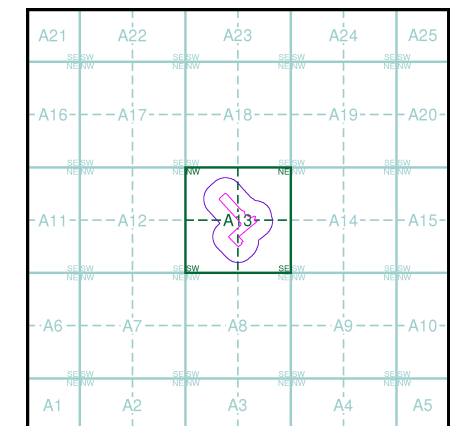
Source map scale - 1:10,000

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)

SS79SW	SS79SE
1964	1964
1:10,560	1:10,560
SS78NW	SS78NE
1965	1965
1:10,560	1:10,560

Historical Map - Slice A



Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details

Site at 274650, 189780

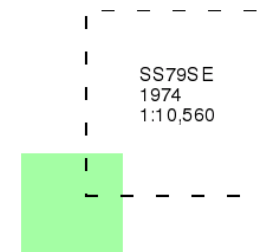
Ordnance Survey Plan

Published 1974

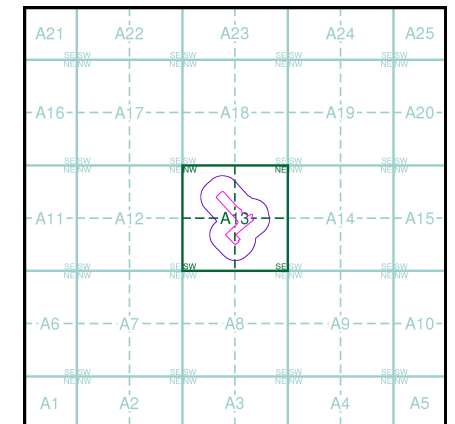
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details

Site at 274650, 189780

Ordnance Survey Plan

Published 1980 - 1982

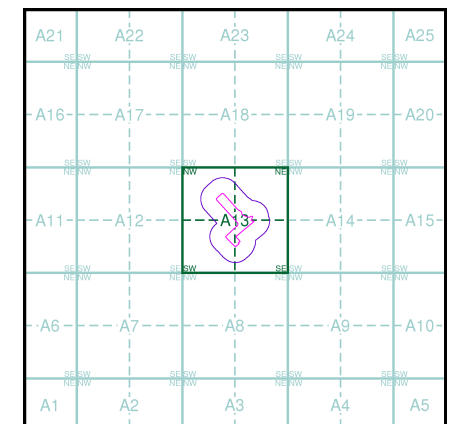
Source map scale - 1:10,000

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)

SS79SW	SS79SE
1980	1980
1:10,000	1:10,000
SS78NW	SS78NE
1982	1982
1:10,000	1:10,000

Historical Map - Slice A



Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details

Site at 274650, 189780

Ordnance Survey Plan

Published 1993 - 1996

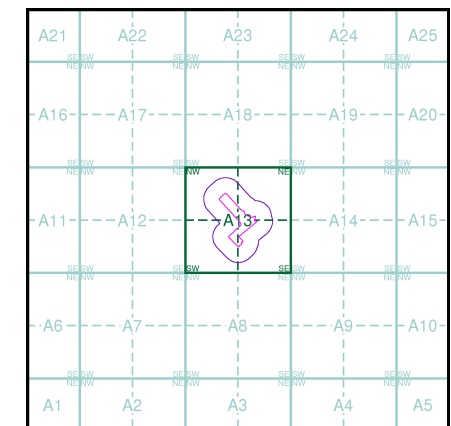
Source map scale - 1:10,000

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)

SS79SE	1996	1:10,000
SS78NW	1993	1:10,000
SS78NE	1993	1:10,000

Historical Map - Slice A



Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details

Site at 274650, 189780

Intégral
Géotechnique

10k Raster Mapping

Published 1999

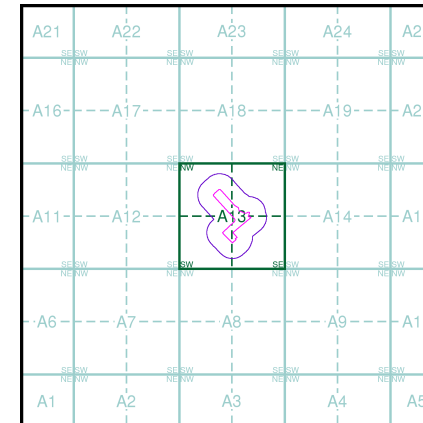
Source map scale - 1:10,000

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

Map Name(s) and Date(s)

SS79SW	SS79SE
1999	1999
1:10,000	1:10,000
SS78NW	SS78NE
1999	1999
1:10,000	1:10,000

Historical Map - Slice A



Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details

Site at 274650, 189780

Landmark
INFORMATION GROUP

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

Intégral Géotechnique

10k Raster Mapping

Published 2006

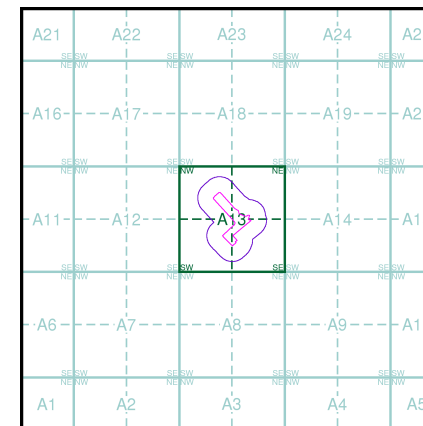
Source map scale - 1:10,000

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)

SS79SW	SS79SE
2006	2006
1:10,000	1:10,000
SS78NW	SS78NE
2006	2006
1:10,000	1:10,000

Historical Map - Slice A



Order Details

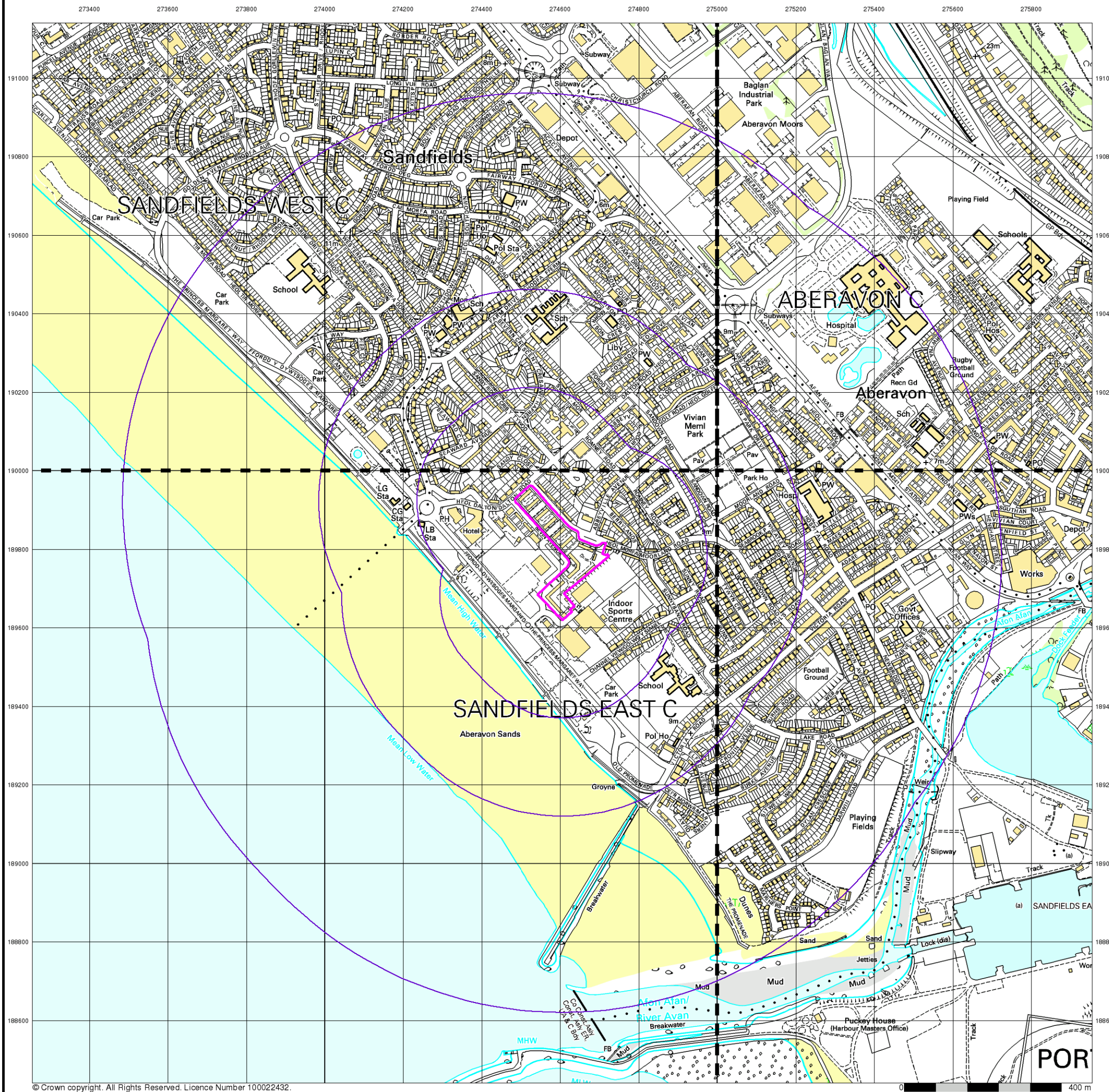
Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details

Site at 274650, 189780

Landmark
INFORMATION GROUP

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





VectorMap Local

Published 2019

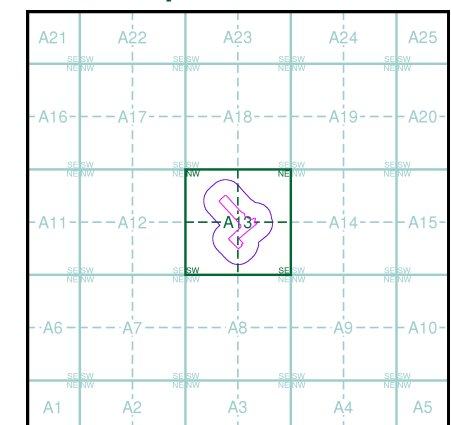
Source map scale - 1:10,000

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)

SS79SW 2019 Variable	SS79SE 2019 Variable
SS78NW 2019 Variable	SS78NE 2019 Variable

Historical Map - Slice A



Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details

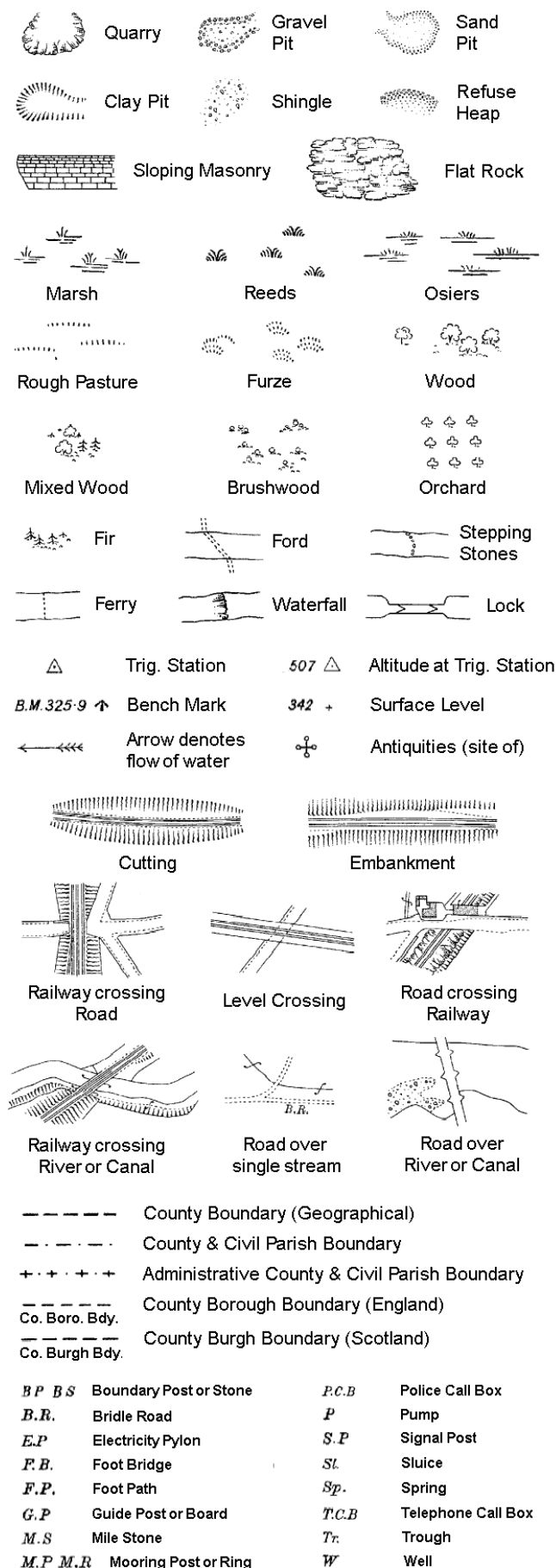
Site at 274650, 189780

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

Historical Mapping Legends

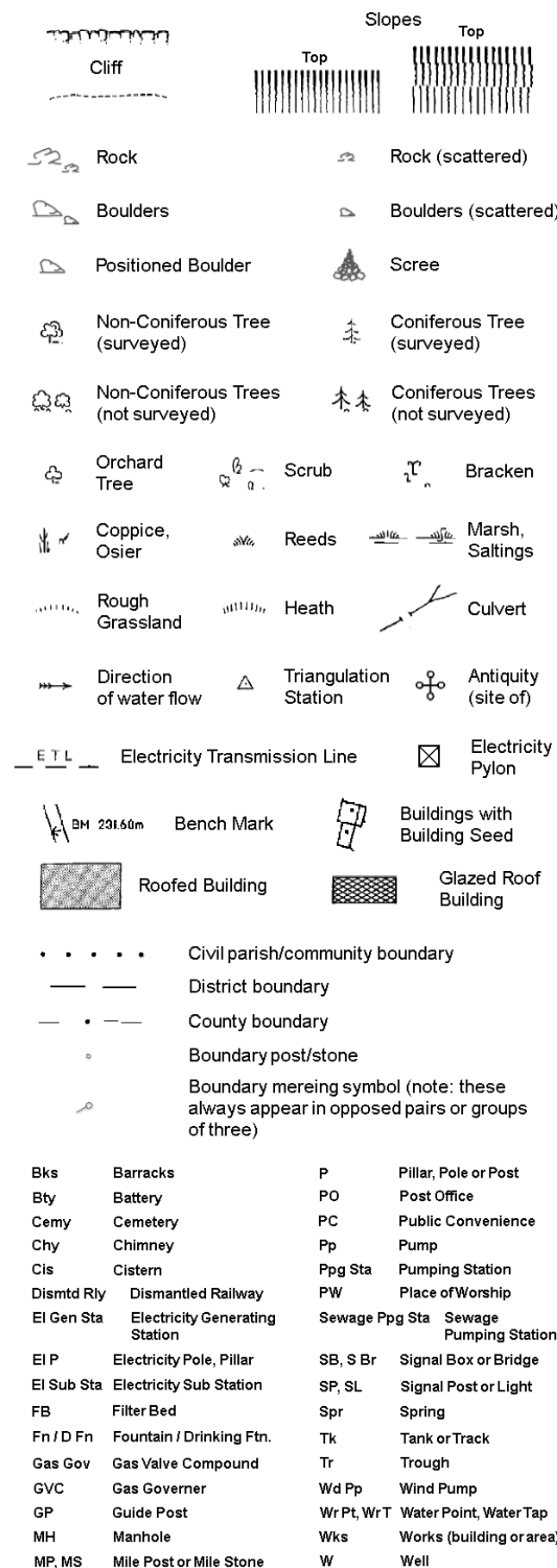
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



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



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

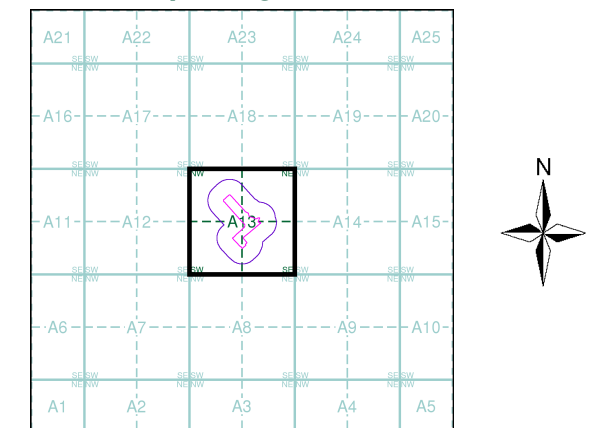


Intégral Géotechnique

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Glamorganshire	1:2,500	1876	2
Glamorganshire	1:2,500	1899	3
Glamorganshire	1:2,500	1917	4
Glamorganshire	1:2,500	1939	5
Ordnance Survey Plan	1:1,250	1956 - 1957	6
Ordnance Survey Plan	1:2,500	1956	7
Ordnance Survey Plan	1:1,250	1961 - 1967	8
Ordnance Survey Plan	1:1,250	1966 - 1976	9
Additional SIMs	1:1,250	1966 - 1986	10
Ordnance Survey Plan	1:2,500	1969	11
Large-Scale National Grid Data	1:1,250	1993 - 1995	12
Large-Scale National Grid Data	1:1,250	1993	13
Historical Aerial Photography	1:2,500	2001	14

Historical Map - Segment A13



Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 100

Site Details

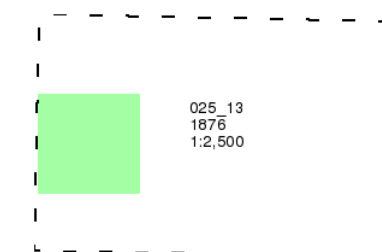
Site at 274650, 189780

Landmark
INFORMATION GROUP

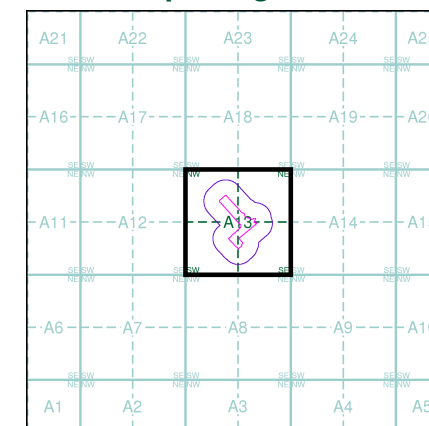
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

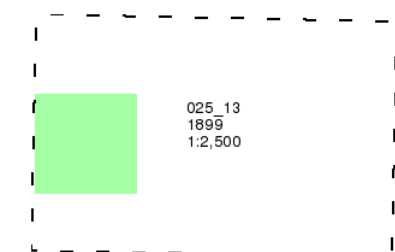
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Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 100

Site Details

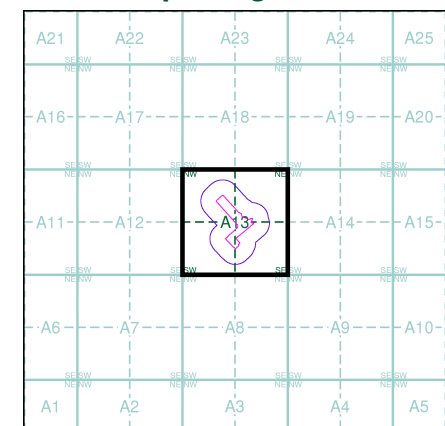
Site at 274650, 189780

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

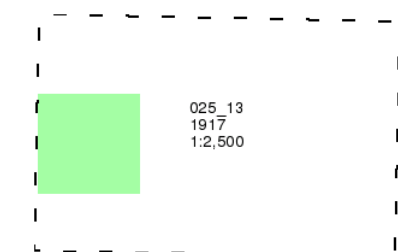
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Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
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Site Area (Ha): 2.47
Search Buffer (m): 100

Site Details

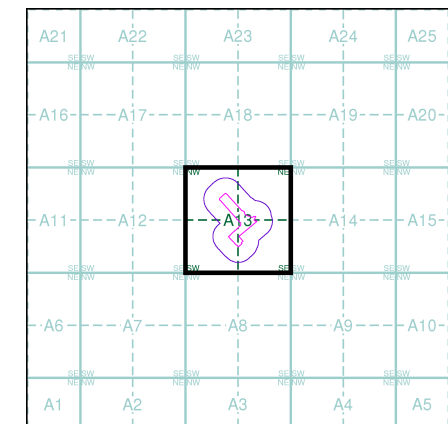
Site at 274650, 189780

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

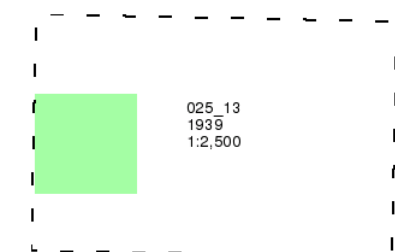
Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 100

Site Details

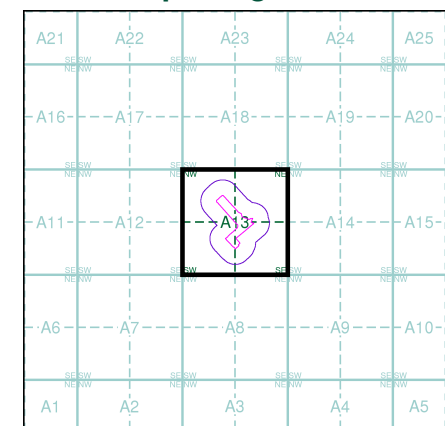
Site at 274650, 189780

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

Map Name(s) and Date(s)



Historical Map - Segment A13

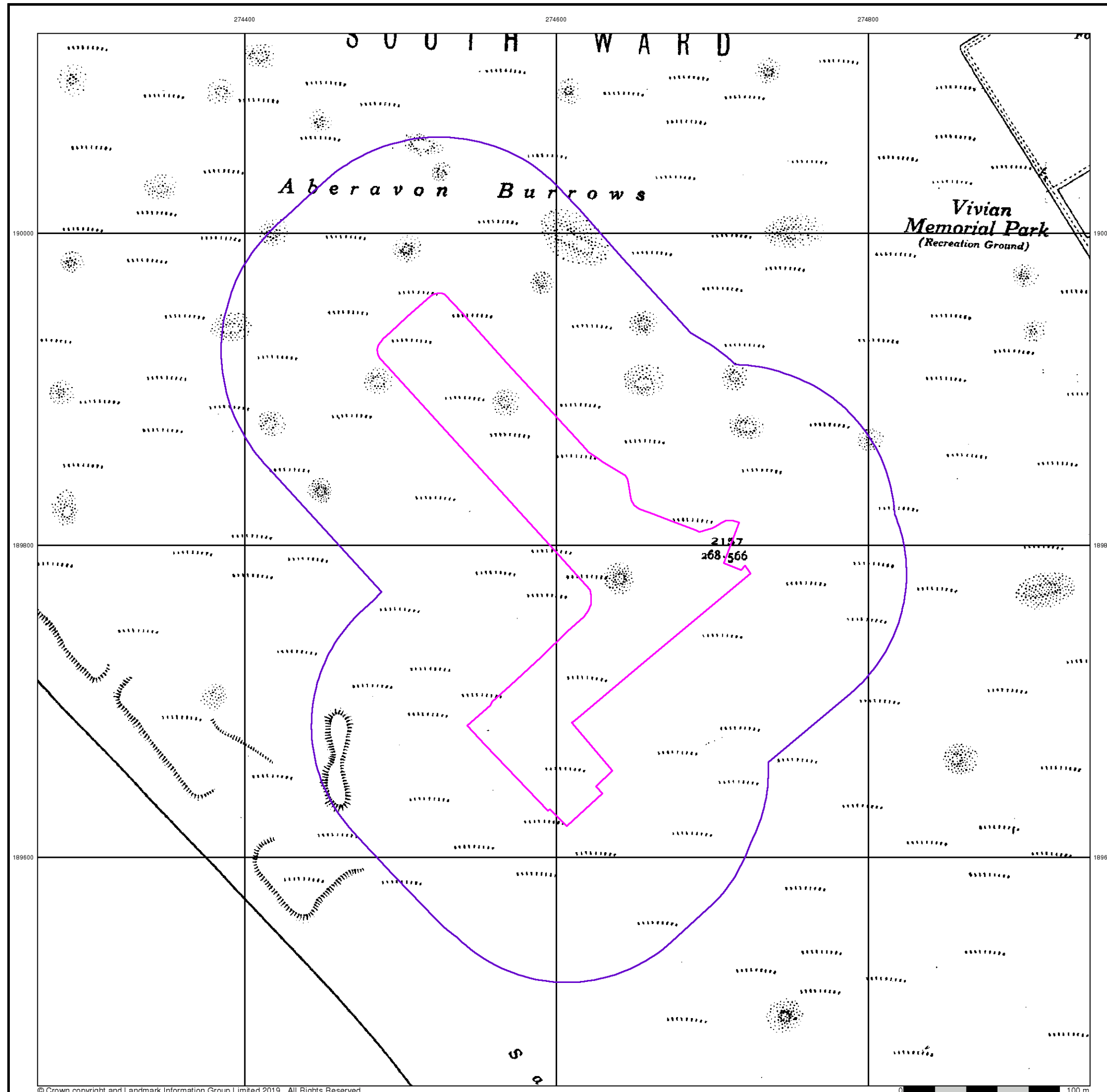


Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 100

Site Details

Site at 274650, 189780



Ordnance Survey Plan

Published 1956 - 1957

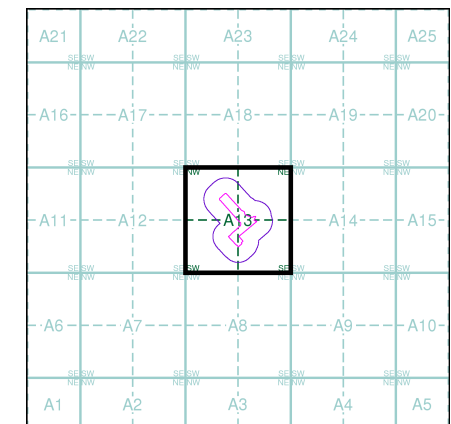
Source map scale - 1:1,250

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)

S7490SW	S7490SE
1957	1957
1:1,250	1:1,250
S7489NW	S7489NE
1956	1956
1:1,250	1:1,250
S7489SW	S7489SE
1956	1956
1:1,250	1:1,250

Historical Map - Segment A13



Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 100

Site Details

Site at 274650, 189780

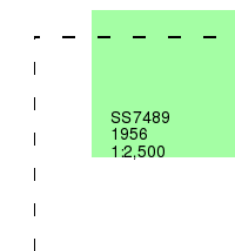
Ordnance Survey Plan

Published 1956

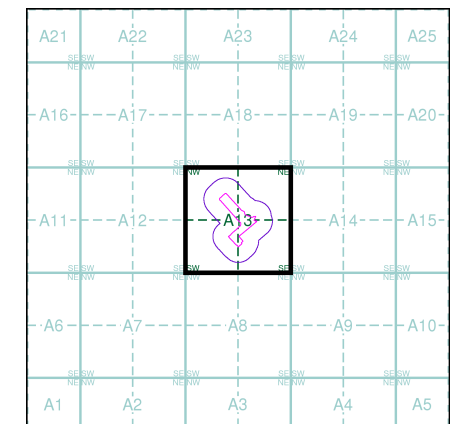
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 100

Site Details

Site at 274650, 189780

Ordnance Survey Plan

Published 1961 - 1967

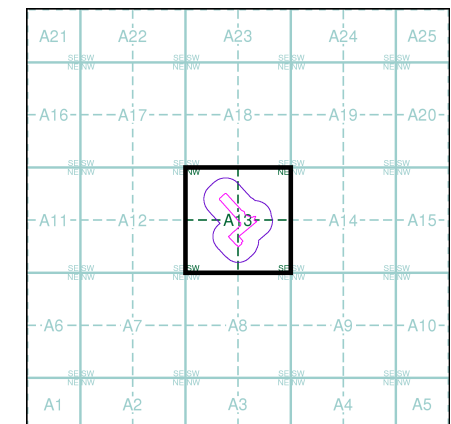
Source map scale - 1:1,250

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)

S7490SW	S7490SE
1963	1967
1:1,250	1:1,250
S7489NW	S7489NE
1961	1966
1:1,250	1:1,250
S7489SW	S7489SE
1961	1961
1:1,250	1:1,250

Historical Map - Segment A13



Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 100

Site Details

Site at 274650, 189780

Ordnance Survey Plan

Published 1966 - 1976

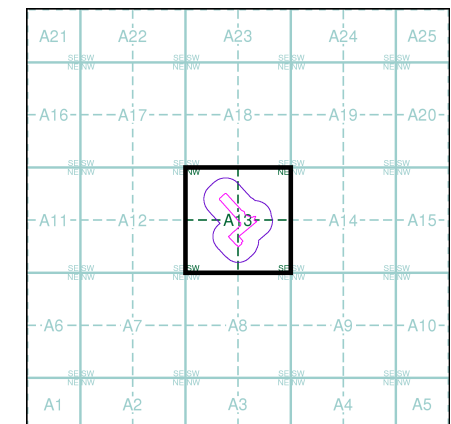
Source map scale - 1:1,250

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)

S7490SW	S7490SE
1976	1970
1:1,250	1:1,250
S7489NW	S7489NE
1966	1971
1:1,250	1:1,250
S7489SW	S7489SE
1966	1966
1:1,250	1:1,250

Historical Map - Segment A13



Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 100

Site Details

Site at 274650, 189780

Additional SIMs

Published 1966 - 1986

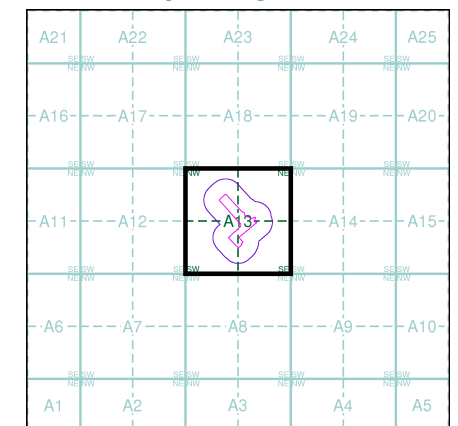
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

BS7490SE	1986	1:1,250
BS7489NW	1978	1:1,250
BS7489SE	1966	1:1,250

Historical Map - Segment A13

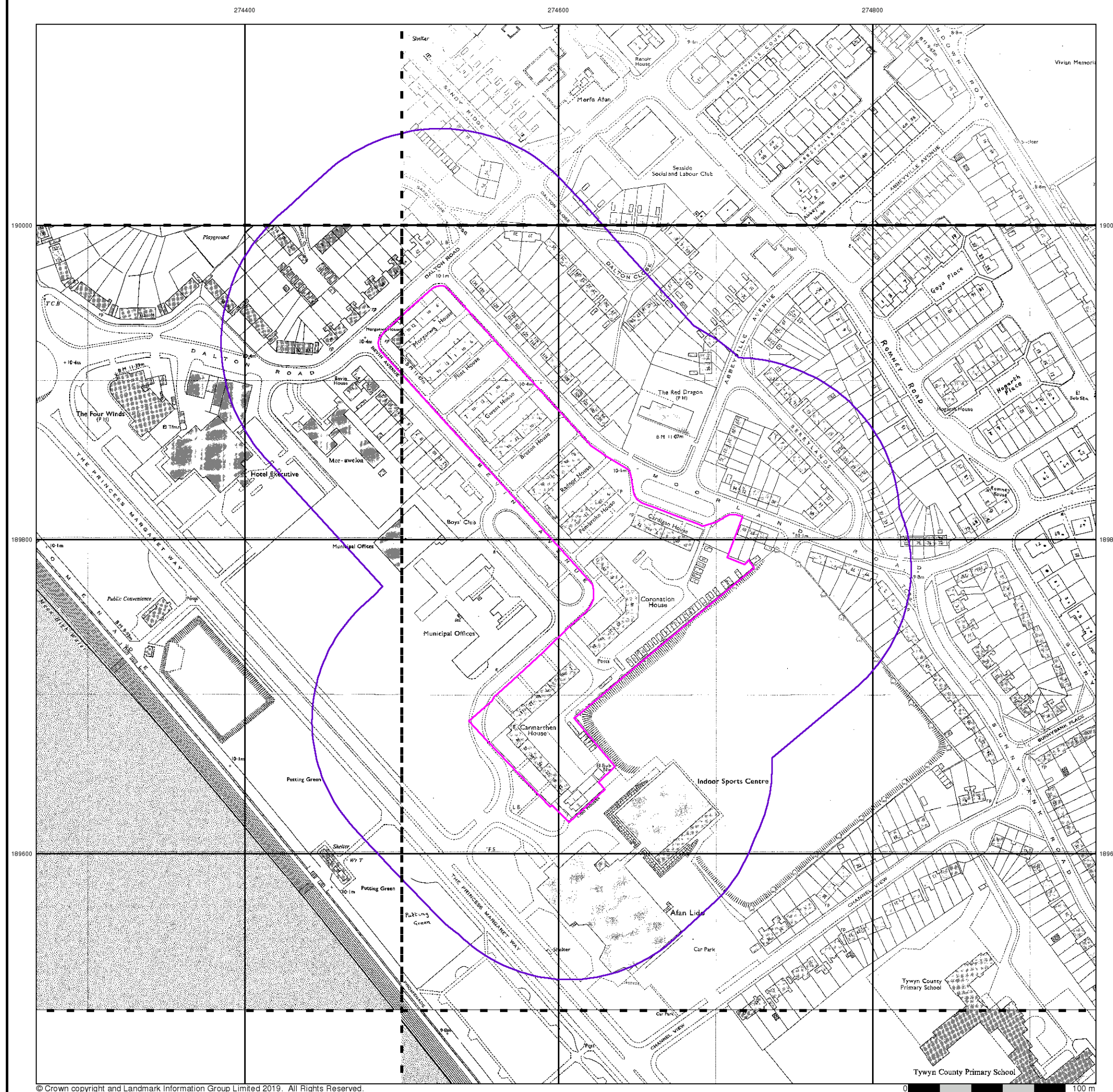


Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 100

Site Details

Site at 274650, 189780



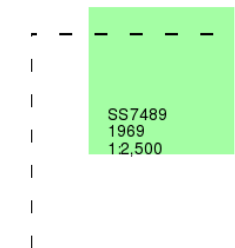
Ordnance Survey Plan

Published 1969

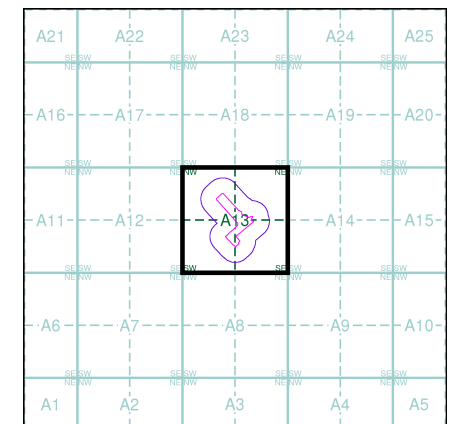
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 100

Site Details

Site at 274650, 189780



Large-Scale National Grid Data

Published 1993 - 1995

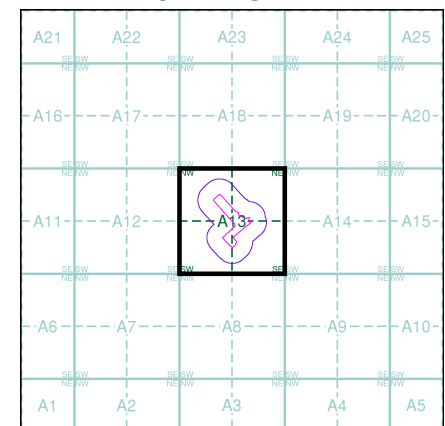
Source map scale - 1:1,250

'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)

TS7490SW	TS7490SE
993	993
1:1,250	1:1,250
TS7489NW	TS7489NE
993	993
1:1,250	1:1,250
TS7489SW	TS7489SE
995	993
1:1,250	1:1,250

Historical Map - Segment A13



Order Details

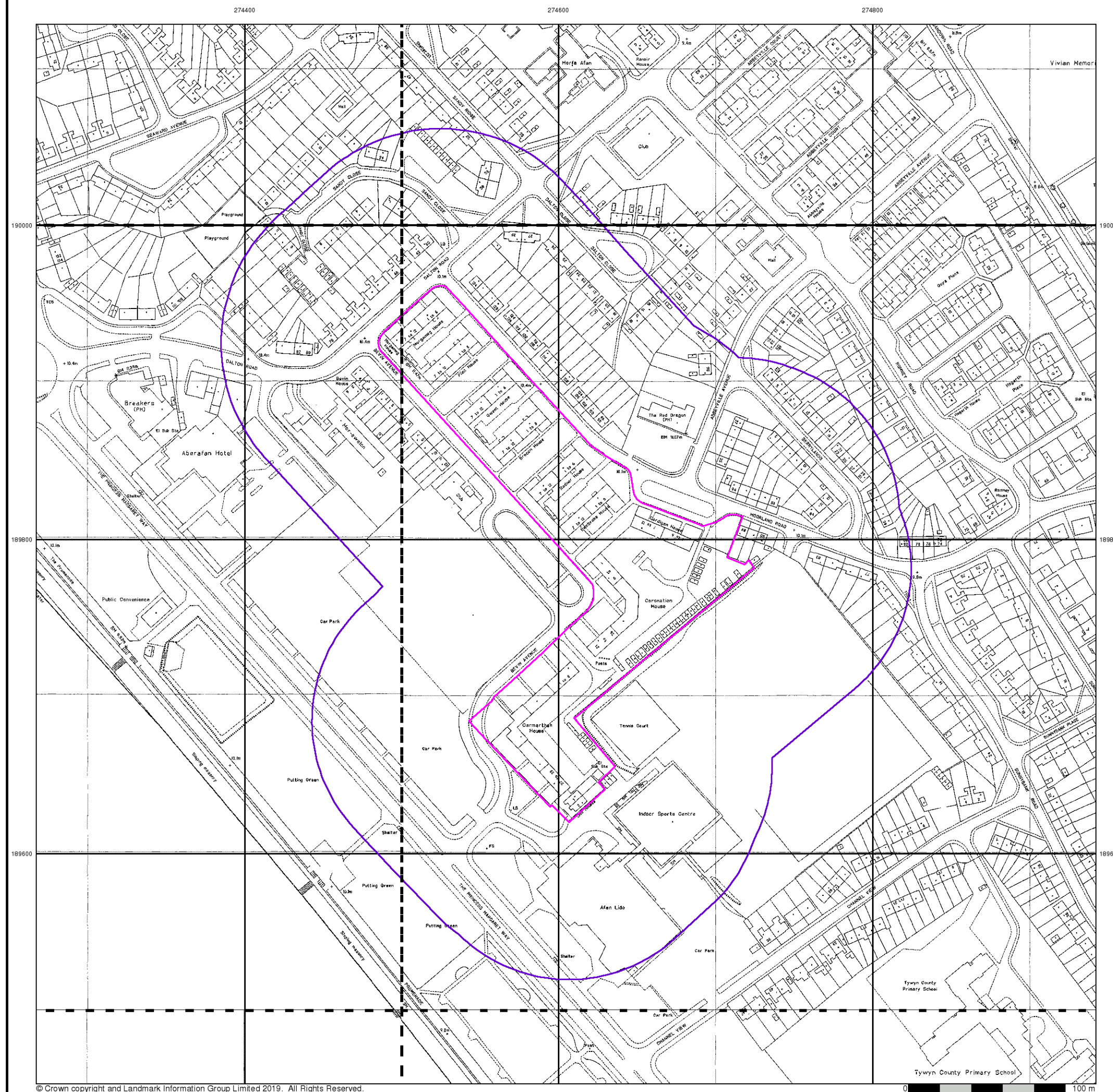
Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 100

Site Details

Site at 274650, 189780

Landmark
INFORMATION GROUP

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





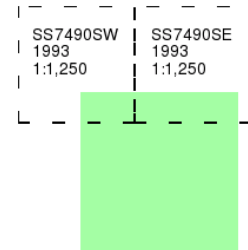
Large-Scale National Grid Data

Published 1993

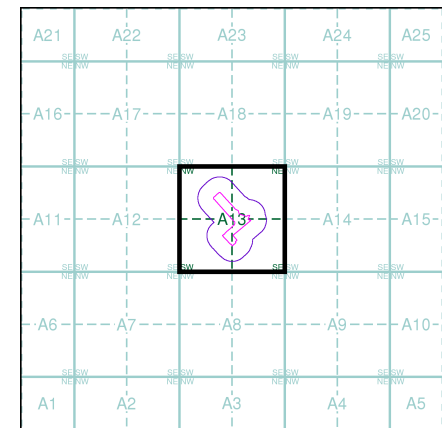
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

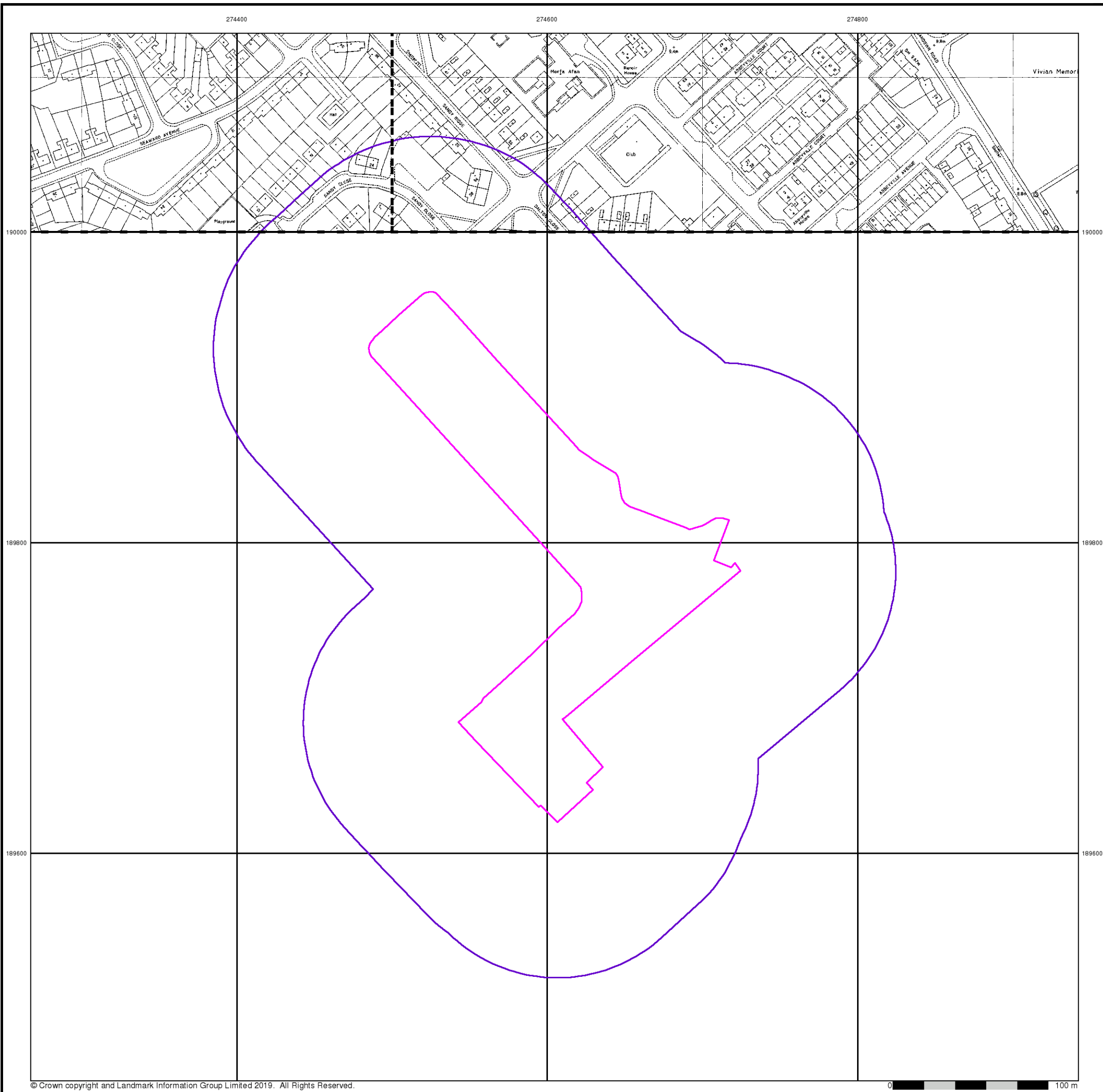
Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 100

Site Details

Site at 274650, 189780



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

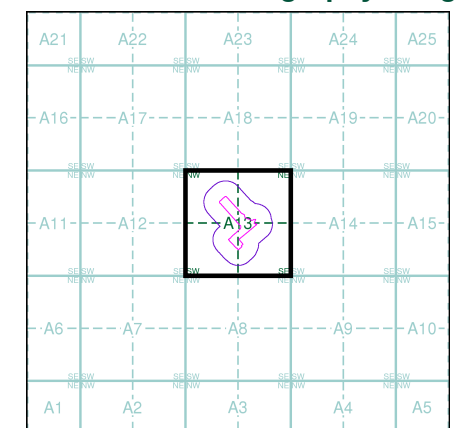


Historical Aerial Photography

Published 2001

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

Historical Aerial Photography - Segment A13



Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 100

Site Details

Site at 274650, 189780

Envirocheck[®] Report:

Mining and Ground Stability Datasheet

Order Details:

Order Number:

216203689_1_1

Customer Reference:

12457/RAH

National Grid Reference:

274590, 189800

Slice:

A

Site Area (Ha):

2.47

Search Buffer (m):

1000

Site Details:

Site at 274650, 189780

Client Details:

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

Report Section and Details	Page Number
Summary	-
The Summary section provides an overview of the data contained within the report, detailing the number of data set features or the existence of a data set in relation to the buffer selected. For ease of reference, the report is broken down into 4 sections of data; Mining and Natural Cavities Data, Historical Land Use Information (1:2,500), Historical Land Use Information (1:10,000) and Ground Stability Data (1:50,000).	
Mining and Natural Cavities Data	1
The Mining and Natural Cavities Data section features data sets related to the existence of mining areas and their potential hazards; and details of naturally formed cavities. Data sets within this section are not plotted, with the exception of BGS Recorded Mineral Sites and Potential Mining Areas which feature on the Historical Land Use Information (1:10,000) map.	
Historical Land Use Information (1:2,500)	2
The Historical Land Use Information (1:2,500) section contains data captured from analysis carried out by Landmark of 1:1,250 and 1:2,500 scale historical Ordnance Survey mapping, identifying areas where, historically, the land uses were potentially contaminative. For the purpose of this Envirocheck module, only historical data relating to mining and ground stability has been included and plotted on the corresponding Historical Land Use Information (1:2,500) map. This section also includes the Subterranean Features data set, which details various man-made and man-used underground spaces obtained from the Subterranea Britannica society.	
Historical Land Use Information (1:10,000)	3
The Historical Land Use (1:10,000) section covers data captured from the systematic analysis carried out by Landmark of 1:10, 560 and 1:10,000 scale historical Ordnance Survey mapping dating back to the mid-19th century, identifying potentially contaminative past industrial land uses. For the purpose of this Envirocheck module, only data relating to mining and ground stability has been included and plotted on the accompanying Historical Land Use Information (1:10,000) map.	
Ground Stability Data (1:50,000)	5
The Ground Stability (1:50,000) section includes the BGS Geosure data suite, reporting features to 250m and plotted onto 3 separate maps. Also reported is brine subsidence, brine mining and salt mining data sets, of which Brine Pumping and Salt Mining Related Features are plotted, and subsidence insurance claims and insurance investigations data, which is not plotted.	
Historical Map List	6
The Historical Map List section details the historical mapping that has been analysed for your site, in relation to the Historical Land Use Information sections.	
Data Currency	7
Data Suppliers	8
Useful Contacts	9

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The brine subsidence data relating to the Droitwich area as provided in this report is derived from JPB studies and physical monitoring undertaken annually over more than 35 years. For more detailed interpretation contact enquiries@jpb.co.uk. JPB retain the copyright and intellectual rights to this data and accept no liability for any loss or damage, including in direct or consequential loss, arising from the use of this data.

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Report Version v53.0

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m
Mining and Natural Cavities Data					
BGS Recorded Mineral Sites					
Coal Mining Affected Areas	pg 1	Yes	n/a	n/a	n/a
Man Made Mining Cavities					
Mining Instability	pg 1	Yes	n/a	n/a	n/a
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential Mining Areas					
Historical Land Use Information (1:2,500)					
Extractive Industries or Potential Excavations from 1855-1909 (100m)	pg 2		1	n/a	n/a
Extractive Industries or Potential Excavations from 1893-1915 (100m)	pg 2		1	n/a	n/a
Extractive Industries or Potential Excavations from 1906-1937 (100m)	pg 2		1	n/a	n/a
Extractive Industries or Potential Excavations from 1924-1949 (100m)	pg 2		1	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					
Heap, unknown constituents	pg 3		1		4
Mineral Railway					
Mining & quarrying general					
Mining of coal & lignite					
Quarrying of sand & clay, operation of sand & gravel pits	pg 3				2
Former Marshes					
Potentially Infilled Land (Non-Water)	pg 3		1		2
Potentially Infilled Land (Water)	pg 3				25

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m
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 5	Yes	Yes	n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 5	Yes	Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 5	Yes	Yes	n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 5	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 5	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 5	Yes	Yes	n/a	n/a
Salt Mining Related Features					
Subsidence Insurance Claims				n/a	n/a
Subsidence Investigations				n/a	n/a

Report Version v53.0

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Coal Mining Affected Areas Description: In an area which may be affected by coal mining activity. It is recommended that a coal mining report is obtained from the Coal Authority. Contact details are included in the Useful Contacts section of this report.	A13NW (NW)	0	1	274591 189797
	Mining Instability Mining Evidence: Inconclusive Coal Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	A13NW (NW)	0	2	274591 189797
	Non Coal Mining Areas of Great Britain No Hazard				

Historical Land Use Information (1:2,500)

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	Extractive Industries or Potential Excavations from 1855-1909 Use: Unspecified Deposited Material First Map Published 1876 Date: Last Map Published Not Applicable Date:	A13SW (SW)	78	-	274463 189688
2	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Deposited Material First Map Published 1899 Date: Last Map Published Not Applicable Date:	A13SW (SW)	73	-	274466 189693
3	Extractive Industries or Potential Excavations from 1906-1937 Use: Unspecified Deposited Material First Map Published 1917 Date: Last Map Published Not Applicable Date:	A13SW (SW)	76	-	274464 189690
4	Extractive Industries or Potential Excavations from 1924-1949 Use: Unspecified Deposited Material First Map Published 1939 Date: Last Map Published Not Applicable Date:	A13SW (SW)	73	-	274468 189693

Historical Land Use Information (1:10,000)

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	Heap, unknown constituents Use: Not Supplied Date of Mapping: 1884	A13SW (SW)	91	-	274454 189668
6	Heap, unknown constituents Use: Not Supplied Date of Mapping: 1884	A14SW (SE)	604	-	275262 189507
7	Heap, unknown constituents Use: Not Supplied Date of Mapping: 1884	A9NW (SE)	649	-	275224 189369
8	Heap, unknown constituents Use: Not Supplied Date of Mapping: 1964	A19NW (NE)	793	-	275094 190516
9	Heap, unknown constituents Use: Not Supplied Date of Mapping: 1884	A9NE (SE)	836	-	275357 189230
10	Quarrying of sand & clay, operation of sand & gravel pits Use: Not Supplied Date of Mapping: 1952	A8NE (SE)	558	-	274941 189173
11	Quarrying of sand & clay, operation of sand & gravel pits Use: Not Supplied Date of Mapping: 1884	A14SW (E)	572	-	275256 189573
12	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A13NE (NE)	139	-	274787 189934
13	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A8NE (SE)	558	-	274941 189173
14	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A14SW (E)	572	-	275256 189573
15	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1884	A8NE (S)	505	-	274791 189151
16	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A8SE (SE)	647	-	274912 189050
17	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A14SE (E)	686	-	275391 189624
18	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19NW (NE)	769	-	275051 190525
19	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1884	A19NW (NE)	781	-	275073 190520
20	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1900	A19NW (NE)	816	-	274961 190653
21	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19NW (NE)	826	-	275115 190542
22	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1921	A19NW (NE)	827	-	274956 190668
23	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A19NW (NE)	839	-	274980 190668
24	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19SE (NE)	843	-	275398 190312
25	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A14SE (E)	880	-	275553 189487

Historical Land Use Information (1:10,000)

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
26	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19NW (N)	886	-	274943 190743
27	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A18NE (N)	890	-	274823 190801
28	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19SE (NE)	897	-	275343 190459
29	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A14SE (E)	903	-	275574 189479
30	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19SE (NE)	910	-	275484 190303
31	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A9NE (SE)	917	-	275532 189349
32	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19NW (NE)	924	-	275265 190558
33	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19NW (NE)	946	-	275182 190645
34	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19NW (NE)	953	-	275144 190688
35	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19NW (NE)	954	-	275226 190621
36	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19NW (NE)	974	-	275057 190778
37	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19NW (NE)	984	-	275059 190789
38	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1921	A15SW (E)	987	-	275694 189597
39	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19NW (NE)	993	-	275227 190666

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.				
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	3	274591 189797
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	39	3	274591 190000
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	3	274591 189797
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	39	3	274591 190000
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	3	274591 189797
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	39	3	274591 190000
40	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	3	274591 189797
41	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	39	3	274591 190000
42	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	135	3	274403 189644
43	Potential for Running Sand Ground Stability Hazards Hazard Potential: High Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	154	3	274389 189629
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	3	274591 189797
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	39	3	274591 190000
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	3	274591 189797
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	39	3	274591 190000

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

1:2,500	Mapsheet	Published Date
Glamorganshire	025_13	1876
Glamorganshire	025_13	1899
Glamorganshire	025_13	1917
Glamorganshire	025_13	1939
Ordnance Survey Plan	SS7489	1956

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

1:10,560	Mapsheet	Published Date
Glamorganshire	024_00	1884
Glamorganshire	025_00	1884
Glamorganshire	033A_00	1885
Glamorganshire	033_00	1885
Glamorganshire	024_SE	1900
Glamorganshire	025_SW	1900
Glamorganshire	033A_NE	1900
Glamorganshire	033_NW	1900
Glamorganshire	024_SE	1921
Glamorganshire	025_SW	1921
Glamorganshire	033_NW	1921
Glamorganshire	024_SE	1951
Glamorganshire	033_NW	1951
Glamorganshire	025_SW	1952
Ordnance Survey Plan	SS79SE	1964
Ordnance Survey Plan	SS79SW	1964
Ordnance Survey Plan	SS78NE	1965
Ordnance Survey Plan	SS78NW	1965
1:10,000	Mapsheet	Published Date
Ordnance Survey Plan	SS79SW	1980
Ordnance Survey Plan	SS78NE	1993
Ordnance Survey Plan	SS78NW	1993
Ordnance Survey Plan	SS79SE	1996

Mining and Cavities Data	Version	Update Cycle
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	April 2019	Bi-Annually
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	Annual Rolling Update
Man Made Mining Cavities Peter Brett Associates	July 2019	Bi-Annually
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Natural Cavities Peter Brett Associates	July 2019	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	March 2019	Bi-Annually
Ground Stability Data (1:50,000)	Version	Update Cycle
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Subsidence Insurance Claims SP Property Services	October 2018	Quarterly
Subsidence Investigations CET Structures Ltd	July 2018	Quarterly
Brine Subsidence Solution Area Johnson Poole & Bloomer	January 2015	Annual Rolling Update

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
British Geological Survey	 British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
The Coal Authority	 The Coal Authority
Ove Arup	
Peter Brett Associates	
Wardell Armstrong	 wardell armstrong your earth our world
Johnson Poole & Bloomer	

Contact	Name and Address	Contact Details
1	The Coal Authority - Property Searches 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG	Telephone: 0345 762 6848 Fax: 01623 637 338 Email: groundstability@coal.gov.uk Website: www2.groundstability.com
2	Ove Arup & Partners Central Square, Forth Street, Newcastle upon Tyne, Tyne and Wear, NE1 3PL	Telephone: 0191 261 6080 Fax: 0191 261 7879
3	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

Historical Land Use Information (1:2,500)

General

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

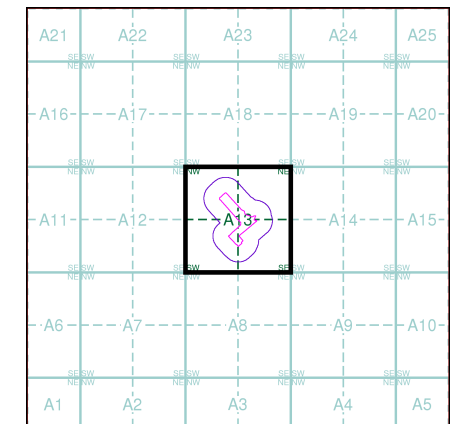
Potentially Contaminative Industrial Uses (Extractive Industries Activity)

	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: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Plot Buffer (m): 100

Site Details

Site at 274650, 189780

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			

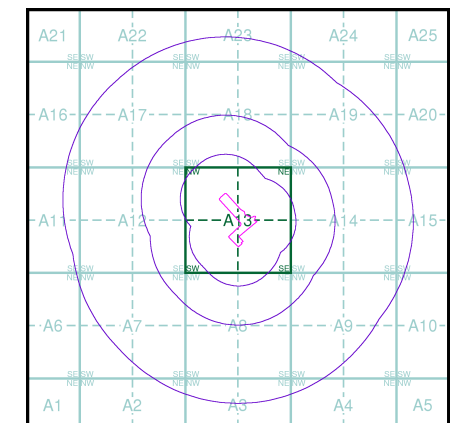
Historical Land Use

	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

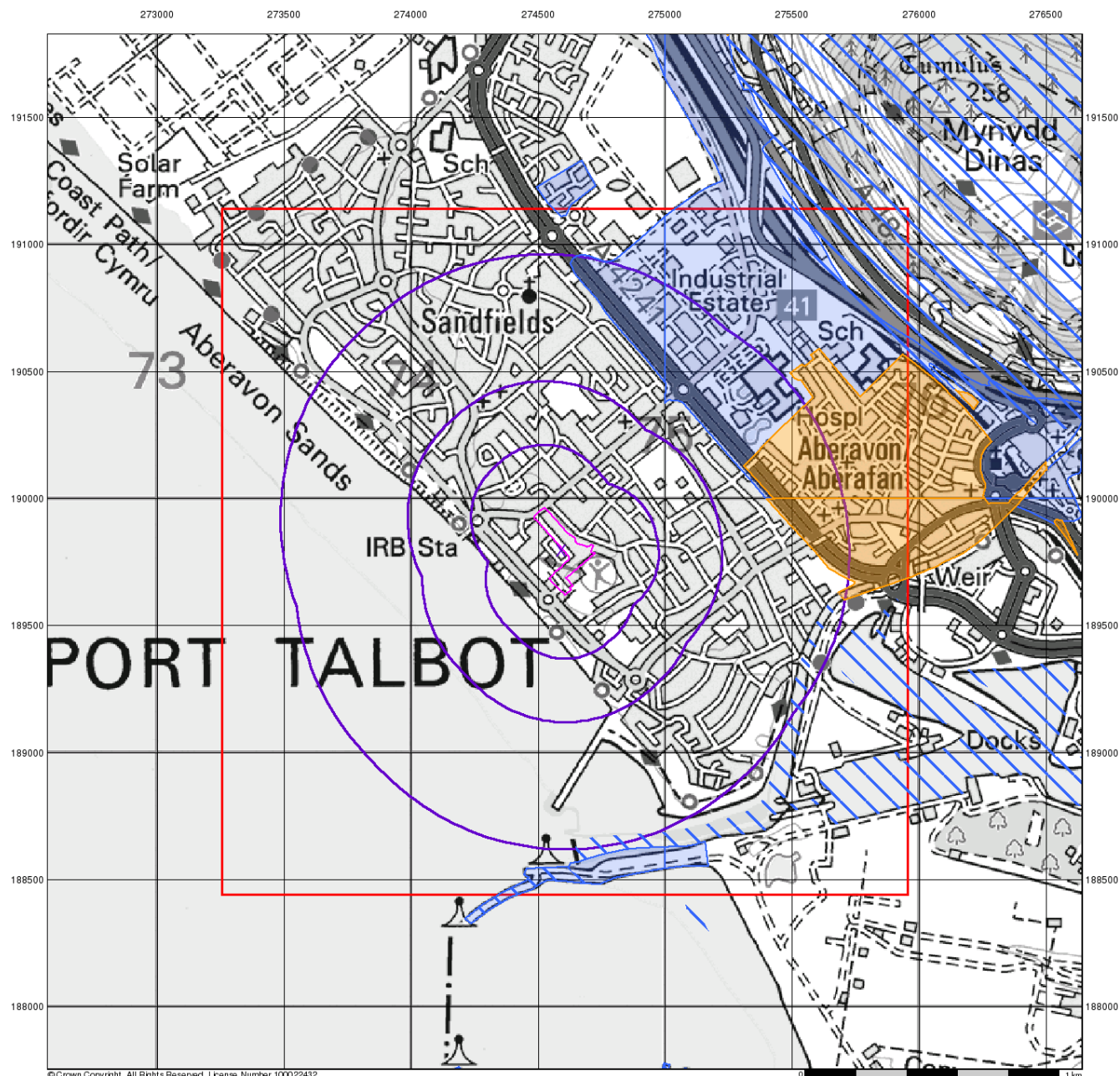


Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274590, 189800
Slice: A
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details

Site at 274650, 189780



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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

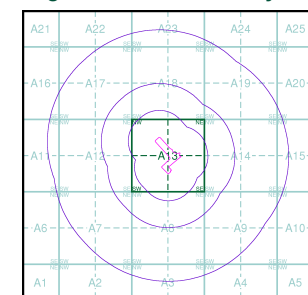
Brine Pumping and Salt Mining

Brine Pumping Related Feature

Salt Mining Related Feature

- | Point | Polygon |
|-------|---------|
| | |
| | |

Mining and Ground Stability - Slice A



Order Details

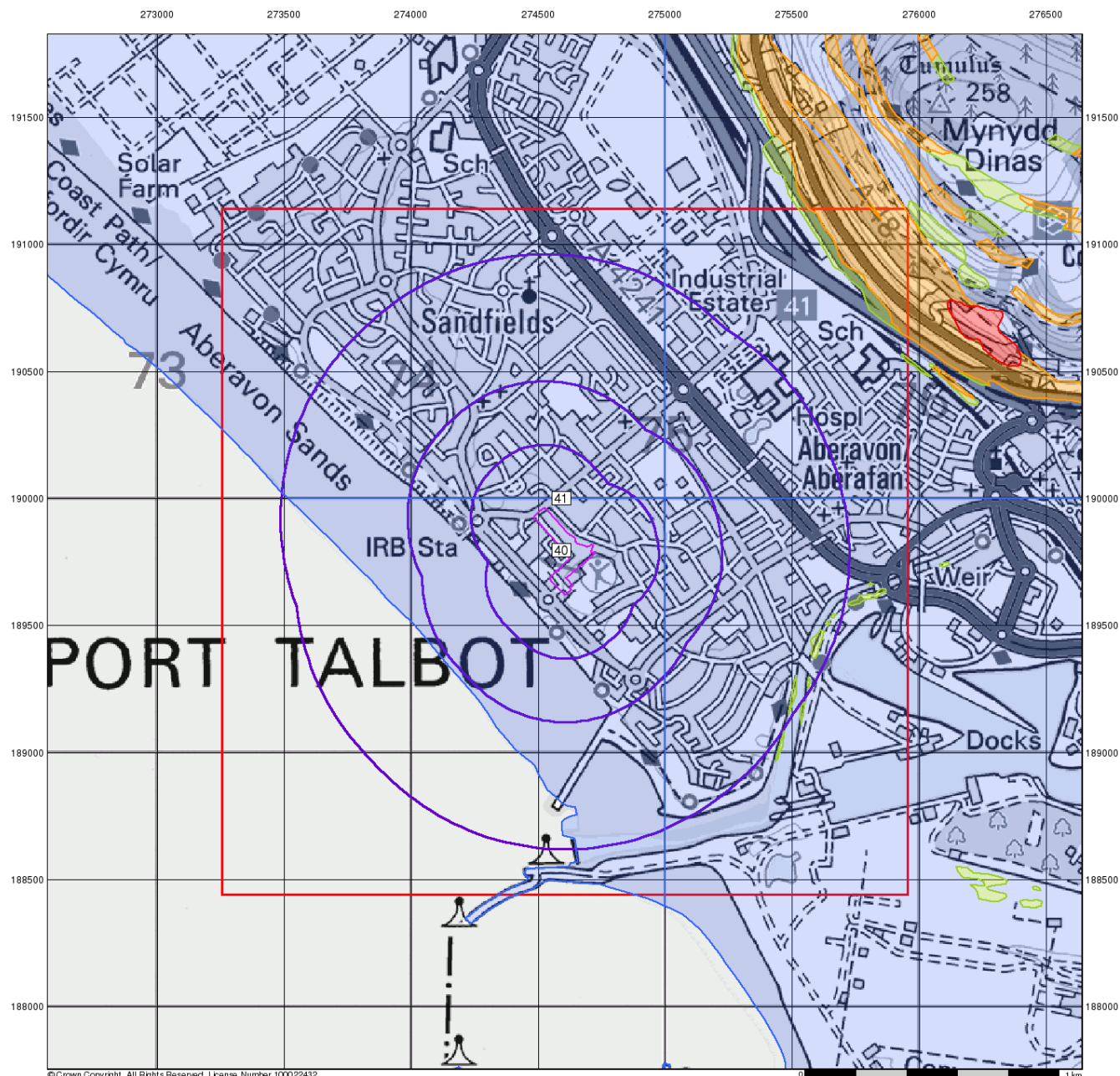
Order Number: 216203689_1_1
 Customer Ref: 12457/RAH
 National Grid Reference: 274590, 189800
 Slice: A
 Site Area (Ha): 2.47
 Search Buffer (m): 1000

Site Details

Site at 274650, 189780

Landmark
 INFORMATION GROUP

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



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Intégral Géotechnique

Ground Stability Data (1:50,000)

General

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

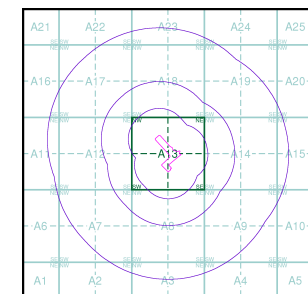
Potential for Landslide Ground Stability Hazards

- High
- Moderate
- Low
- Very Low

Potential for Ground Dissolution Stability Hazards

- High
- Moderate
- Low
- Very Low

Mining and Ground Stability - Slice A



Order Details

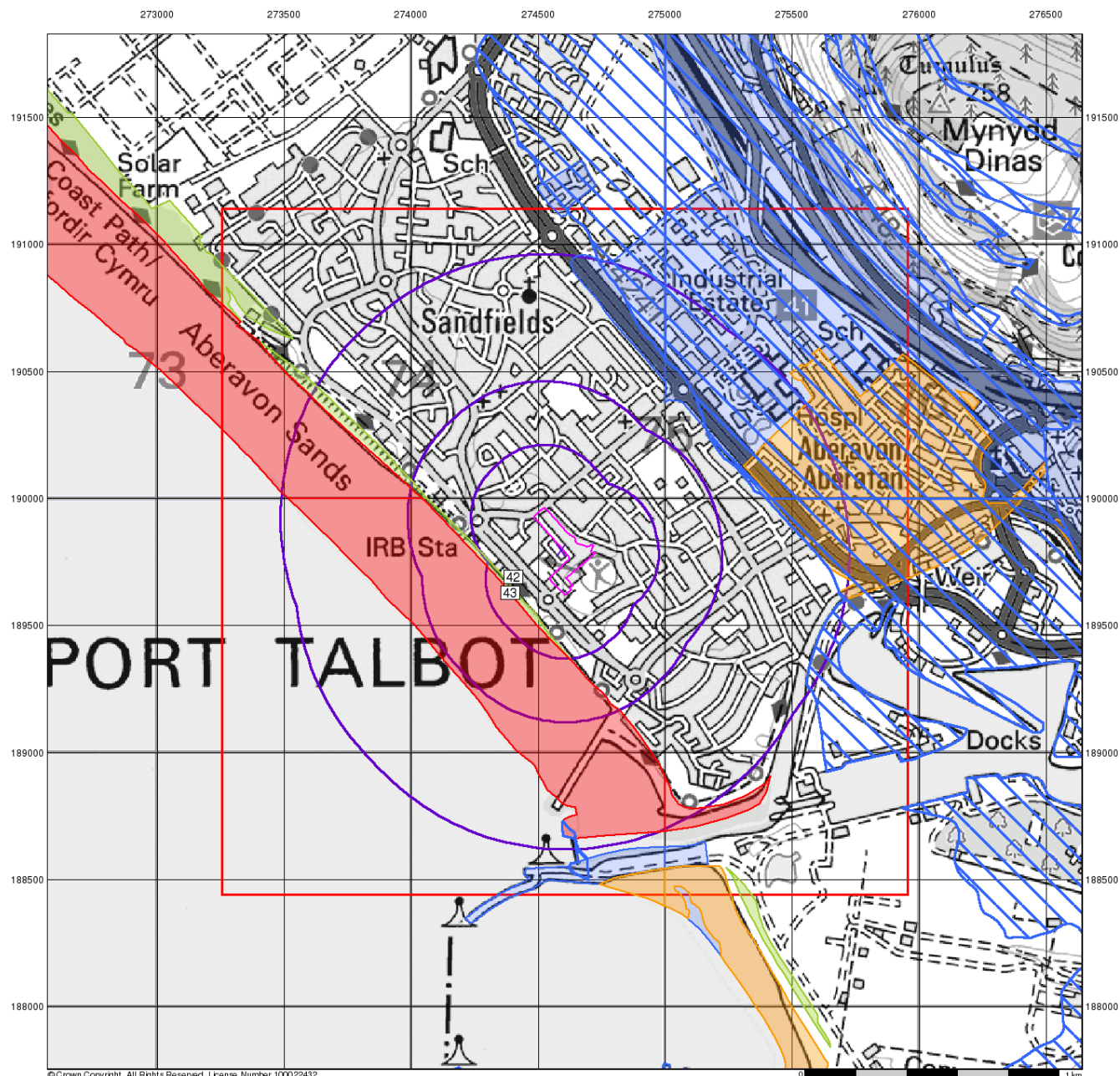
Order Number: 216203689_1_1
 Customer Ref: 12457/RAH
 National Grid Reference: 274590, 189800
 Slice: A
 Site Area (Ha): 2.47
 Search Buffer (m): 1000

Site Details

Site at 274650, 189780

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Intégral Géotechnique

Ground Stability Data (1:50,000)

General

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

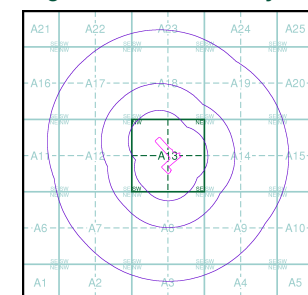
Potential for Running Sand Ground Stability Hazards

- 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: 216203689_1_1
 Customer Ref: 12457/RAH
 National Grid Reference: 274590, 189800
 Slice: A
 Site Area (Ha): 2.47
 Search Buffer (m): 1000

Site Details

Site at 274650, 189780

Landmark
 INFORMATION GROUP

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

Index Map

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

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

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

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

A selection of organisations who provide data within this report:



Envirocheck reports are compiled from 136 different sources of data.

Client Details

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

Order Details

Order Number: 216203689_1_1
Customer Ref: 12457/RAH
National Grid Reference: 274600, 189800
Site Area (Ha): 2.47
Search Buffer (m): 1000

Site Details

Site at 274650, 189780

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

APPENDIX B

BGS RADON REPORT



**British
Geological Survey**
Expert | Impartial | Innovative

GeoReports

Laura Pullin
Integral Geotechnique (Wales) Ltd
Integral House
7 Beddau Way
Castlegate Business Park
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_303465/4290**

Client reference: **Job No 12457**



Search location



Contains OS data © Crown Copyright and database right 2019. OS OpenMap Local: Scale: 1:5 000 (1cm = 50 m)

Search location indicated in red

*This report describes a site located at National Grid Reference 274587, 189863.
Note that for sites of irregular shape, this point may lie outside the site boundary.
Where the client has submitted a site plan the assessment will be based on the area given.*



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.

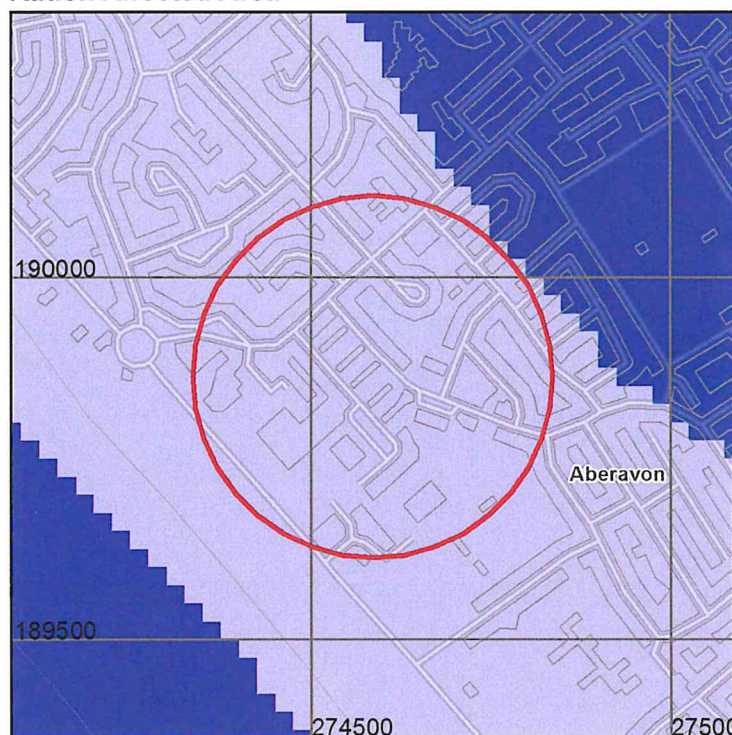
More details of the protective measures required are available in *BR211 Radon: Guidance on protective measures for new buildings (2015 Edition)*. Additional information and guidance is available from the Building Research Establishment website (<http://www.bre.co.uk/radon/>).

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 PHE 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 2019

Scale: 1:10 000 (1cm = 100 m)

Search area indicated in red

Is the property in a radon Affected Area as defined by Public Health England (PHE) 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.

PHE 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.



PHE 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. PHE 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 PHE. 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 PHE 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.uk website: www.brebookshop.com



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



Terms and Conditions

General Terms & Conditions

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Important notes about this Report

- 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.

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**Ordnance
Survey**

**Report issued by
BGS Enquiry Service**

APPENDIX C

COAL AUTHORITY MINING REPORT



The Coal
Authority

CON29M

coal mining report

SITE AT 274650, 189780, NEATH PORT TALBOT



Known or potential coal mining risks

Future underground coal mining

Page 3



Further action

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

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



Professional opinion

According to the official mining information records held by the Coal Authority at the time of this search, evidence of, or the potential for, coal mining related features have been identified. It is unlikely that these features will impact on the stability of the enquiry boundary.

Your reference: **216203689_2**
Our reference: **51002167694001**
Date: **29 August 2019**

Client name:
**LANDMARK INFORMATION
GROUP LIMITED**

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

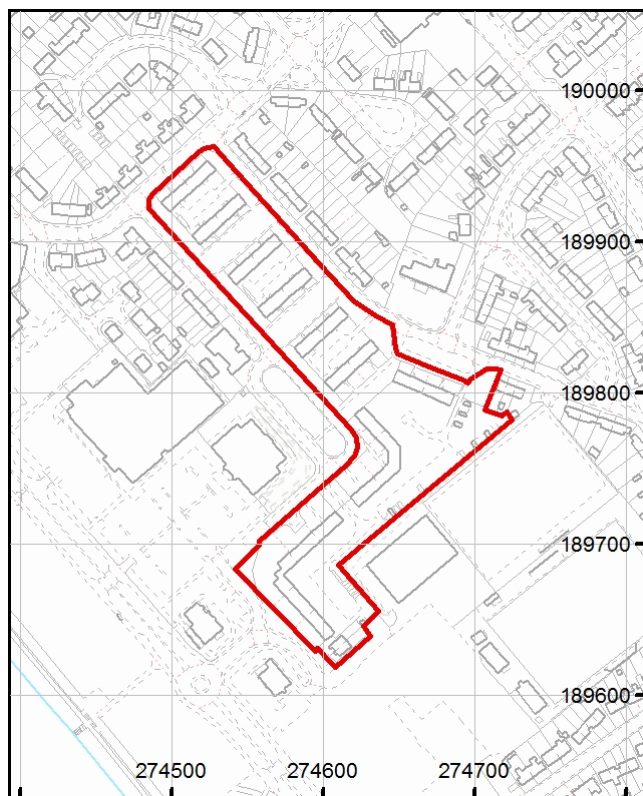


The Law
Society

Enquiry boundary

Key

Approximate position of enquiry boundary shown



We can confirm that the location is
on the coalfield



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



Accessibility

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

Detailed findings

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

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1 Past underground coal mining

The property is not within a surface area that could be affected by any past recorded underground coal mining.

2 Present underground coal mining

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

3 Future underground coal mining

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

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

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

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

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

4 Mine entries

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

5 Coal mining geology

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

6 Past opencast coal mining

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

7 Present opencast coal mining

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

8 Future opencast coal mining

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

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

9 Coal mining subsidence

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

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

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

10 Mine gas

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

11 Hazards related to coal mining

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

12 Withdrawal of support

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

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

13 Working facilities order

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

14 Payments to owners of former copyhold land

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

Statutory cover



Coal mining subsidence

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

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

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

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



Coal mining hazards

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

Glossary



Key terms

adit - horizontal or sloped entrance to a mine

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

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

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

coal seams - bed of coal of varying thickness

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

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

mine entries - collective name for shafts and adits

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

shaft - vertical entry into a mine

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

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

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

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

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

APPENDIX D

HISTORIC BOREHOLE LOGS

RECORD OF ~~SHAFT~~ BORE FOR MINERALS

Name and Number of Shaft or Bore given by Geological Survey :

County Glam.
 8" Quarter Sheet 25 NW
 1" N.S. Geol. Map 247
 1" O.S. Geol. Map _____
 Whether Confidential _____

Name and Number given by owner (if different from above):

Chawson (Nº 2)

Town or Village _____

Date of sinking Feb. 1894

Exact site _____

[Modified Version Published in Summary Memoir 1907, p. 40]

Purpose for which made _____

Level at which bore commenced relative to O.D. _____

If not down bore, state if horizontal or up _____

Made by VIVIAN'S (B3 p. 228)

for Messrs Sandhill Boring Co. Ltd.

Information from _____

JOHNSON & SONS

Date received March 1941

Specimens _____

Dip of strata _____

A sketch-map or tracing from a large-scale map is desirable.

GEOLOGICAL CLASSIFICATION	DESCRIPTION	THICKNESS		DEPTH	
N.B.		ft.	in.	ft.	in.
	<i>The "sandy cliff" in the following section is "sandy shale" Falt. and so identical with the shale marked "cliff quar" in the Blaengwynf Falt.</i>				
	Brown sand.	3	1	19	0
	Blue clay.		5	24	0
	Dark grey sand.		5	29	0
	Peat.		1 6	30	6
	Dark grey sand.		2	32	6
	Blue clay.		3 6	36	0
	Blue loamy clay.	2		48	0
	Coarse gravel.		3	51	0
	Peat.		1 0	52	0
	Hard bound gravel.	4	5	56	0
	Brown peat.	1	3	57	0
	Hard brown peat.	1	1	58	0
	Brown peat.		5	63	0
	Dark blue.		3	66	0
	Dark dark grey cliff.	1	3	67	0
	Black.		1	68	0
	Dark grey.	2		70	0
	Dark grey.	4	5	74	0
	Very jointy dark grey.	2	5	76	0
	Dark grey.	2	2	78	0
	Very jointy & broken dark grey cliff.	1	1	79	0
	Dark grey cliff.	3		82	0
	Jointy dark grey cliff.		2 4	84	4
	Coal.		6	90	0
	Light grey sandy cliff.		2 2	92	0
	Dark.		4	96	0
	Dark & cliff minor.	1	3	97	0
	Jointy grey sandy cliff.		4	101	0
	Granite rock.	1	3	102	0
	Gray.		1	103	0
	sandy cliff.		3	106	0
	Dark grey.	1	3	107	0
	Gray granite rock.		5	112	0
	Dark grey cliff.	1	3	113	0

SECTION OF NO 3 BOREHOLE ABERAVON MARSHES (1903-1905)

[Abridged version published in Swansea Mem. 1907, p. 40] [74568955]

	THICKNESS	TOTAL	DATE
<i>Brown sand</i>	74-0'-0"	21-0-	
<i>gray sand</i>	34-6'-6"	30-6-	
<i>Light Blue clay</i>	2-1-6	38-0-	17-8-03
<i>Dark Sandy clay</i>	1-2-9	43-9-	
<i>Dark running sand</i>	1-2-3	49-	
"	3-0-6	58-6-	
<i>Light Blue clay</i>	1-2-0	63-6-	
<i>Very coarse gravel</i>	2-6	66-0-	
" <i>Very Wet</i>	2-2-0	74-0-	9-9-03
"	2-0-0	80-0-	
<i>Boulder clay very stony</i>	1-0-0	83-0-	
"	4-2-0	97-0-	
<i>Broken flint - Much shattered</i>	3-1-0		
"	3-0-0		14-10-03
"	4-2-0		
<i>Cliff</i>	1-1-8		
<i>Light Blue Iron Balls</i>	1-2-0		
<i>Black Blue</i>	1-6		
<i>Black Shale</i>	4		
<i>Coal</i>	3	50-0-8	
<i>Fine, Finest - Very Hard</i>	3-0-4		
<i>Dark Sandy Shale</i>	1-9		
<i>Pennant Rock</i>	2-6		
<i>Dark Sandy Shale</i>	1-3		
<i>Pennant Rock</i>	2-1-4		
<i>Light Finest Iron Balls</i>	3-1-2		4-11-03
" " "	2-0-3		
<i>Dark Shaly Sandstone</i>	1-0-4		
"	2-0-6		
<i>Finest Bituminous Shale with Iron Balls</i>	5-1-4		
<i>Coal</i>	1	71-2-11	7-2-04
<i>Ironstone Balls - Pyrites</i>	3		
<i>Light Blue & Iron Balls</i>	1-2-6		
			Cont-

APPENDIX E

DYNAMIC WINDOWLESS SAMPLING BOREHOLE LOGS

		Integral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: Sandfields County Flats		Project No.: 12457		Borehole No.: WS01 Sheet 1 of 1	
Location: Sandfields				Client: Quad Consult		Coordinates:		Hole Type: WLS	
Equipment: Geo 032				Diameter of Casing:		Level:		Scale 1:25	
Diameter of Boring: 101mm				Depth of Casing:		Dates 30/08/2019 -		Logged By: RAH	

Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.04 - 0.20	ES		0.04		MADE GROUND comprising: Compacted GRAVEL of grey fine to coarse sub-angular to angular limestone. MADE GROUND comprising: Compact dark brown to black slightly silty gravelly SAND. Gravel comprises fine to coarse sub-angular limestone. MADE GROUND comprising: Grey locally pink gravel and cobbles of fine to coarse sub-angular grey limestone and occasional angular coal. MADE GROUND comprising: Stiff black ashy sandy gravelly silty CLAY. Gravel comprises fine to coarse sub-angular coal and burnt shale. Medium dense becoming very dense light brown fine to medium SAND.	
		0.26 - 0.36	ES		0.20 0.26 0.36			
		0.45 - 0.60	D					
		1.00	C	50 (3,5/50 for 160mm)	1.00		End of Borehole at 1.00 m	

Remarks: No groundwater encountered during or post drilling. Backfilled with arisings and finished with bitumen plug at surface.				Key: D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)				W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation			
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Intégral Géotechnique		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: Sandfields County Flats			Project No.: 12457		Borehole No.: WS02 Sheet 1 of 1		
Location: Sandfields				Client: Quad Consult			Coordinates:		Hole Type: WLS		
Equipment: Geo 032				Diameter of Casing:			Level:		Scale 1:25		
Diameter of Boring: 101mm				Depth of Casing:			Dates 30/08/2019 -		Logged By: RAH		
Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description			
		Depth (m)	Type	Results							
		0.00 - 0.15	ES		0.18			Grass over, soft brown slightly gravelly sandy silty CLAY with rootlets and containing occasional plastic and foam fragments. Gravel comprises fine to medium sub-angular limestone and sandstone. (Topsoil/subsoil) MADE GROUND comprising: Loose light brown slightly gravelly SAND. Gravel comprises fine to coarse sub-angular limestone and concrete. REWORKED SOILS comprising: Loose light brown very slightly gravelly fine to medium SAND. Gravel comprises fine to coarse limestone. Medium dense light brown fine to medium SAND. Very slightly damp.			
					0.42						
					0.55						
		0.80 - 1.00	D	N=17 (3,4/4,4,5,4)							
		1.00	C								
		2.00	C								
				3.00	C	N=18 (2,3/4,3,5,6)					
						3.70					
				4.00	C	N=34 (7,8/9,8,9,8)	3.95 4.00				
		5.00	C	N=26 (5,6/6,6,7,7)	5.00						
Remarks: No groundwater encountered during drilling. Wet at base post-drilling.							Key: D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone) W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation				

		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: Sandfields County Flats		Project No.: 12457		Borehole No.: WS03 Sheet 1 of 1	
Location: Sandfields				Client: Quad Consult		Coordinates:		Hole Type: WLS	
Equipment: Geo 032				Diameter of Casing:		Level:		Scale 1:25	
Diameter of Boring: 101mm				Depth of Casing:		Dates 30/08/2019 -		Logged By: RAH	

Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.15 - 0.40	ES		0.04		MADE GROUND comprising: Compacted bitumen bound gravel.	1	
					0.15		MADE GROUND comprising: Grey slightly sandy GRAVEL of fine to coarse sub-angular to angular limestone.		
					0.30		MADE GROUND comprising: Compact brown to pinkish brown silty gravelly SAND. Gravel comprises fine to coarse angular to sub-angular limestone and occasional fragment of blacktop/tarmac.		
					0.47		MADE GROUND comprising: Compact black slightly silty gravelly SAND. Gravel comprises fine to coarse sub-rounded to angular limestone, quartzite and sandstone.		
							Loose becoming medium dense light brown fine to medium SAND.		
		1.20	C	N=14 (2,3/3,4,3,4)					
		2.00	C	N=37 (4,6/8,7,9,13)	2.00		Medium dense to dense light brown fine to medium SAND.	2	
		2.50	C	50 (12,11/50 for 210mm)	2.50				
		End of Borehole at 2.50 m							
								3	
								4	
								5	

Remarks: Hand dug to 1.20mbgl. No groundwater encountered during or post drilling. Backfilled with arisings and finished with bitumen plug at surface.		Key: D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)		W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation		
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 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name:		Project No.:		Borehole No.:	
		Sandfields County Flats		12457		WS04	
Location:		Client:		Coordinates:		Sheet 1 of 1	
Sandfields		Quad Consult				Hole Type:	
Equipment: Geo 032		Diameter of Casing:		Level:		Scale	
						1:25	
Diameter of Boring: 101mm		Depth of Casing:		Dates		Logged By:	
				30/08/2019 -		RAH	

Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.30	ES		0.30		Grass over, soft to firm brown slightly sandy slightly gravelly silty CLAY with rootlets. Gravel comprises fine to medium sub-angular limestone and quartz. (Topsoil/subsoil)		
		1.00	C	N=12 (2,3/3,2,4,3)					
		1.30 - 1.50	D						
		2.00	C	N=17 (3,4/4,4,5,4)					
		3.00		N=7 (2,1/1,1,2,3)					
		4.00	C	N=25 (6,5/6,6,7,6)	4.75		Medium dense brown fine to medium SAND.		
		5.00	C	N=19 (3,4/4,5,5,5)	5.00		End of Borehole at 5.00 m		

Remarks: No groundwater encountered during drilling. Slightly wet at base post-drilling.		Key: D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)		W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation		
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		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: Sandfields County Flats		Project No.: 12457		Borehole No.: WS05 Sheet 1 of 1	
Location: Sandfields				Client: Quad Consult		Coordinates:		Hole Type: WLS	
Equipment: Geo 032				Diameter of Casing:		Level:		Scale 1:25	
Diameter of Boring: 101mm				Depth of Casing:		Dates 30/08/2019 -		Logged By: RAH	

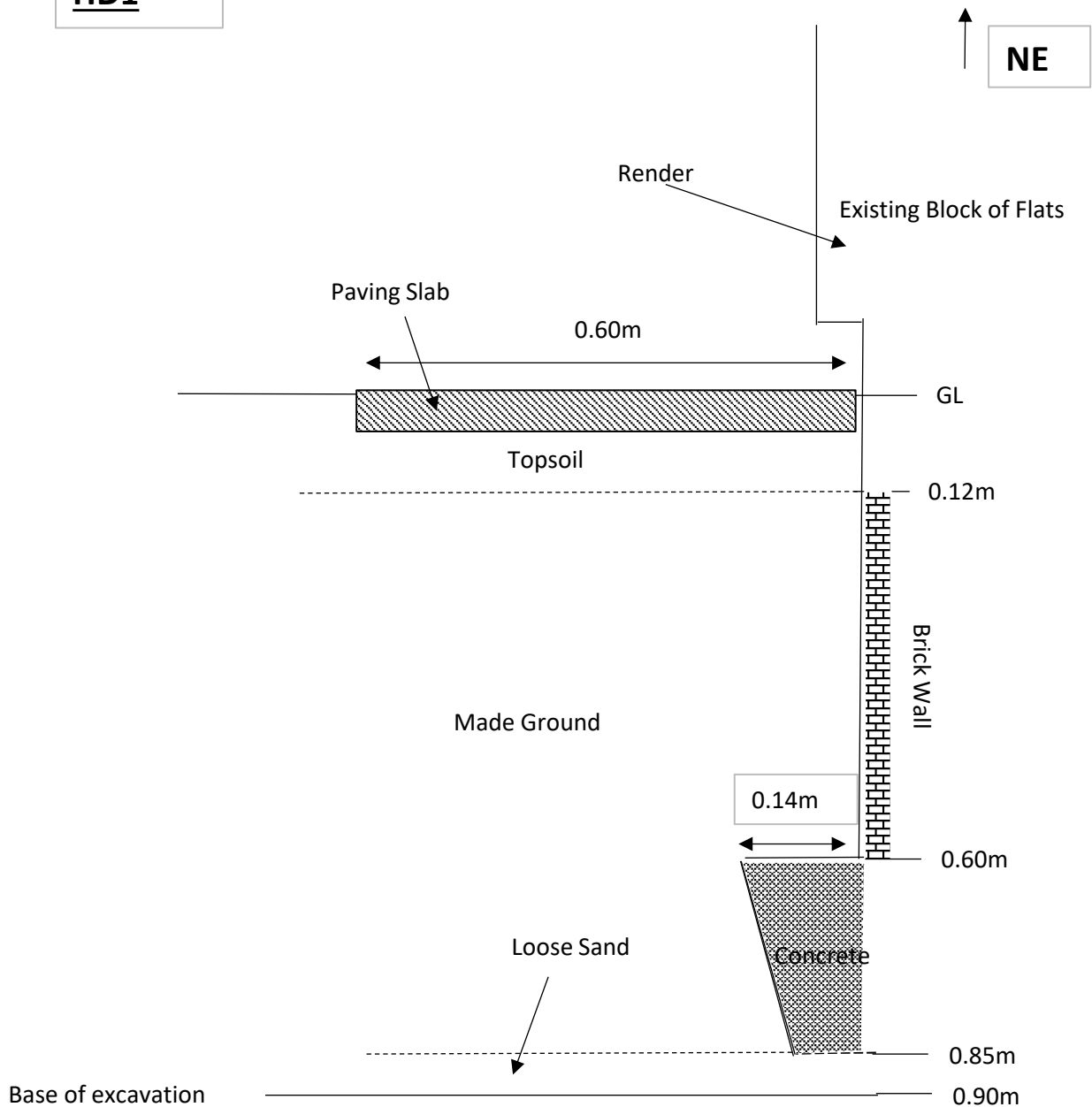
Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.05			MADE GROUND comprising: TARMAC/Bitumen bound gravel.	1
					0.20			MADE GROUND comprising: White/light grey GRAVEL of fine to coarse sub-angular to angular limestone, with occasional cobble.	
		0.40 - 0.60	ES		0.40			REWORKED SOILS comprising: Moderately compact light brown mottled dark grey slightly silty gravelly fine SAND. Gravel comprises fine to coarse sub-angular sandstone and limestone, often black stained. Occasional cobble of limestone.	
		0.80 - 1.00	D		0.60			REWORKED SOILS comprising: Moderately compact light brown mottled dark grey slightly silty gravelly fine SAND. Gravel comprises abundant fine burnt shale and fine to coarse sub-angular sandstone and limestone, often black stained.	
		1.00	C	N=12 (2,2/2,3,3,4)	1.00			Loose to medium dense light brown locally mottled grey fine to medium SAND. (Possible reworked materials)	
		2.00	C	N=9 (1,1/2,2,2,3)				Loose locally medium dense light brown fine to medium SAND.	2
		3.00	C	N=9 (1,2/2,3,2,2)					3
		4.00	C	N=21 (4,5/5,5,5,6)					4
		5.00	C	N=5 (2,2/2,1,1,1)	5.00				5

Remarks: No groundwater encountered during or post drilling. Backfilled with arisings and finished with bitumen plug at surface.		Key: D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)		W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation		
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APPENDIX F

FOUNDATION INSPECTION PITS

HD1

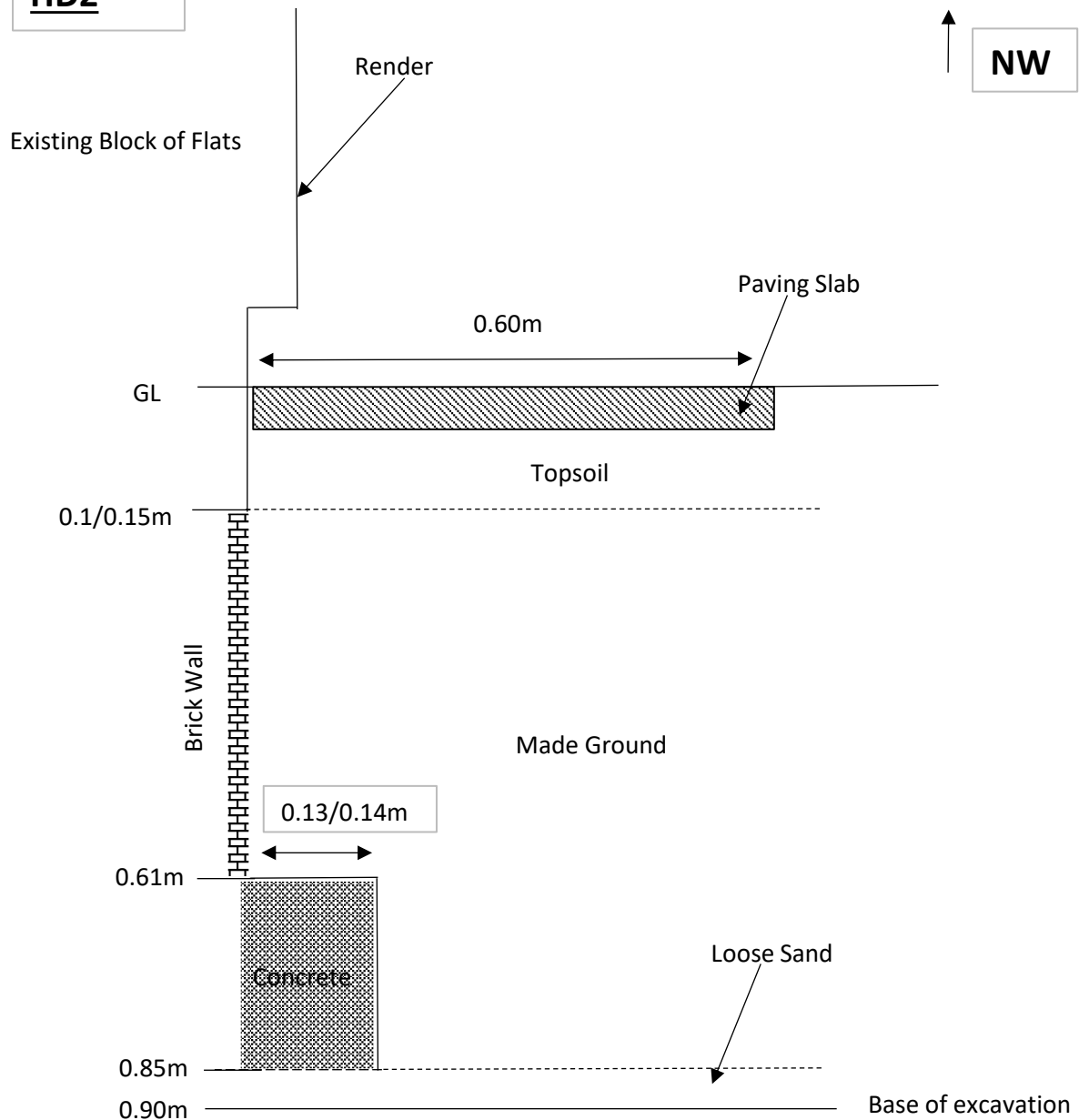


KEY

Made Ground: Loose brown fine to medium SAND with occasional gravel of sub-angular to sub-rounded quartz.

Loose Sand: Loose fine to medium SAND (Blown Sand).

HD2



KEY

Made Ground: Loose light brown gravelly SAND with occasional cobbles. Gravel and cobbles comprise brick, concrete, limestone, sandstone. Contains occasional asbestos cement tile, scrap metal and ceramic fragment.

Loose Sand: Loose fine to medium SAND (Blown Sand).

APPENDIX G

LABORATORY CHEMICAL TEST RESULTS (SOILS)



Rebecca Hitt
Integral Geotechnique
Integral House
7 Beddau Way
Castlegate Business Park
CF83 2AX

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f: 02920862176
e: rebecca@integralgeotec.com

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

t: 01923 225404
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e: reception@i2analytical.com

Analytical Report Number : 19-57541

Project / Site name:	Sandfields, Aberavon	Samples received on:	03/09/2019
Your job number:	12457	Samples instructed on:	03/09/2019
Your order number:		Analysis completed by:	11/09/2019
Report Issue Number:	1	Report issued on:	11/09/2019
Samples Analysed:	1 bulk sample - 10 soil samples		

Signed:

Dr Claire Stone
Quality Manager
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.

Iss No 19-57541-1 Sandfields, Aberavon 12457

This certificate should not be reproduced, except in full, without the express permission of the laboratory.

The results included within the report are representative of the samples submitted for analysis.

Page 1 of 7

Analytical Report Number: 19-57541
Project / Site name: Sandfields, Aberavon

Lab Sample Number				1306161	1306162	1306163	1306164	1306165
Sample Reference				WS01	WS01	WS01	WS02	WS02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.04-0.20	0.26-0.36	0.45-0.60	0.00-0.15	0.80-1.00
Date Sampled				30/08/2019	30/08/2019	30/08/2019	30/08/2019	30/08/2019
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	%	N/A	NONE	3.3	5.1	3.0	11	3.0
Total mass of sample received	kg	0.001	NONE	0.52	0.50	1.6	0.44	1.7

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	-	Not-detected	-
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General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.9	8.3	8.9	7.7	8.7
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	-	< 1	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	320	450	-	670	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.022	0.075	0.0056	0.018	0.0033
Sulphide	mg/kg	1	MCERTS	31	5.4	-	1.1	-
Total Sulphur	mg/kg	50	MCERTS	220	3200	-	340	-
Total Organic Carbon (TOC)	%	0.1	MCERTS	0.9	2.0	-	2.1	-
Loss on Ignition @ 450°C	%	0.2	MCERTS	2.1	14.9	-	4.9	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.25	1.6	-	0.52	-
Acenaphthylene	mg/kg	0.05	MCERTS	0.49	< 0.05	-	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	0.51	< 0.05	-	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	1.3	0.45	-	< 0.05	-
Phenanthrene	mg/kg	0.05	MCERTS	8.3	1.0	-	< 0.05	-
Anthracene	mg/kg	0.05	MCERTS	2.7	< 0.05	-	< 0.05	-
Fluoranthene	mg/kg	0.05	MCERTS	19	< 0.05	-	< 0.05	-
Pyrene	mg/kg	0.05	MCERTS	15	< 0.05	-	< 0.05	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	20	< 0.05	-	< 0.05	-
Chrysene	mg/kg	0.05	MCERTS	17	< 0.05	-	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	25	< 0.05	-	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	7.7	< 0.05	-	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	16	< 0.05	-	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	7.7	< 0.05	-	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	3.5	< 0.05	-	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	7.6	< 0.05	-	< 0.05	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	152	3.06	-	< 0.80	-
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	4.2	16	-	12	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.18	1.1	-	0.91	-
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3	1.0	-	0.8	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	2.0	2.7	-	2.8	-
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	-	< 4.0	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	13	19	-	35	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	17	49	-	18	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	46	93	-	140	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-	< 0.3	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	5.4	21	-	23	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	11	14	-	38	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	68	110	-	130	-

Analytical Report Number: 19-57541
Project / Site name: Sandfields, Aberavon

Lab Sample Number				1306166	1306167	1306168	1306169	1306170
Sample Reference				WS04	WS04	WS05	WS05	HD2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10-0.30	1.30-1.50	0.40-0.60	0.80-1.00	0.20-0.80
Date Sampled				30/08/2019	30/08/2019	30/08/2019	30/08/2019	30/08/2019
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	%	N/A	NONE	12	3.9	3.7	3.8	3.3
Total mass of sample received	kg	0.001	NONE	0.47	1.4	0.54	1.4	1.4

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	Not-detected	-	Not-detected
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General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.0	8.8	9.3	8.8	11.4
Total Cyanide	mg/kg	1	MCERTS	< 1	-	< 1	-	< 1
Total Sulphate as SO ₄	mg/kg	50	MCERTS	880	-	390	-	810
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.027	0.0026	0.044	0.0071	0.10
Sulphide	mg/kg	1	MCERTS	7.5	-	3.5	-	3.4
Total Sulphur	mg/kg	50	MCERTS	410	-	510	-	330
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.9	-	1.2	-	0.2
Loss on Ignition @ 450°C	%	0.2	MCERTS	4.8	-	5.6	-	0.8

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	0.75	-	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	-	0.56	-	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	-	1.31	-	< 0.80
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	-	16	-	6.4
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.2	-	0.43	-	0.18
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	-	0.2	-	0.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	7.5	-	< 0.2	-	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	-	< 4.0	-	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	63	-	7.5	-	7.5
Copper (aqua regia extractable)	mg/kg	1	MCERTS	23	-	19	-	11
Lead (aqua regia extractable)	mg/kg	1	MCERTS	460	-	14	-	9.7
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	24	-	12	-	6.0
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	43	-	16	-	15
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	270	-	29	-	32



Analytical Report Number: 19-57541

Project / Site name: Sandfields, Aberavon

Lab Sample Number				1306171				
Sample Reference				HD2				
Sample Number				None Supplied				
Depth (m)				S1				
Date Sampled				30/08/2019				
Time Taken				None Supplied				
Analytical Parameter (Bulk Analysis)				Units	Limit of detection	Accreditation Status		
Asbestos Identification				Type	N/A	ISO 17025	Chrysotile - Hard/Cement Type Material	

Analytical Report Number : 19-57541

Project / Site name: Sandfields, Aberavon

* 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 *
1306161	WS01	None Supplied	0.04-0.20	Brown sandy gravel.
1306162	WS01	None Supplied	0.26-0.36	Grey sandy clay with gravel.
1306163	WS01	None Supplied	0.45-0.60	Light brown sand.
1306164	WS02	None Supplied	0.00-0.15	Light brown sandy loam with gravel and vegetation.
1306165	WS02	None Supplied	0.80-1.00	Light brown sand.
1306166	WS04	None Supplied	0.10-0.30	Brown sandy loam with gravel and vegetation.
1306167	WS04	None Supplied	1.30-1.50	Brown sand.
1306168	WS05	None Supplied	0.40-0.60	3.13.20.0
1306169	WS05	None Supplied	0.80-1.00	Brown sand.
1306170	HD2	None Supplied	0.20-0.80	Brown sand with gravel.

Analytical Report Number : 19-57541

Project / Site name: Sandfields, Aberavon

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Bults	Asbestos Identification in bulk material with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	W	ISO 17025
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
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L047-PL	D	MCERTS
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
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	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
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	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
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
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-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 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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests ^{***}	L009-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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
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 based on BS1377 Part 3, 1990, and MEWAM 2006 Methods for the Determination of Metals in Soil	L038-PL	D	MCERTS

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The results included within the report are representative of the samples submitted for analysis.

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Analytical Report Number : 19-57541

Project / Site name: Sandfields, Aberavon

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

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

APPENDIX H

SUMMARY OF CHEMICAL RESULTS

SUMMARY OF LABORATORY SOIL TEST RESULTS

METALS AND SEMI-METALS

Job No.: 12457
 Site: Sandfields, Aberavon
 Soil Type: Made Ground
 Soil Organic Matter: 1%

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)	Stratum
1	WS01	0.04-0.20	4.2	0.3	0.18	2.0	13	< 4.0	17	46	< 0.3	5.4	< 1.0	11	68	Made Ground
2	WS01	0.26-0.36	16	1.0	1.1	2.7	19	< 4.0	49	93	< 0.3	21	< 1.0	14	110	Made Ground
3	WS01	0.45-0.60	-	-	-	-	-	-	-	-	-	-	-	-	-	Blown Sand
4	WS02	0.00-0.15	12	0.8	0.91	2.8	35	< 4.0	18	140	< 0.3	23	< 1.0	38	130	Topsoil
5	WS02	0.80-1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	Blown Sand
6	WS04	0.10-0.30	16	0.6	1.2	7.5	63	< 4.0	23	460	< 0.3	24	< 1.0	43	270	Topsoil
7	WS04	1.30-1.50	-	-	-	-	-	-	-	-	-	-	-	-	-	Blown Sand
8	WS05	0.40-0.60	16	0.2	0.43	< 0.2	7.5	< 4.0	19	14	< 0.3	12	< 1.0	16	29	Reworked Soils
9	WS05	0.80-1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	Blown Sand
10	HD2	0.20-0.80	6.4	0.7	0.18	< 0.2	7.5	< 4.0	11	9.7	< 0.3	6.0	< 1.0	15	32	Made Ground
Screening Criteria Value			79.0	21000.0	2.2	11.0	1500.0	7.7	12000.0	630.0	16.0	230.0	1100.0	2000.0	81000.0	
Source of Screening Criteria Value			S4UL	S4UL	S4UL	S4UL	-	S4UL	S4UL	C4SL	S4UL	S4UL	S4UL	S4UL	S4UL	

SUMMARY OF LABORATORY SOIL TEST RESULTS

INORGANIC CHEMICALS & OTHERS

Job No.: 12457
 Site: Sandfields, Aberavon
 Soil Type: Made Ground
 Soil Organic Matter: 1%

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 (%)	Stratum
1	WS01	0.04-0.20	< 1	2.1	3.3	< 1.0	8.9	0.022	320	31	220	0.9	1.55	Not-detected	#N/A	Made Ground
2	WS01	0.26-0.36	< 1	14.9	5.1	< 1.0	8.3	0.075	450	5.4	3200	2.0	3.44	Not-detected	#N/A	Made Ground
3	WS01	0.45-0.60	-	-	3.0	-	8.9	0.0056	-	-	-	-	-	-	#N/A	Blown Sand
4	WS02	0.00-0.15	< 1	4.9	11	< 1.0	7.7	0.018	670	1.1	340	2.1	3.61	Not-detected	#N/A	Topsoil
5	WS02	0.80-1.00	-	-	3.0	-	8.7	0.0033	-	-	-	-	-	-	#N/A	Blown Sand
6	WS04	0.10-0.30	< 1	4.8	12	< 1.0	8.0	0.027	880	7.5	410	1.9	3.27	Not-detected	#N/A	Topsoil
7	WS04	1.30-1.50	-	-	3.9	-	8.8	0.0026	-	-	-	-	-	-	#N/A	Blown Sand
8	WS05	0.40-0.60	< 1	5.6	3.7	< 1.0	9.3	0.044	390	3.5	510	1.2	2.06	Not-detected	#N/A	Reworked Soils
9	WS05	0.80-1.00	-	-	3.8	-	8.8	0.0071	-	-	-	-	-	-	#N/A	Blown Sand
10	HD2	0.20-0.80	< 1	0.8	3.3	< 1.0	11.4	0.10	810	3.4	330	0.2	0.34	Not-detected	#N/A	Made Ground
Screening Criteria Value			34.0	-	-	760.0	-	-	-	-	-	-	-	-	0.001	
Source of Screening Criteria Value			ATRISK	-	-	S4UL	-	-	-	-	-	-	-	-	IOM	

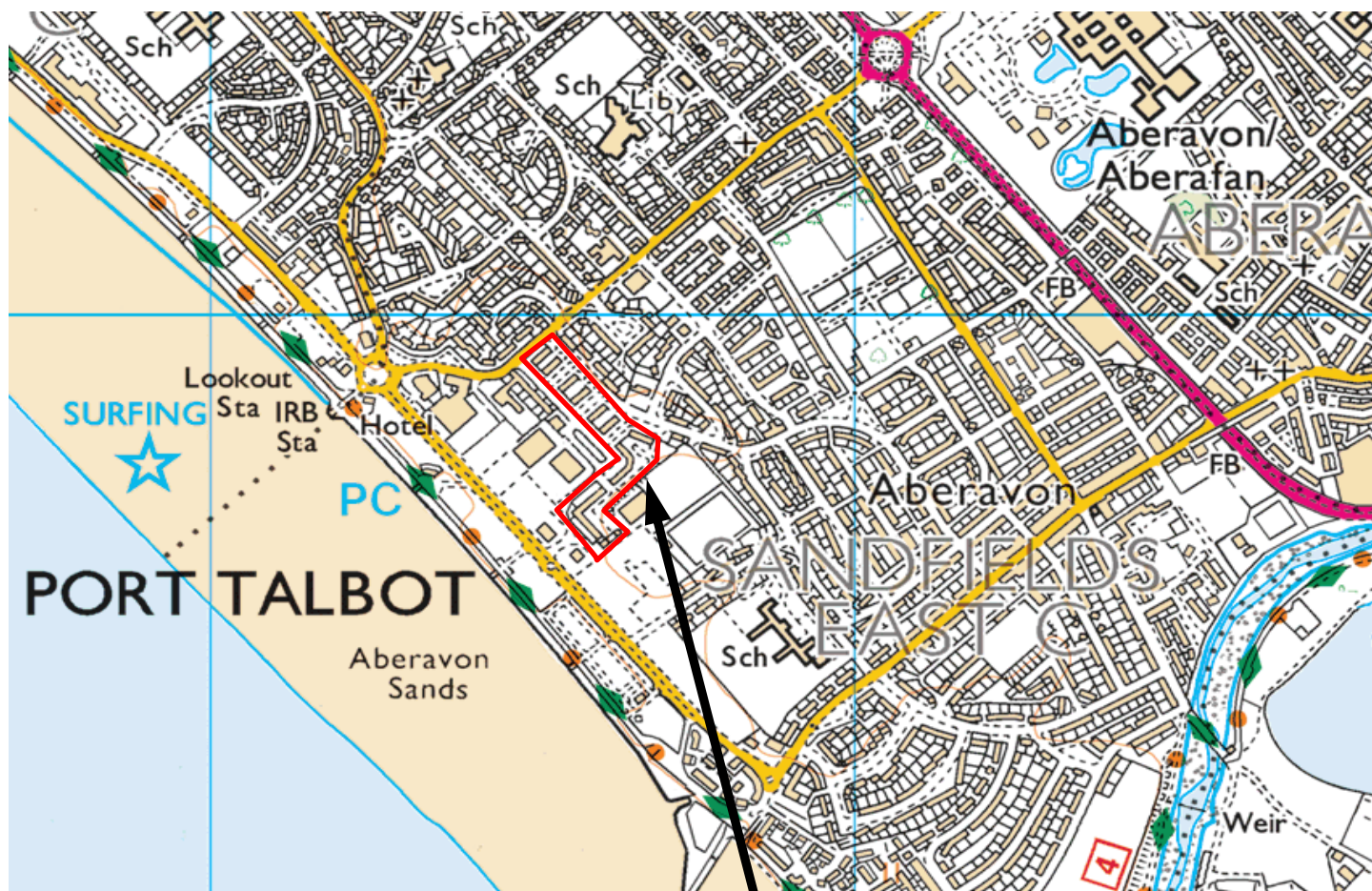
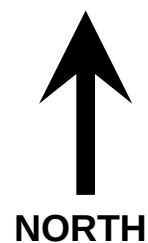
SUMMARY OF LABORATORY SOIL TEST RESULTS

POLYAROMATIC HYDROCARBONS (PAH)

Job No.: 12457
 Site: Sandfields, Aberavon
 Soil Type: Made Ground
 Soil Organic Matter: 1%

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)	Stratum
1	WS01	0.04-0.20	0.51	0.49	2.7	20	16	25	7.6	7.7	17	3.5	19	1.3	7.7	0.25	8.3	15	Made Ground
2	WS01	0.26-0.36	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.45	< 0.05	1.6	1.0	< 0.05	Made Ground
3	WS01	0.45-0.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Blown Sand
4	WS02	0.00-0.15	< 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	0.52	< 0.05	< 0.05	Topsoil
5	WS02	0.80-1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Blown Sand
6	WS04	0.10-0.30	< 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	Topsoil
7	WS04	1.30-1.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Blown Sand
8	WS05	0.40-0.60	< 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	0.75	0.56	< 0.05	Reworked Soils
9	WS05	0.80-1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Blown Sand
10	HD2	0.20-0.80	< 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	Made Ground
Screening Criteria Value			15000.0	15000.0	74000.0	29.0	5.7	7.1	640.0	190.0	57.0	0.6	3100.0	9900.0	82.0	4900.0	3100.0	7400.0	
Source of Screening Criteria Value			S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	

FIGURES



The Site

FIGURE 1 - Site Location Plan

12457 - Sandfields, Aberavon

Intégral
Géotechnique

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

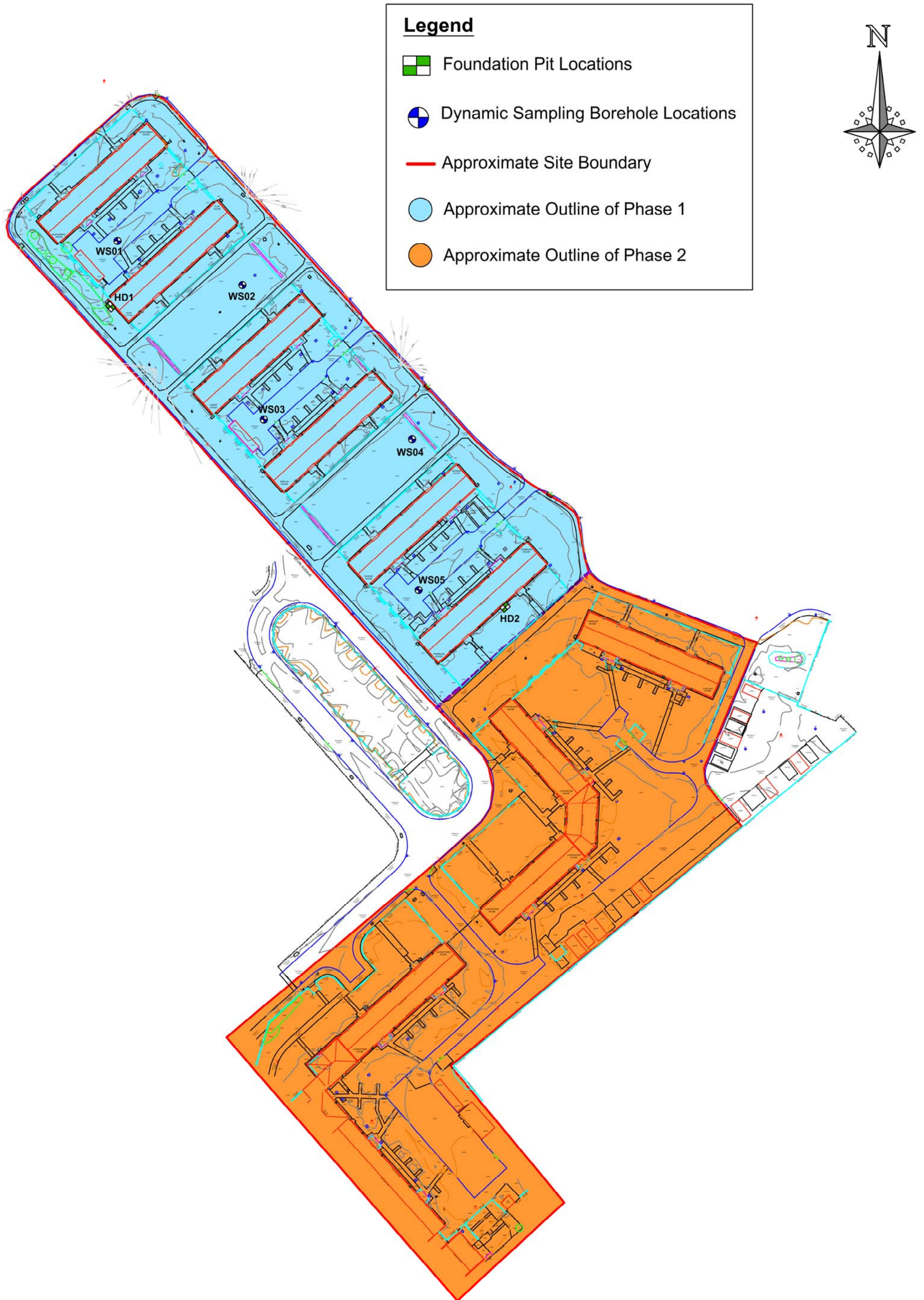


Figure 2 : Exploratory Hole Location Plan

Project: Sandfields, Aberavon

Client: Quad Consult

Job No.: 12457

Scale: 1:1000 at A3

Intégral
Géotechnique

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