THE VALE OF
GLAMORGAN COUNCIL

TOWN AND COUNTRY PLANNING ACT 1990

APPROVED

SUBJECT TO COMPLIANCE WITH CONDITIONS (IF ANY)

Lambert Smith Hampton

Land at Upper House Farm, Rhoose

Site Investigation Report

11164/DH/13

Intégral
Géotechnique

CLIENT: **Lambert Smith Hampton**

PROJECT: **Land at Upper House Farm, Rhoose**

TITLE: **Site Investigation Report**

JOB NO: **11164**

DOCUMENT REF: **11164/DH/13**

Revision	Purpose Description	Originated	Reviewed	Authorised	Date
0	Final	DH	GNS	HP	May 2013

Geotechnical Engineers:

Intégral Géotechnique (Wales) Limited
Integral House
7 Beddau Way
Castlegate Business Park
Caerphilly
CF83 2AX

Tel: 029 2080 7991
Fax: 029 2086 2176

CONTENTS

CONTENTS (CONTINUED)

1.0 INTRODUCTION

1.1 GENERAL

Lambert Smith Hampton are the agents for the sale of a site at Rhoose, to the rear of Upper House Farm for residential end-use. We understand the site is being marketed for residential end use.

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

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

1.2 PROPOSED DEVELOPMENT

It is understood the site is to be marketed as a residential development opportunity. At this stage it is assumed that the proposed houses will be conventional low rise structures, with associated residential garden and landscaped areas.

1.3 SCOPE OF WORKS

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

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
- Geological maps of the area and the online database provided by the British Geological Survey
- the Environment Agency groundwater vulnerability map and aquifer database for the area

1.3 SCOPE OF WORKS (CONTINUED)

The desk study information was used to make an initial assessment of the site and to design an investigation to be carried out by Intégral Géotechnique. The site investigation was designed in accordance with BS5930:1999, the Code of Practice for Site Investigations, BS10175:2011, the code of practice for investigation of potentially contaminated sites, and 'Land Contamination: A Guide for Developers' prepared by Welsh Local Government Association (WLGA)/Environment Agency Wales (EAW) Land Contamination Working Group, July 2006.

The site investigation included:

- An intrusive investigation carried out during 19th to 23rd April 2013
- Sampling of soil/fill for laboratory chemical and physical 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, the Environment Agency Wales and the NHBC, as appropriate.

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

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.

Access for the intrusive site investigation was readily available across the site, but locally limited by the presence of underground services. Care was also taken around livestock, with no excavations remaining open for an extended period of time.

This report has been prepared for the use of Lambert Smith Hampton and should not be passed to others without the express consent of Intégral Géotechnique (Wales) Limited.

2.0 THE SITE

2.1 SITE LOCATION AND DESCRIPTION

The site is located to the south of Porthkerry Road on the eastern side of Rhoose Village, approximately 800m south of Cardiff International Airport and centred at a National Grid Reference of 306740 166370, see Figure 1.

The site is irregular in shape and occupies an area of approximately 12.66 hectares and comprises seven undeveloped fields used for the grazing of horses and cattle. The boundaries of the site are defined by hedgerows and wire fencing. The rear gardens of adjacent residential properties define the northern, western and eastern (in part) site boundaries. A track and public footpath defines the majority of the eastern site boundary and the southern boundary is defined by the main Vale railway line. The site is dissected by hedgerows, defining field lines. A single story, detached bungalow with associated areas of hardstanding is located in the north eastern extent of the site in close proximity to the track. A site plan is presented in Figure 2.

The site is situated on southward sloping ground from an approximate elevation of 60m AOD in the north, dropping some 19m in elevation to typically 41m AOD in the south.

Gated access is provided by the track running along the eastern site boundary (in part).

2.2 SITE OPERATIONS

The site is currently used for agricultural purposes, specifically for grazing of livestock, including cattle. The north eastern site corner is occupied by a single detached bungalow.

2.3 SURROUNDING LAND USE

To the west, north and north east of the site lies residential housing and associated gardens which back onto the site. To the south of the railway line, which defines the southern site boundary, is further residential housing of Rhoose Point housing development. To the east of the site lies open agricultural land.

2.4 AVAILABLE SITE INVESTIGATION DATA

No previous site investigation data has been made available.

2.5 CONSULTATIONS WITH REGULATORS

No consultations have been made with 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	1879, 1900, 1919, 1943, 1973, 1978, 1988, 1990, 1993, 1994, 1995, 1996, 1997.
1:10,560	1885, 1900-1901, 1921, 1938-1947.
1:10,000	1965, 1975, 1982, 1995, 2006, 2012.

The earliest editions of the historical maps, dated circa 1879, indicated the site to comprise undeveloped open fields. A track orientated north-south runs along the sites main eastern boundary and is shown to be on site in the north eastern site area. A narrow area of vegetated land was situated in the south western site area, leading off the site to the south. This area was indicated to be a topographic depression vegetated as heathland with trees. A limekiln was situated 500m to the south west of the site, shown on maps dated 1885.

Maps dated circa 1900-1901 indicated that a minor road or track ran across the sites western area in a northwest-southeast orientation. This track was shown leading from the nearby residential area of Rhoose, to a railway crossing which was located on the sites southern boundary, possibly partially onsite. Two small non-descript buildings were situated at the sites north western area at this time. The narrow depression shown on former maps was still shown but was no longer indicated to be vegetated by this time. A well was situated immediately northwest of the site. The Vale of Glamorgan Railway Line, oriented east-west, had been constructed along the sites southern boundary by this time.

By 1921 a cement works and reservoir had been constructed immediately south of the railway line. A quarry, likely to be quarrying limestone for the cement production, was shown approximately 250m south-southwest of the site on maps dated 1921. The limekiln was indicated as disused by this time.

3.0 SITE HISTORY (CONTINUED)

An 'Asbestos Cement Works' had been constructed some 100m south west of the site by circa 1938-1947, as well as an additional quarry immediately west of the existing quarry. Residential development had occurred immediately west of the site in the village of Rhoose. Minor residential development had also taken place to the north east of the site by this time, including the construction of the bungalow in the north eastern corner of the site. The small buildings in the north western site area were labelled as 'Sheep Wash' by 1943.

The narrow area of topographic depression in the south-western site area and the track running across the western site area were no longer shown on maps dated 1973, suggesting that the depression had potentially been infilled by this time. Much residential development had occurred immediately north of the site. Both quarries to the south of the site were labelled as disused on maps dated 1975.

The sheep wash buildings in the north western site area were not shown on maps dated 1990, indicating that they were removed by this time.

By 1995 the cement works immediately south of the site and the asbestos cement works to the south west of the site were disused. The previous asbestos cement works some 100m south west of the site was now labelled as Cardiff Airport Industrial Estate by this time. Residential development had occurred immediately to the east-northeast.

4.0 SITE ENVIRONMENTAL SETTING

4.1 PHYSICAL SETTING

The site is situated on southward sloping ground from an elevation of typically 60m AOD in the north to 41m AOD in the south, and comprises undeveloped open fields.

The site is located approximately 400m from the South Wales Coastline, specifically Rhoose Point beach.

4.2 GEOLOGY

The 1:50,000 scale geological map (Sheet 262) of the area indicates that the site is underlain by rocks of the Porthkerry Formation, belonging to the Lower Lias Limestone Series of Jurassic age. These rocks typically comprise interbedded limestone and mudstone.

The solid strata are indicated to be dipping southward at approximately 7°.

Potential made ground is anticipated in the north eastern corner of the site, local to the existing bungalow and derived from the construction of the bungalow and localised disturbance of the ground profile. Made ground may also be identified within the vicinity of the small depression historically identified on site.

The geological map indicates that no superficial deposits are situated on the site area.

A thin veneer of topsoil should be anticipated across the site area.

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	Localised made ground	Various materials derived from the construction of the bungalow in the northeast of the site and associated with the possible infill of a historical depression on site.
Recent	Topsoil	Homogenous silts and clays, potentially organic rich.
Jurassic	Porthkerry Formation	Interbedded limestone and mudstone.

4.2 GEOLOGY (CONTINUED)

A BGS radon report has been obtained for the site and a copy included in Appendix B. The report indicates that the site is in a radon affected area where the probability that the site is above the Action Level is 1-3% (intermediate). However, no radon protective measures are required for the site

4.3 MINING

The Envirocheck Report indicates that the site does not lie within a defined coalfield area, and therefore the site is not at risk from any shallow coal mining hazards.

4.4 HYDROLOGY, HYDROGEOLOGY AND FLOOD RISK

The nearest surface water features are recorded some 270m to the south of the site. The Envirocheck report does not provide details of the features nature but from observation it appears that they comprise a series of surface water drains and ponds/lakes.

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

There are no superficial soils beneath the site; hence no classification for superficial soils is applied.

Given the anticipated ground conditions, no perched water body is anticipated.

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

There are three discharge consents recorded within 500m of the site boundary, the nearest of which is located 293m west of the site. The discharge consent is for storm sewage overflow into Rhoose Brook operated by Dwr Cymru Cyfyngedig.

The Envirocheck Report states that there are two groundwater abstractions within 1000m of the site.

1.4 LIMITATIONS (CONTINUED)

Approximately 120m southwest of the site a groundwater abstraction operated by Blue Circles Industries Plc. Water is abstracted from a groundwater source for evaporative cooling.

The remaining abstraction is situated some 227m northwest of the site and operated by a Mr G. Reader, with water abstracted from a well at Lower Farm for general farming and domestic use.

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
Surface run-off	On site	Flows into site surface	N/A	No	Not known
Site Drainage	Located within the south-western extremes of the site and local to the existing bungalow	Not known	N/A	No	Not known

Table 3: Summary of Site Hydrogeology

Geological Unit	Aquifer Classification	Aquifer Characteristics	Source Protection Zone	Groundwater Abstractions
Topsoil/localised made ground	Not classified	Highly variable permeability and porosity. Likely to be in hydraulic continuity with underlying solid strata	No	None
Porthkerry Formation	Secondary A Aquifer	Variable permeability limestones and mudstones. Fracture permeability is the likely control of flow rates.	No	123m south west and 227m north west of site

The soils have been classified as having a high leachate potential. Soils of high leaching potential are coarse textured or moderately shallow soils which readily transmit non absorbed pollutants and liquid discharges but which have some ability to attenuate absorbed pollutants because of their large clay or organic matter contents.

4.4 HYDROLOGY, HYDROGEOLOGY AND FLOOD RISK (CONTINUED)

The Environment Agency Flood Risk Map as presented within the Envirocheck Report in Appendix B indicates that the site is not at risk from flooding from rivers or sea.

4.5 LANDFILL SITES

Three historical landfill sites are located within 500m of the site.

The Rhoose Point Encapsulation Landfill was historically located 185m southwest of the site, deposited waste included industrial and special waste. The site was operated by Blue Circle Industries Plc at the old Aberthaw Works.

A historical landfill known as The Quarry (some 187m distant to the southwest) was used for industrial, commercial, household and special waste and liquid sludge; the last recorded input date was 1979. The site was operated by Tac Construction Materials Limited.

Formerly located 392m south of the site was the Rhoose Quarry landfill site which received industrial, commercial, household and special waste between 1981 and 1991. The site was operated by Blue Circle Cement Plc.

All of the above landfills were situated on the sites of the former quarries/cement works to the south of the site.

Three registered landfill sites are located within 500m of the site. It is important to note that none of these landfills are any longer operational.

The recent Rhoose Point Encapsulation Landfill is situated 334m south west of the site. The max input rate is listed as ‘medium’ and the site was closed in May 1997. Authorised wastes included Asbestos Contaminated Soil, Bagged Asbestos, Contaminated Soils & Spoils, Hardcore, Solidified Cement Wastes and Subsoils. Prohibited waste included Biodegradable/Putrescible Waste, Liquid Wastes, Spec.Waste (In '96 Regs) Exc. Asbestos and Waste N.O.S.

The Quarry landfill site, situated 375m south west was not operational from December 1977. Authorised waste included Asbestos Cement Sludge, Asbestos Fibre, Builders Debris, Dry Asbestos Cement Waste, Kitchen Waste, Paint Tins, Paper/Cardboard Waste, Plastic Bags and Pulverised Fuel Ash. Prohibited waste included Blue Asbestos.

4.5 LANDFILL SITES (CONTINUED)

Rhoose Cement Works Quarry Landfill Site, situated 364m south of the site, was no longer operational from October 1981. Authorised waste included Cement Waste, Domestic Office Waste, General Industrial Waste, Office Paper and Scrap Wooden Pallets. Prohibited waste included toxic waste.

4.6 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. Reference to Department of the Environment Industry Profiles has been made and a summary of the potential contaminants can be found in the tables.

Table 4: Potential Contaminants

Land Use: Green Field		
Material/Process	**Contamination/Hazard**	**Evidence**
Possible agricultural land	No potential contaminants	Historical Maps
Land Use: Residential in north eastern corner from 1938-47		
Material/Process	**Contamination/Hazard**	**Evidence**
Potential made ground local to bungalow in north eastern site corner and to the small area of potentially infilled ground in the central site area.	Metals, semi metals, non-metals, PAH	Historical Maps

Existing Uses

The site remains as undeveloped open fields, currently used for agricultural purposes. A detached bungalow is situated in the sites north eastern extent. Limited sources of contamination would be anticipated.

4.6 POTENTIAL CONTAMINATION (CONTINUED)

Adjacent Site Uses

Table 5 : Potential Contaminants : Adjacent Site Uses		
Potential Contamination Source	**Boundary**	**Associated Contaminants and Hazards**
Residential	Northern, western, southern, north-eastern	No Potential Contaminants
Agricultural	Eastern	No Potential Contaminants

4.7 OTHER ENVIRONMENTAL ISSUES

The Envirocheck Report indicates that there have been no pollution incidents to controlled waters recorded on site and there have been no enforcement or prohibition notices on site. However, several incidents have been recorded within the immediate surrounding area.

In 1996 a minor incident to controlled waters was recorded 325m south west of the site; the pollutant in this case was crude sewage.

In 1998 a minor incident to controlled waters was recorded 952m north of the site, at Cardiff airport. The pollutant was light oil and a note of 'spillage' is attached to the incident.

There has been no further pollution incidents to controlled waters recorded within 1000m of the site boundary.

No substantiated pollution incidents are registered on site or within 1000m of the site boundary.

The former Asbestos Cement Works historically situated approximately 100m south west of the site may give potential concerns for contaminants, possibly airborne particles.

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 heath 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.

5.2 CLEA FRAMEWORK

The DEFRA/Environment Agency CLEA Model 2002, including the technical background, generic conceptual models and model parameters, and the Soil Guideline Values derived from this model, were withdrawn in August 2008. The model parameters and generic conceptual models were reviewed and the technical background updated to incorporate the results of additional research. The withdrawn reports were replaced by the following documents:

- Human Health Toxicological Assessment of Contaminants in Soil (Science Report Final SC050021/SR2)
- Updated Technical Background to the CLEA Model (Science Report Final SC050021/SR3)

5.3 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.

5.4 CRITICAL SENSITIVE RECEPTOR – HUMAN HEALTH

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

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

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

5.5 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 Porthkerry Formation Limestones underlying the site.

By considering groundwater as the critical sensitive receptor for controlled waters, the groundwater/hydrogeological risk assessment will also be protective of the Rhoose Brook to the west of the site, and the nearest surface water features to the south.

5.6 POTENTIAL CONTAMINANT SOURCES

As identified in the desk study, the historical land uses at the, site since the earliest editions of the historical maps, have has resulted in a low risk of potentially contaminative sources. There is potential for made ground local to the existing bungalow in the north eastern site corner.

The potential types of contaminants of concern are listed below:

- Metals, semi-metals, and inorganics within the shallow made ground
- Polyaromatic hydrocarbons (PAH) within the shallow made ground
- Asbestos particles potential derived from airborne particles

5.7 POTENTIAL EXPOSURE PATHWAYS

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

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

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

- Ground gas generation and migration
- Building materials durability.

5.8 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 local to bungalow and potentially infilling of historic depression	Metals, semi-metals, non-metals, PAH and asbestos	Resident – human health	Dermal Contact with made ground/dust	✓
			Ingestion of soil and/or soil attached to home-grown produce	✓
			Ingestion of home-grown produce	✓
			Inhalation of dust	✓
			Inhalation of vapours – indoor/outdoor	✓
	Metals, semi-metals, inorganics and PAH	Groundwater quality	Leaching from made ground	✓
	Metals, semi-metals, inorganics and PAH	Surface water quality	Transportation within groundwater	✓
Underground Storage Tank	Petroleum hydrocarbons	Resident – human health	Inhalation of Vapours – indoor/outdoor	x
	Petroleum hydrocarbons	Groundwater quality	Localised spillage	x
	Petroleum hydrocarbons	Surface water quality	Transportation within groundwater	x
Made Ground of unknown origin and natural ground	Metals, semi-metals, non-metals, PAH, petroleum hydrocarbons, VOC/SVOC, PCB	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

A site investigation was designed in accordance with BS5930:1999, the Code of Practice for Site Investigations, BS10175:2011, the Code of Practice for Investigation of Potentially Contaminated Sites, and 'Land Contamination: A Guide for Developers' prepared by Welsh Local Government Association (WLGA)/Environment Agency Wales (EAW) Land Contamination Working Group, July 2006.

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

An investigation comprising 44 machine excavated trial pits (utilising a CAT 428E backhoe excavator) was carried between the 19th and 23rd April 2013. The trial pits were located across the site and excavated to a maximum depth of 1.45m below existing ground level. The purpose of the trial pits was to prove the shallow ground conditions and to allow an assessment of the most appropriate foundation types for the proposed developments. The trial pits were backfilled following the excavation process, with no pits left open or unattended for any length of time.

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

The fieldworks were supervised by a qualified Geotechnical Engineer from Intégral Géotechnique (Wales) Limited who also logged the trial pits and prepared their detailed engineering logs in accordance with the requirements of BS5930: 1999.

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

6.2 FIELD OBSERVATIONS

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

6.3 LABORATORY CHEMICAL TESTING

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

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

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

A select number of samples were also screened for asbestos.

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

6.4 LABORATORY PHYSICAL TESTING

Representative soil samples were taken from locations close to the mature trees within and around the site boundary. These samples were dispatched to the laboratories of GEO Site and Testing Services Limited, in Llanelli, for analysis of moisture content, Atterberg Limits, pH, and water-soluble sulphate content in order to assess the engineering properties of the soils and to assess the required class of buried concrete. The results of the geotechnical testing are presented in Appendix E.

The plasticity test results show that the tested soils have modified plasticity indices ranging from 22.32% to 24.96%. Based on these results and Table 1 of the NHBC standards for building near trees, the tested soils have a medium volume change potential. Therefore, the depths of any foundations within an influencing distance of the trees should be adjusted accordingly, in line with the NHBC guidelines.

7.0 GROUND CONDITIONS

Detailed information of the ground conditions recorded on site is presented in the trial pit logs presented in Appendix C to the rear of this report.

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

TABLE 7 : SUMMARY OF GROUND CONDITIONS

Depth (m) From	Depth (m) To	Stratum
0.0	0.2/0.35	TOPSOIL: Soft and soft to firm, dark brown, silty clay with occasional gravel of subangular and subrounded limestone and frequent rootlets.
0.2/0.35	0.3/1.4	Firm, brown, slightly silty, slightly gravelly CLAY with occasional to frequent cobbles of subangular limestone. Gravel is generally medium and coarse subrounded limestone.
0.3/0.9	0.45/1.1	Dense, grey COBBLES and BOULDERS of block, tabular and subangular often micritic limestone.
0.35/1.4	0.4/1.45	Strong, light grey, thinly to medium bedded, slightly weathered often micritic LIMESTONE with vertical tight and locally open joints and typically orientated NE-SW. Strata seemingly dips sub horizontally.

Topsoil was recorded at each trial pit location to typically 0.2m to 0.3m depth and comprised silty organic rich clay with frequent rootlets.

No significant made ground was recorded on site. The only made ground was identified in TP43 to a depth of 0.8m below existing ground level. The made ground comprised a firm, silty, gravelly clay with occasional cobbles of limestone and brick. The gravel comprised brick with occasional porcelain fragments.

The topsoil was generally underlain by a mantle of natural clay described as being firm with gravel and occasional to frequent cobbles of limestone.

This natural clay was underlain by either dense cobbles and boulders of limestone, or actual suspected limestone bedrock, dependent on the state of weathering of the solid strata.

7.0 GROUND CONDITIONS (CONTINUED)

Slow progress of excavation was made when encountering the natural cobbles and boulders or suspected solid strata of the limestone. All of the trial pits terminated on suspected natural limestone, with no further excavation progress possible.

All of the trial pits remained dry during excavation and for a short period afterwards.

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 soil type, natural ground.

8.2 SOIL CONTAMINATION

As detailed in Section 5.2, the DEFRA/Environment Agency CLEA Model 2002, including the technical background, generic conceptual models and model parameters, and the Soil Guideline Values derived from this model, were withdrawn in August 2008. This included the withdrawal of R&D Publication CLR 7 which detailed the statistical approach to be adopted at the time for assessing site wide contamination. Subsequent to the withdrawal of this document, CL:AIRE (Contaminated Land: Applications in Real Environments) has published a document entitled 'Guidance on Comparing Soil Contamination Data with a Critical Concentration', 2008. The CL:AIRE document includes guidelines on the use of various statistical methods to assess the soil contamination concentrations, either conducted in the context of the land use planning system or Part 2A of the Environmental Protection Act 1990.

To conform to this approach, we have implemented the use of the ESI Contaminated Land Statistics Calculator developed by Environmental Simulations International (ESI) Limited, which fully conforms to the CL:AIRE guidance.

In accordance with the CL:AIRE guidance, the results of the laboratory testing can be compared to a critical concentration and statistical analysis undertaken to produce an Upper Confidence Limit ($UCL_{0.95}$), against which the soil contamination concentrations can be compared, if required. If the Upper Confidence Limit (set as a default at 95%) is achieved then the Null Hypothesis (i.e. the level of contamination is the same as, or greater than the critical concentration) can be rejected and no further analysis or remedial works are likely to be required at the site. If the Upper Confidence Limit is not achieved then either further statistical data is required (comprising further chemical laboratory analysis) or remedial action may be required.

8.2 SOIL CONTAMINATION (CONTINUED)

The published Soil Guideline Values for arsenic, cadmium, mercury, nickel, selenium, phenol and BTEX compounds have been adopted as critical concentrations against which soil contaminant concentrations can be compared. In the absence of additional published SGVs, the Soil Screening Values (SSVs) derived by Atkins ATRISK^{soil} for a residential with home grown produce end use and the Generic Assessment Criteria (GAC's) derived by Land Quality Management (LQM)/Chartered Institute of Environmental Health (CIEH) have been adopted.

Since the results of the testing indicate total organic carbon content (TOC) in the range of 1.2% to 4.0%, the results have been compared to the respective guidelines, where applicable, for 1% soil organic matter content.

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

The results of the laboratory testing indicate that all of the analysed chemical elements or compounds are present at concentrations below the appropriate thresholds, with the exception of total chromium.

Total chromium has been detected at concentrations of up to 48mg/kg. The critical concentration currently used is 4.3mg/kg (LQM). Total chromium is not derived solely from the more toxic hexavalent form of chromium. The test results show a maximum concentration of hexavalent chromium of <4.0mg/kg, which is below the 4.3mg/kg value adopted.

None of the samples screened for asbestos recorded a positive identification.

9.0 REVISED CONCEPTUAL EXPOSURE MODEL

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

Table 10: Revised Conceptual Exposure Model

Source		Receptor	Pathway	Preliminary Active Pathway? (see Sect. 5.8)	Relevant Pollutant Linkage	Justification/ Mitigation
Origin	Contaminant					
Topsoil, localised made ground and natural ground	Metals, semi-metals, non-metals, PAH and asbestos	Resident – human health	Dermal Contact with made ground/dust	✓	X	No significantly elevated contaminants other than total chromium. No elevated concentrations of hexavalent chromium identified.
			Ingestion of soil and/or soil attached to home-grown produce	✓	X	
			Ingestion of home-grown produce	✓	X	
			Inhalation of dust	✓	X	
			Inhalation of vapours – indoor/outdoor	✓	X	No sufficiently volatile contaminants identified.
	Metals, semi-metals, inorganics and PAH	Groundwater quality	Leaching from made ground	✓	X	No sources of contamination identified. Risks to controlled waters is low.
	Metals, semi-metals, inorganics, PAH, petroleum hydrocarbons, VOC/SVOC	Surface water quality	Transportation within groundwater	✓	X	No sources of contamination identified. Risks to controlled waters is low.

9.0 REVISED CONCEPTUAL EXPOSURE MODEL (CONTINUED)

Source		Receptor	Pathway	Preliminary Active Pathway?	Relevant Pollutant Linkage	Justification/ Mitigation
Origin	Contaminant					
Underground Storage Tank	Petroleum hydrocarbons	Resident – human health	Inhalation of Vapours – indoor/outdoor	✓	X	No underground storage tanks identified.
	Petroleum hydrocarbons	Groundwater quality	Localised spillage	✓	X	
	Petroleum hydrocarbons	Surface water quality	Transportation within groundwater	✓	X	
Localised made ground and natural soils	Metals, semi-metals, non-metals and PAH	Building Materials Durability	Direct contact	✓	✓	Building materials will be in contact with various soils. Assessment to be undertaken following BRE SD1 2005 guidance.
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	✓	✓	No significant sources of on-site ground gases identified. Risk assessment required with regards to in-active and historical landfills to the south.

10.0 RISK ASSESSMENT

10.1 METHODOLOGY

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

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

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

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

10.2 SOURCE-PATHWAY-RECEPTOR MODEL

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

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

10.3 HUMAN HEALTH RISK ASSESSMENT

10.3.1 Site in its Present Condition

The site does not pose any risks to casual visitors or trespassers.

10.3 HUMAN HEALTH RISK ASSESSMENT (CONTINUED)

10.3.2 Future Site Users

As to be expected the contamination test results and investigation observations have not identified any significant contamination on site. The only contaminant identified on site is total chromium.

Elevated total chromium concentrations were identified in all eight samples analysed. However, analysis of the more toxic hexavalent form of chromium has not identified any concentrations which exceed the published LQM screening value. This indicates that the total chromium concentrations are probably derived from the less toxic chromium III. Therefore the total chromium results are not considered to be of concern.

Based on the analysis undertaken to date and the historical and present usage of the site, it is considered that the site does not require any formal remediation measures with regards to the protection of site end-users.

Laboratory analysis has indicated that the existing topsoil should be suitable for re-use on site. Further laboratory analysis may be required to satisfy the Local Authority.

With future site development works involving the excavation and removal of the soils, there would be a risk to workers from contaminants in the soils and also the groundwater if it is encountered. Appropriate measures are therefore recommended for works involving the materials which are known to be present beneath the site.

All excavations should be regularly checked for safe atmospheres.

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

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

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

10.3 HUMAN HEALTH RISK ASSESSMENT (CONTINUED)

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

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

10.4 RISKS TO VEGETATION

No phytotoxic metals are present at problematic levels. No remediation is required to promote plant growth. The sub soils and topsoils at the site are suitable for use in domestic gardens.

10.5 GROUNDWATER RISK ASSESSMENT

No significant sources of contamination have been identified on site. When considering this and the long term agricultural use of the site only, the groundwater regime and additional controlled waters are not considered to be at risk from past or current site activities.

10.6 GROUND GAS RISK ASSESSMENT

No biodegradable or potentially gas generating organic materials were observed within any of the trial pit excavations. Furthermore, given the historical nature of the site and the very limited extent of made ground identified, it is considered that the vast majority of the site is at a low risk from ground gases.

It should be noted, however, that several disused and historical landfill sites are recorded to the south of the site, the nearest of which is some 185m distant. Gas monitoring may be required within 250m of this historic landfill to identify what risk, if any, ground gases pose to the subject site.

It is therefore recommended that ground gas monitoring stations should be installed and monitored in these areas of the site, in order to assess if there are any risks from gases in the ground that would require the incorporation of gas protection measures within the foundations of the proposed buildings.

10.6 GROUND GAS RISK ASSESSMENT (CONTINUED)

It is, however, unlikely that gas protective measures will be required given that the land directly to the south of the site has been developed for residential housing.

No radon protective measures are required on site.

10.7 RISKS TO BUILDINGS AND MATERIALS DURABILITY

10.7.1 Concrete Classification

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

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 soils.

In accordance with BRE Digest SD1:2005 and adopting the assessment procedure specified therein for Greenfield sites, the laboratory chemical test results indicate a characteristic value (taking the mean of the highest 20% of the test results) for water soluble sulphate within the soils of 68mg/l.

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

The groundwater regime of the site has been assessed as ‘mobile’ and a characteristic pH value within the various soils on site of 6.85 has been determined (adopting the mean of the lowest 20% 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 soils on site.

10.7.2 Water Services

Given the nature of the site it is unlikely that water pipes will require protection from any contamination within the ground. Reference should however 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.

10.7 RISKS TO BUILDINGS AND MATERIALS DURABILITY (CONTINUED)

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 SPOIL DISPOSAL

Under the Landfill Regulations (2002) all spoil materials should be classified if they require disposal to a landfill facility. To determine the appropriate type of landfill site, there will need to be a characterisation of the materials in relation to the Waste regulations.

The localised made ground materials are tentatively classified as stable non-reactive hazardous waste but specialised testing will be required once earthworks design and volumes are known.

The natural soils are tentatively classified as inert waste but specialised testing will be required once earthworks design and volumes are known.

Basic Characterisation

For each waste intended to be landfilled, the following information will be required, either separately or as part of the Duty of Care waste transfer note, or Special Waste consignment note:

- Source and origin
- Standard Industry Code (SIC), process producing waste
- Treatment applied or reason not considered necessary
- Composition (including Waste Acceptability Criteria (WAC) leaching tests hazardous and inert waste where necessary)
- Appearance
- European Waste Catalogue (EWC) Code
- Hazardous properties (if hazardous waste and applicable)
- Not a waste prohibited from landfill (i.e. not corrosive, flammable etc)
- The class of landfill that waste is suitable for (i.e. hazardous)
- Likely behaviour of the waste in the landfill
- Whether waste can be recycled

The basic characterisation is the responsibility of the waste producer. The waste contractor may undertake all or part of the process of basic characterisation – including the WAC analysis. It will still be the responsibility of the waste producer to ensure that the information is correct.

10.8 SPOIL DISPOSAL (CONTINUED)

In the absence of any detailed assessment of the likely areas and types of soils that may be generated for disposal (based on the ground conditions, remediation proposals and soil materials encountered at the site) the following tentative classification is proposed.

Table 11: Summary of Preliminary Waste Classification

Source and origin	**Land at Upper House Farm, Rhoose**	
Standard Industry Code (SIC), process producing waste	41.20	
Stratigraphic horizon	Localised Made Ground	Natural Ground
Treatment applied or reason not considered necessary	Segregation applied at point of excavation	Segregation applied at point of excavation
Composition (including WAC leaching tests for hazardous and inert waste where necessary)	Refer to Section 7.0	Refer to Section 7.0
Appearance (smell, colour, consistency and physical form)	Non odorous Brown and grey Reasonably homogeneous cohesive	Non odorous brown grey Reasonably homogenous Cohesive and granular
European Waste Catalogue (EWC) Code	17.05 Soil (including excavated soil from contaminated sites), stones and dredging spoil	17.05 Soil (including excavated soil from contaminated sites), stones and dredging spoil
Not a waste prohibited from landfill (i.e. corrosive, flammable etc)	No	No
The class of landfill that waste is suitable for (i.e. hazardous)	Stable Non-reactive Hazardous Waste in Non-hazardous Landfill	Inert
Likely behaviour of the waste in the Landfill	Stable	Stable
Whether waste can be recycled	Yes	Yes

This preliminary classification will require more definitive assessment and confirmation when detailed designs are produced detailing the likely areas of waste disposal if required. Alternatively, at construction stage any materials identified by the developer as waste will require Waste Acceptance Criteria (WAC) testing and characterisation prior to pre-approval from the landfill operator and ahead of export to tip.

10.8 SPOIL DISPOSAL (CONTINUED)

It is recommended that a sustainable development strategy is adopted which reduces to a practicable minimum the need for export of waste to a licensed tip.

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.

10.9 UNCERTAINTIES

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

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

11.0 ENGINEERING CONSIDERATIONS AND RECOMMENDATIONS

11.1 DETAILS OF PROPOSED DEVELOPMENT

It is understood the site is to be marketed as a residential development opportunity. At this stage it is assumed that the proposed houses will be conventional low rise structures, with associated residential garden and landscaped areas.

11.2 SITE PREPARATION

The topsoil, comprising soft to firm or firm, brown, silty clay with occasional gravels and many fine roots (typically 0.2/0.35m thick), should be removed from beneath the proposed buildings and access roads. These excavated materials will be unacceptable as structural fill and should be used in landscaped areas and gardens, with any surplus materials removed from site. Additional chemical analysis may be required to confirm the materials are fit for re-use.

The existing bungalow within the north of the site will require an asbestos survey and demolition in a controlled manner.

Allowances should be made for removing buried structures associated with the past usage of the site within this area, including foundations of the existing building, underground pipe works, and site drainage etc.

Any buried services running within the site should be traced and either disconnected and removed or diverted prior to site works commencing. Any diversionary works should be carried out under the supervision of, and to the specification of, the appropriate statutory authorities.

All redundant ground slabs, footings and services associated with the bungalow will need to be broken out with the resulting debris crushed and screened to a structural specification, typically 150mm maximum particle size. All excavated materials should be screened for unsuitable materials such as timber, metal etc.

The exposed formations should be checked and any soft spots/areas should be removed and replaced with well compacted site won or imported granular fill material where practical. Materials should be compacted in accordance with the DTp Specification for Highway Works.

11.2 SITE PREPARATION (CONTINUED)

If site excavated materials are to be used, then the limestone rocks may need to be processed/crushed to appropriate sizes. The in-situ firm clays could only be used, if they are placed at their optimum moisture contents and also if they are mixed with gravel and cobble size limestone rocks.

There are many mature trees/hedges along the edges of the site, and also through the site, separating the fields. Allowances should therefore be made for the removal of any associated roots that may become exposed in any proposed nearby earthworks and foundation excavations. Any such works should be conducted in accordance with the code of practice recommended by the National House Building Council (NHBC).

Some cut and fill works are likely to be required in the steeper parts of the site.

If any fill is to be placed onto an existing sloping area, then the original ground should be adequately cut and benched, in order to prevent the possibility of slippage at the interface between the new fill and the original ground.

Any cut and/or fill slopes should be no steeper than 1 in 2. Cut off drains should be provided at the top and French drains at the bottom of any cut and/or fill slopes. In areas of cut and/or fill, the slopes should be topsoiled and seeded with grass, in order to minimise any future maintenance problems caused by surface water run-offs.

Some surface water and groundwater management will be required in order to ensure the protection to the earthworks and materials.

Allowances should also be made for encountering and having to deal shallow rock within the proposed depths of the drainage excavations.

11.3 FOUNDATIONS AND FLOOR SLABS

On the basis of the desk study research and trial pitting investigations, it is considered that the site should not be affected by major solution cavities/features and that the ground encountered at shallow depths is well capable of supporting a traditional two storey dwelling on conventional mass concrete strip foundations and ground bearing floor slabs.

Given the possibility of small solution features being present, it is recommended that special care is taken during the excavation and construction of the foundations, floor slabs and drainage works, to ensure that rainwater does not become ponded and lead to concentrated discharges of water in to the underlying ground.

11.3 FOUNDATIONS AND FLOOR SLABS (CONTINUED)

Conventional mass concrete strip footings, as described above, can therefore be used and founded within the firm to stiff orange brown and grey silty clay with many gravels, cobbles, the dense grey cobbles of limestone, or the limestone bedrock. The depths to these founding materials are likely to vary between approximately 0.35m and 1.4m below the existing ground levels. Typically foundation depths will be between 0.75m – 1.6m below existing ground level.

Deeper foundation depths than those quoted above may become required in certain areas of the site, where the founding horizons may need to be taken down below any root systems.

Any foundation bearing on a combination of differing bearing strata should be locally reinforced with mesh fabric over the change in strata.

The foundation formations should be kept to a minimum depth of 0.75 to 0.90m below finished ground levels, in order to protect them from the effects of frost heave and/or thermal shrinkage.

At the above depths an allowable bearing pressure of 100kN/m² could be used for design purposes when founding in clay or cobbles and boulders, and up to 200kN/m² within the more competent limestone bedrock. At this intensity of loading, the total settlements should not exceed 20mm, and any angular distortions caused by differential movements should be less than 1:750.

Allowances should be made for overbreaks in the sides of the excavations and for their possible backfilling either with granular materials or mass concrete.

Laboratory Atterberg Limits have been determined from samples taken across the site. The results show the in-situ clays have generally a medium shrinkage potential. However, as recommended, if the foundations are founded within the firm to stiff silty clay with many cobbles and boulders of limestone or the limestone rocks, the overall plasticity is likely to be low to medium, or non plastic within the rocks.

Appropriate foundation depths should, therefore be determined by assuming medium plasticity. However, for the floor slabs to be constructed close to the existing ground levels, high plasticity characteristics should be assumed for the in-situ materials immediately beneath the slabs. It is likely however, given the shallow depth of bedrock that the great majority of footings will bear directly onto bedrock. This is a non-shrinkable strata and footings need not be deepened further.

11.3 FOUNDATIONS AND FLOOR SLABS (CONTINUED)

Provided that the site preparation works are adhered to, the floor slabs could be designed as ground bearing, in-situ suspended or beam and block at the design engineer's discretion.

No radon protective measures are required at the site.

It should be noted that in order to comply with the requirements of the National House Building Council (NHBC) for ground bearing floor slabs, the thickness of made ground at any point beneath the slab should not exceed 600mm, if it does, the floor slabs should be designed and constructed as suspended.

In construction of floor slabs and, in particular, adjacent to the hedgerows and trees, consideration should be given to the laboratory plasticity results. At these locations, in order to satisfy the requirements of the NHBC, precast suspended floor slabs may need to be used.

If weathered rocks are encountered at shallow depths within the excavations then, in order to minimise any differential settlements, individual buildings or blocks of buildings should be founded entirely within either the firm to stiff clays with gravels and cobbles, or within the weathered rocks.

It is recommended that a careful inspection is made of the foundation and floor slab formations, and that contingencies are allowed for the possible presence of localised solution features and, therefore, deeper foundations. Any encountered soft materials/voids should be excavated and replaced/plugged with mass concrete.

It is also recommended that the excavation for, and construction of the foundations and floor slabs are completed quickly, in order to avoid ponding of surface water and possible concentrated discharges of water into the ground at these locations.

11.4 EXCAVATIONS AND FORMATIONS

On the basis of the trial pitting findings, excavations deeper than 1.0m deep typically will encounter hard dig and rock break conditions. It may therefore become necessary to employ larger tracked machines and/or breaking equipment in these areas, if deeper excavations are required.

11.4 EXCAVATIONS AND FORMATIONS (CONTINUED)

From the site investigation findings, the excavations are unlikely to encounter significant groundwater inflows. Any groundwater inflows/seepages are likely to be slight and these together with any rainfall infiltrations should be dealt with by conventional pumping techniques.

The sides of excavations deeper than 1.0m should be supported by planking and strutting, or temporarily battered at gradients of typically 30 degrees.

The exposed formations within the in-situ materials will be extremely susceptible to damage; softening and deterioration by wet weather and site traffic. They should therefore be protected by blinding concrete or a 100mm thick layer of hardcore immediately after exposure.

11.5 ACCESS ROADS AND CAR PARKING AREAS

There are likely to be variations in the strength of the materials at the access road formation levels and therefore a California Bearing Ratio (CBR) value of between 2% and 5% can then be used for designed purposes. This value of CBR could be significantly increased to much greater than 5% if the pavement formations are within the limestone rocks, or within well compacted 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 highway authority may insist that field CBR tests should be carried out to confirm the above recommendations. Allowances should therefore be made for carrying out such tests and any further works which the local authority may require as a result of these tests.

11.6 DRAINAGE

As discussed previously, shallow rock may be present beneath parts of the site and, therefore, locally difficult digging conditions may be encountered in the drainage excavations. Given the possible presence of solution features, it is recommended that all the drainage works are constructed properly and such that there will be no risk of leakages into the surrounding soils and rocks. Soakaways are not recommended.

APPENDIX A

ENVIROCHECK REPORT

Intégral Géotechnique

Envirocheck® Report:

Datasheet

Order Details:

Order Number:
45159403_1_1

Customer Reference:
11164/DH

National Grid Reference:
306740, 166370

Slice:
A

Site Area (Ha):
12.66

Search Buffer (m):
1000

Site Details:

Site at 306680, 166420

Client Details:

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

Landmark Information Group

Intégral Géotechnique

Contents

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency 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 the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

Copyright Notice

© Landmark Information Group Limited 2013. The Copyright on the information and data and its format as contained in this Envirocheck® Report ("Report") is the property of Landmark Information Group Limited ("Landmark") and several other Data Providers, including (but not limited to) Ordnance Survey, British Geological Survey, the Environment Agency and Natural England, and must not be reproduced in whole or in part by photocopying or any other method. The Report is supplied under Landmark's Terms and Conditions accepted by the Customer.
A copy of Landmark's Terms and Conditions can be found with the Index Map for this report. Additional copies of the Report may be obtained from Landmark, subject to Landmark's charges in force from time to time. The Copyright, design rights and any other intellectual rights shall remain the exclusive property of Landmark and /or other Data providers, whose Copyright material has been included in this Report.

Natural England Copyright Notice

Site of Special Scientific Interest, National Nature Reserve, Ramsar, Special Protection Area, Special Conservation Area, Marine Nature Reserve data (derived from Ordnance Survey 1:10000 raster) is provided by, and used with the permission of, Natural England who retain the copyright and Intellectual Property Rights for the data.

Ove Arup Copyright Notice

The Data provided in this report was obtained on Licence from Ove Arup & Partners Limited (for further information, contact mining.review@arup.com). No reproduction or further use of such Data is to be made without the prior written consent of Ove Arup & Partners Limited. The information and data supplied in the product are derived from publicly available records and other third party sources and neither Ove Arup & Partners nor Landmark warrant the accuracy or completeness of such information or data.

Peter Brett Associates Copyright Notice

The cavity data presented has been extracted from the PBA enhanced version of the original DEFRA national cavity databases. PBA/DEFRA retain the copyright & intellectual property rights in the data. Whilst all reasonable efforts are made to check that the information contained in the cavity databases is accurate we do not warrant that the data is complete or error free. The information is based upon our own researches and those collated from a number of external sources and is continually being augmented and updated by PBA. In no event shall PBA/DEFRA or Landmark be liable for any loss or damage including, without limitation, indirect or consequential loss or damage arising from the use of this data.

Radon Potential dataset Copyright Notice

Information supplied from a joint dataset compiled by The British Geological Survey and the Health Protection Agency.

Report Version v47.0

Intégral Géotechnique

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1			4	9
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			1	1
Prosecutions Relating to Authorised Processes					
Prosecutions Relating to Controlled Waters					
Registered Radioactive Substances					
River Quality					
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions	pg 4		2		
Water Industry Act Referrals					
Groundwater Vulnerability	pg 5	Yes	n/a	n/a	n/a
Bedrock Aquifer Designations	pg 5	Yes	n/a	n/a	n/a
Superficial Aquifer Designations			n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites	pg 6		2	1	1
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)	pg 6		1		
Licensed Waste Management Facilities (Locations)	pg 7			2	
Local Authority Recorded Landfill Sites	pg 7			2	
Registered Landfill Sites	pg 8			3	
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					

Intégral Géotechnique

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					
Geological					
BGS 1:625,000 Solid Geology	pg 10	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 10	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 13			4	4
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
Brine Compensation Area			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities	pg 14				5
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 15	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 15		Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 15	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 15		Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards				n/a	n/a
Radon Potential - Radon Affected Areas	pg 16	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 17		5	5	12
Fuel Station Entries					

Intégral Géotechnique

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
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					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Rhoose Station R'D Cso Rhoose Barry, Rhoose Station Road Cso, Rhoose, Barry, South Glamorgan Authority: Environment Agency, Welsh Region Catchment Area: Rhoose Brook Reference: An0107801 Permit Version: 2 Effective Date: 30th November 2004 Issued Date: 27th October 2004 Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: Rhoose Brook **Status: Varied by Application - (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A10SW (W)	293	1	306211 166229
1	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Rhoose - Station Road Authority: Environment Agency, Welsh Region Catchment Area: Rhoose Brook Reference: AN0107801 Permit Version: 1 Effective Date: 20th October 1989 Issued Date: 20th October 1989 Revocation Date: 29th November 2004 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: Unnamed Watercourse **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A10SW (W)	304	1	306200 166240
2	**Discharge Consents** Operator: Cofton Ltd Property Type: Industrial Parks & Estates Location: Rhoose Point Quarry, Off Station Road, Rhoose Point, Rhoose, Vale Of Glamorgan, Cf62 3lp Authority: Environment Agency, Welsh Region Catchment Area: Rhoose Brook Reference: An029370101 Permit Version: 1 Effective Date: 14th October 1999 Issued Date: 14th October 1999 Revocation Date: Not Supplied Discharge Type: Trade Discharges - Site Drainage Discharge Environment: Into Land Receiving Water: Land **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 100m	A6NE (S)	311	1	306600 165900
3	**Discharge Consents** Operator: Cofton Ltd Property Type: Sewerage Network - Pumping Station - Others Location: Sps Development At Rhoose Point, Vale Of Glamorgan, Wales Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: An029900101 Permit Version: 1 Effective Date: 31st August 2000 Issued Date: 31st August 2000 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Not Water Company Discharge Environment: Lake/Reservoir - with outlet Receiving Water: A Lake **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A7NW (S)	429	1	306800 165750

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
4	**Discharge Consents** Operator: Cardiff International Airport Property Type: Air Transport Location: Cardiff Wales Airport Near Cardiff, Near Cardiff Pt C Cardiff Authority: Environment Agency, Welsh Region Catchment Area: Rhoose Brook Reference: AN0249003 Permit Version: 1 Effective Date: 3rd October 1994 Issued Date: 3rd October 1994 Revocation Date: Not Supplied Discharge Type: Trade Effluent Discharge Environment: Saline Estuary Receiving Water: Bristol Channel (Via Highway D **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A5NE (SW)	653	1	306000 165800
4	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Station - Water Company Location: Rhoose Ps (Old Cement Works) Rhoo, Rhoose Authority: Environment Agency, Welsh Region Catchment Area: Not Given Reference: AN0228801 Permit Version: 1 Effective Date: 30th June 1992 Issued Date: 13th November 1991 Revocation Date: 28th October 2004 Discharge Type: Unspecified Discharge Environment: Controlled Sea Receiving Water: Bristol Channel **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 10m	A5NE (SW)	658	1	306010 165780
4	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Station - Water Company Location: Rhoose Ps (Old Cement Works) Rhoo, Rhoose Authority: Environment Agency, Welsh Region Catchment Area: Not Given Reference: AN0228802 Permit Version: 1 Effective Date: 30th June 1992 Issued Date: 13th November 1991 Revocation Date: 31st March 2005 Discharge Type: Unspecified Discharge Environment: Coastal Receiving Water: Coastal Waters **Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A5NE (SW)	658	1	306010 165780
5	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Station - Water Company Location: A Sewage Pumping Station Rhoose Sps, Rhoose, Barry, Vale Of Glamorgan Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: An0228801 Permit Version: 2 Effective Date: 29th October 2004 Issued Date: 28th October 2004 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Controlled Sea Receiving Water: Bristol Channel **Status: Varied by Application - (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A5SE (SW)	749	1	306015 165648

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Station - Water Company Location: A Sewage Pumping Station Rhoose Sps, Rhoose, Barry, Vale Of Glamorgan Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: An0228801 Permit Version: 2 Effective Date: 29th October 2004 Issued Date: 28th October 2004 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Controlled Sea Receiving Water: Bristol Channel **Status: Varied by Application - (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A5SE (SW)	749	1	306015 165648
6	**Discharge Consents** Operator: Portreset Limited Property Type: Other Tourist/Short Stay Accommadation Location: Porthkerry Caravan Park, Nr Rhoose, Barry, South Glamorgan, Cf62 3zp Authority: Environment Agency, Welsh Region Catchment Area: Boundary Of HA 58 & HA 59 Reference: AG0002101 Permit Version: 1 Effective Date: 29th November 1979 Issued Date: 29th November 1979 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Into Land Receiving Water: Underground Strata Via Soakawa **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 10m	A12SW (E)	767	1	307720 166060
7	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Rhoose East Authority: Environment Agency, Welsh Region Catchment Area: Boundary Of HA 58 & HA 59 Reference: An0037601 Permit Version: 1 Effective Date: 11th December 1987 Issued Date: 11th December 1987 Revocation Date: 7th April 1993 Discharge Type: Sewerage System Discharge Discharge Environment: Controlled Sea Receiving Water: Bristol Channel **Status: Consent expired** Positional Accuracy: Located by supplier to within 100m	A5SE (SW)	795	1	306000 165600
8	**Discharge Consents** Operator: Dixon W Property Type: Undefined Or Other Location: Rhoose, South Glamorgan Authority: Environment Agency, Welsh Region Catchment Area: River Thaw Reference: An0215101 Permit Version: 2 Effective Date: 30th March 1990 Issued Date: 30th March 1990 Revocation Date: 31st March 1995 Discharge Type: Unspecified Discharge Environment: Land/Soakaway Receiving Water: Soakaway **Status: Consent expired** Positional Accuracy: Located by supplier to within 100m	A13NE (NW)	997	1	305900 167300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
8	**Discharge Consents** Operator: Dixon W Property Type: Undefined Or Other Location: Rhoose, South Glamorgan Authority: Environment Agency, Welsh Region Catchment Area: River Thaw Reference: An0215101 Permit Version: 1 Effective Date: 1st January 1901 Issued Date: 1st January 1901 Revocation Date: 29th March 1990 Discharge Type: Unspecified Discharge Environment: Land/Soakaway Receiving Water: Soakaway **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 100m	A13NE (NW)	997	1	305900 167300
9	**Local Authority Pollution Prevention and Controls** Name: Vale Garage Services Location: 87 Fontygary Road, Rhoose Authority: Vale Of Glamorgan County Borough Council, Environmental Health Department Permit Reference: VOG/WOB1 Dated: Not Supplied Process Type: Local Authority Pollution Prevention and Control Description: PG1/1Waste oil burners, less than 0.4MW net rated thermal input **Status: Permitted** Positional Accuracy: Manually positioned to the address or location	A9SW (W)	829	2	305676 166298
	Nearest Surface Water Feature	A6NE (S)	270	-	306572 165934
10	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, Welsh Region Pollutant: Crude Sewage Note: Not Supplied Incident Date: 3rd September 1996 Incident Reference: 29800 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	A10SW (SW)	325	1	306200 166100
11	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Cardiff Airport, BARRY Authority: Environment Agency, Welsh Region Pollutant: Light Oil Note: Spillage Incident Date: 19th February 1998 Incident Reference: 34770 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	A19SW (N)	952	1	307100 167500
12	**Water Abstractions** Operator: Blue Circle Industries Plc Licence Number: 21/58/31/0001 Permit Version: Not Supplied Location: Location Description Not Available Authority: Environment Agency, Welsh Region Abstraction: Evaporated Cooling Water Abstraction Type: Not Supplied Source: Groundwater Daily Rate (m3): 73 Yearly Rate (m3): 150018 Details: Rhoose Works Well Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A10SW (SW)	123	1	306400 166150

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
13	**Water Abstractions** Operator: Mr G Reader Licence Number: 21/58/21/0013 Permit Version: 100 Location: Well At Lower Farm Authority: Environment Agency, Welsh Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 25th March 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A10NW (NW)	227	1	306320 166600
	Groundwater Vulnerability Soil Classification: Soils of High Leaching Potential (H3)- Coarse textured or moderately shallow soils which readily transmit non-absorbed pollutants and liquid discharges but which have some ability to attenuate absorbed pollutants because of their large clay or organic matter contents Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	A10SE (SE)	0	1	306744 166369
	Drift Deposits None				
	Bedrock Aquifer Designations Aquifer Desination: Secondary Aquifer - A	A10SE (SE)	0	3	306744 166369
	Superficial Aquifer Designations No Data Available				
	Extreme Flooding from Rivers or Sea without Defences None				
	Flooding from Rivers or Sea without Defences None				
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
14	**Historical Landfill Sites** Licence Holder: Blue Circle Industries Plc Location: Rhoose Point Encapsulation Landfill, Aberthaw Works, Rhoose Point, Rhoose, Vale Of Glamorgan Name: Rhoose Point Encapsulation Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD14503 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Industrial and Special Waste EA Waste Ref: 30193 Regis Ref: WU1/L/BLU002 WRC Ref: 6950/0051 BGS Ref: Not Supplied Other Ref: SEW/203	A10SW (SW)	185	1	306371 166085
15	**Historical Landfill Sites** Licence Holder: Tac Construction Materials Limited Location: Rhoose Name: The Quarry Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD14922 First Input Date: 31st December 1947 Last Input Date: 31st December 1979 Specified Waste Type: Deposited Waste included Industrial, Commercial, Household and Special Waste, and Liquid Sludge EA Waste Ref: Not Supplied Regis Ref: Not Supplied WRC Ref: 6950/0058 BGS Ref: Not Supplied Other Ref: 5	A10SW (SW)	187	1	306374 166079
16	**Historical Landfill Sites** Licence Holder: Blue Circle Cement Plc Location: Rhoose Point Developement, Former Cardiff Airport Ind Est, Rhoose Point, Rhoose, Vale Of Glamorgan Name: Rhoose Quarry Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD14923 First Input Date: 31st December 1981 Last Input Date: 31st December 1991 Specified Waste Type: Deposited Waste included Industrial, Commercial, Household and Special Waste EA Waste Ref: Not Supplied Regis Ref: Not Supplied WRC Ref: 6950/0052 BGS Ref: Not Supplied Other Ref: 26	A6NE (S)	392	1	306763 165788
17	**Historical Landfill Sites** Licence Holder: Mr G B Jenkins Location: Model Farm, Port Road, Rhoose, South Glamorgan Name: Model Farm Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD14920 First Input Date: 31st December 1991 Last Input Date: 27th March 1995 Specified Waste Type: Deposited Waste included Inert, Commercial and Household Waste EA Waste Ref: Not Supplied Regis Ref: Not Supplied WRC Ref: 6950/0042 BGS Ref: Not Supplied Other Ref: 45	A16NW (NE)	996	1	307541 167282
18	**Licensed Waste Management Facilities (Landfill Boundaries)** Name: Rhoose Point Encapsulation Licence Number: 30193 Location: Rhoose Point Encapsulation Landfill, Aberthaw Works, Rhoose Point, Rhoose, Vale Of Glam, CF62 3EP Licence Holder: Blue Circle Industries Plc/Rhoose Point Authority: Environment Agency Wales, South East Area Site Category: Other Landfill Sites Taking Special Waste Max Input Rate: Large (Equal to or greater than 75,000 tonnes per year) **Licence Status: Inactive** Issued 29th May 1997 Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied	A10SW (SW)	186	1	306377 166079

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
19	**Licensed Waste Management Facilities (Locations)** Licence Number: 30193 Location: Rhoose Point Encapsulation Landfill, Aberthaw Works, Rhoose Point, Rhoose, Glamorgan, CF62 3EP Operator Name: Blue Circle Cement U K Operator Location: Not Supplied Authority: Environment Agency Wales, South East Area Site Category: Other Landfill Sites Taking Special Waste **Licence Status: Surrendered** Issued: 29th May 1997 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	A6NW (SW)	354	1	306246 165972
20	**Licensed Waste Management Facilities (Locations)** Licence Number: 30193 Location: Rhoose Point Encapsulation Landfill, Aberthaw Works, Rhoose Point, Rhoose, Vale Of Glam, CF62 3EP Operator Name: Blue Circle Industries Plc/rhoose Point Operator Location: The Manor Court, Chilton, Oxfordshire, OX11 0RN Authority: Environment Agency Wales, South East Area Site Category: Other Landfill Sites Taking Special Waste **Licence Status: Surrendered** Issued: 29th May 1997 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 22nd May 2002 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 100m	A7NW (S)	380	1	306800 165800
	Local Authority Landfill Coverage Name: Vale Of Glamorgan County Borough Council - Has supplied landfill data		0	4	306744 166369
21	**Local Authority Recorded Landfill Sites** Location: Airport Industrial Estate Reference: SEW/203 Authority: Vale Of Glamorgan County Borough Council **Last Reported Status: Unknown** Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Moderate	A6NW (SW)	320	4	306387 165917
22	**Local Authority Recorded Landfill Sites** Location: Rhoose Waste Site, Rhoose Reference: 26 Authority: Vale Of Glamorgan County Borough Council **Last Reported Status: Unknown** Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Moderate	A6NE (S)	385	4	306555 165824

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
23	**Registered Landfill Sites** Licence Holder: Blue Circle Industries Plc Licence Reference: SEW/203 Site Location: Rhoose Point Encapsulation Landfill, Aberthaw Works, Rhoose Point, Barry, South Glamorgan Licence Easting: 306300 Licence Northing: 165950 Operator Location: Aldermaston Court, Church Road, ALDERMASTON, Berkshire, RG7 4HP Authority: Environment Agency Wales, South East Area Site Category: Landfill Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: Some restriction on source of waste Status: Site Closed Dated: 29th May 1997 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Asbestos Contaminated Soil; Bagged Asbestos; Contaminated Soils & Spoils; Hardcore; Max.Waste Permitted By Licence; Solidified Cement Wastes; Subsoils Prohibited Waste: Biodegradable/Putrescible Waste; Liquid Wastes; Spec.Waste (In '96 Regs) Exc. Asbestos; Waste N.O.S.	A6NW (SW)	334	1	306300 165950
23	**Registered Landfill Sites** Licence Holder: T.A.C. Construction Materials Licence Reference: 13 WAS 5 Site Location: The Quarry, Rhoose, Barry, South Glamorgan Licence Easting: 306300 Licence Northing: 165900 Operator Location: Rhoose, Barry, South Glamorgan Authority: Environment Agency Wales, South East Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st December 1977 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the road within the address or location Boundary Accuracy: Not Applicable Authorised Waste: Asbestos Cement Sludge; Asbestos Fibre; Builders Debris; Dry Asbestos Cement Waste; Kitchen Waste; Paint Tins; Paper/Cardboard Waste; Plastic Bags; Pulverised Fuel Ash Prohibited Waste: Blue Asbestos	A6NW (SW)	375	1	306300 165900

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
24	**Registered Landfill Sites** Licence Holder: Blue Circle Industries Plc Licence Reference: 26 Site Location: Rhoose Cement Works Quarry Site, Rhoose, Barry, South Glamorgan Licence Easting: Not Supplied Licence Northing: Not Supplied Operator Location: Aberthaw Works, East Aberthaw, BARRY, South Glamorgan, CF6 9ZR Authority: Environment Agency Wales, South East Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: Only waste produced on site Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st October 1981 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Positioned by the supplier Boundary Accuracy: Good Authorised Waste: Cement Waste Domestic Office Waste General Industrial Wastes Office Paper Scrap Wooden Palletts Prohibited Waste: Toxic Wastes	A7NW (S)	364	1	306792 165796

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Lower Lias	A10SE (SE)	0	3	306744 166369
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A10SE (SE)	0	5	306744 166369
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A11SW (E)	0	5	307000 166369
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A6NE (S)	169	5	306744 166000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A7NW (SE)	196	5	307000 166000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7NW (SE)	304	5	307091 165928
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A14SE (N)	410	5	306744 167000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A15SW (N)	447	5	307000 167000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A9SE (W)	504	5	306000 166369
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A5NE (SW)	548	5	306000 166000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A7SW (S)	576	5	306841 165585
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A5NE (SW)	674	5	306017 165749
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A5NE (SW)	681	5	306000 165757

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A13SE (NW)	717	5	306000 167000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A12SE (E)	800	5	307829 166336
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A12SE (E)	863	5	307843 166107
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A12SE (E)	946	5	307941 166140
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A16NW (NE)	954	5	307699 167082
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A12SE (E)	970	5	308000 166369

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A16SE (E)	985	5	307905 166846
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A12SE (E)	993	5	308000 166183
25	**BGS Recorded Mineral Sites** Site Name: Rhoose Location: , Rhoose, Barry, South Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 4482 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Jurassic Geology: Porthkerry Member Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A6NE (SW)	307	3	306464 165910
26	**BGS Recorded Mineral Sites** Site Name: Rhoose Point Location: , Rhoose, Barry, South Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 161258 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Jurassic Geology: Porthkerry Member Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A6NW (SW)	468	3	306344 165775
27	**BGS Recorded Mineral Sites** Site Name: Rhoose Station Location: , East Aberthaw, Barry, South Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 161254 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Jurassic Geology: Porthkerry Member Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A6NW (SW)	492	3	306109 165922
28	**BGS Recorded Mineral Sites** Site Name: Rhoose Point Location: , Rhoose, Barry, South Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 161259 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Jurassic Geology: Porthkerry Member Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A6NE (S)	500	3	306533 165714

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
29	**BGS Recorded Mineral Sites** Site Name: Porthkerry Location: , Rhoose, Barry, South Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 161256 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Jurassic Geology: Porthkerry Member Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A8NW (SE)	620	3	307482 165922
30	**BGS Recorded Mineral Sites** Site Name: Font-Y-Gari Location: , Rhoose, Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 16417 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Jurassic Geology: Porthkerry Member Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A5NW (W)	811	3	305718 166017
31	**BGS Recorded Mineral Sites** Site Name: Tredogan Location: , East Aberthaw, Barry, South Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 161253 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Jurassic Geology: Porthkerry Member Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A15NE (NE)	888	3	307408 167259
32	**BGS Recorded Mineral Sites** Site Name: Tredogan Location: , East Aberthaw, Barry, South Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 161251 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Jurassic Geology: Porthkerry Member Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A19SW (N)	984	3	307083 167538
	BGS Measured Urban Soil Chemistry No data available				
	BGS Urban Soil Chemistry Averages No data available				
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Natural Cavities Easting: 306200 Northing: 165650 Distance: 641 Quadrant Reference: A6 Quadrant Reference: SW Bearing Ref: SW Cavity Type: Vadose Cave Solid Geology Detail: Lower Lias Superficial Geology Detail: No Details	A6SW (SW)	641	6	306200 165650

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Natural Cavities Easting: 306320 Northing: 165580 Distance: 661 Quadrant Reference: A6 Quadrant Reference: SW Bearing Ref: SW Cavity Type: Sea Cave x 2 Solid Geology Detail: Lower Lias Superficial Geology Detail: No Details	A6SW (SW)	661	6	306320 165580
	Natural Cavities Easting: 306330 Northing: 165560 Distance: 678 Quadrant Reference: A6 Quadrant Reference: SW Bearing Ref: SW Cavity Type: Sea Cave x 1 Solid Geology Detail: Lower Lias Superficial Geology Detail: No Details	A6SW (SW)	678	6	306330 165560
	Natural Cavities Easting: 305930 Northing: 165750 Distance: 739 Quadrant Reference: A5 Quadrant Reference: NE Bearing Ref: SW Cavity Type: Sea Cave x 1 Solid Geology Detail: Lower Lias Superficial Geology Detail: No Details	A5NE (SW)	739	6	305930 165750
	Natural Cavities Easting: 306540 Northing: 165360 Distance: 854 Quadrant Reference: A2 Quadrant Reference: NE Bearing Ref: S Cavity Type: Sea Cave x 1 Solid Geology Detail: Carboniferous Limestone Supergroup, Lower Carboniferous Limestone, Upper Carboniferous Limestone Superficial Geology Detail: No Details	A2NE (S)	854	6	306540 165360
	Non Coal Mining Areas of Great Britain No Hazard				
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (SE)	0	3	306744 166369
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10SE (SE)	0	3	306744 166369
	Potential for Compressible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	172	3	306432 166059
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10SE (SE)	0	3	306744 166369
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (SE)	0	3	306744 166369
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10SE (SE)	0	3	306744 166369
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	172	3	306432 166059
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10SE (SE)	0	3	306744 166369

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	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	A11SW (E)	0	3	306924 166369
	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	A10SE (SE)	0	3	306744 166369
	Radon Potential - Radon Affected Areas Affected Area: The property is in a radon affected area, as between 1 and 3% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	A11SW (E)	0	3	306924 166369
	Radon Potential - Radon Affected Areas Affected Area: The property is in a lower probability radon area, as less than 1% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	A10SE (SE)	0	3	306744 166369

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
33	**Contemporary Trade Directory Entries** Name: Stairlift Solitions Location: 12, Ceri Avenue, Rhoose, Barry, South Glamorgan, CF62 3HG Classification: Stairlifts - Manufacturers & Installers **Status: Active** Positional Accuracy: Automatically positioned to the address	A11NW (N)	74	-	306811 166664
33	**Contemporary Trade Directory Entries** Name: Stairlift Solutions Wales Location: 12, Ceri Avenue, Rhoose, Barry, South Glamorgan, CF62 3HG Classification: Stairlifts - Manufacturers & Installers **Status: Active** Positional Accuracy: Automatically positioned to the address	A11NW (N)	74	-	306811 166664
34	**Contemporary Trade Directory Entries** Name: Plumb It Location: 17, Lon Lindys, Rhoose, Barry, South Glamorgan, CF62 3LU Classification: Boilers - Servicing, Replacements & Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10SW (SW)	107	-	306403 166182
35	**Contemporary Trade Directory Entries** Name: Cardiff & Vale Ceramics Location: Hillside, Rhoose Road, Rhoose, BARRY, South Glamorgan, CF62 3EQ Classification: Ceramic Manufacturers, Supplies & Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10NE (NW)	117	-	306564 166683
36	**Contemporary Trade Directory Entries** Name: Cardiff & Castle Cleaning Co Location: The Granary, Brendon View Close, Rhoose, Barry, South Glamorgan, CF62 3ER Classification: Cleaning Services - Commercial **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10NW (W)	239	-	306287 166558
37	**Contemporary Trade Directory Entries** Name: Eze Clean Services Location: 40, Cilgant y Meillion, Rhoose, Barry, South Glamorgan, CF62 3LH Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NW (S)	284	-	306809 165896
37	**Contemporary Trade Directory Entries** Name: Eze Clean Services Location: 40, Cilgant y Meillion, Rhoose, Barry, South Glamorgan, CF62 3LH Classification: Cleaning Services - Domestic **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NW (S)	284	-	306809 165896
38	**Contemporary Trade Directory Entries** Name: Datasharp Office Imaging Ltd Location: Suite 39,Prospect House,Swn-y-more, Rhoose, Barry, South Glamorgan, CF62 3LA Classification: Photocopiers **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A7NE (SE)	316	-	307172 165991
39	**Contemporary Trade Directory Entries** Name: Olynpaidd M & E 2008 Ltd Location: St. Davids House, Rhoose Road, Rhoose, Barry, South Glamorgan, CF62 3EP Classification: Mechanical Engineers **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SE (N)	346	-	306619 166921
40	**Contemporary Trade Directory Entries** Name: Watts Air Conditioning Ltd Location: 7, Cilgant y Meillion, Rhoose, Barry, South Glamorgan, CF62 3LH Classification: Air Conditioning & Refrigeration Contractors **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NW (S)	369	-	306904 165800
41	**Contemporary Trade Directory Entries** Name: Mac F Payne Location: 14, Speedwell Drive, Rhoose, Barry, South Glamorgan, CF62 3HS Classification: Painting & Decorating Supplies **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NE (W)	591	-	305923 166479

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
42	**Contemporary Trade Directory Entries** Name: Vale Garage Services Location: 87, Fontygary Road, Rhoose, Barry, South Glamorgan, CF62 3DT Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A9SW (W)	828	-	305677 166298
43	**Contemporary Trade Directory Entries** Name: Jtm Ltd Location: Cardiff Wales Airport/Rhoose, Barry, South Glamorgan, CF62 3BD Classification: Engineers - General **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A19SW (N)	837	-	306872 167425
44	**Contemporary Trade Directory Entries** Name: Cardiff Aviation Engineering Location: Cardiff International Airport/, Barry, South Glamorgan, CF62 3BD Classification: Aviation Engineers **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A19SW (N)	881	-	307052 167440
45	**Contemporary Trade Directory Entries** Name: Cardiff Airport Location: Rhoose, Barry, South Glamorgan, CF62 3BD Classification: Airports **Status: Active** Positional Accuracy: Manually positioned to the address or location	A19SW (N)	887	-	306937 167468
45	**Contemporary Trade Directory Entries** Name: I C S Location: Cardiff International Airport/, Barry, South Glamorgan, CF62 3BD Classification: Commercial Cleaning Services **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A19SW (N)	887	-	306938 167468
46	**Contemporary Trade Directory Entries** Name: Dfv Location: Office 6, Cargo Terminal, Rhoose, Barry, South Glamorgan, CF62 3BD Classification: Freight Forwarders **Status: Active** Positional Accuracy: Automatically positioned to the address	A19SW (N)	937	-	307074 167492
46	**Contemporary Trade Directory Entries** Name: Schenker Ltd Location: Cargo Terminal, Rhoose, Barry, South Glamorgan, CF62 3BD Classification: Freight Forwarders **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19SW (N)	937	-	307074 167492
46	**Contemporary Trade Directory Entries** Name: Ceva Freight Uk Ltd Location: Cargo Terminal, Rhoose, Barry, South Glamorgan, CF62 3BD Classification: Freight Forwarders **Status: Active** Positional Accuracy: Automatically positioned to the address	A19SW (N)	937	-	307074 167492
46	**Contemporary Trade Directory Entries** Name: Raven Express Location: Cargo Terminal, Cardiff International Airport, Rhoose, Barry, South Glamorgan, CF62 3BD Classification: Airfreight Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A19SW (N)	937	-	307074 167492
46	**Contemporary Trade Directory Entries** Name: Service Air Location: Cargo Terminal, Rhoose, Barry, South Glamorgan, CF62 3BD Classification: Airfreight Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19SW (N)	937	-	307074 167492
46	**Contemporary Trade Directory Entries** Name: Air Cargo Wales Ltd Location: Office 6, Cargo Terminal, Cardiff International Airport, Rhoose, Barry, South Glamorgan, CF62 3BD Classification: Freight Forwarders **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19SW (N)	937	-	307074 167492

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices Vale Of Glamorgan County Borough Council - Environmental Health Department	October 2012	Annual Rolling Update
Discharge Consents Environment Agency - Welsh Region	January 2013	Quarterly
Enforcement and Prohibition Notices Environment Agency - Welsh Region	March 2013	Quarterly
Integrated Pollution Controls Environment Agency - Welsh Region	October 2008	Not Applicable
Integrated Pollution Prevention And Control Environment Agency - Welsh Region	January 2013	Quarterly
Local Authority Integrated Pollution Prevention And Control Vale Of Glamorgan County Borough Council - Environmental Health Department	November 2012	Annual Rolling Update
Local Authority Pollution Prevention and Controls Vale Of Glamorgan County Borough Council - Environmental Health Department	November 2012	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements Vale Of Glamorgan County Borough Council - Environmental Health Department	November 2012	Annual Rolling Update
Nearest Surface Water Feature Ordnance Survey	July 2012	Quarterly
Pollution Incidents to Controlled Waters Environment Agency - Welsh Region	December 1998	Not Applicable
Prosecutions Relating to Authorised Processes Environment Agency - Welsh Region	March 2013	Monthly
Prosecutions Relating to Controlled Waters Environment Agency - Welsh Region	March 2013	Monthly
Registered Radioactive Substances Environment Agency - Welsh Region	January 2013	Quarterly
River Quality Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points Environment Agency - Head Office	July 2012	Annually
River Quality Chemistry Sampling Points Environment Agency - Head Office	July 2012	Annually
Substantiated Pollution Incident Register Environment Agency Wales - South East Area	January 2013	Quarterly
Water Abstractions Environment Agency - Welsh Region	January 2013	Quarterly
Water Industry Act Referrals Environment Agency - Welsh Region	January 2013	Quarterly
Groundwater Vulnerability Environment Agency - Head Office	January 2011	Not Applicable
Drift Deposits Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations British Geological Survey - National Geoscience Information Service	October 2012	Annually
Superficial Aquifer Designations British Geological Survey - National Geoscience Information Service	October 2012	Annually
Source Protection Zones Environment Agency - Head Office	January 2013	Quarterly
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	January 2013	Quarterly

Data Currency

Agency & Hydrological	Version	Update Cycle
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	January 2013	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	January 2013	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	January 2013	Quarterly
Flood Defences Environment Agency - Head Office	January 2013	Quarterly
Waste	**Version**	**Update Cycle**
BGS Recorded Landfill Sites British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites Environment Agency Wales - South East Area	January 2013	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 East Area	January 2013	Quarterly
Licensed Waste Management Facilities (Locations) Environment Agency Wales - South East Area	January 2013	Quarterly
Local Authority Landfill Coverage Vale Of Glamorgan County Borough Council	May 2000	Not Applicable
Local Authority Recorded Landfill Sites Vale Of Glamorgan County Borough Council	May 2000	Not Applicable
Registered Landfill Sites Environment Agency Wales - South East Area	March 2003	Not Applicable
Registered Waste Transfer Sites Environment Agency Wales - South East Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites Environment Agency Wales - South East Area	March 2003	Not Applicable
Hazardous Substances	**Version**	**Update Cycle**
Control of Major Accident Hazards Sites (COMAH) Health and Safety Executive	October 2012	Bi-Annually
Explosive Sites Health and Safety Executive	March 2013	Bi-Annually
Notification of Installations Handling Hazardous Substances (NIHHS) Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements Vale Of Glamorgan County Borough Council - Planning Department	January 2013	Annual Rolling Update
Planning Hazardous Substance Consents Vale Of Glamorgan County Borough Council - Planning Department	January 2013	Annual Rolling Update

Data Currency

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	August 1996	Not Applicable
BGS Estimated Soil Chemistry British Geological Survey - National Geoscience Information Service	January 2010	Variable
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	October 2012	Bi-Annually
Coal Mining Affected Areas The Coal Authority - Mining Report Service	January 2012	As notified
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	February 2011	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	February 2011	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	February 2011	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	February 2011	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	February 2011	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	February 2011	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	February 2011	Annually
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	As notified
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	As notified
Industrial Land Use	**Version**	**Update Cycle**
Contemporary Trade Directory Entries Thomson Directories	November 2012	Quarterly
Fuel Station Entries Catalist Ltd - Experian	February 2013	Quarterly

Data Currency

Sensitive Land Use	Version	Update Cycle
Areas of Outstanding Natural Beauty Countryside Council for Wales	November 2012	Bi-Annually
Environmentally Sensitive Areas The National Assembly for Wales - GI Services (Department of Planning & Countryside)	August 2008	Annually
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Vale Of Glamorgan County Borough Council	November 2012	Bi-Annually
Marine Nature Reserves Countryside Council for Wales	November 2012	Bi-Annually
National Nature Reserves Countryside Council for Wales	November 2012	Bi-Annually
Nitrate Sensitive Areas Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	February 2012	Not Applicable
Nitrate Vulnerable Zones The National Assembly for Wales - GI Services (Department of Planning & Countryside)	October 2005	Annually
Ramsar Sites Countryside Council for Wales	November 2012	Bi-Annually
Sites of Special Scientific Interest Countryside Council for Wales	November 2012	Bi-Annually
Special Areas of Conservation Countryside Council for Wales	November 2012	Bi-Annually
Special Protection Areas Countryside Council for Wales	November 2012	Bi-Annually

Data Suppliers

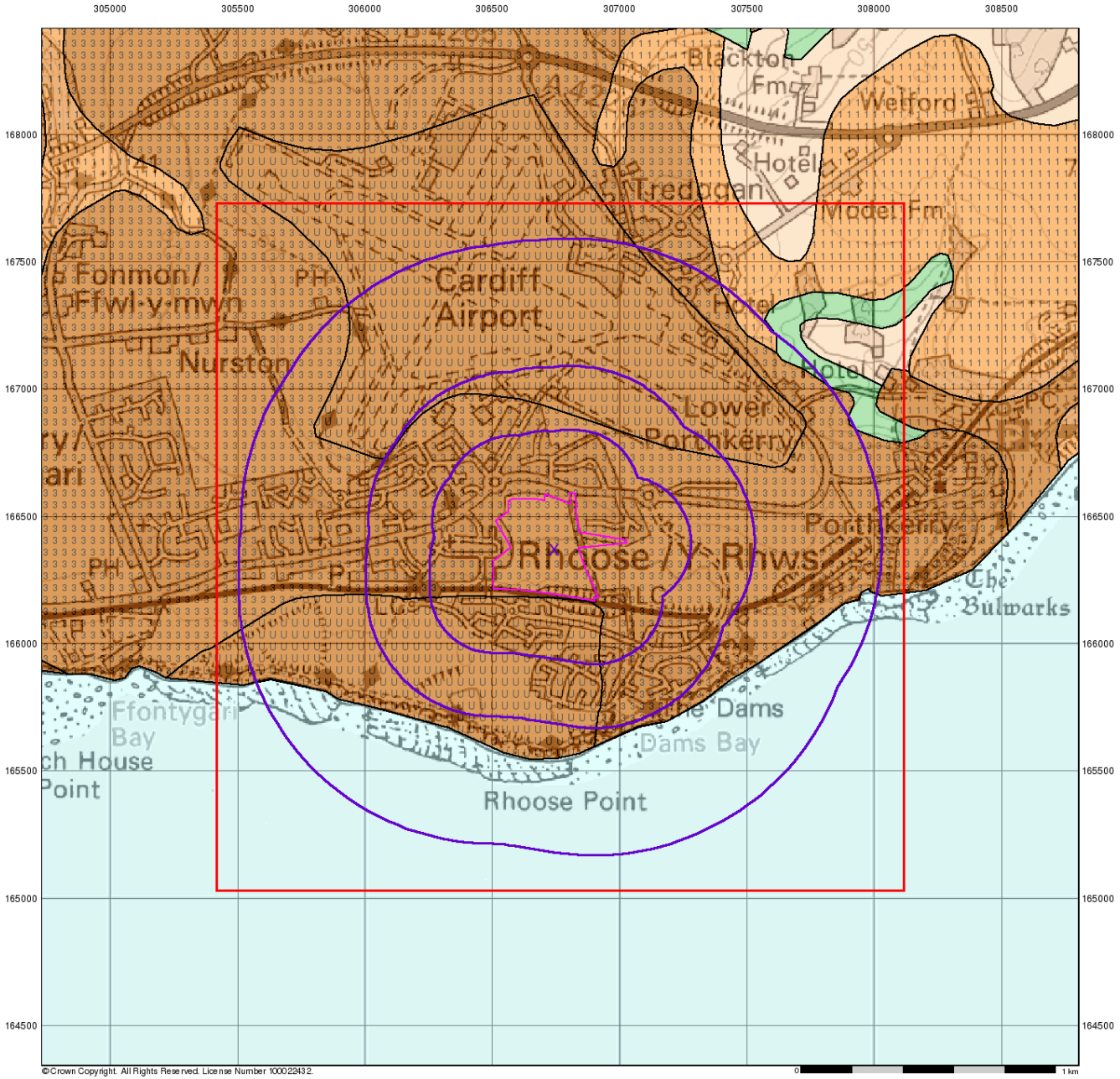
A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	Ordnance Survey Licensed Partner
Environment Agency	Environment Agency
Scottish Environment Protection Agency	SEPA Scottish Environment Protection Agency
The Coal Authority	THE COAL AUTHORITY
British Geological Survey	British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
Centre for Ecology and Hydrology	Centre for Ecology & Hydrology NATURAL ENVIRONMENT RESEARCH COUNCIL
Countryside Council for Wales	CYNGOR CEFN GWLAD CYMRU COUNTRYSIDE COUNCIL FOR WALES
Scottish Natural Heritage	SCOTTISH NATURAL HERITAGE
Natural England	NATURAL ENGLAND
Health Protection Agency	Health Protection Agency
Ove Arup	ARUP
Peter Brett Associates	pba peterbrett

Useful Contacts

Contact	Name and Address	Contact Details
1	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 08708 506 506 Email: enquiries@environment-agency.gov.uk
2	**Vale Of Glamorgan County Borough Council - Environmental Health Department** Civic Offices, Holton Road, Barry, CF63 4RU	Telephone: 01446 700111 Fax: 01446 745566 Website: www.valeofglamorgan.gov.uk
3	**British Geological Survey - Enquiry Service** British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
4	**Vale Of Glamorgan County Borough Council** Civic Offices, Holton Road, Barry, South Glamorgan, CF63 4RU	Telephone: 01446 700111 Fax: 01446 745566 Website: www.valeofglamorgan.gov.uk
5	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmark.co.uk Website: www.landmarkinfo.co.uk
6	**Peter Brett Associates** Caversham Bridge House, Waterman Place, Reading, Berkshire, RG1 8DN	Telephone: 0118 950 0761 Fax: 0118 959 7498 Email: reading@pba.co.uk Website: www.pba.co.uk
7	**Countryside Council for Wales** Plas Penrhose, Fford Penrhos, Bangor, Gwynedd, LL57 2LQ	Telephone: 01248 385500 Fax: 01248 355782
-	**Health Protection Agency - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@hpa.org.uk Website: www.hpa.org.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

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



Intégral Géotechnique

Groundwater Vulnerability

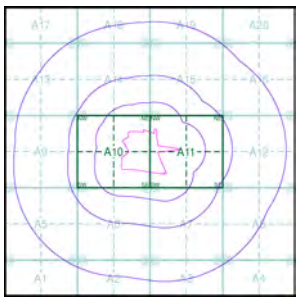
General

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

Agency and Hydrological

Geological Classes	Soil Classes
Major Aquifer (Highly Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Minor Aquifer (Variably Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Non Aquifer (Negligibly Permeable)	
Water or Sea	
Drift Deposit	

Site Sensitivity Context Map - Slice A



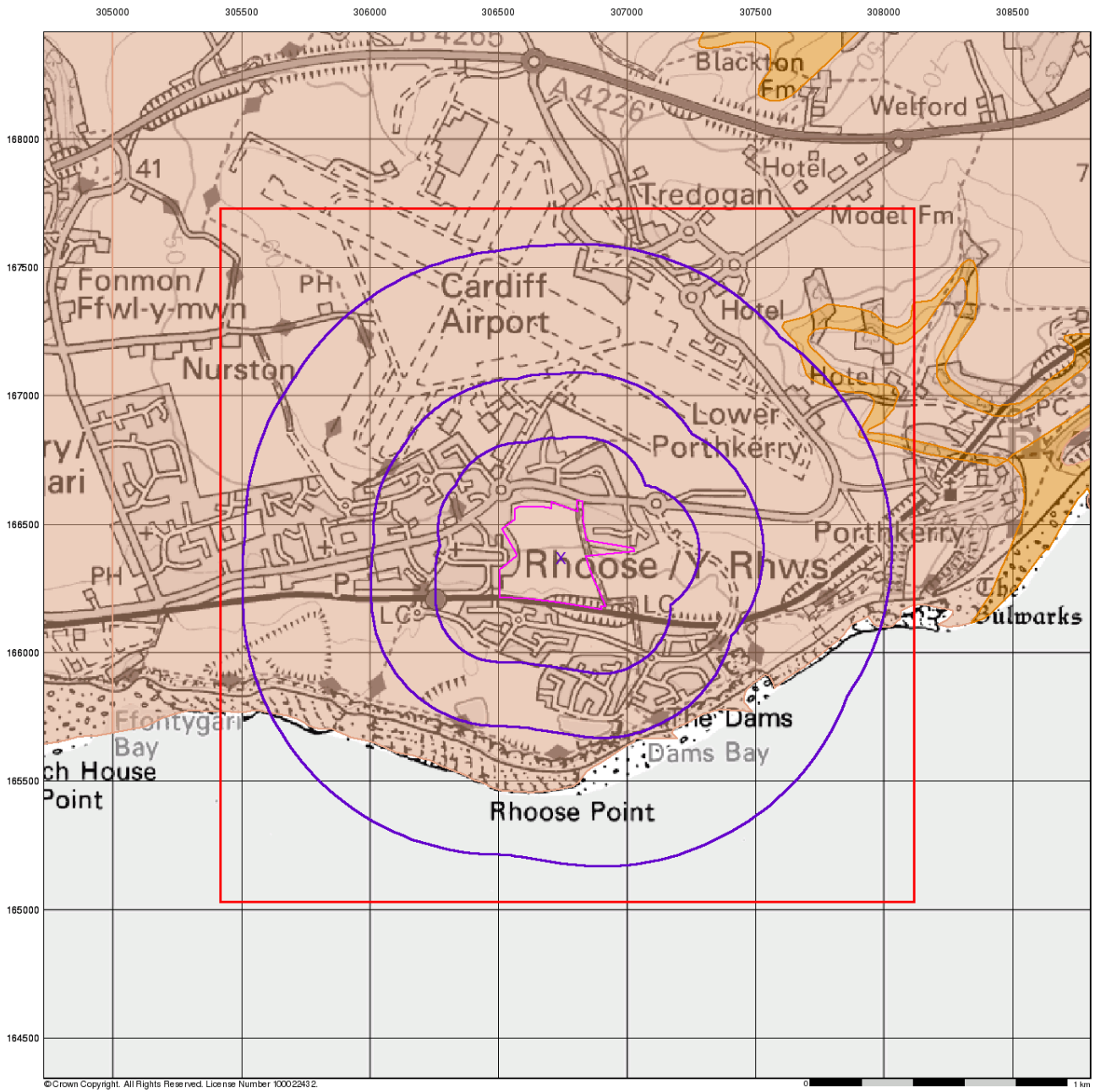
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

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



Intégral Géotechnique

Bedrock Aquifer Designation

General

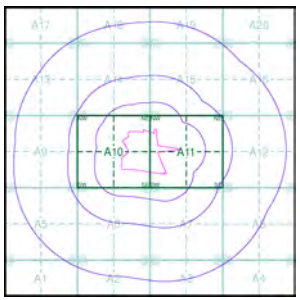
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown

Site Sensitivity Context Map - Slice A



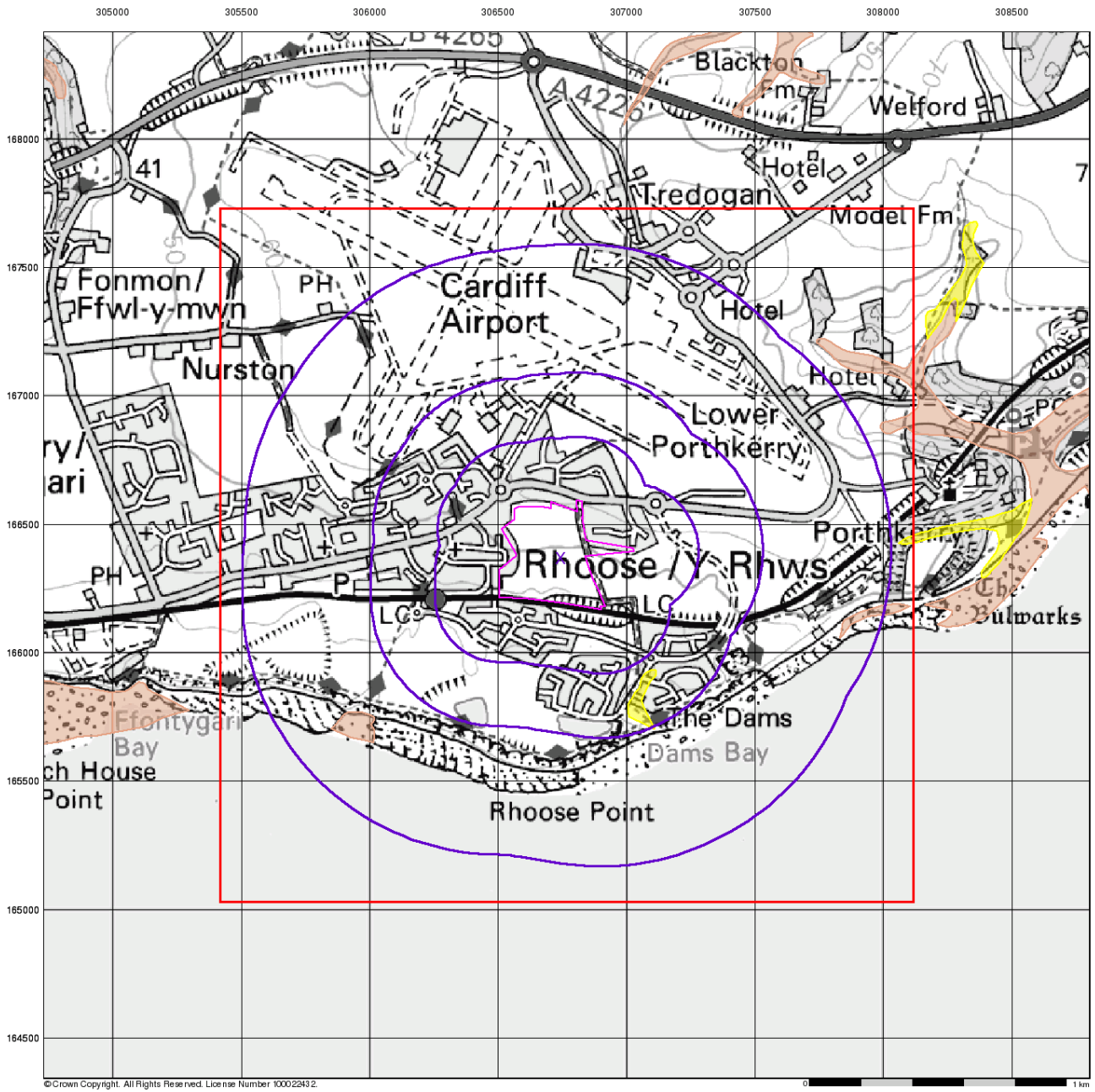
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

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



Intégral Géotechnique

Superficial Aquifer Designation

General

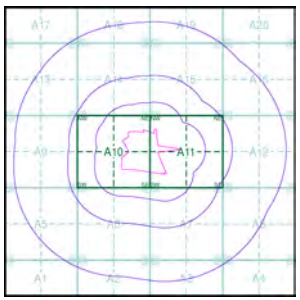
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown

Site Sensitivity Context Map - Slice A



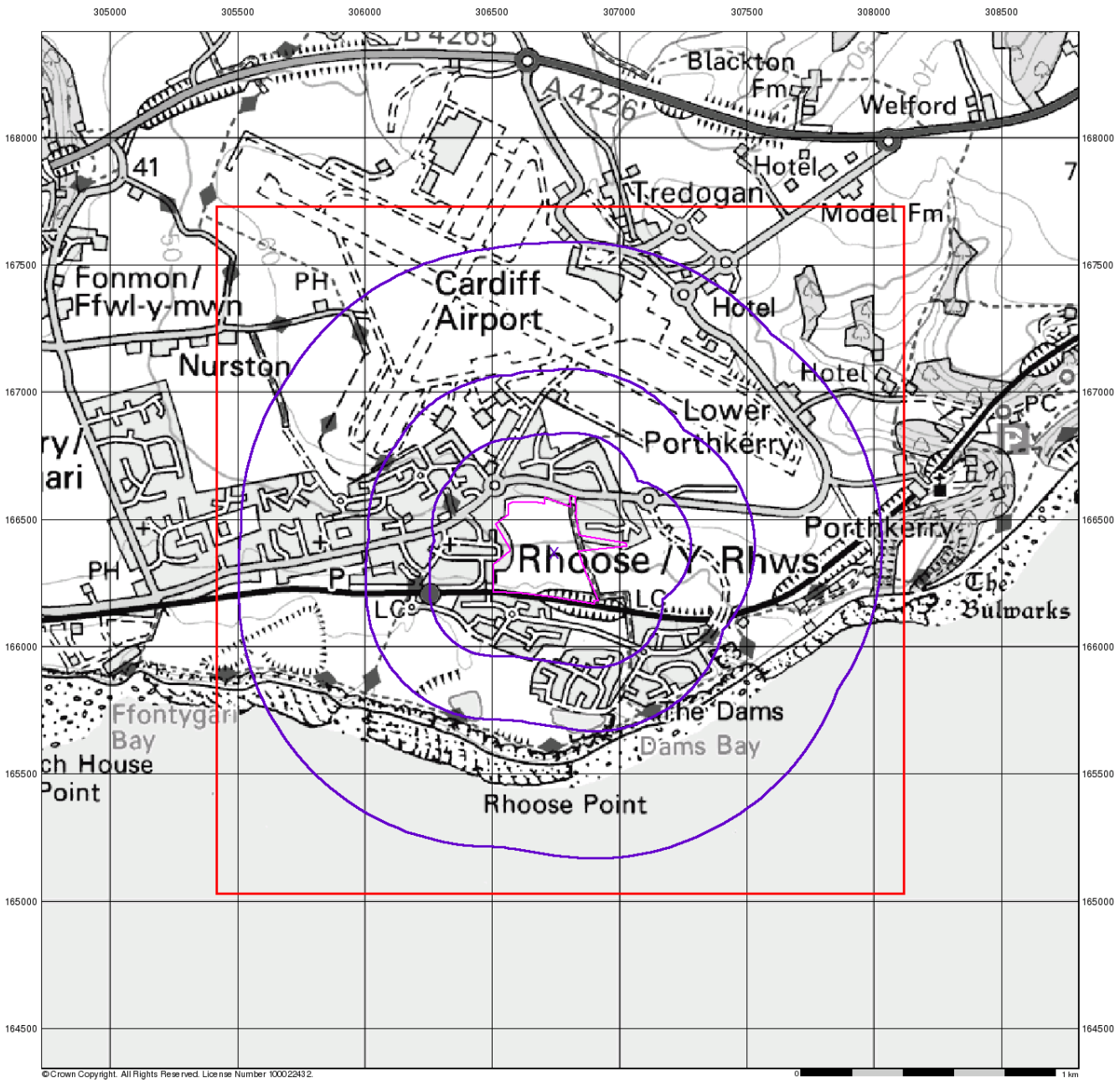
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

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



Intégral Géotechnique

Source Protection Zones

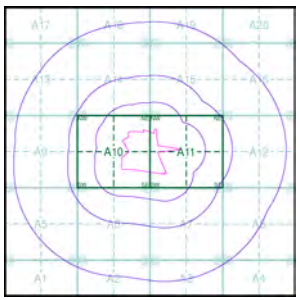
General

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

Agency and Hydrological

Source Protection Zone I
Source Protection Zone II
Source Protection Zone III
Zone of Special Interest
Source Protection Zone Borehole

Site Sensitivity Context Map - Slice A



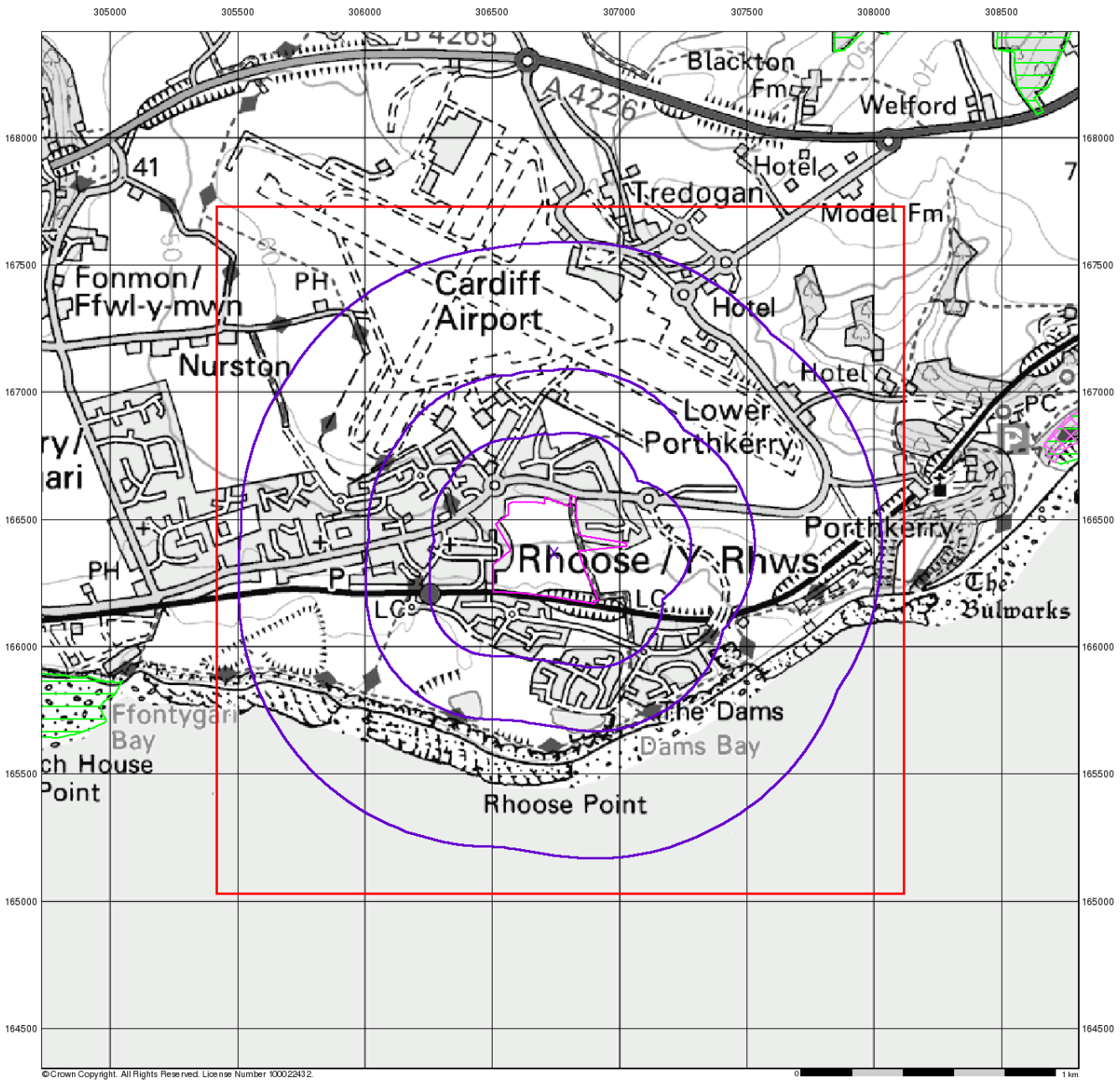
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

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



Intégral Géotechnique

Sensitive Land Uses

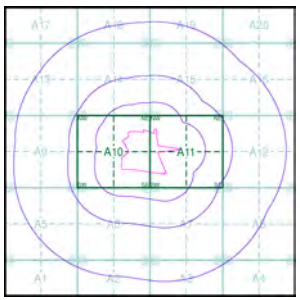
General

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

Sensitive Land Uses

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

Site Sensitivity Context Map - Slice A



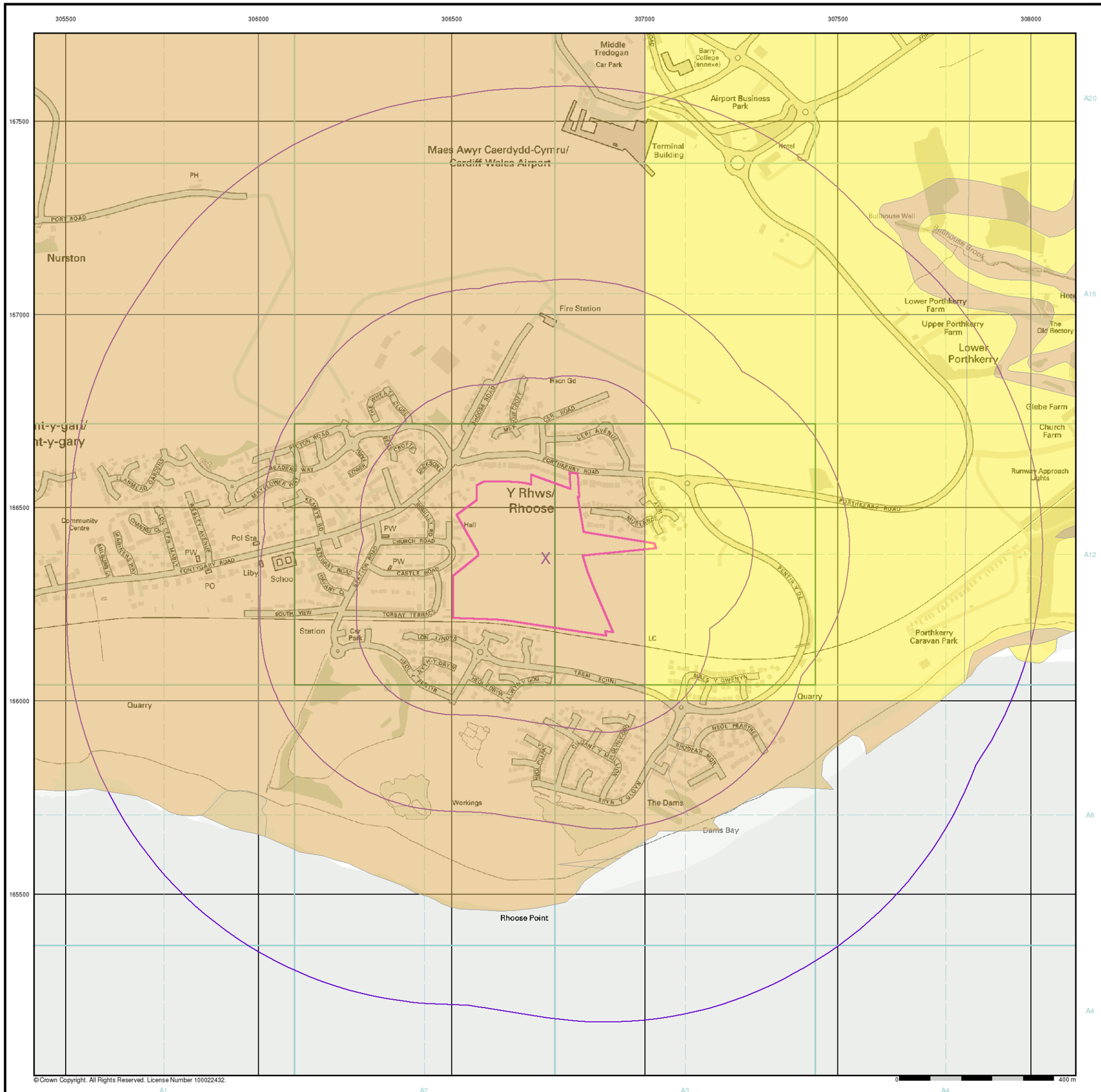
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

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



Intégral Géotechnique

General

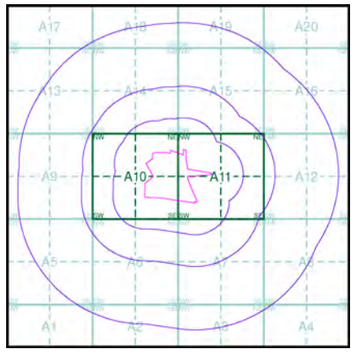
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg

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

Estimated Soil Chemistry Arsenic - Slice A



Order Details

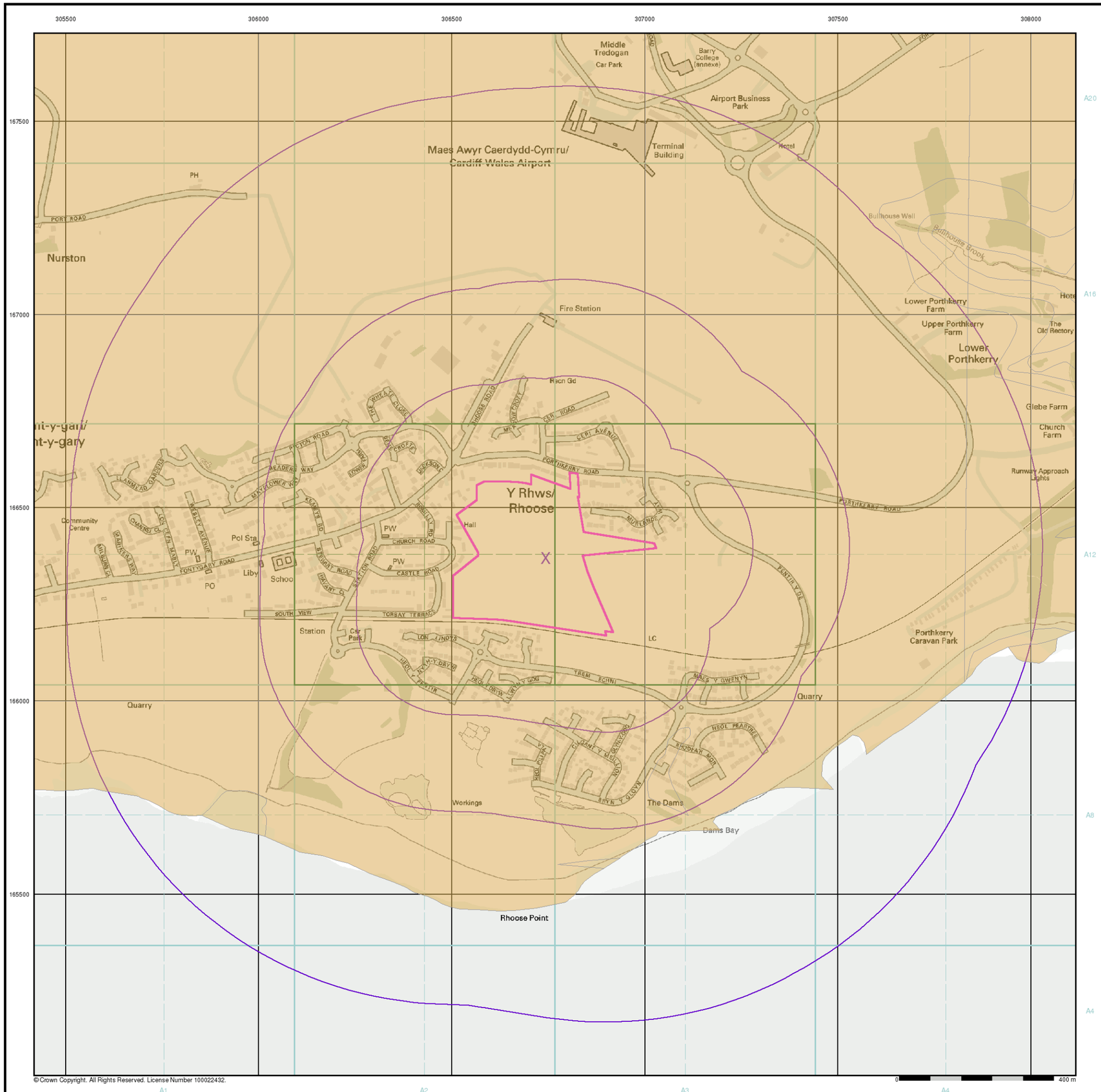
Order Details:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

Landmark Information Group

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



Intégral Géotechnique

General

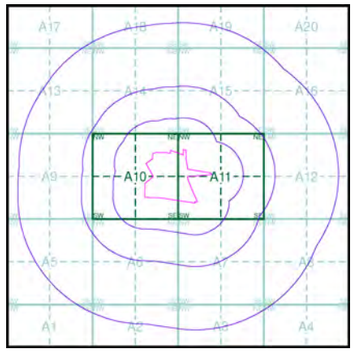
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg

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

Estimated Soil Chemistry Cadmium - Slice A



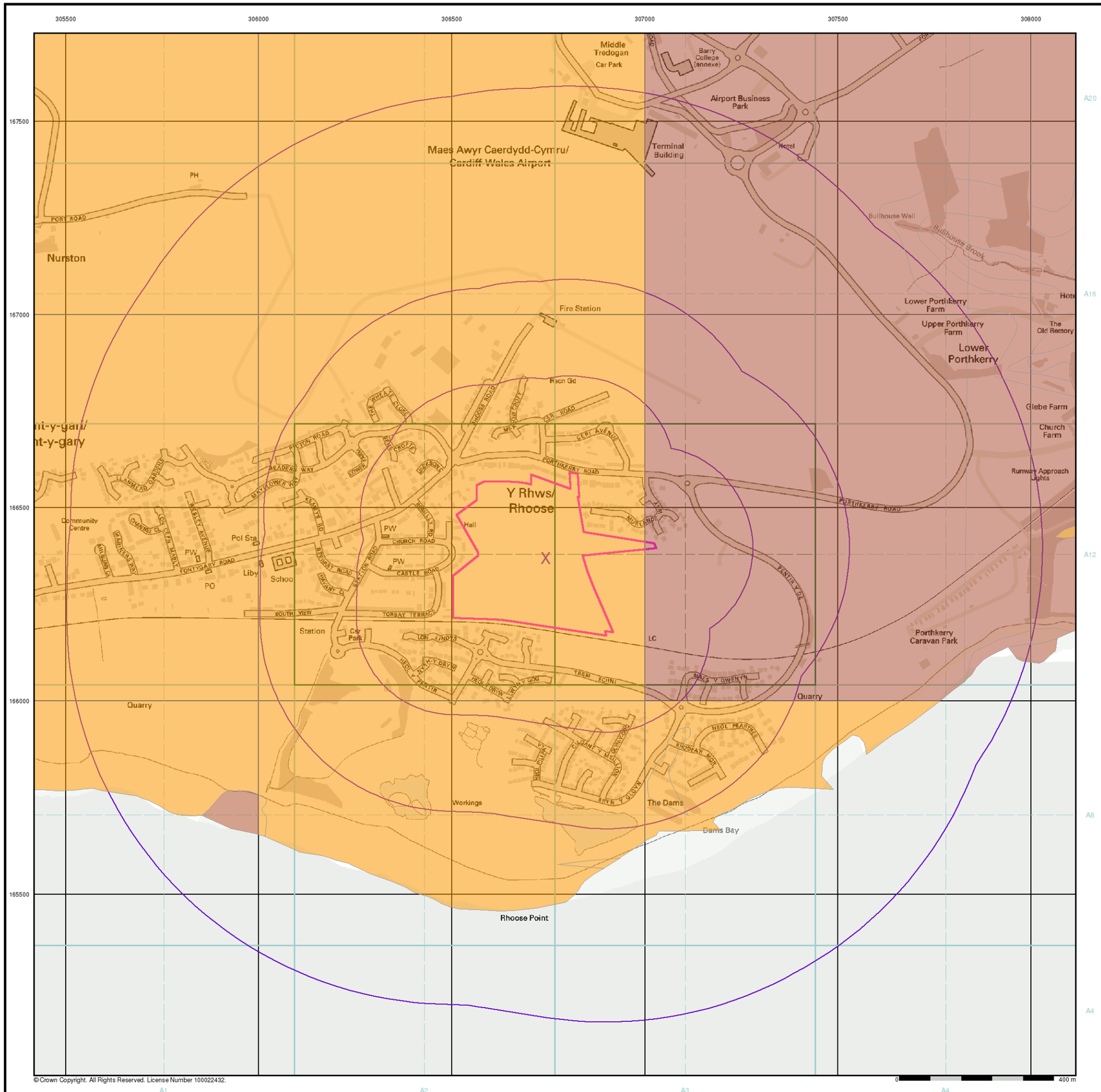
Order Details

Order Details:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

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



© Crown Copyright. All Rights Reserved. License Number 100022432.

Intégral Géotechnique

General

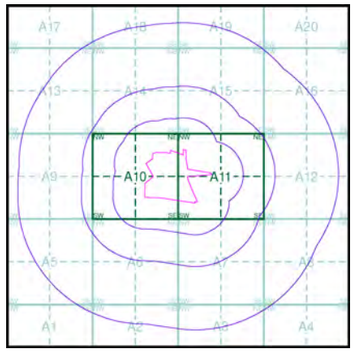
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg

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

Estimated Soil Chemistry Chromium - Slice A



Order Details

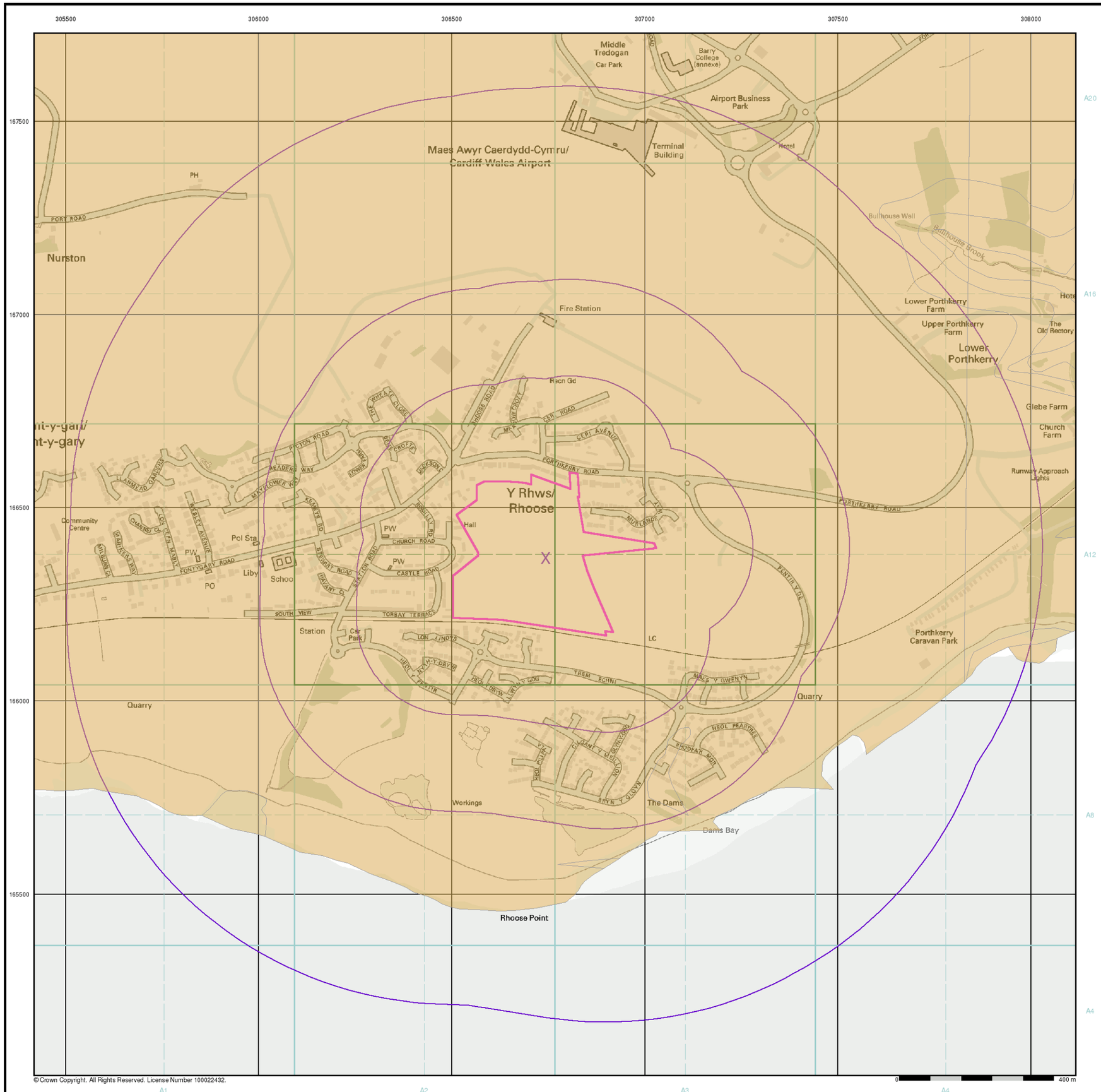
Order Details:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

Landmark Information Group

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



Intégral Géotechnique

General

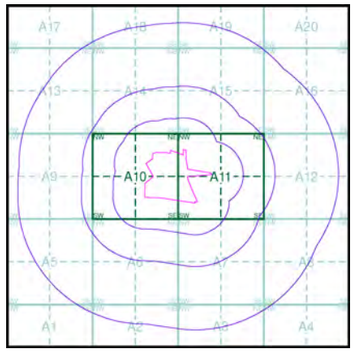
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg

- < 150
- 150 - 300
- 300 - 600
- 600 - 900
- > 900

Estimated Soil Chemistry Lead - Slice A



Order Details

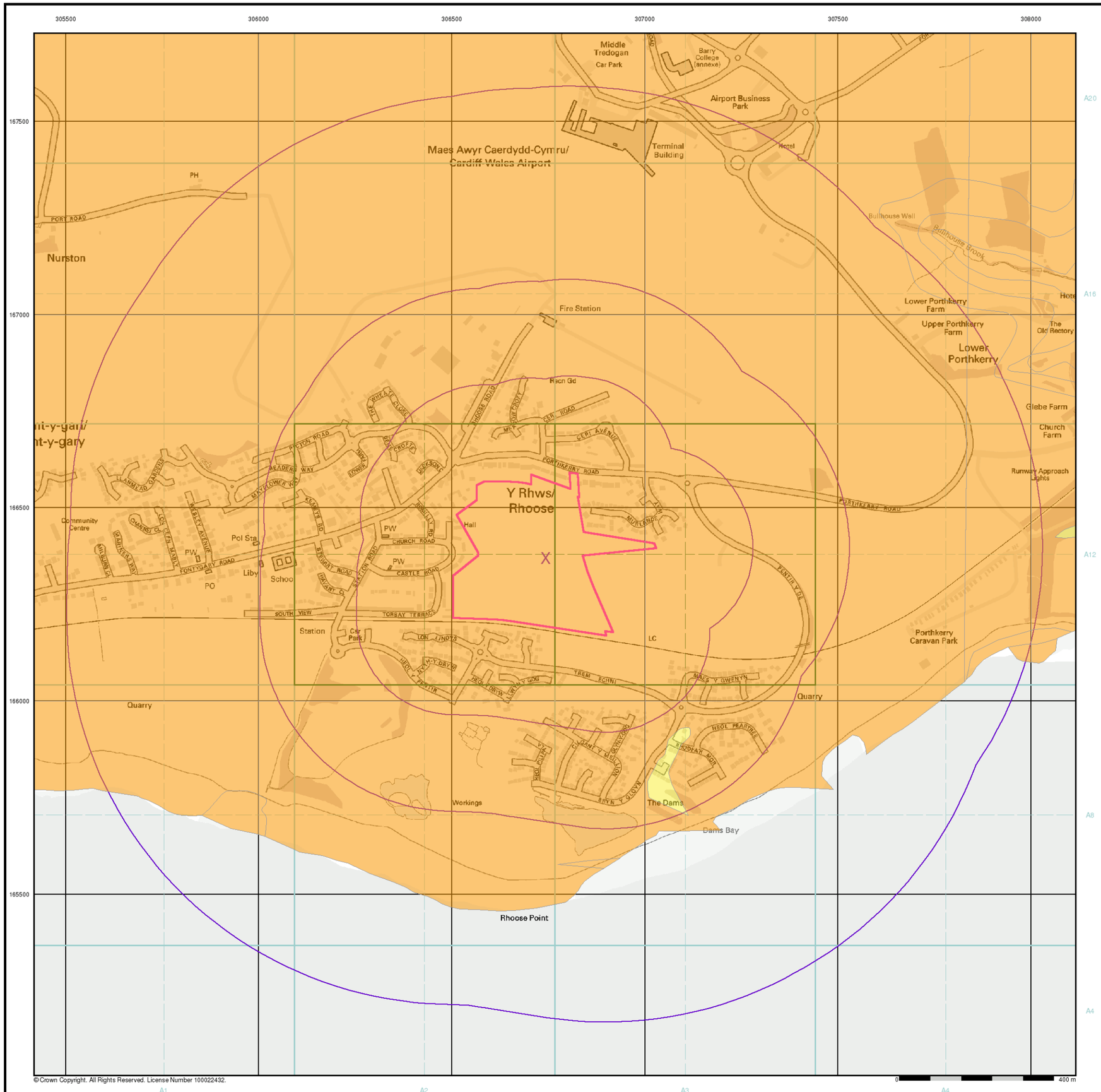
Order Details:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

Landmark Information Group

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



Intégral Géotechnique

General

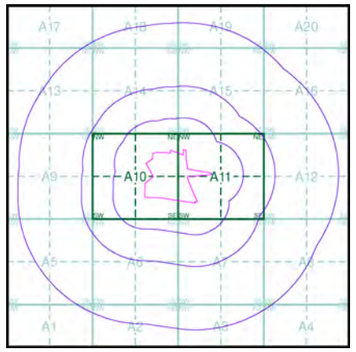
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg

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

Estimated Soil Chemistry Nickel - Slice A



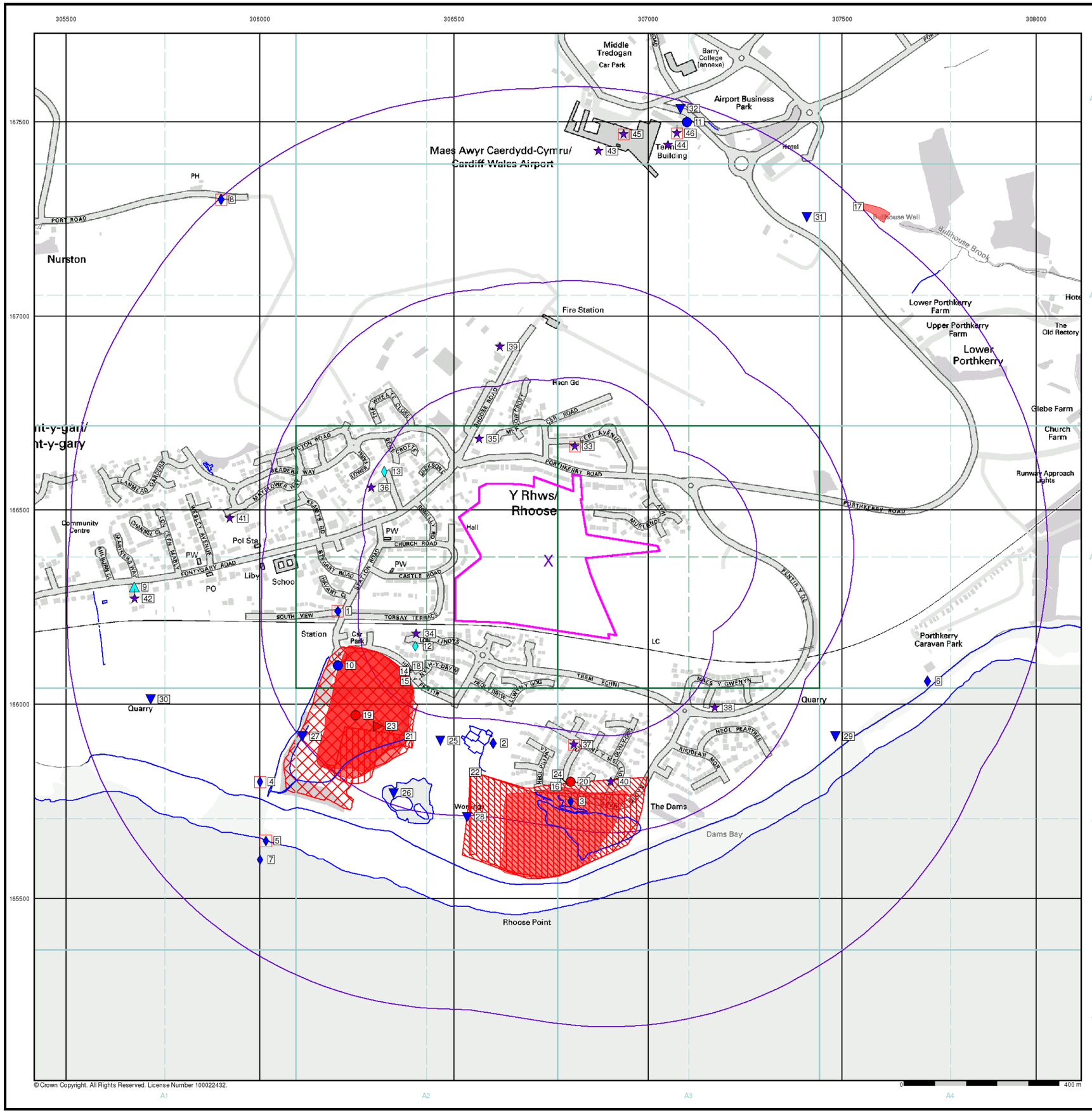
Order Details

Order Details:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

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 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

Geological

- BGS Recorded Mineral Site

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry

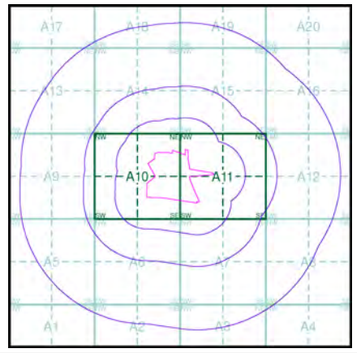
Waste

- 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
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Hazardous Substances

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

Site Sensitivity Map - Slice A



Order Details

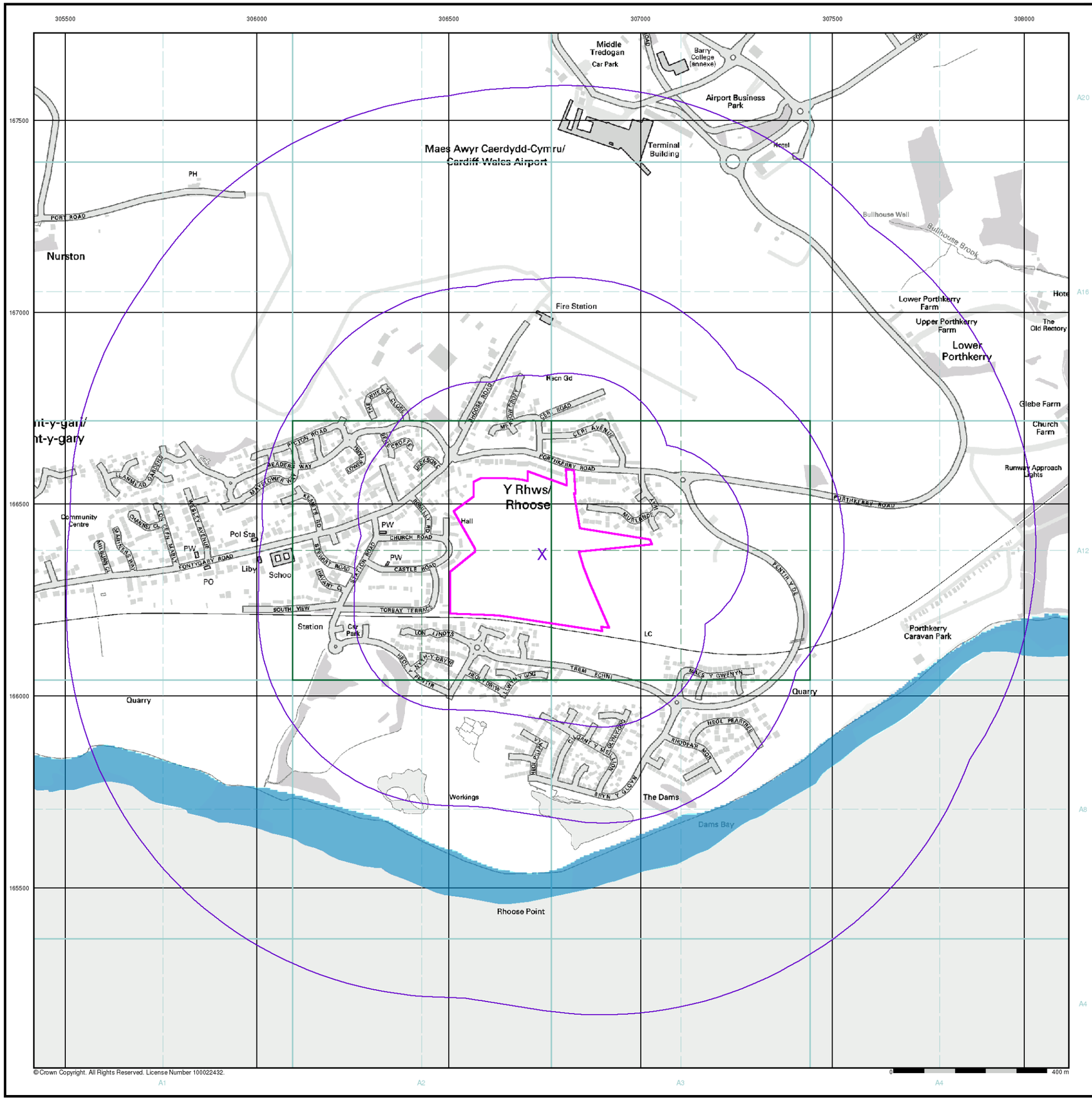
Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

Landmark Information Group

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



Intégral Géotechnique

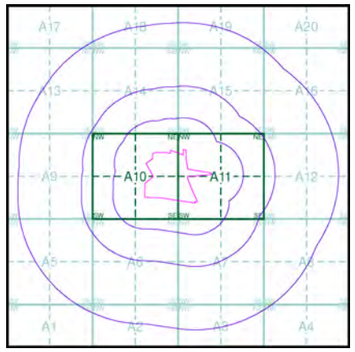
General

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

Agency and Hydrological (Flood)

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

Flood Map - Slice A



Order Details

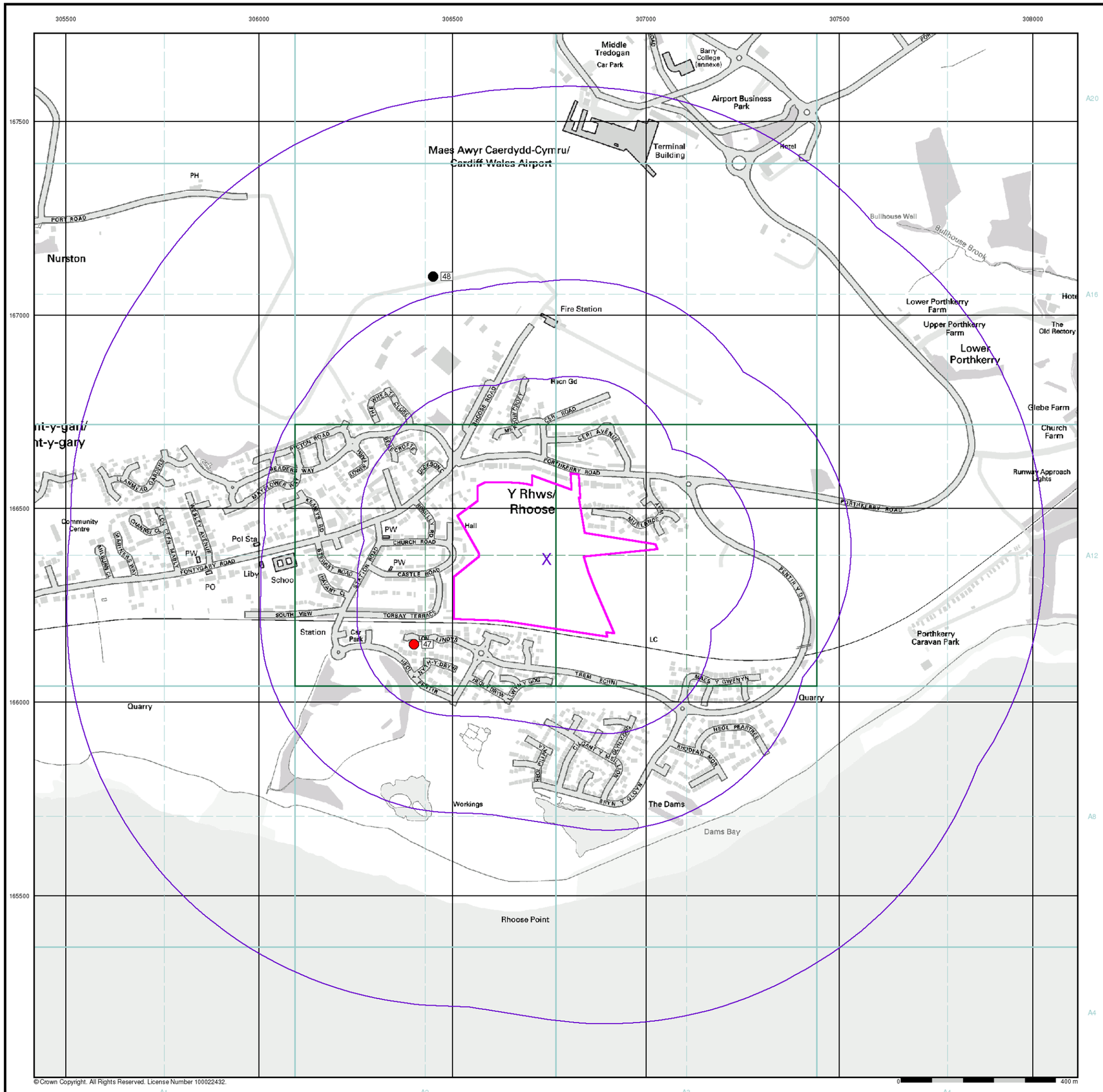
Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

Landmark Information Group

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



Intégral Géotechnique

General

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

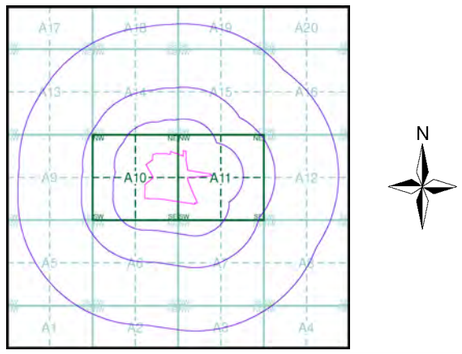
Agency and Hydrological (Boreholes)

- 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

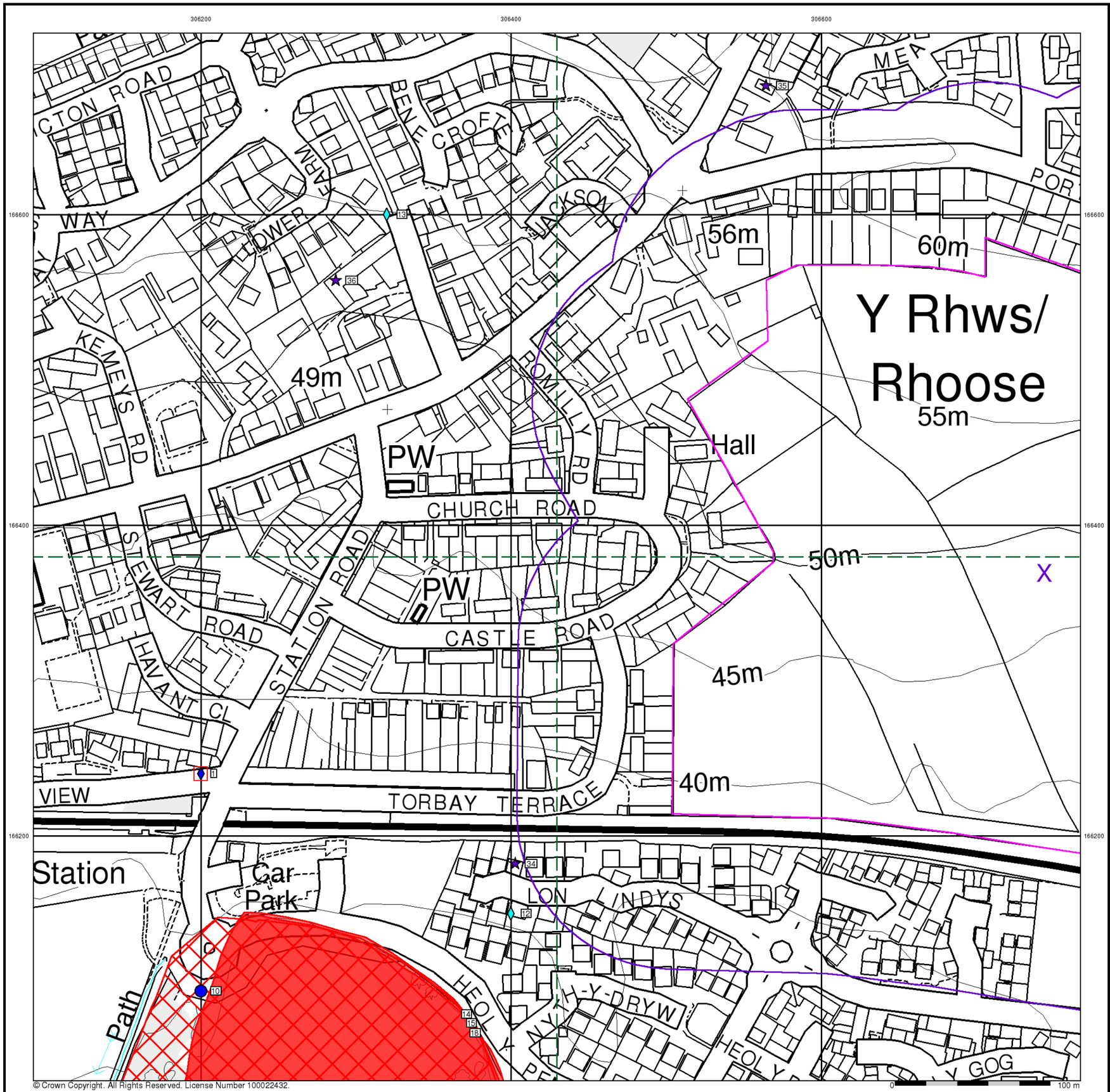
Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

Landmark Information Group

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



© Crown Copyright. All Rights Reserved. License Number 100022432.

0 100 m

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

Geological

- BGS Recorded Mineral Site

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry

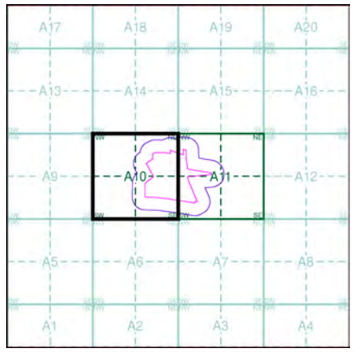
Waste

- 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
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Hazardous Substances

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

Site Sensitivity Map - Segment A10



Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66

Site Details

Site at 306680, 166420

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

© Crown Copyright. All Rights Reserved. License Number 100022432.

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

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
- 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

Geological

- BGS Recorded Mineral Site

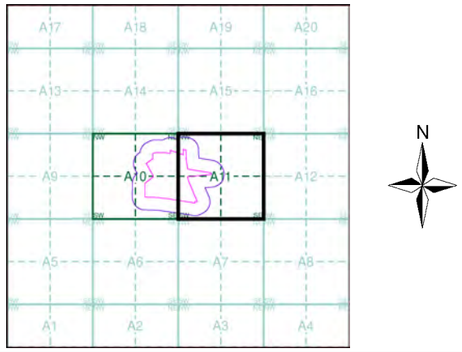
Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Site Sensitivity Map - Segment A11



Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66

Site Details

Site at 306680, 166420

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

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

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

Ordnance Survey Plan 1:10,000

Chalk Pit, Clay Pit or Quarry
Gravel Pit
Sand Pit
Disused Pit or Quarry
Refuse or Slag Heap
Lake, Loch or Pond
Dunes
Boulders
Coniferous Trees
Non-Coniferous Trees
Orchard
Scrub
Coppice
Bracken
Heath
Rough Grassland
Marsh
Reeds
Saltings
Building
Direction of Flow of Water
Shingle
Sand
Glasshouse
Pylon
Electricity Transmission Line
Pole
Sloping Masonry
Cutting
Embankment
Standard Gauge Multiple Track
Road Under
Road Over
Level Crossing
Foot Bridge
Standard Gauge Single Track
Siding, Tramway or Mineral Line
Narrow Gauge
Geographical County
Administrative County, County Borough or County of City
Municipal Borough, Urban or Rural District, Burgh or District Council
Borough, Burgh or County Constituency
Shown only when not coincident with other boundaries
Civil Parish
Shown alternately when coincidence of boundaries occurs

BP, BS	Boundary Post or Stone	Pol Sta	Police Station
Ch	Church	PO	Post Office
CH	Club House	PC	Public Convenience
F E Sta	Fire Engine Station	PH	Public House
FB	Foot Bridge	SB	Signal Box
Fn	Fountain	Spr	Spring
GP	Guide Post	TCB	Telephone Call Box
MP	Mile Post	TCP	Telephone Call Post
MS	Mile Stone	W	Well

1:10,000 Raster Mapping

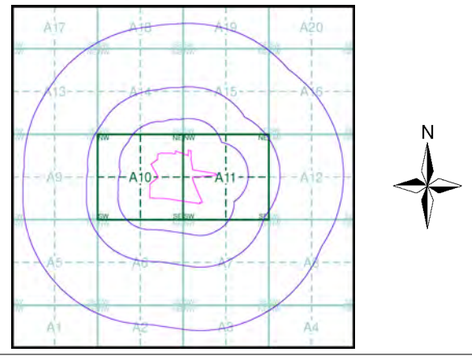
Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
Mud
Sand
Sand
Sand Pit
Slopes
Top of cliff
General detail
Underground detail
Overhead detail
Narrow gauge railway
Multi-track railway
Single track railway
County boundary (England only)
Civil, parish or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

Intégral Géotechnique

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Glamorganshire	1:10,560	1885	2
Glamorganshire	1:10,560	1900 - 1901	3
Glamorganshire	1:10,560	1921	4
Glamorganshire	1:10,560	1936	5
Glamorganshire	1:10,560	1938 - 1947	6
Historical Aerial Photography	1:10,560	1947	7
Historical Aerial Photography	1:10,560	1947	8
Ordnance Survey Plan	1:10,000	1965	9
Ordnance Survey Plan	1:10,000	1975	10
Ordnance Survey Plan	1:10,000	1982	11
Ordnance Survey Plan	1:10,000	1995	12
10K Raster Mapping	1:10,000	2006	13
10K Raster Mapping	1:10,000	2012	14

Historical Map - Slice A



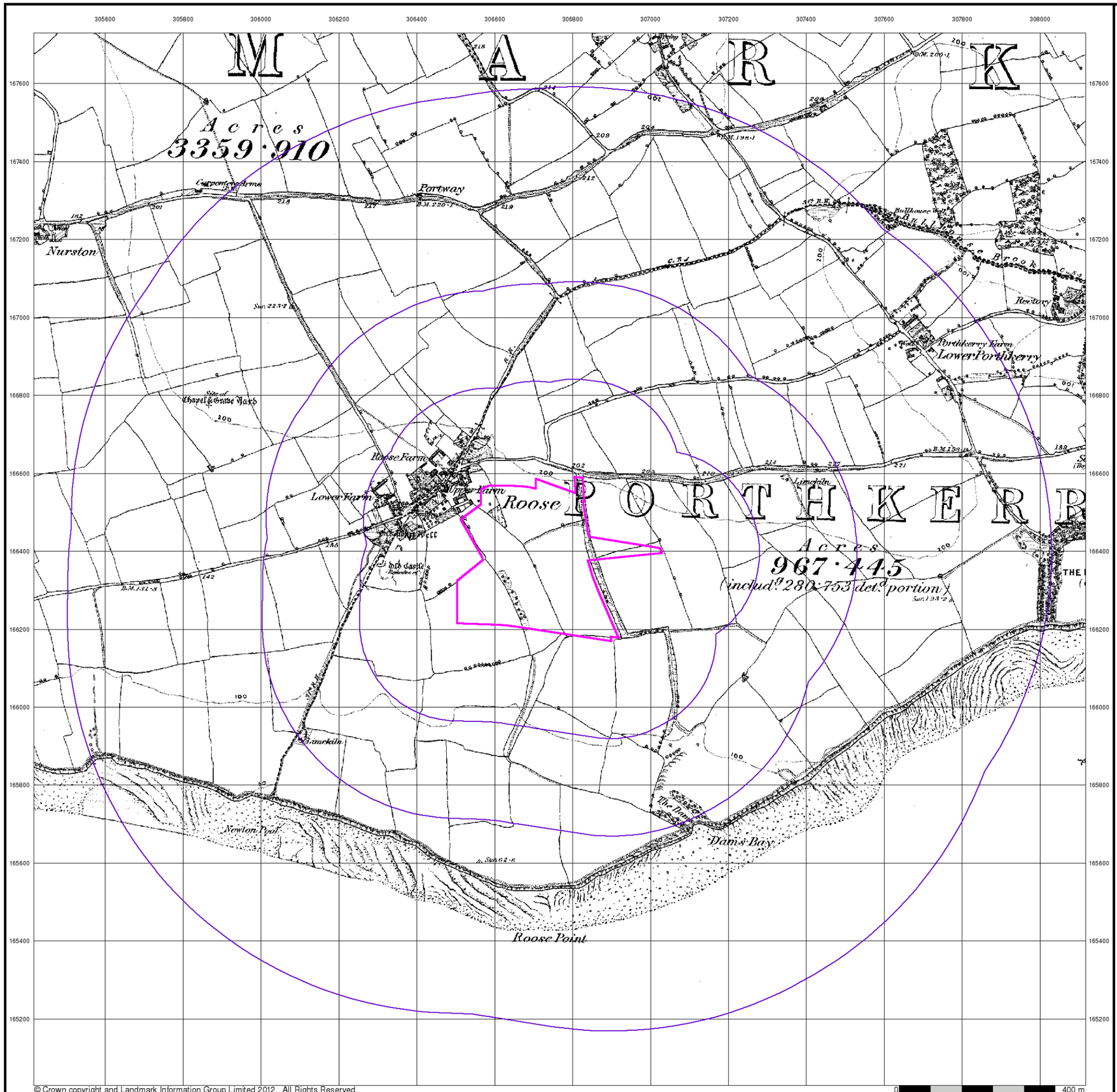
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

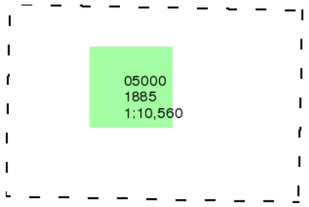
Glamorganshire

Published 1885

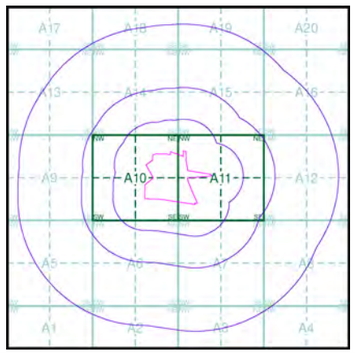
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



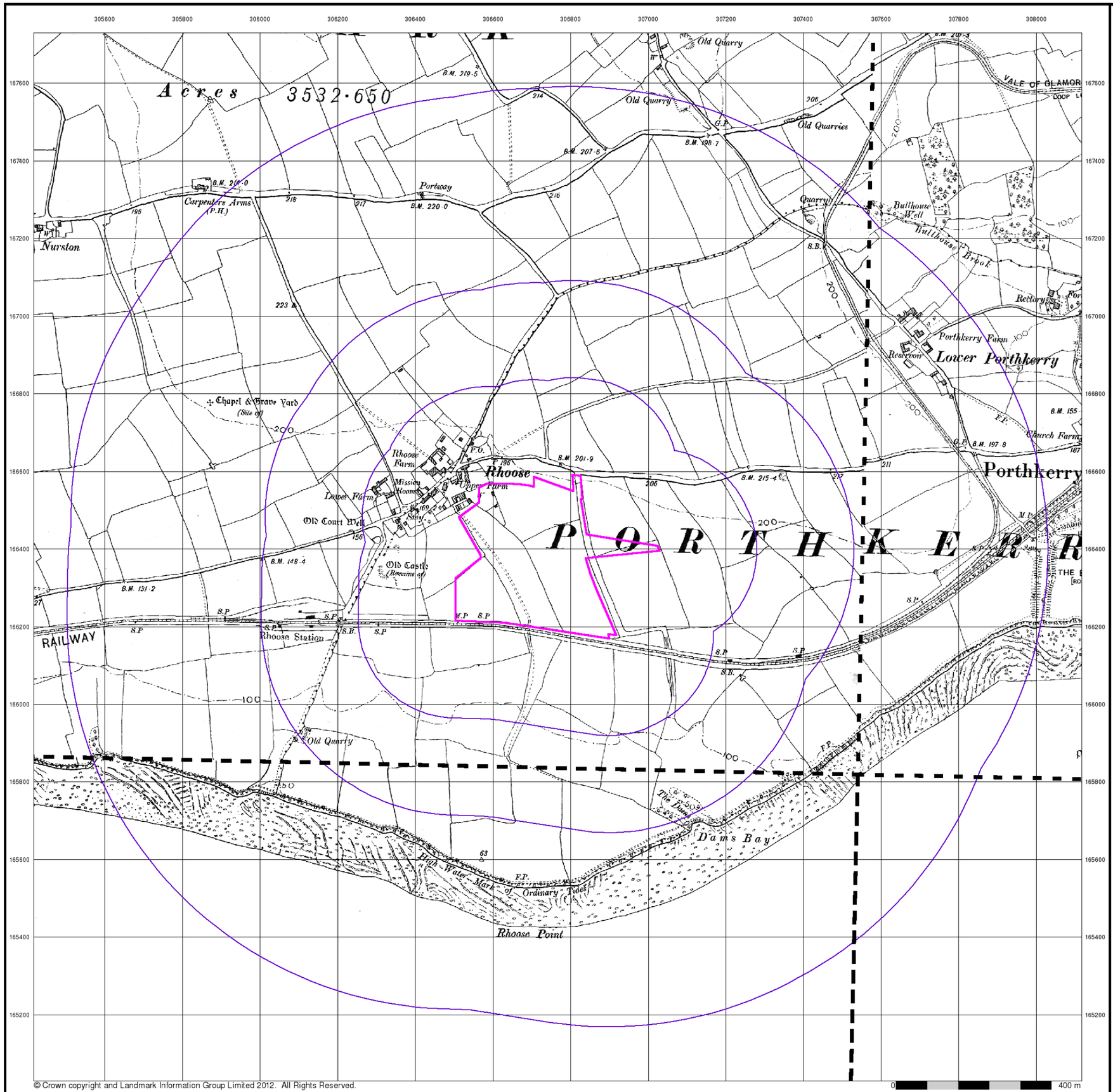
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

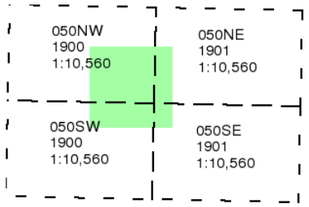
Glamorganshire

Published 1900 - 1901

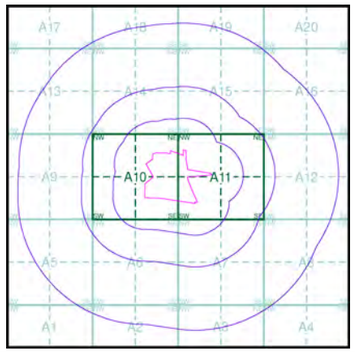
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



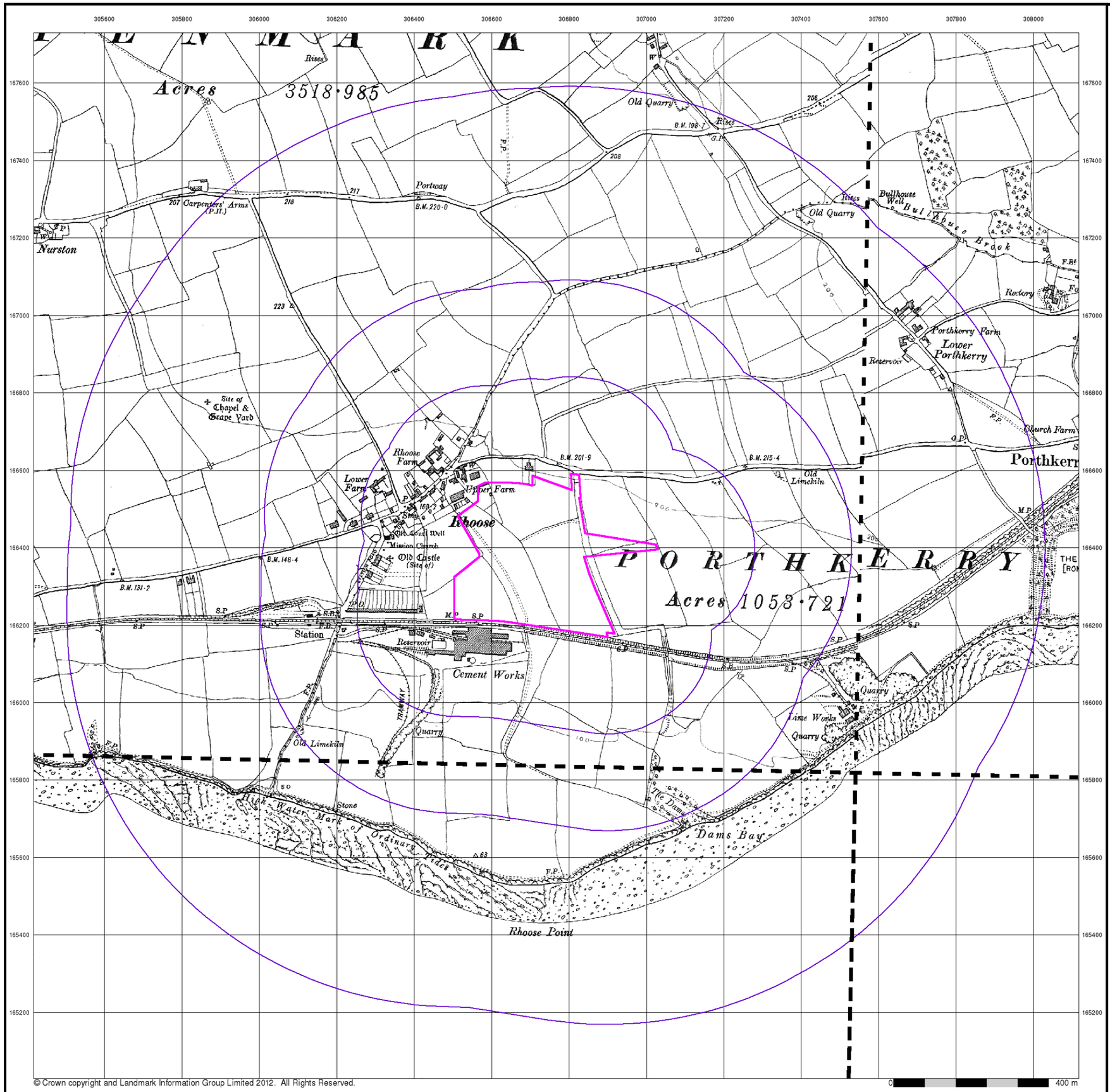
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

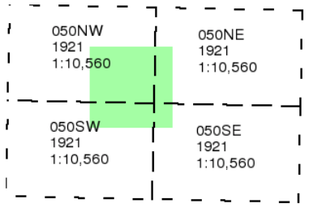
Glamorganshire

Published 1921

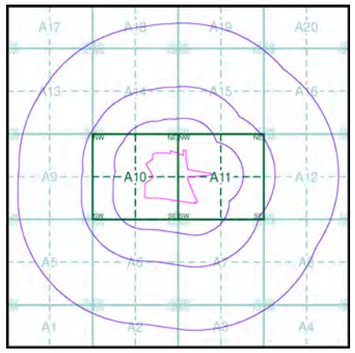
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



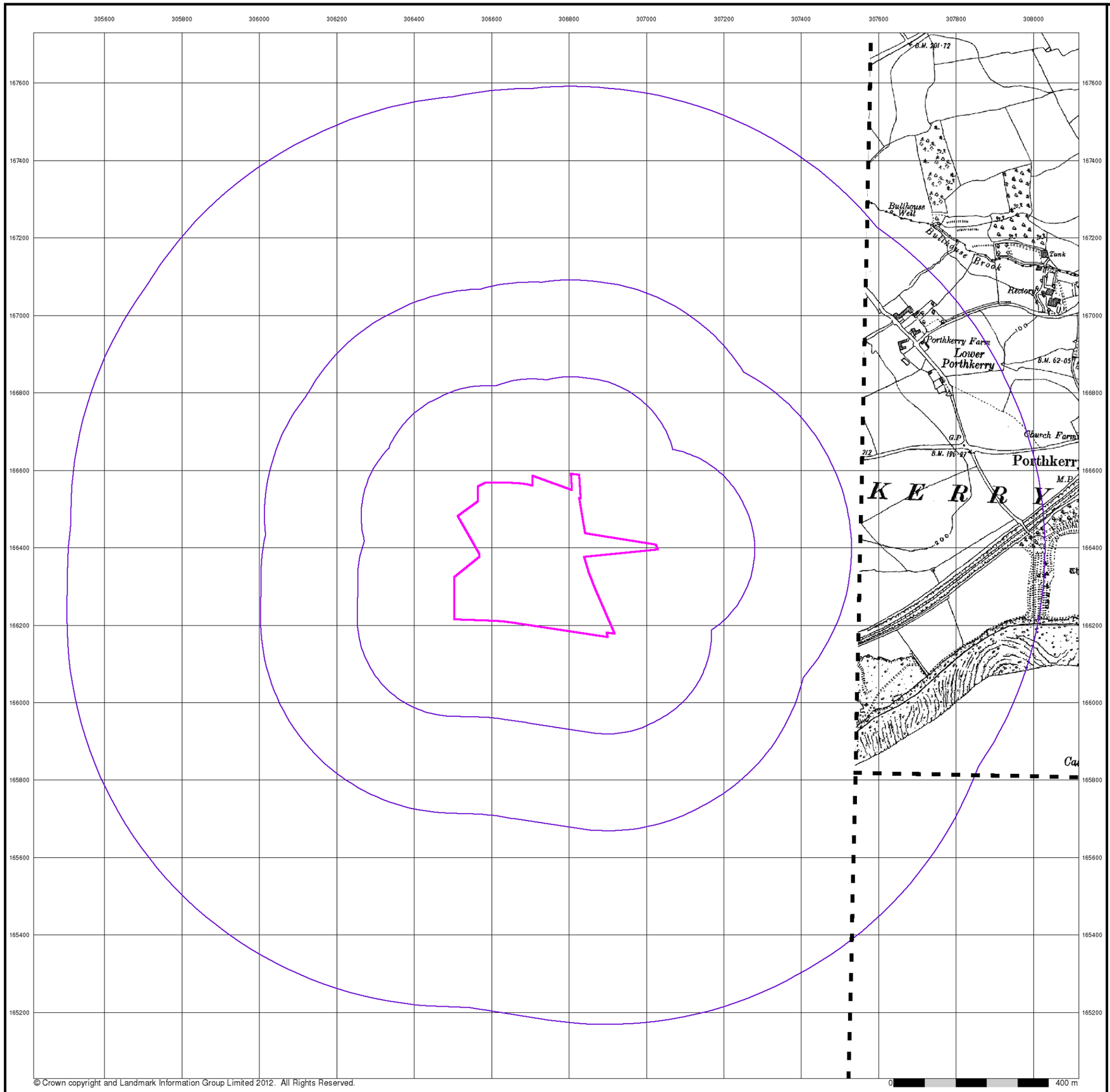
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

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



Intégral Géotechnique

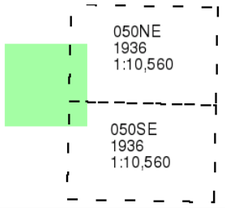
Glamorganshire

Published 1936

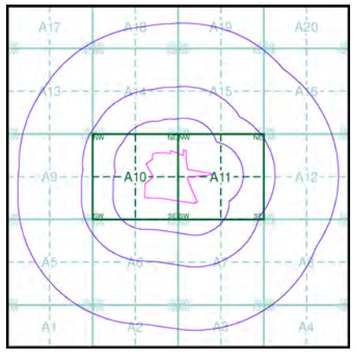
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

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

© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

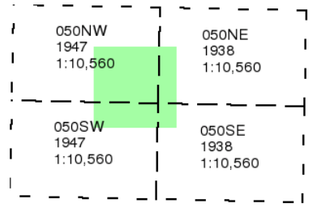
Glamorganshire

Published 1938 - 1947

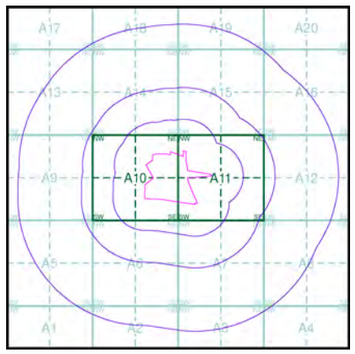
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



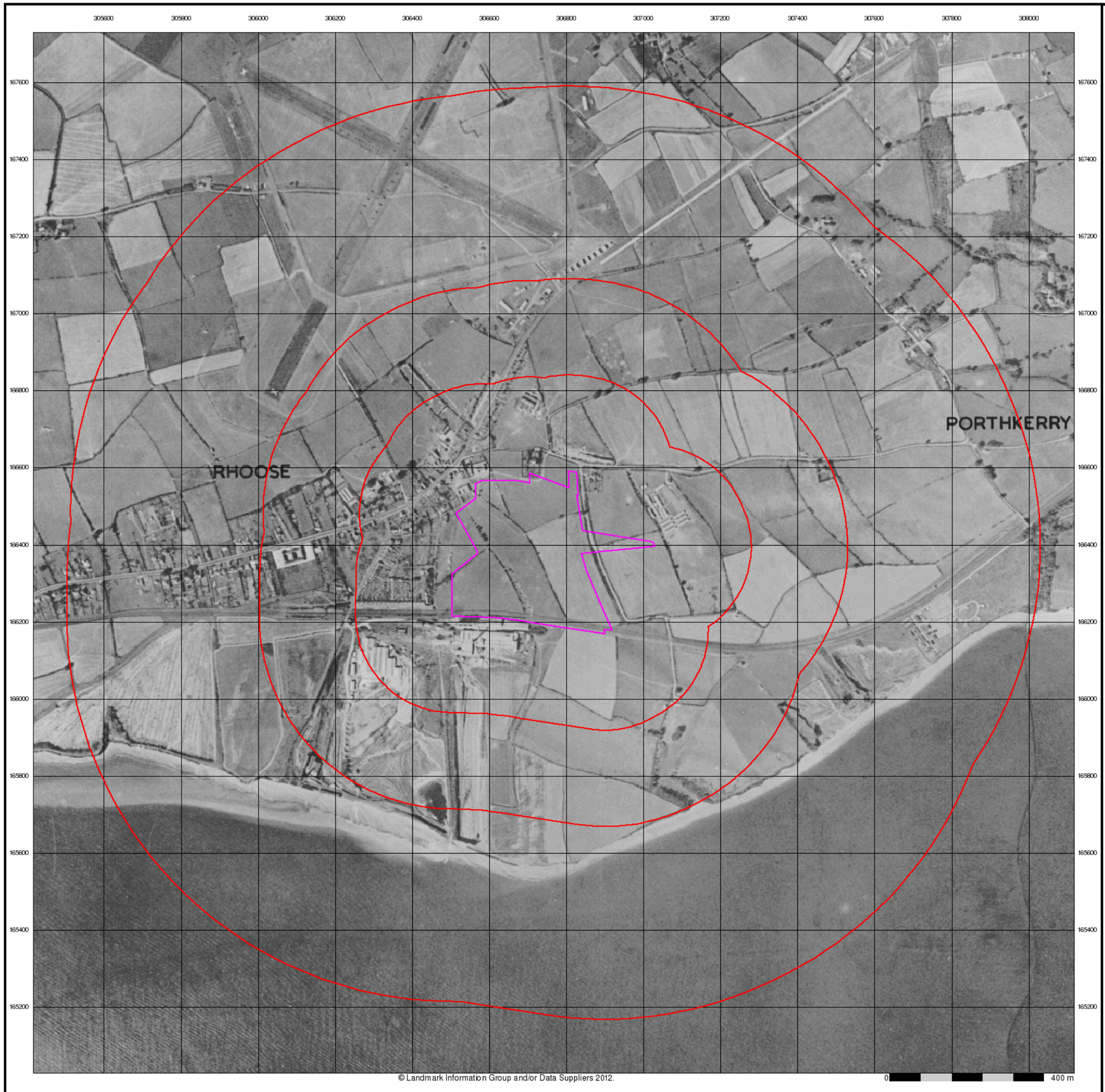
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

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



Intégral Géotechnique

Historical Aerial Photography

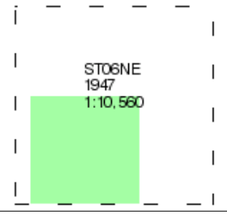
Published 1947

Source map scale - 1:10,560

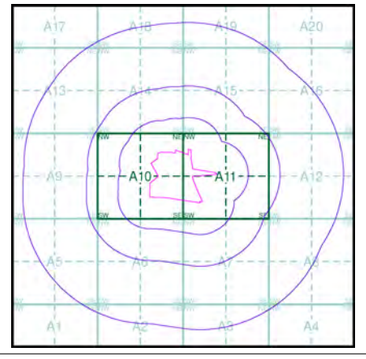
The Historical Aerial Photos were produced by the Ordnance Survey at a scale of 1:1,250 and 1:10,560 from Air Force photography. They were produced between 1944 and 1951 as an interim measure, pending preparation of conventional mapping, due to post war resource shortages. New security measures in the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

© Landmark Information Group and/or Data Suppliers 2010.

Map Name(s) and Date(s)



Historical Aerial Photography - Slice A



BRITISH LIBRARY

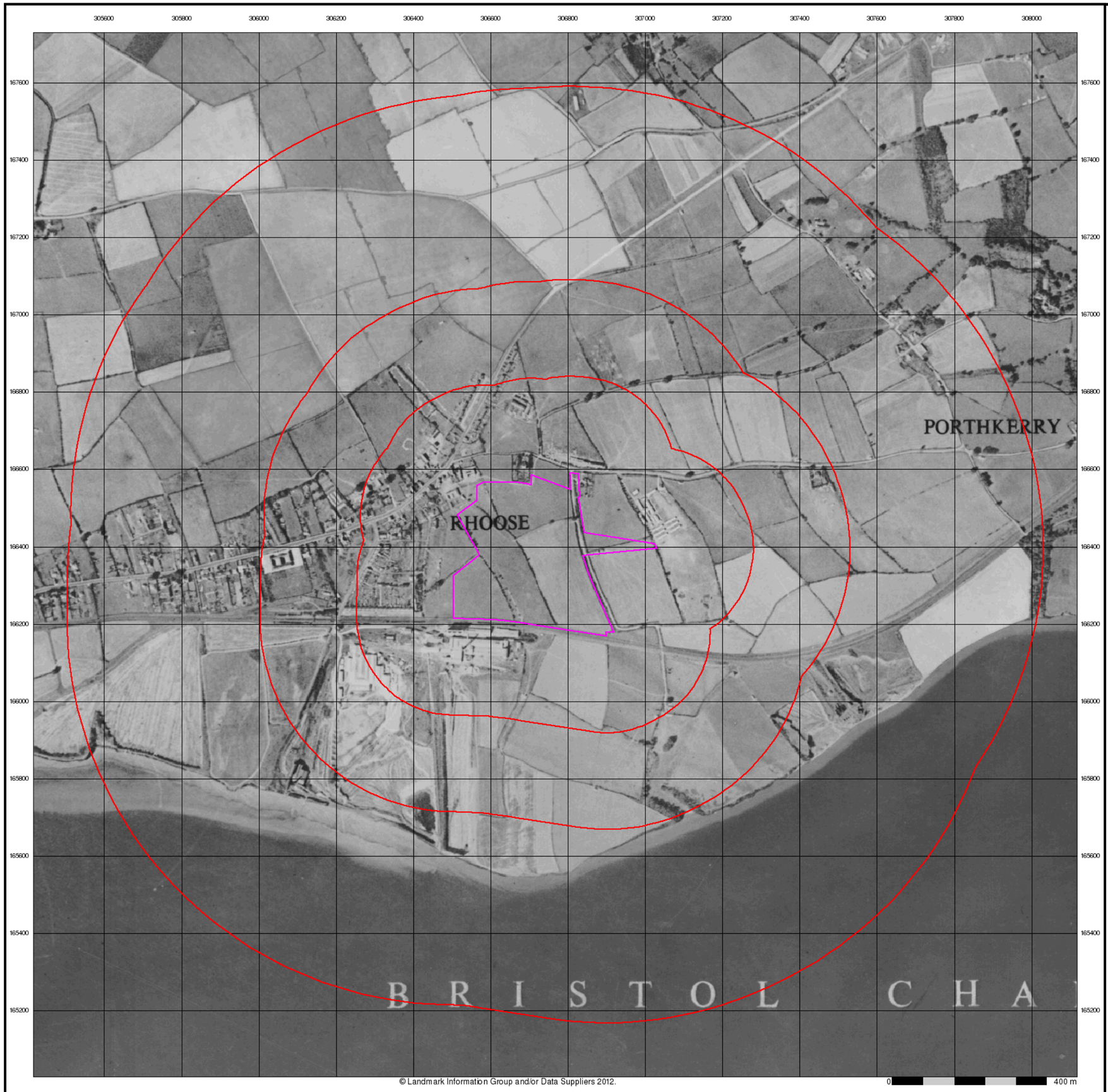
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

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



Intégral Géotechnique

Historical Aerial Photography

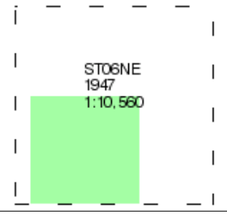
Published 1947

Source map scale - 1:10,560

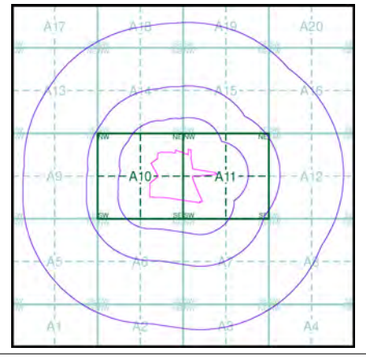
The Historical Aerial Photos were produced by the Ordnance Survey at a scale of 1:1,250 and 1:10,560 from Air Force photography. They were produced between 1944 and 1951 as an interim measure, pending preparation of conventional mapping, due to post war resource shortages. New security measures in the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

© Landmark Information Group and/or Data Suppliers 2010.

Map Name(s) and Date(s)



Historical Aerial Photography - Slice A



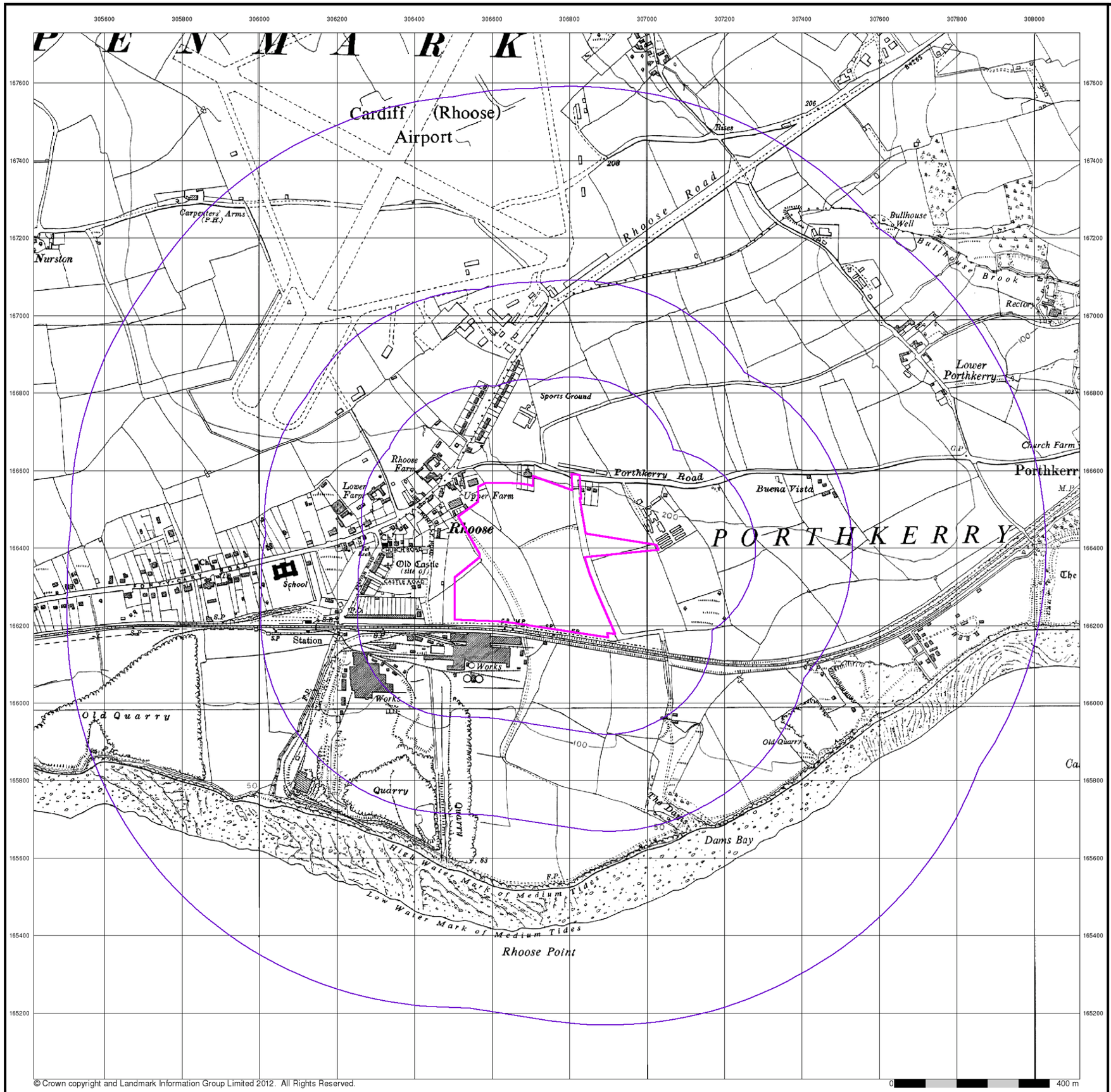
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

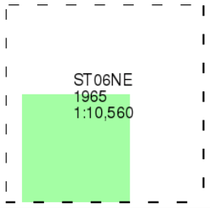
Ordnance Survey Plan

Published 1965

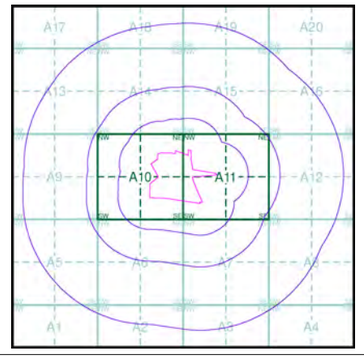
Source map scale - 1:10,000

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)



Historical Map - Slice A



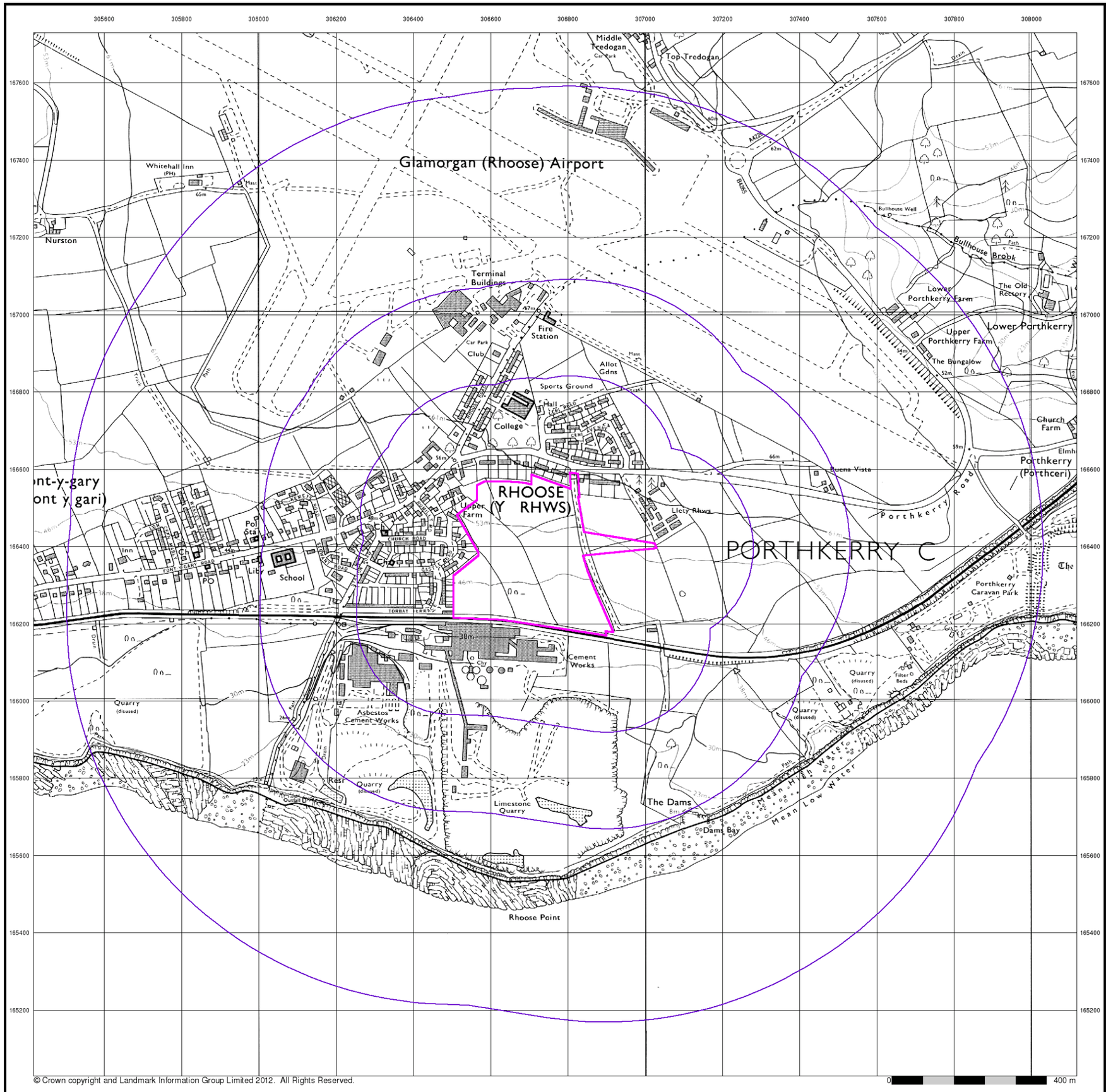
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

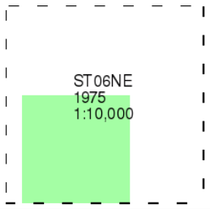
Ordnance Survey Plan

Published 1975

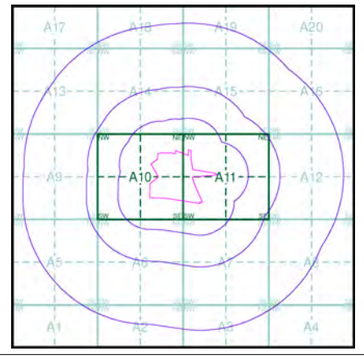
Source map scale - 1:10,000

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



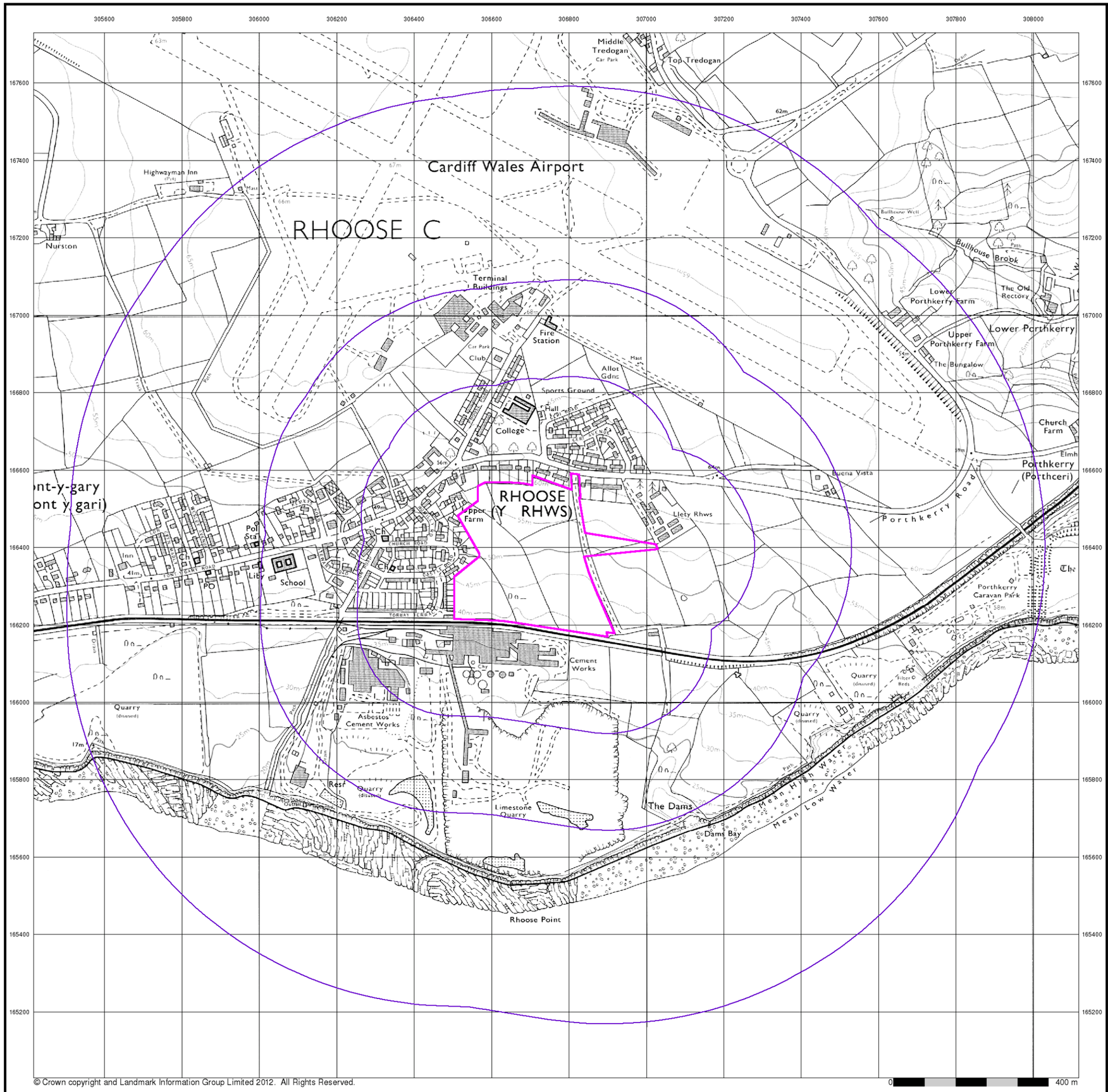
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

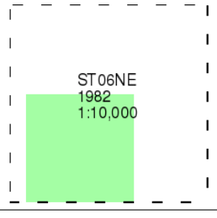
Ordnance Survey Plan

Published 1982

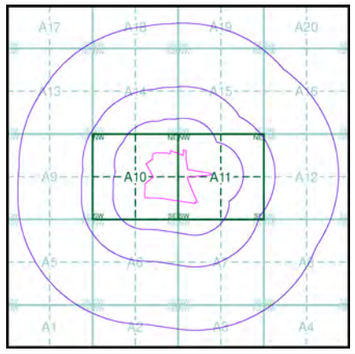
Source map scale - 1:10,000

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)



Historical Map - Slice A



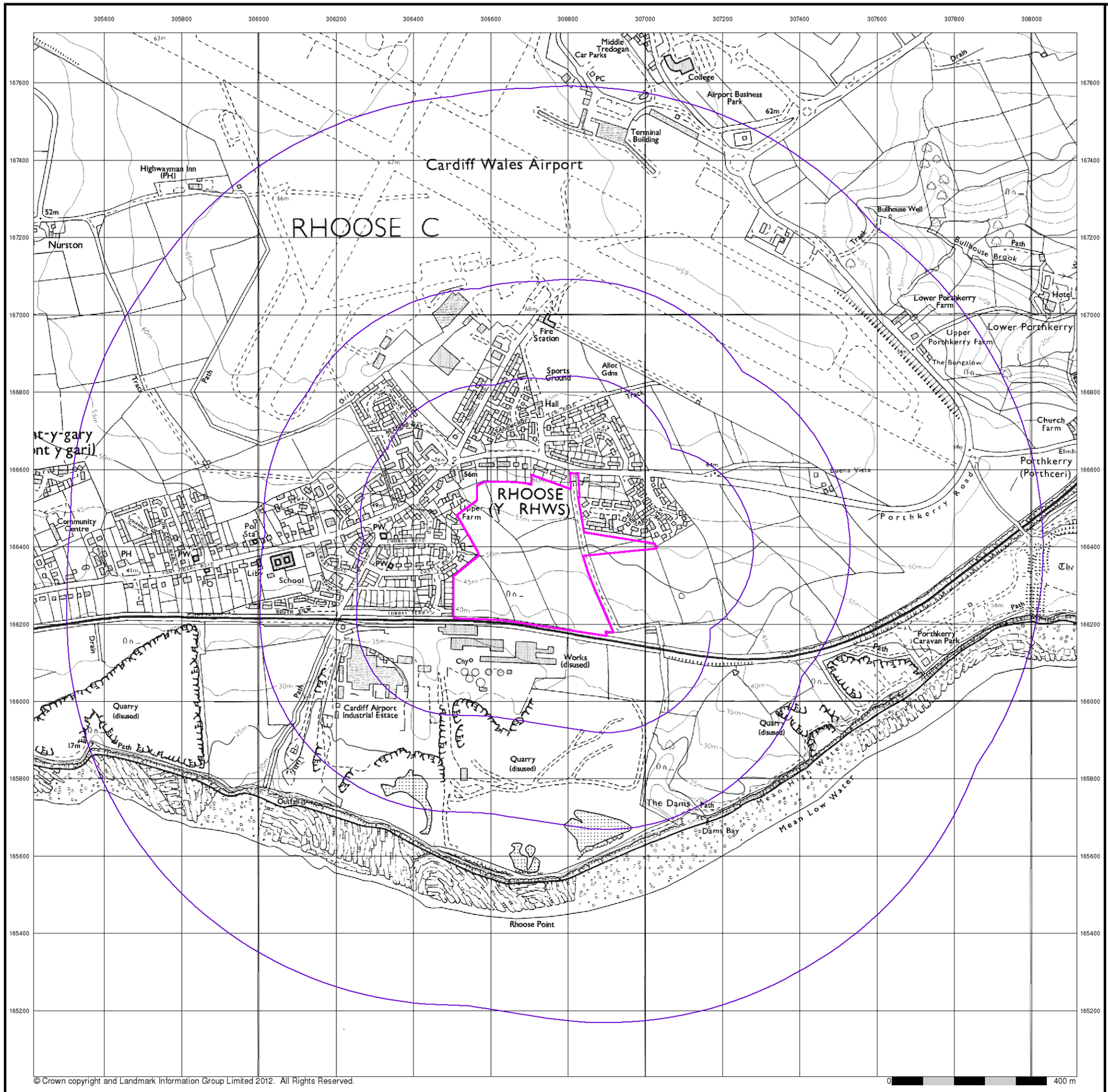
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

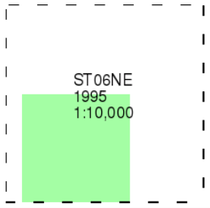
Ordnance Survey Plan

Published 1995

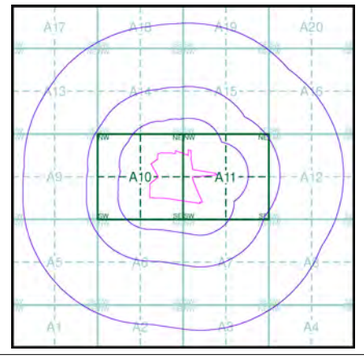
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

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

Intégral Géotechnique

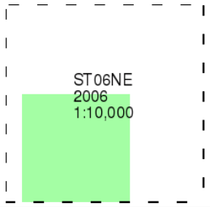
10k Raster Mapping

Published 2006

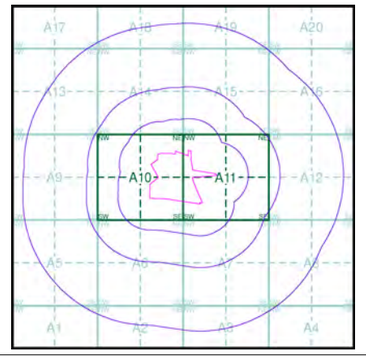
Source map scale - 1:10,000

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)



Historical Map - Slice A



Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

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

Intégral Géotechnique

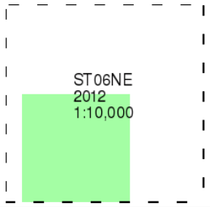
10k Raster Mapping

Published 2012

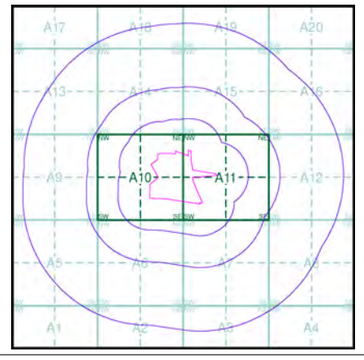
Source map scale - 1:10,000

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)



Historical Map - Slice A



Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

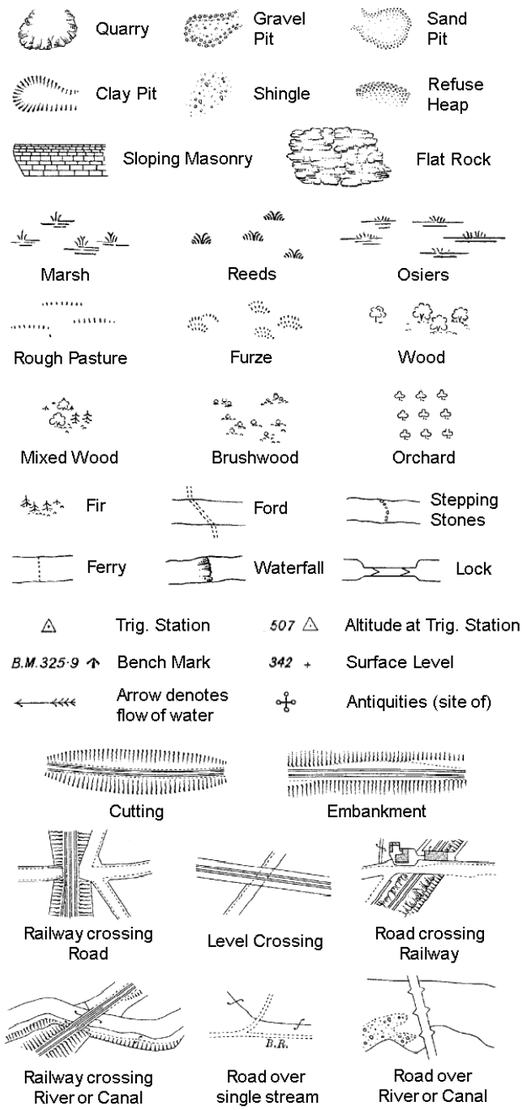
Site at 306680, 166420

Landmark Information Group

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

Historical Mapping Legends

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



County Boundary (Geographical)

County & Civil Parish Boundary

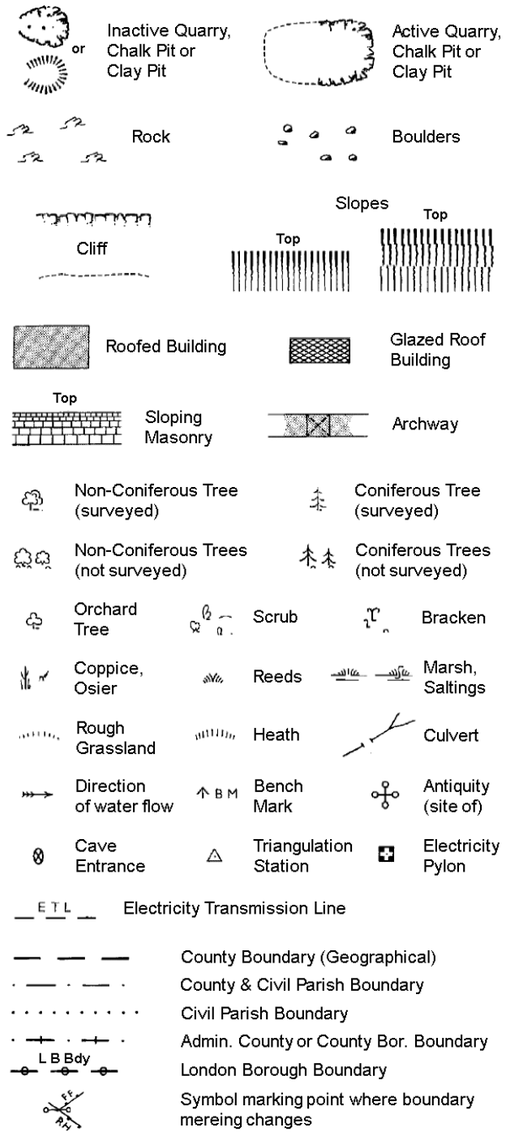
Administrative County & Civil Parish Boundary

Co. Boro. Bdy. County Borough Boundary (England)

Co. Burgh Bdy. County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

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



County Boundary (Geographical)

County & Civil Parish Boundary

Civil Parish Boundary

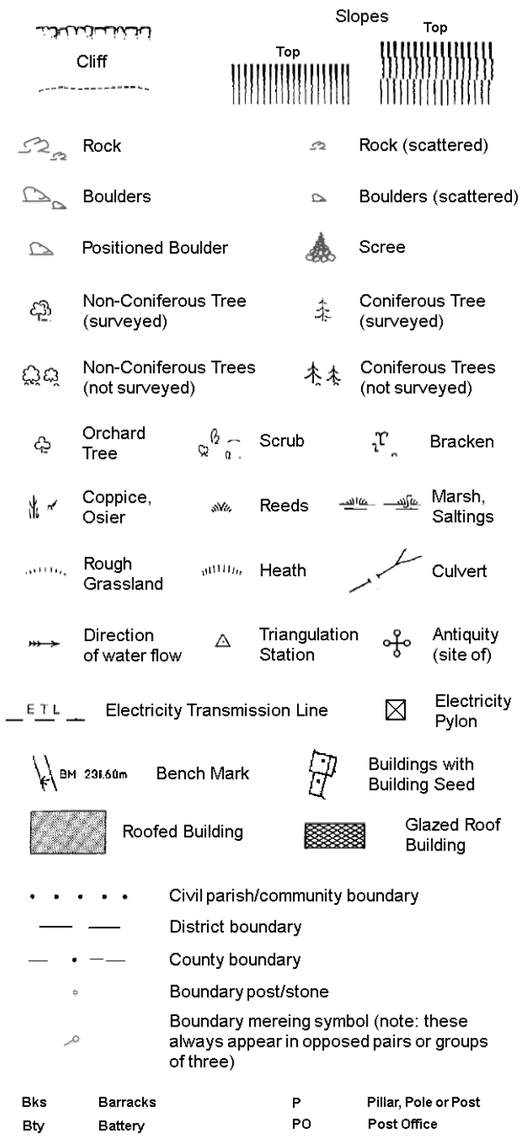
Admin. County or County Bor. Boundary

L B Bdy London Borough Boundary

Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

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



Civil parish/community boundary

District boundary

County boundary

Boundary post/stone

Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

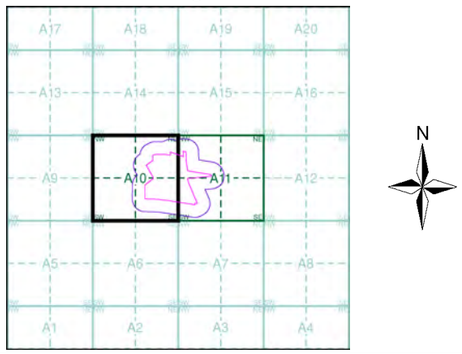
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

Intégral Géotechnique

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Glamorganshire	1:2,500	1879	2
Glamorganshire	1:2,500	1900	3
Glamorganshire	1:2,500	1919	4
Glamorganshire	1:2,500	1943	5
Ordnance Survey Plan	1:2,500	1973	6
Additional SIMs	1:2,500	1978	7
Additional SIMs	1:2,500	1988	8
Ordnance Survey Plan	1:2,500	1990	9
Large-Scale National Grid Data	1:2,500	1993	10
Large-Scale National Grid Data	1:2,500	1993	11
Large-Scale National Grid Data	1:2,500	1993	12
Large-Scale National Grid Data	1:2,500	1994	13
Large-Scale National Grid Data	1:2,500	1995	14
Large-Scale National Grid Data	1:2,500	1996	15
Large-Scale National Grid Data	1:2,500	1997	16

Historical Map - Segment A10



Order Details

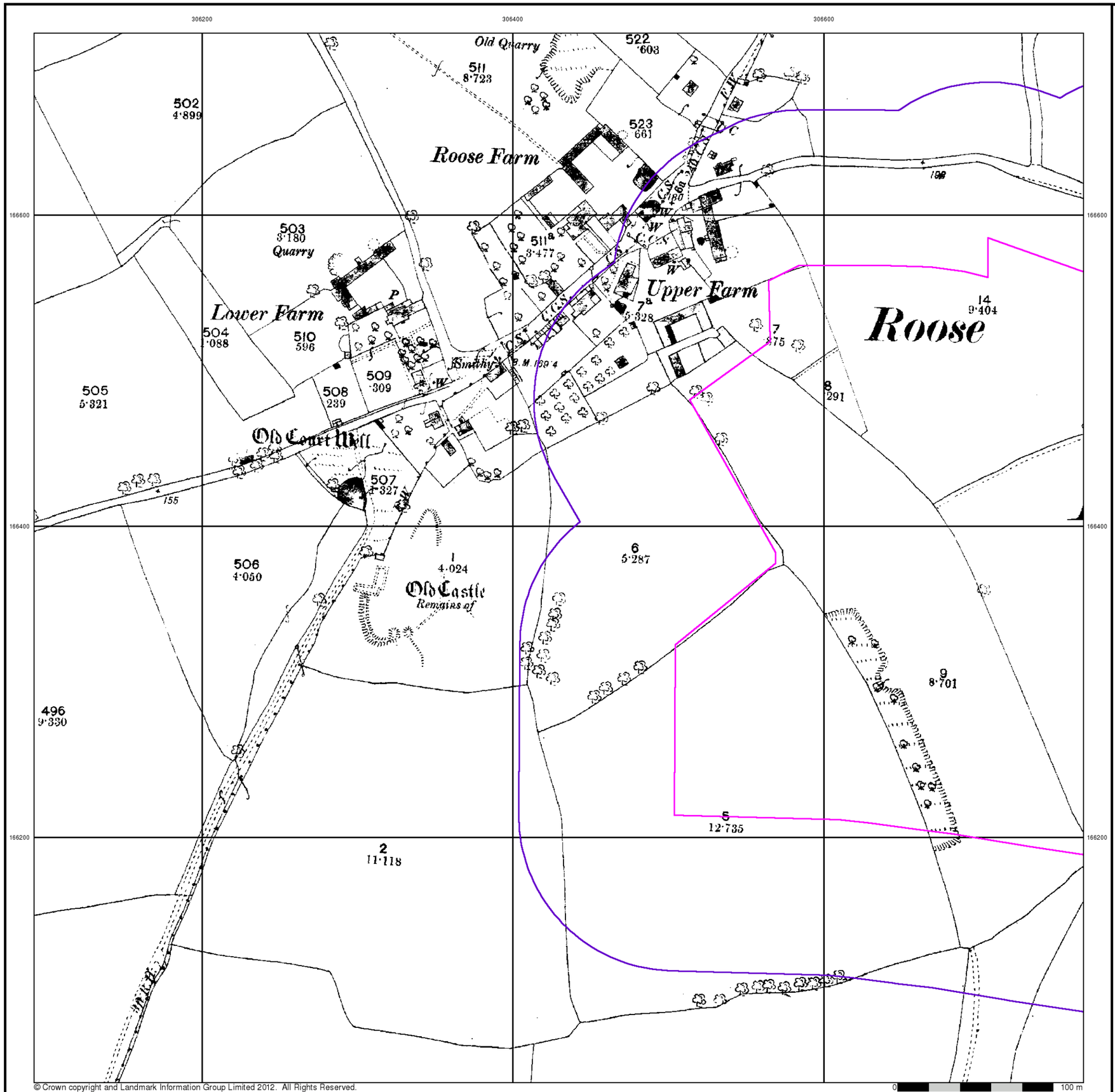
Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

Landmark Information Group

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

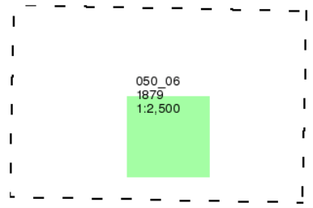
Glamorganshire

Published 1879

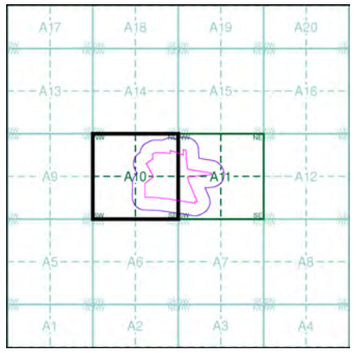
Source map scale - 1:2,500

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 A10



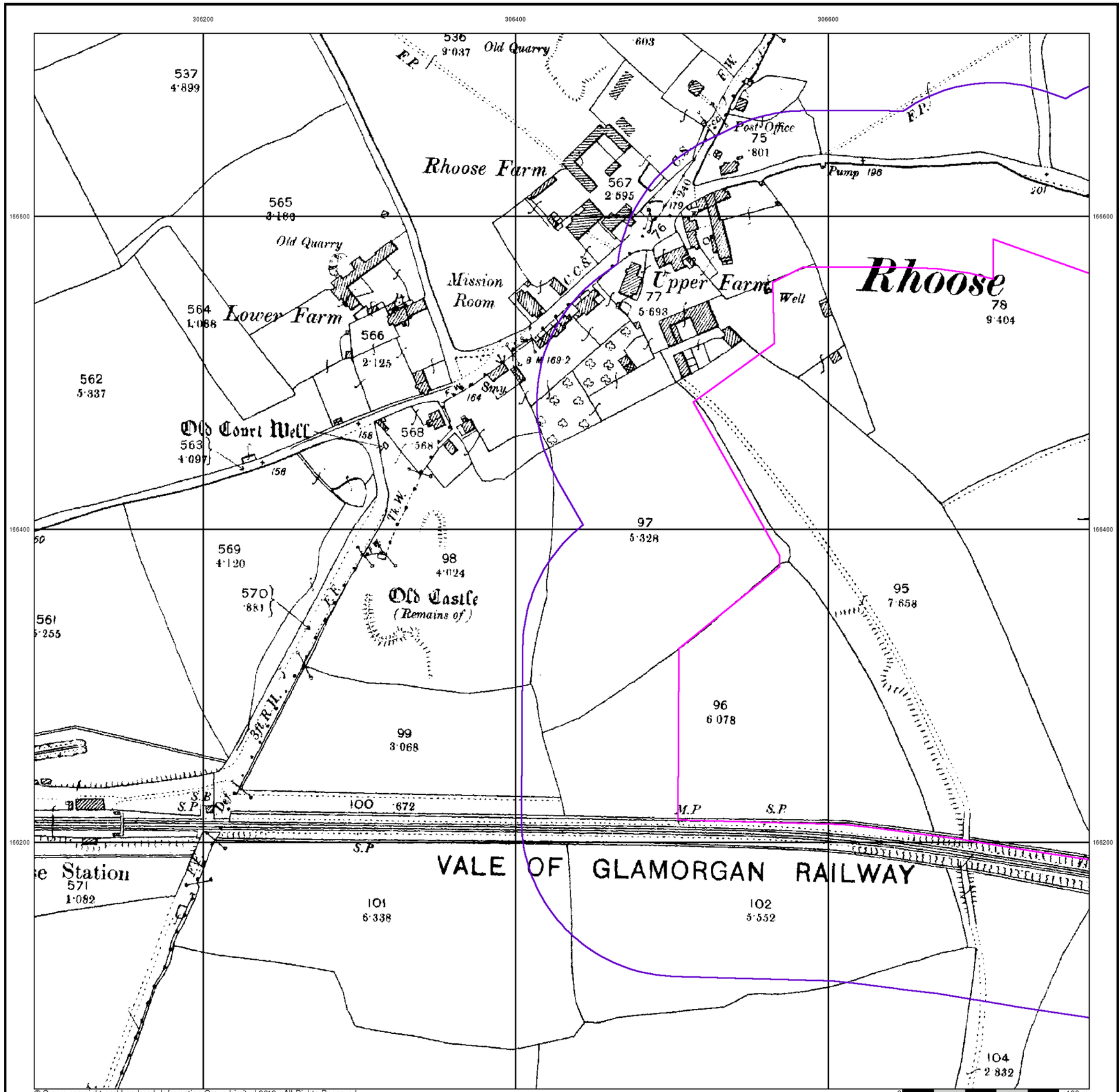
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

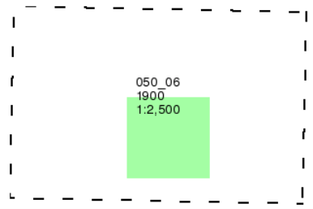
Glamorganshire

Published 1900

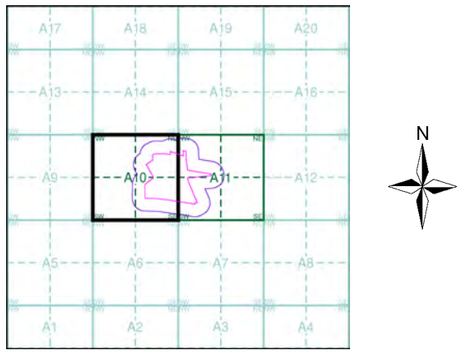
Source map scale - 1:2,500

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 A10



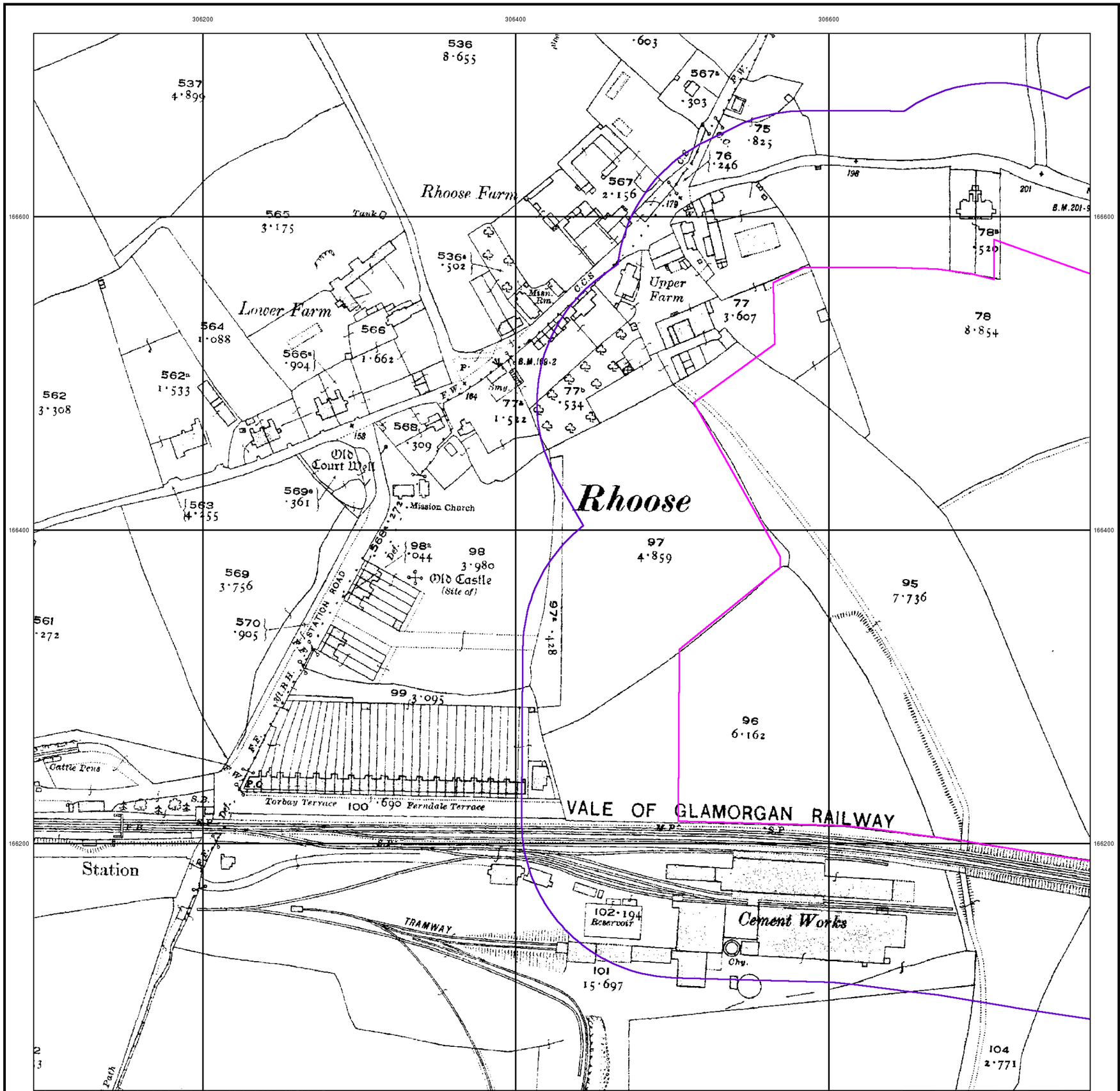
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



Intégral Géotechnique

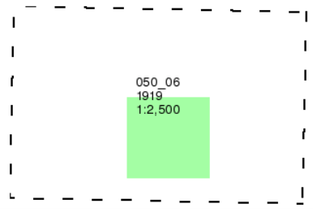
Glamorganshire

Published 1919

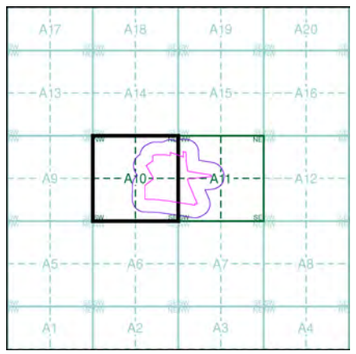
Source map scale - 1:2,500

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 A10



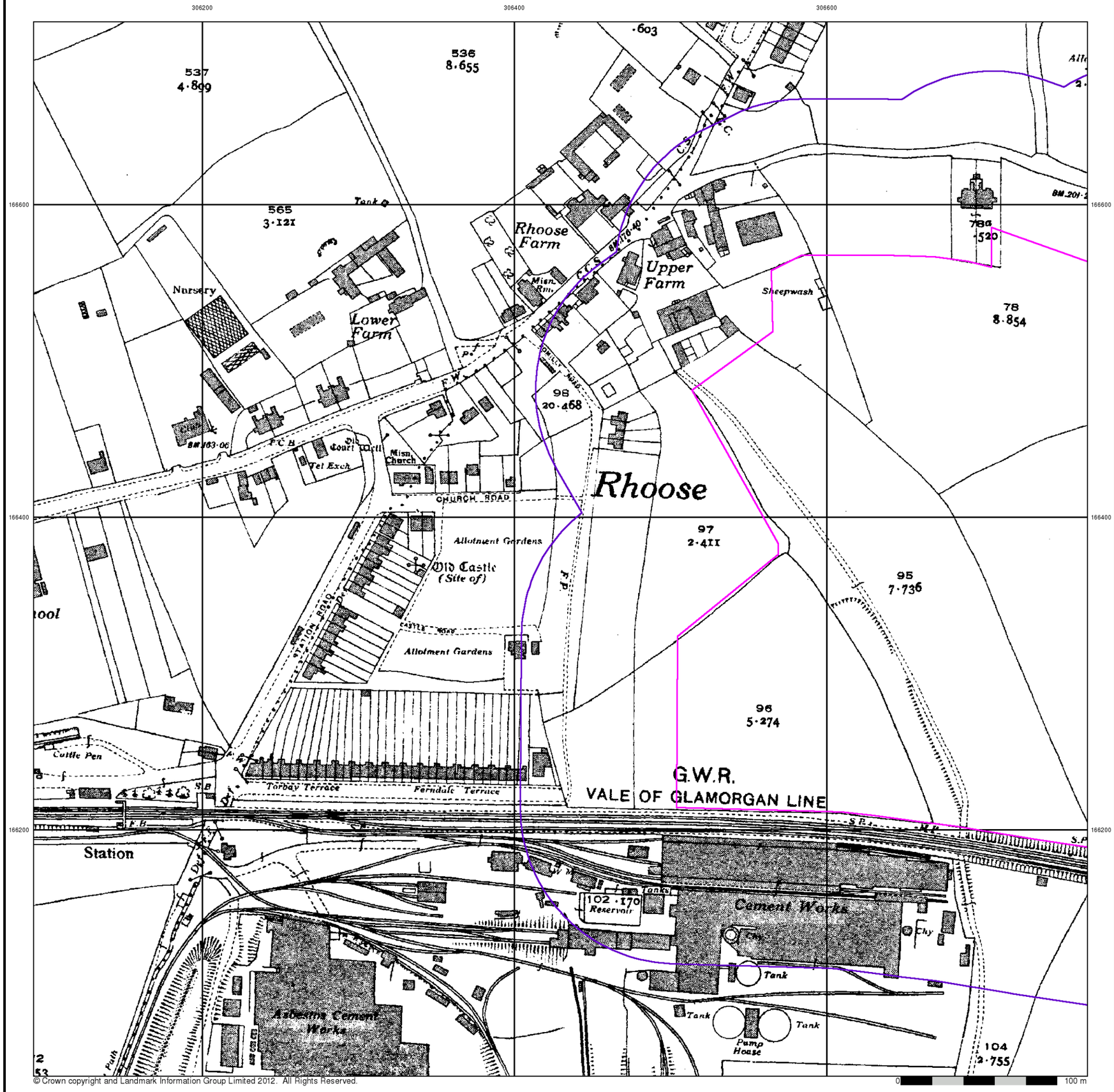
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

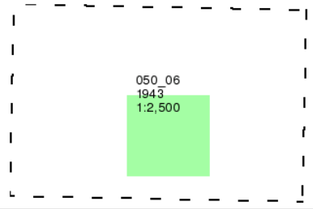
Glamorganshire

Published 1943

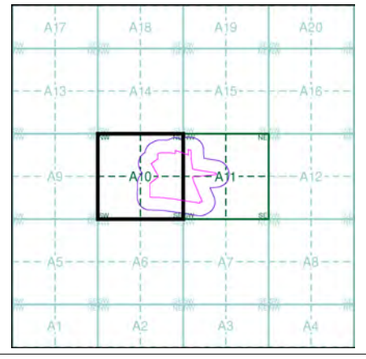
Source map scale - 1:2,500

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 A10



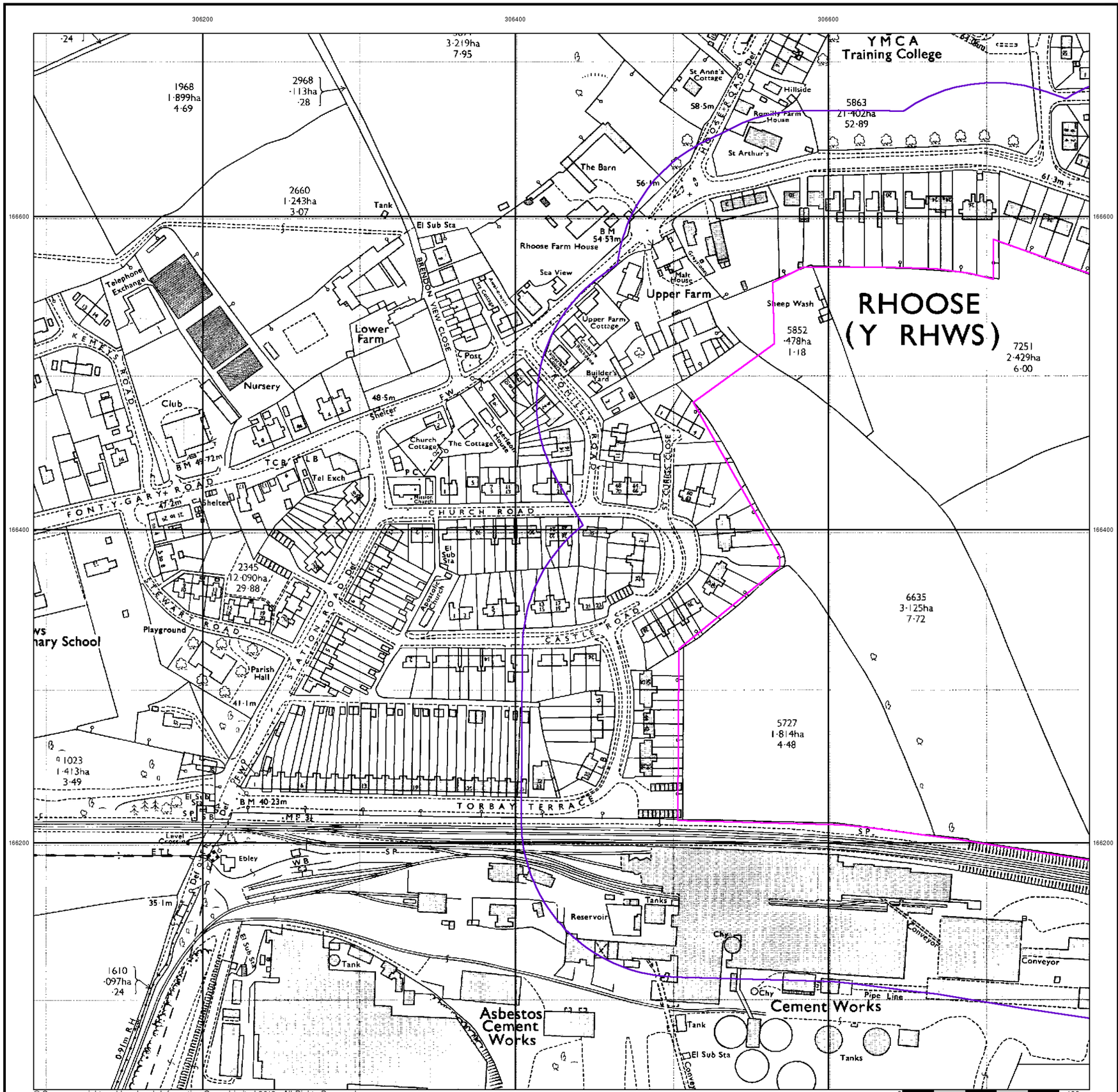
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

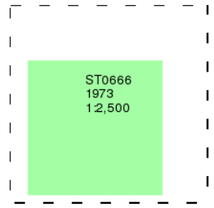
Ordnance Survey Plan

Published 1973

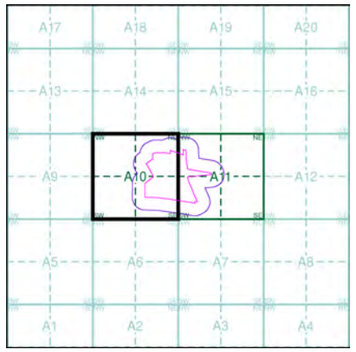
Source map scale - 1:2,500

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 A10



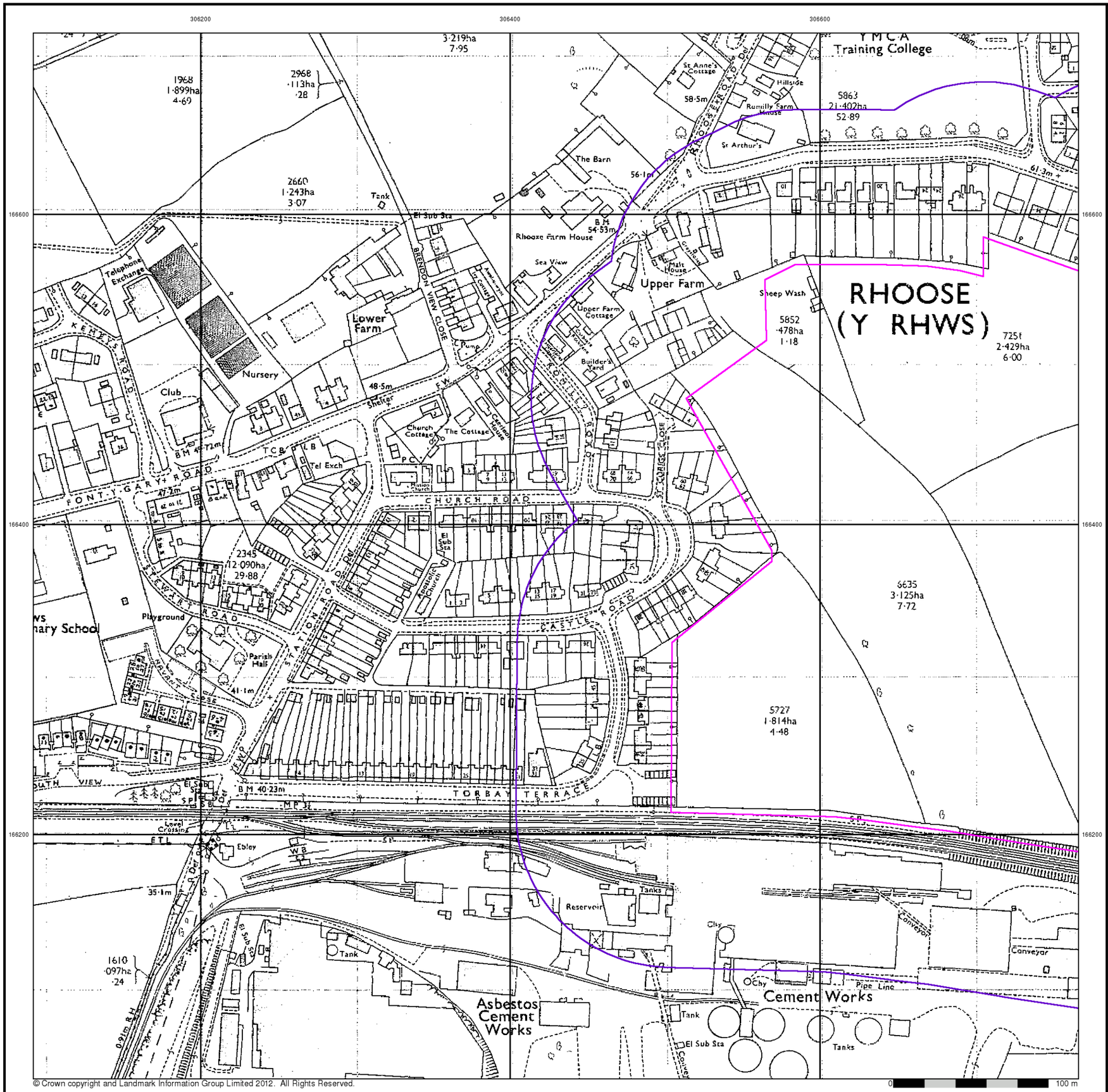
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



Intégral Géotechnique

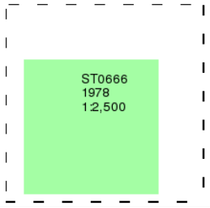
Additional SIMs

Published 1978

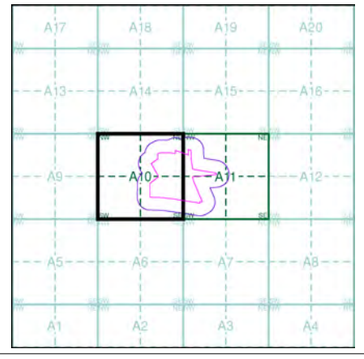
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A10



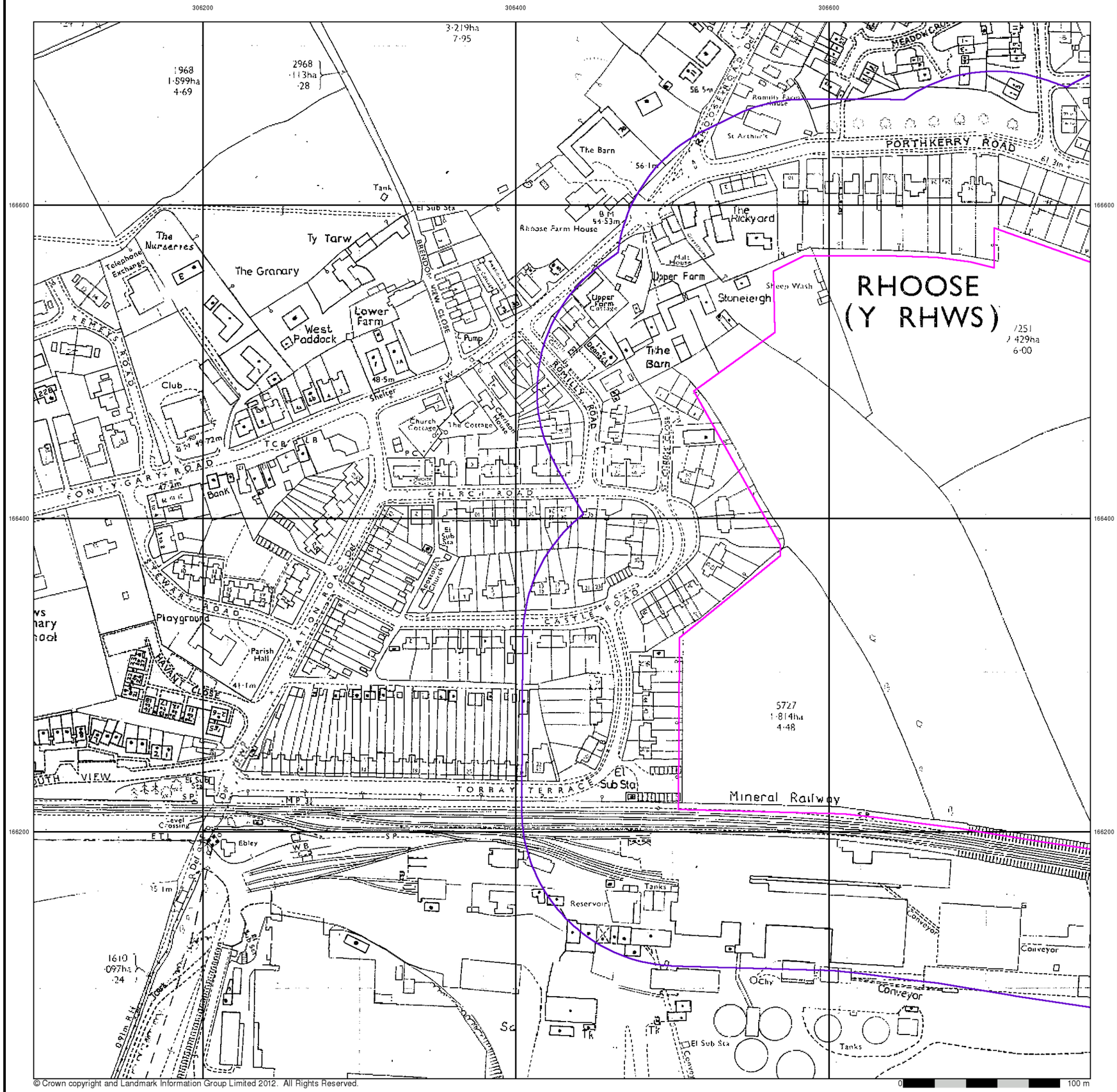
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

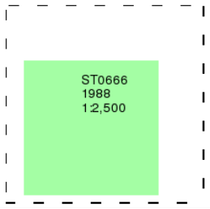
Additional SIMs

Published 1988

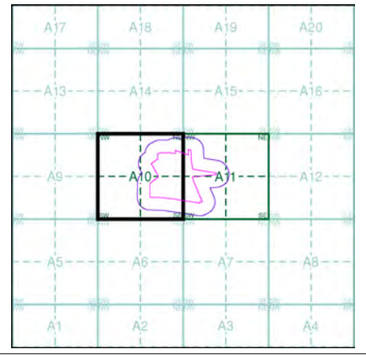
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A10



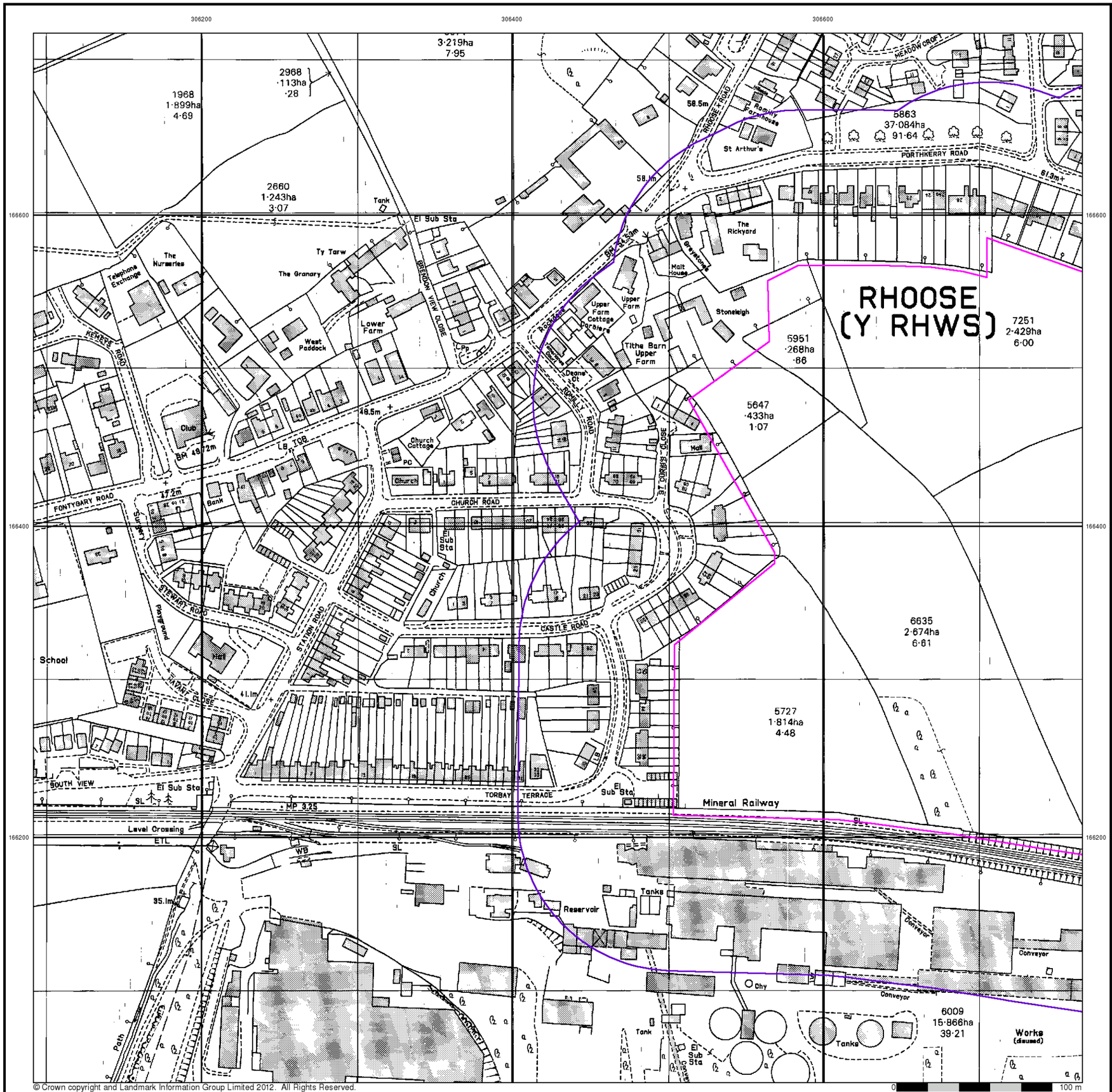
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

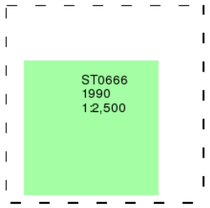
Ordnance Survey Plan

Published 1990

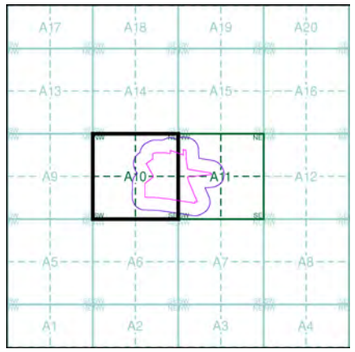
Source map scale - 1:2,500

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 A10



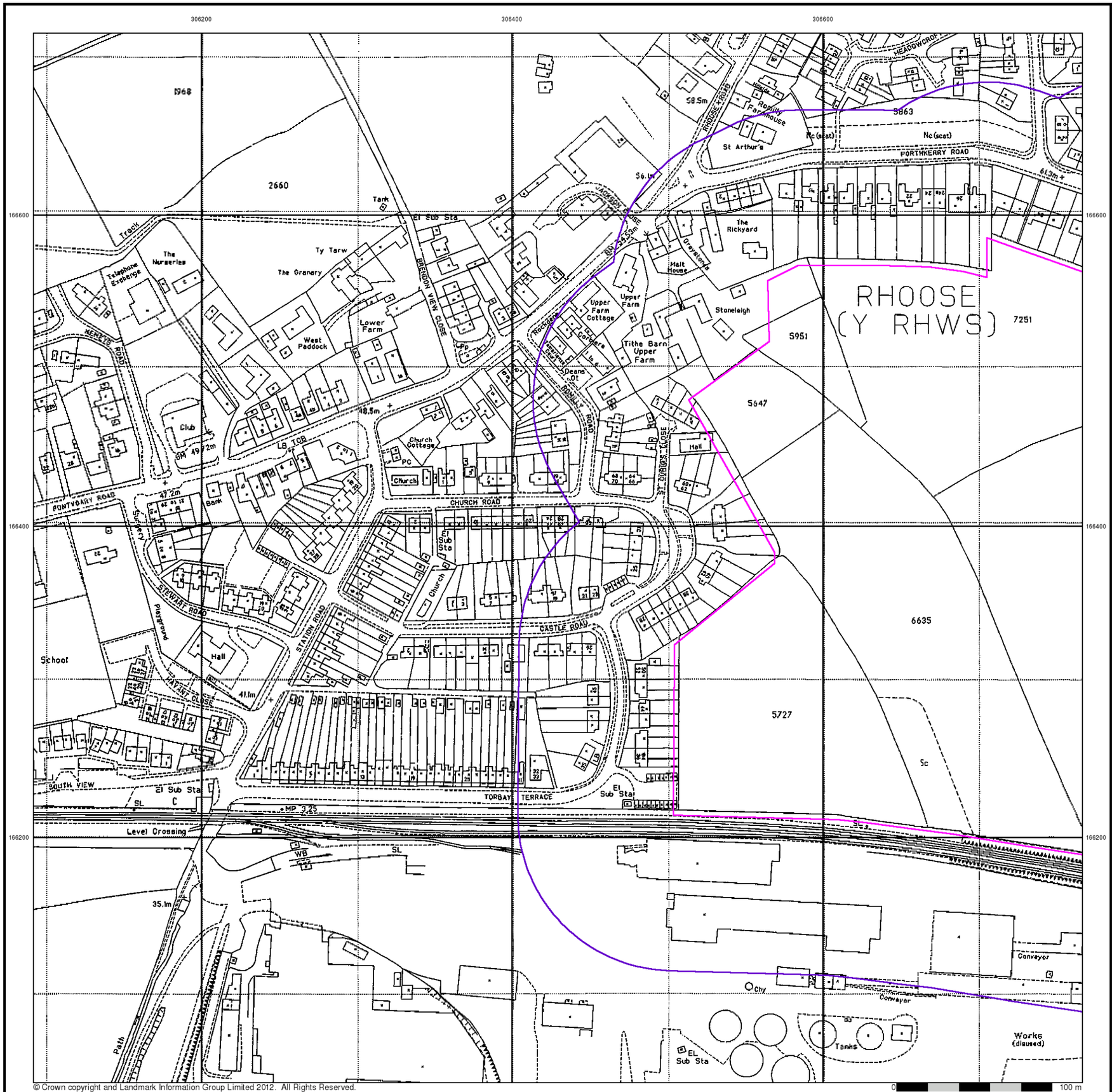
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

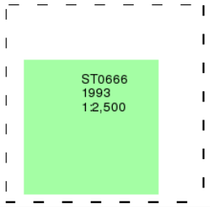
Large-Scale National Grid Data

Published 1993

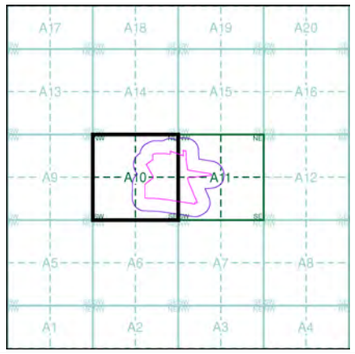
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A10



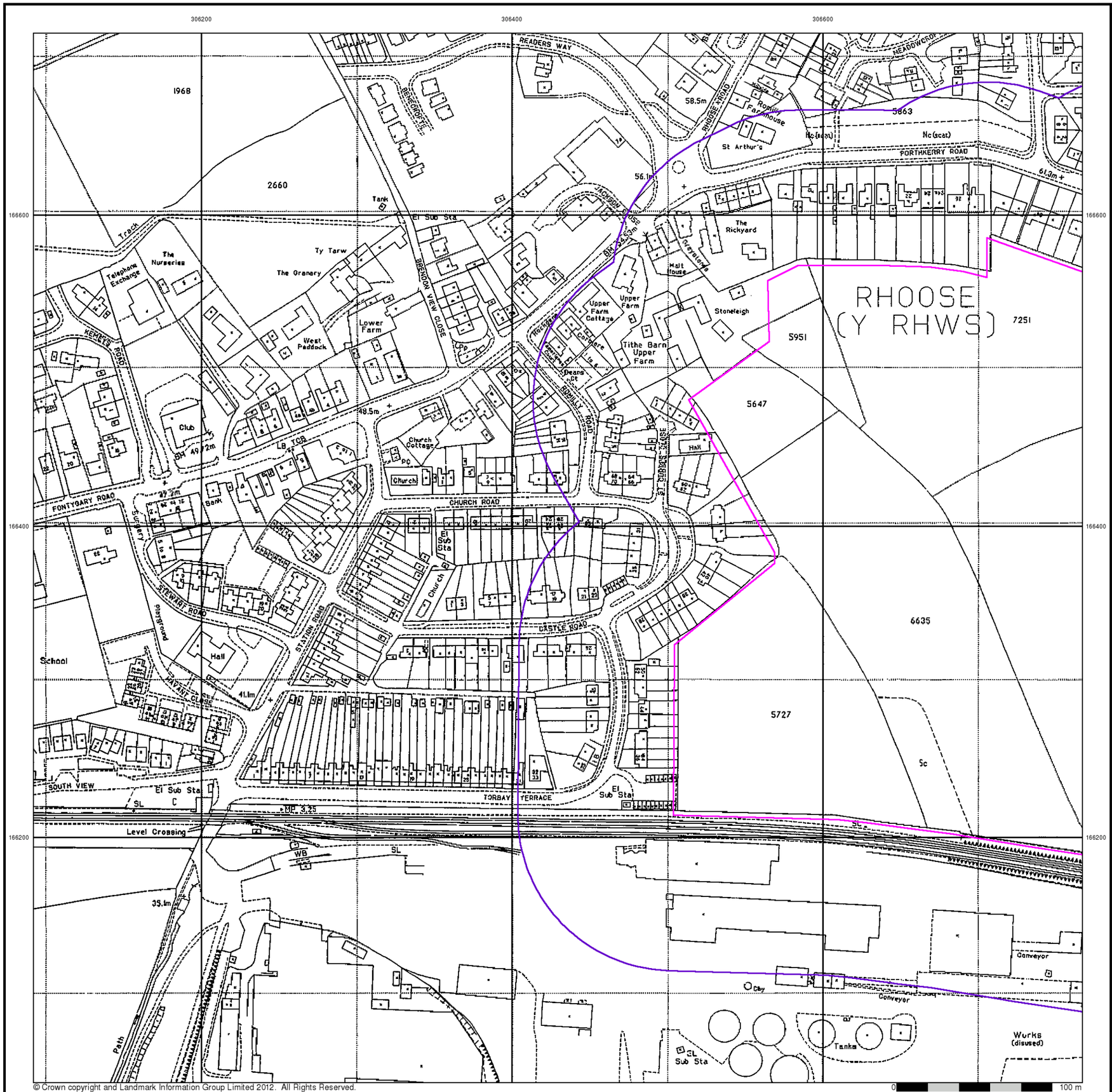
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

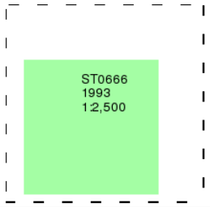
Large-Scale National Grid Data

Published 1993

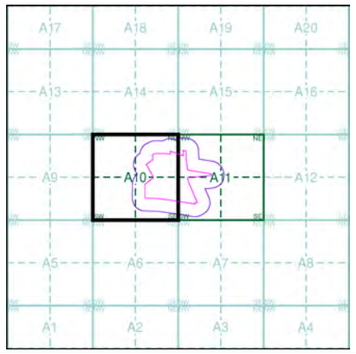
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A10



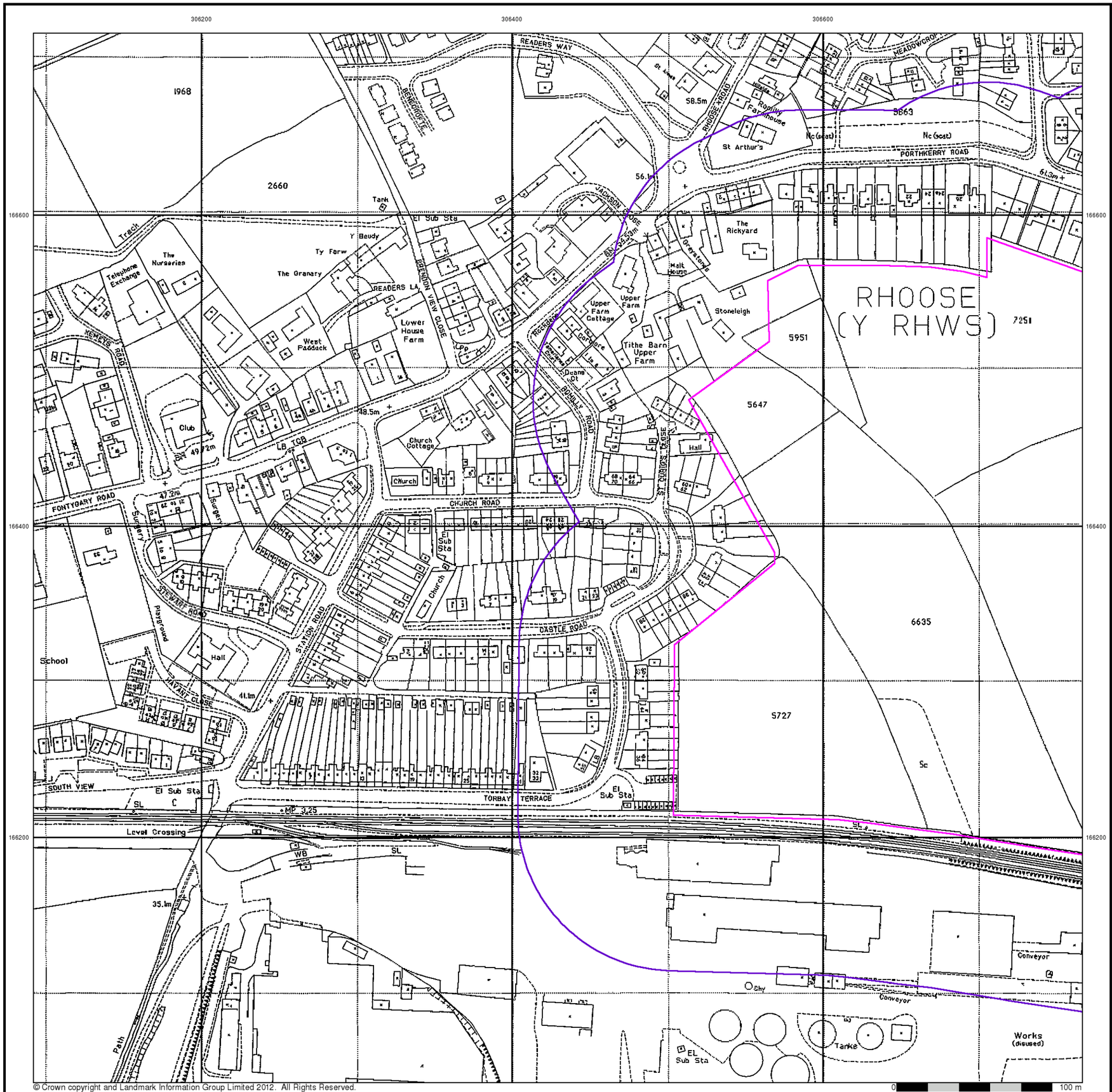
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

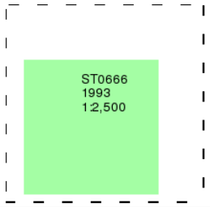
Large-Scale National Grid Data

Published 1993

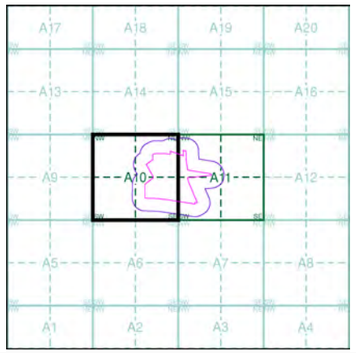
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A10



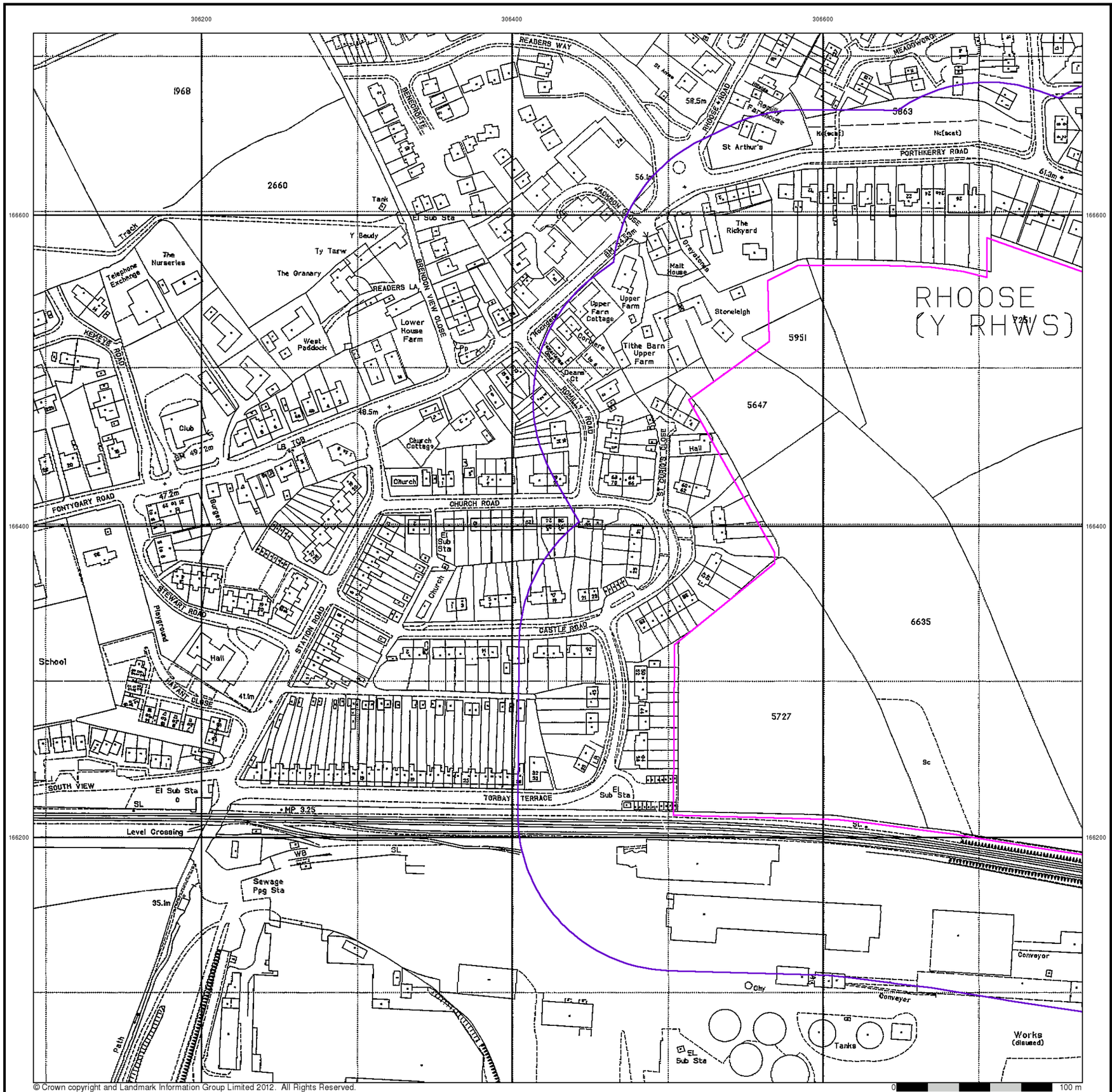
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

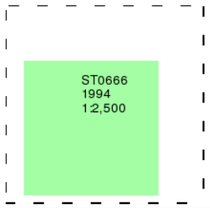
Large-Scale National Grid Data

Published 1994

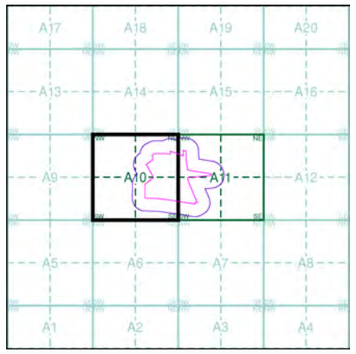
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A10



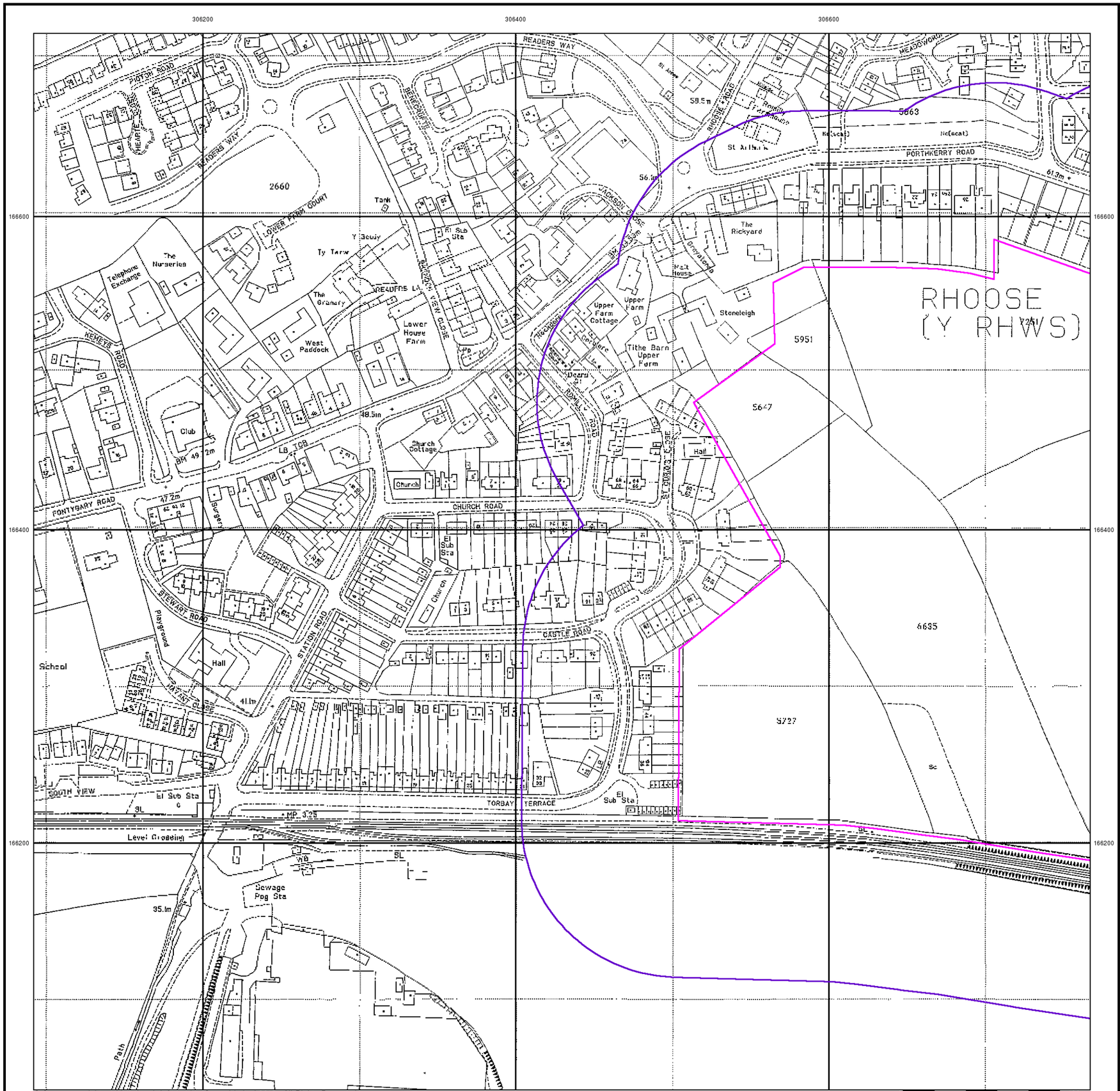
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



Intégral Géotechnique

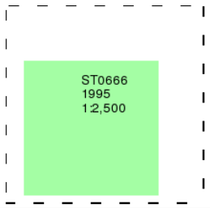
Large-Scale National Grid Data

Published 1995

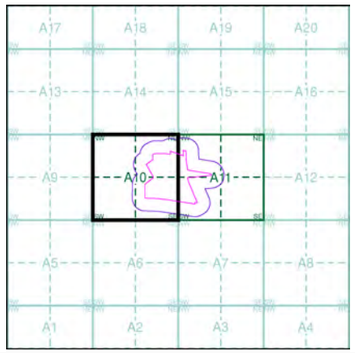
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A10



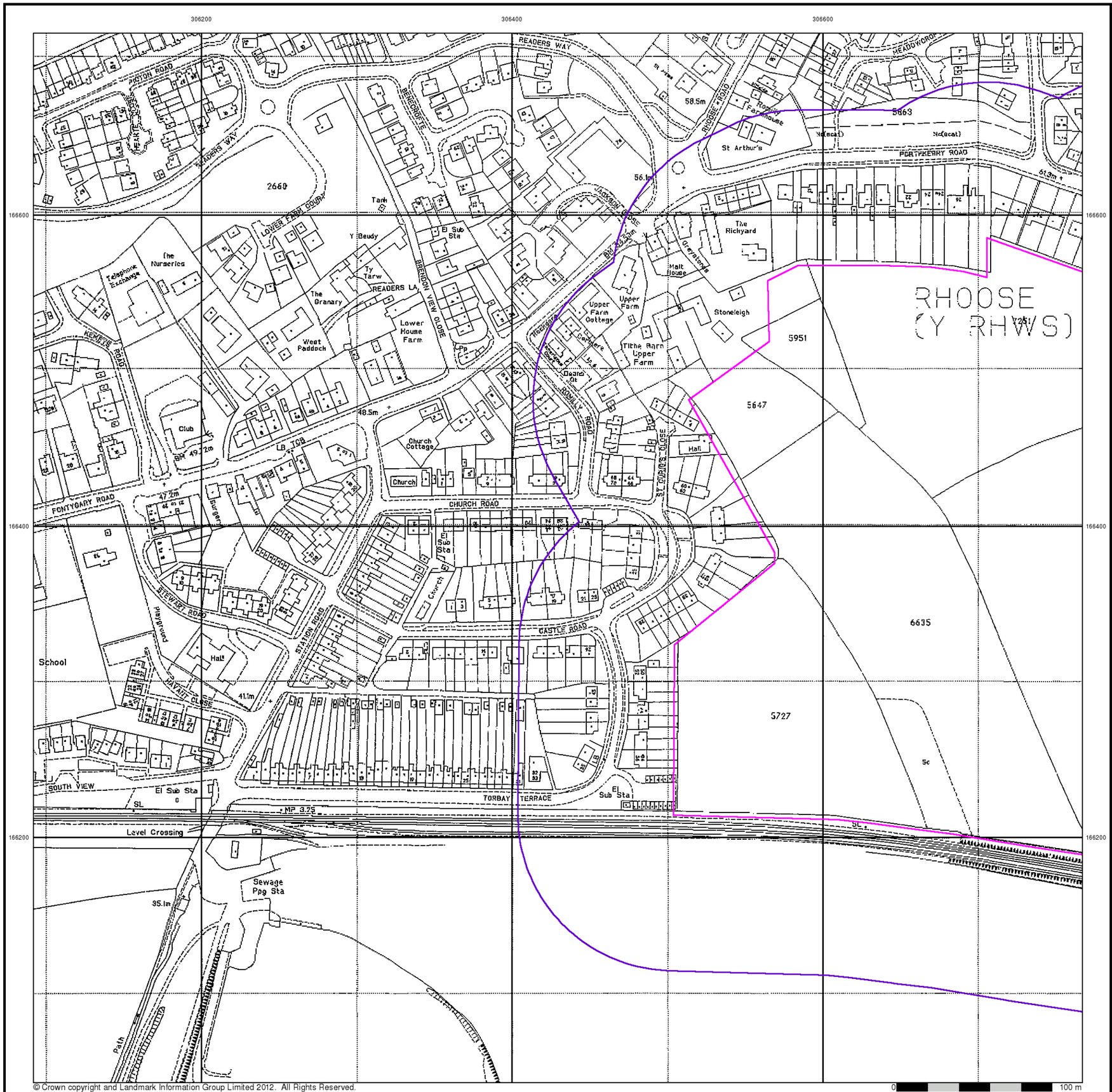
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



Intégral Géotechnique

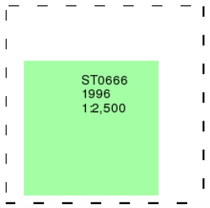
Large-Scale National Grid Data

Published 1996

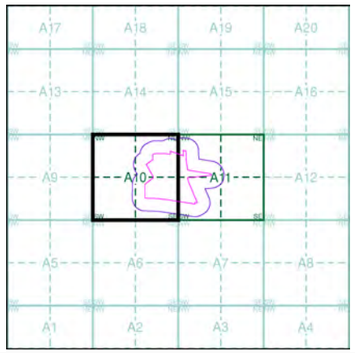
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A10



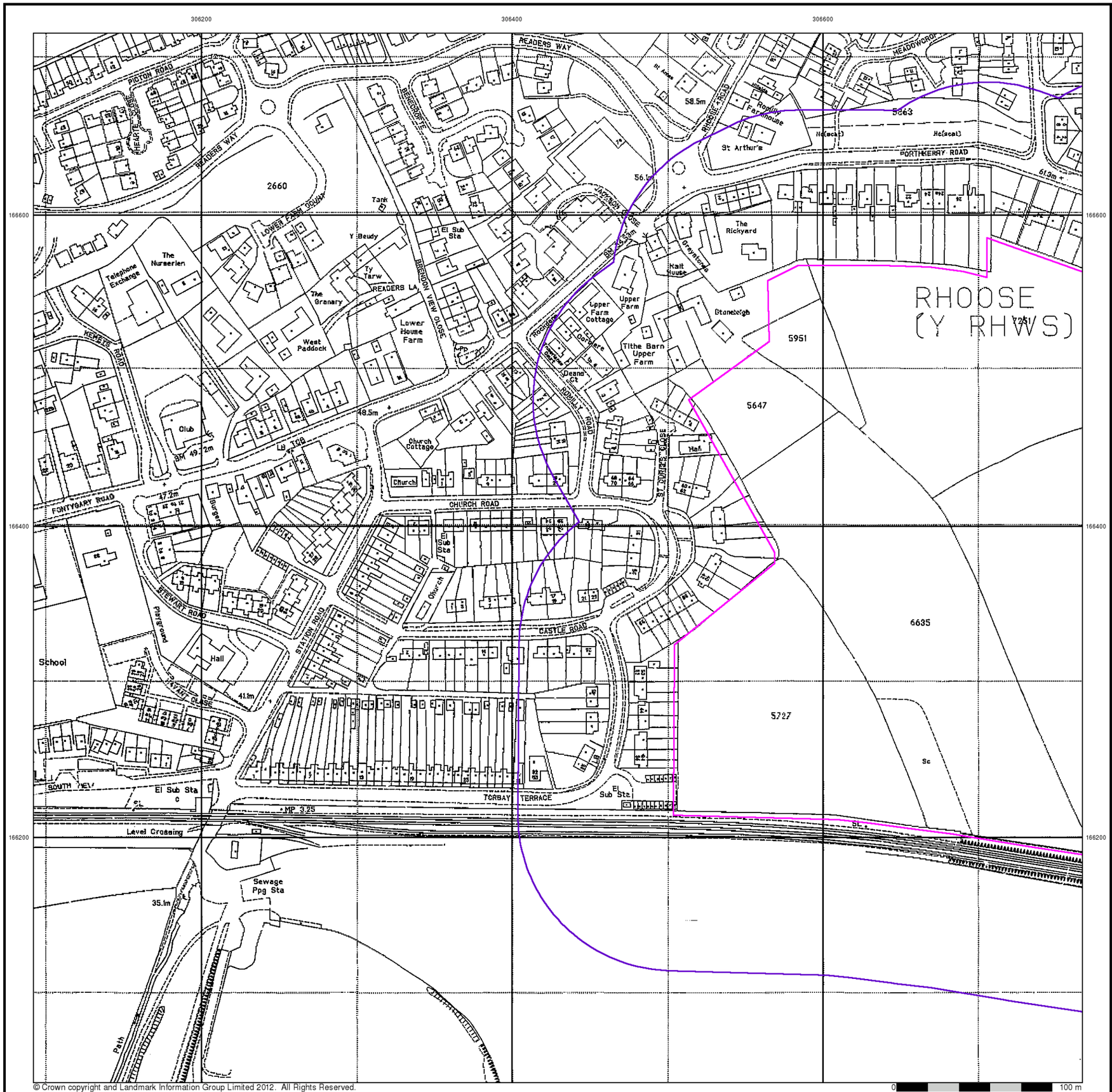
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



Intégral Géotechnique

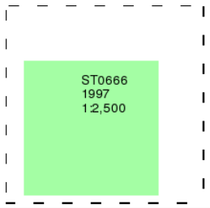
Large-Scale National Grid Data

Published 1997

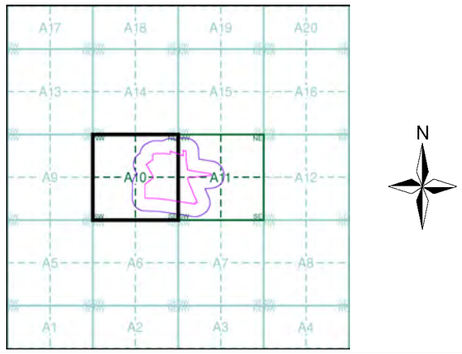
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A10



Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

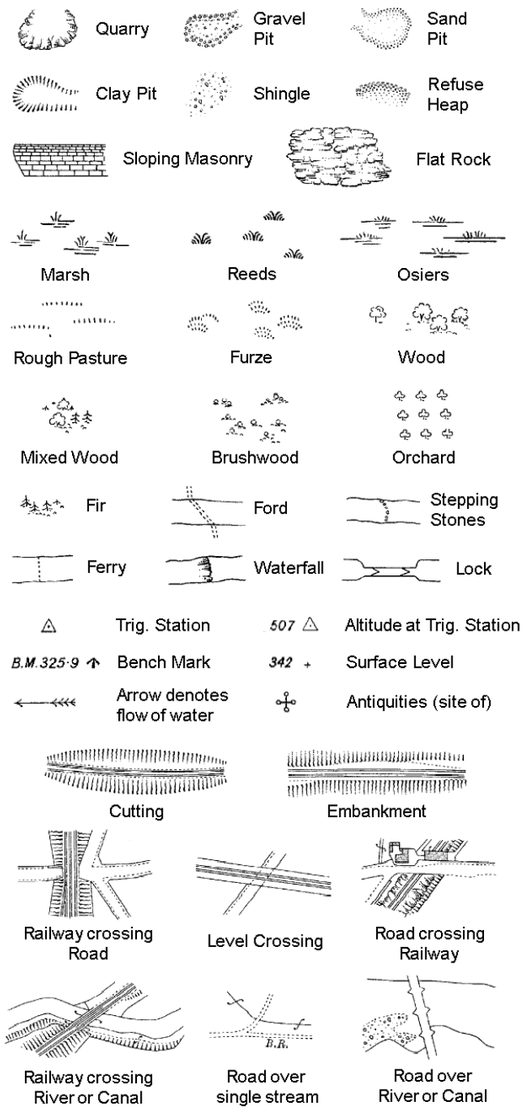
Site Details

Site at 306680, 166420

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

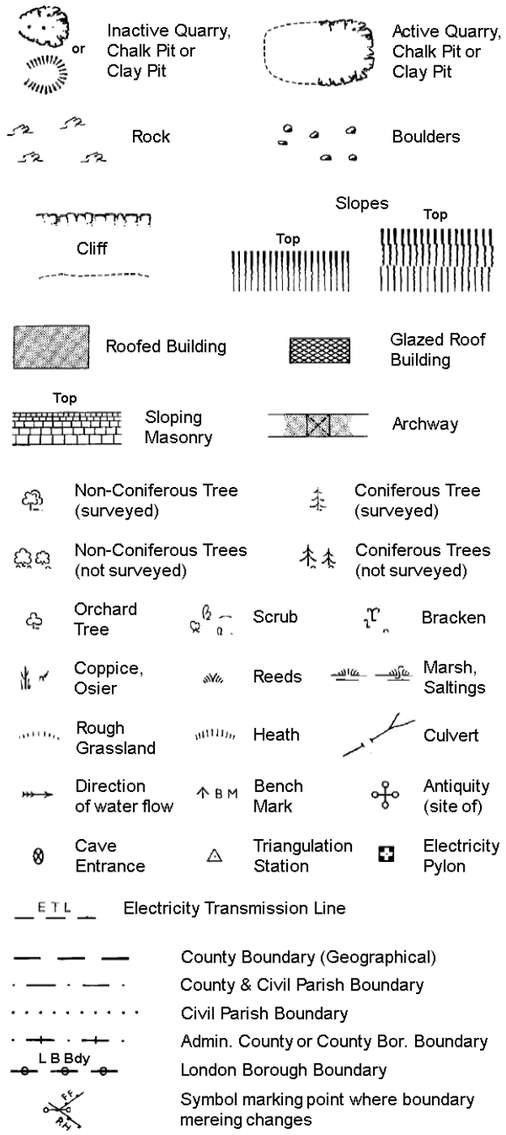
Historical Mapping Legends

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



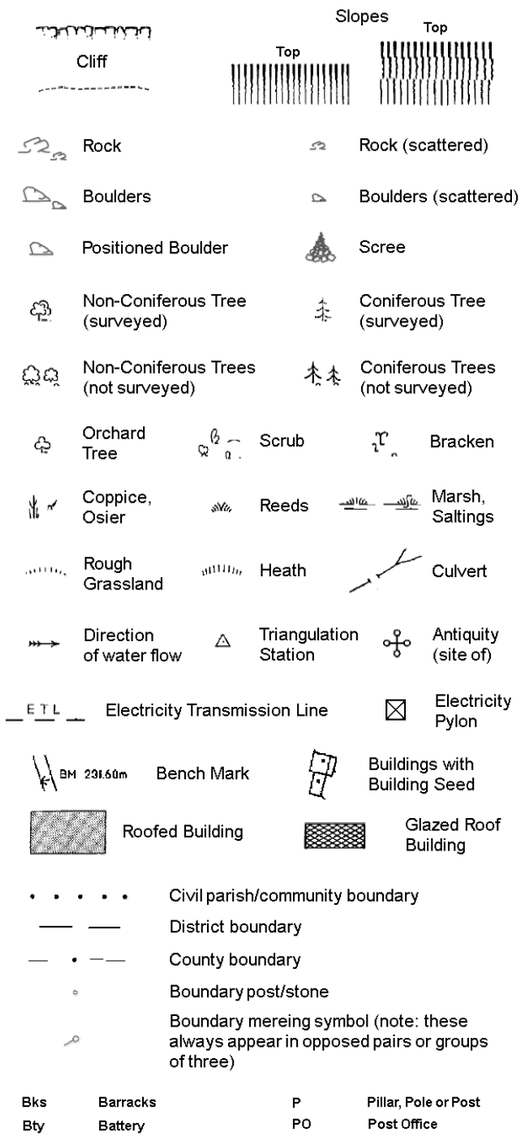
B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

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



BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

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



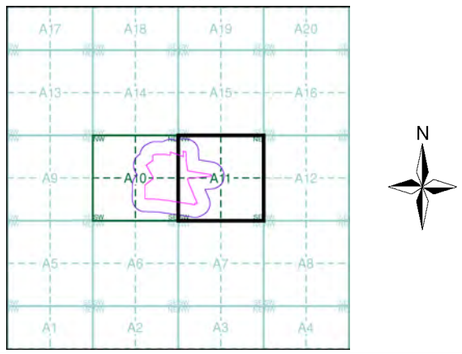
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

Intégral Géotechnique

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Glamorganshire	1:2,500	1879	2
Glamorganshire	1:2,500	1900	3
Glamorganshire	1:2,500	1919	4
Glamorganshire	1:2,500	1943	5
Ordnance Survey Plan	1:2,500	1973	6
Additional SIMs	1:2,500	1978 - 1984	7
Additional SIMs	1:2,500	1988	8
Ordnance Survey Plan	1:2,500	1990	9
Large-Scale National Grid Data	1:2,500	1993	10
Large-Scale National Grid Data	1:2,500	1993	11
Large-Scale National Grid Data	1:2,500	1993	12
Large-Scale National Grid Data	1:2,500	1994	13
Large-Scale National Grid Data	1:2,500	1995	14
Large-Scale National Grid Data	1:2,500	1996	15
Large-Scale National Grid Data	1:2,500	1997	16

Historical Map - Segment A11



Order Details

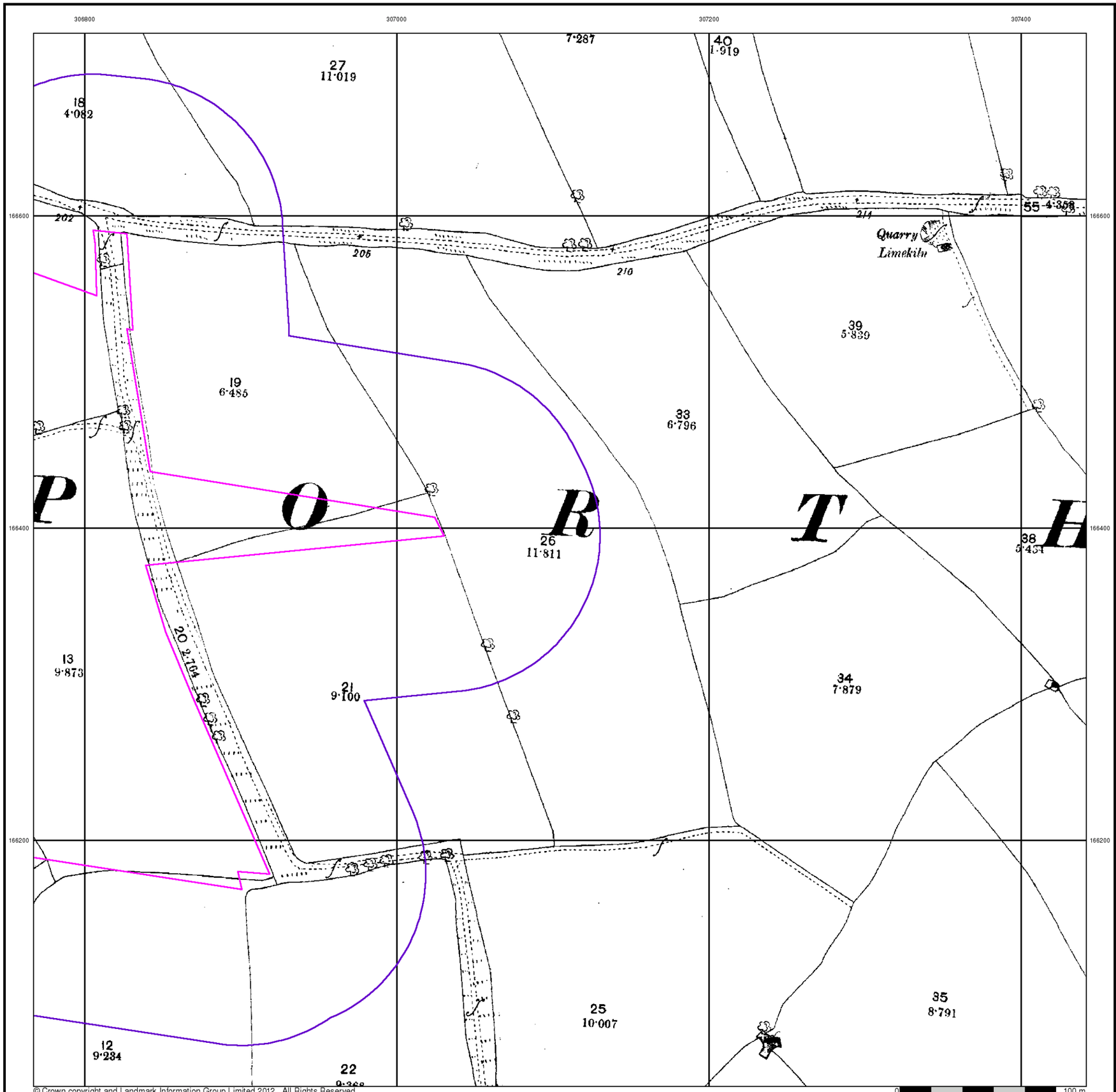
Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

Landmark Information Group

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

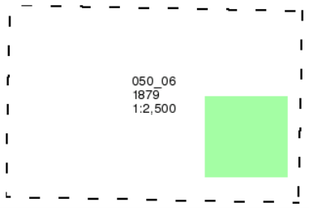
Glamorganshire

Published 1879

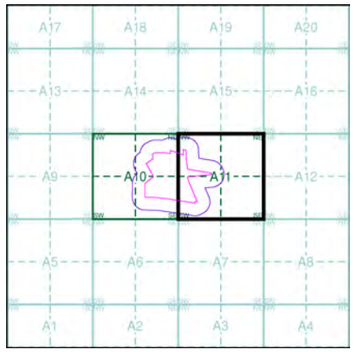
Source map scale - 1:2,500

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 A11



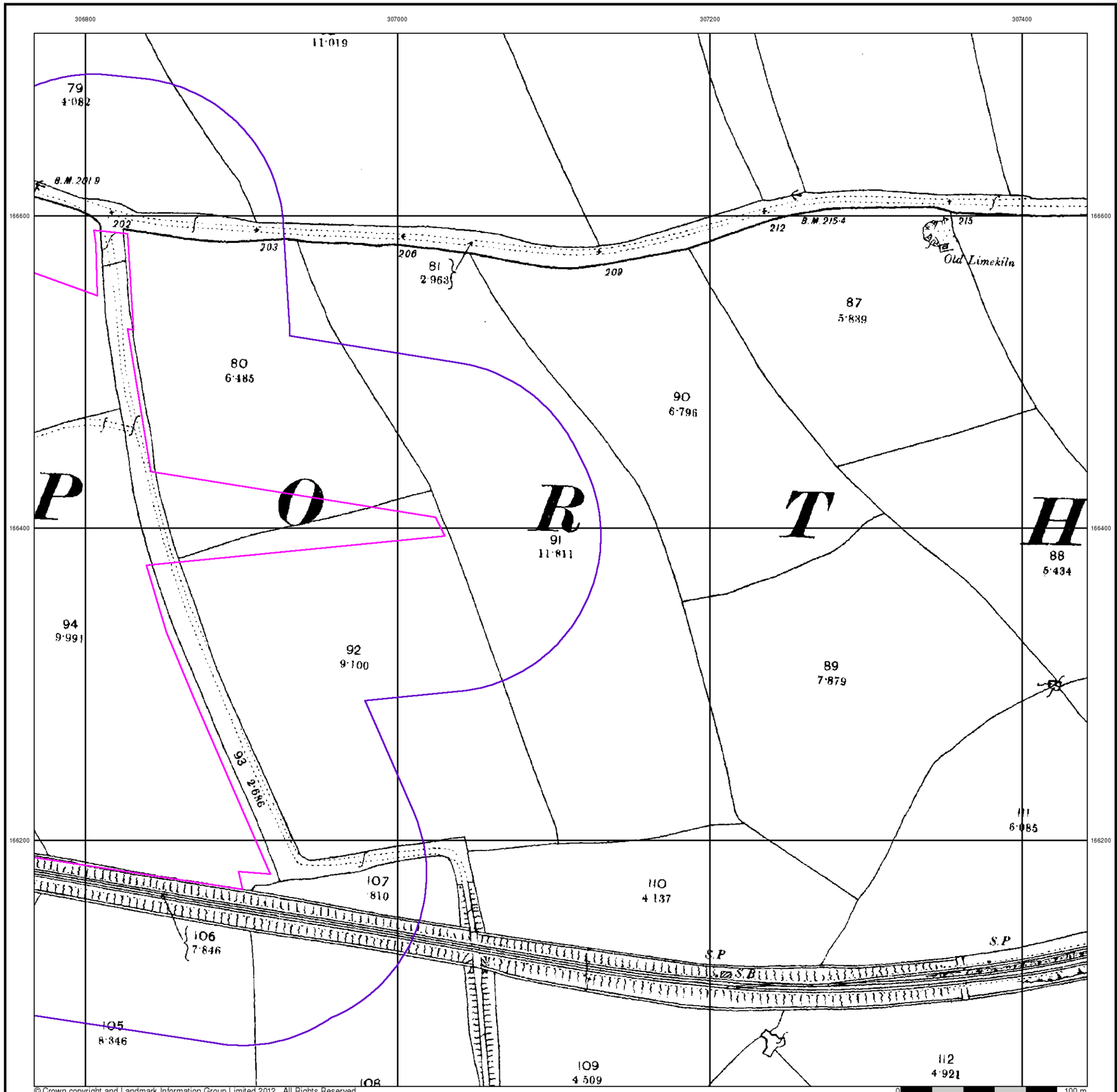
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

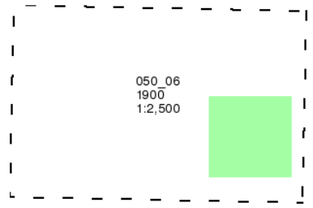
Glamorganshire

Published 1900

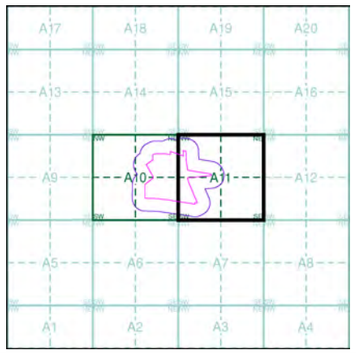
Source map scale - 1:2,500

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 A11



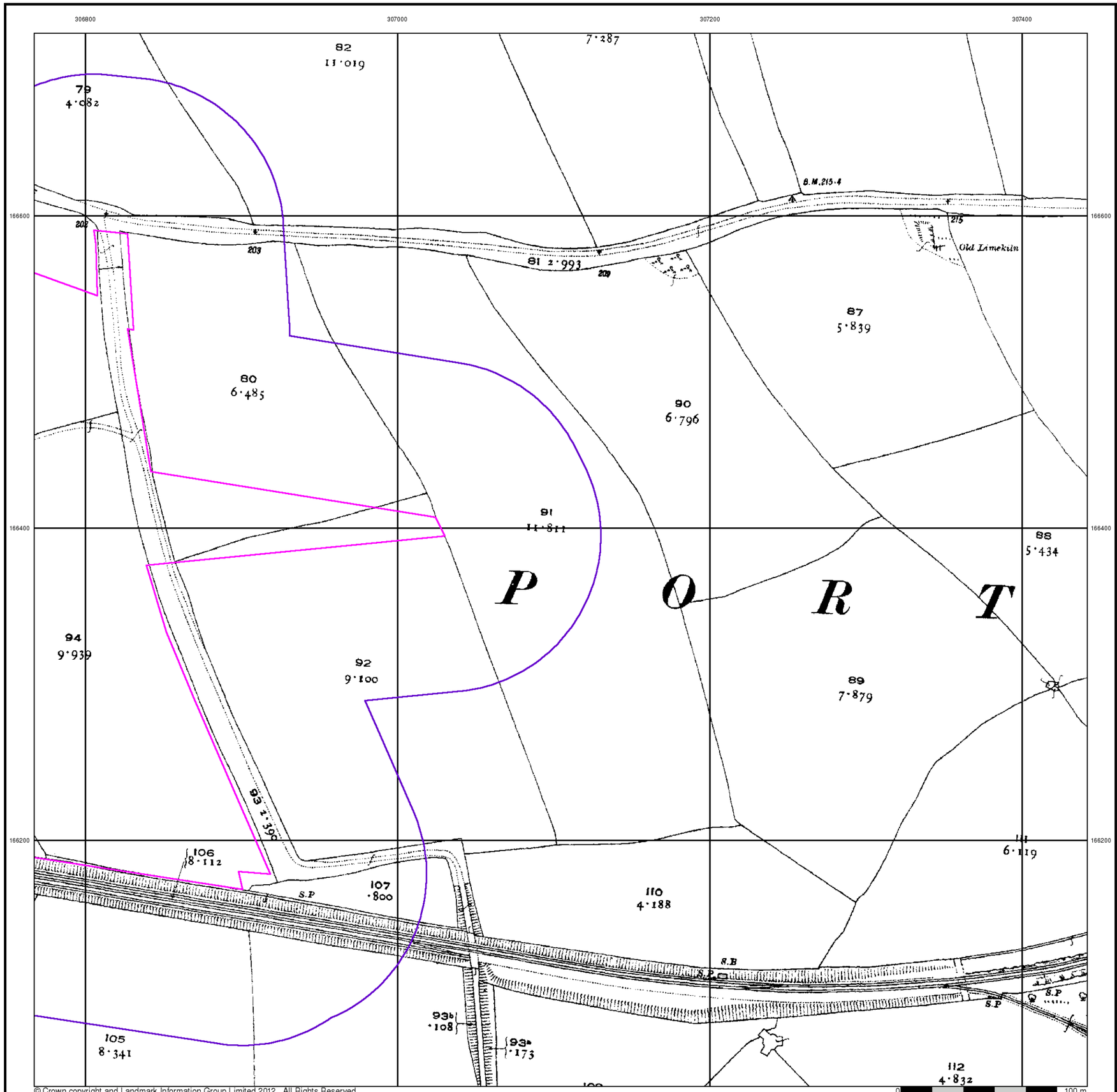
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

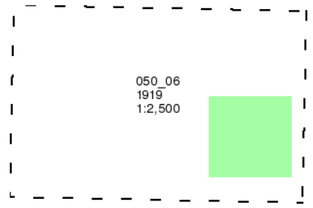
Glamorganshire

Published 1919

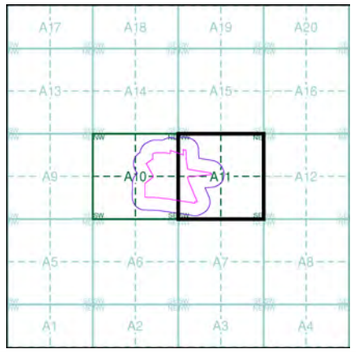
Source map scale - 1:2,500

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 A11



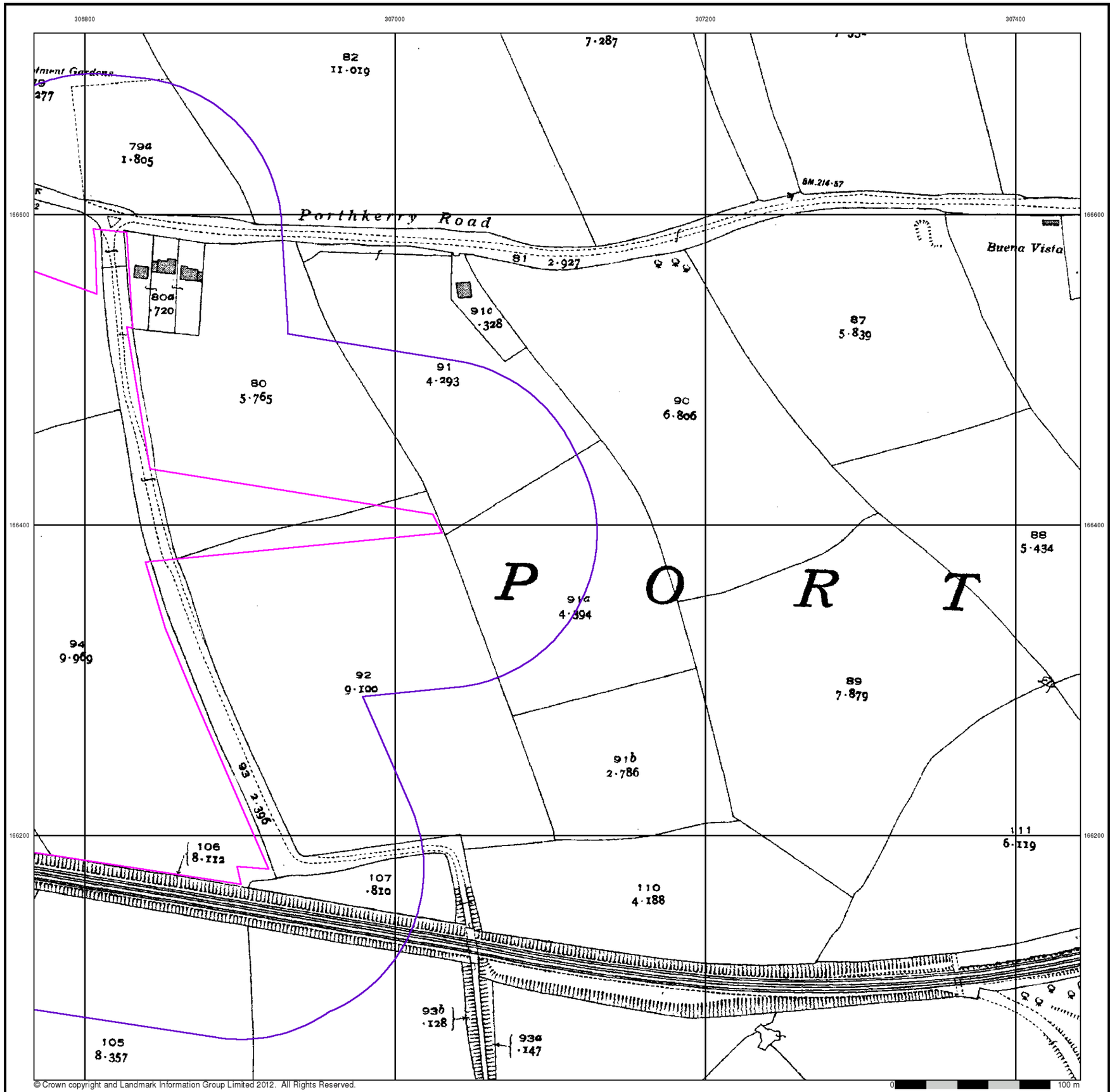
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

0 100 m

Intégral Géotechnique

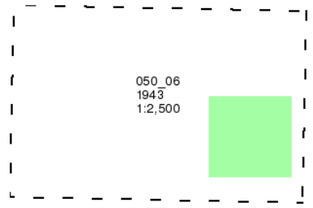
Glamorganshire

Published 1943

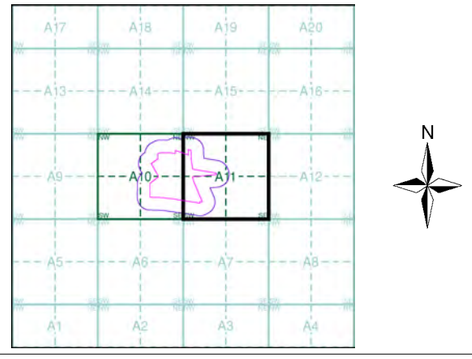
Source map scale - 1:2,500

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 A11



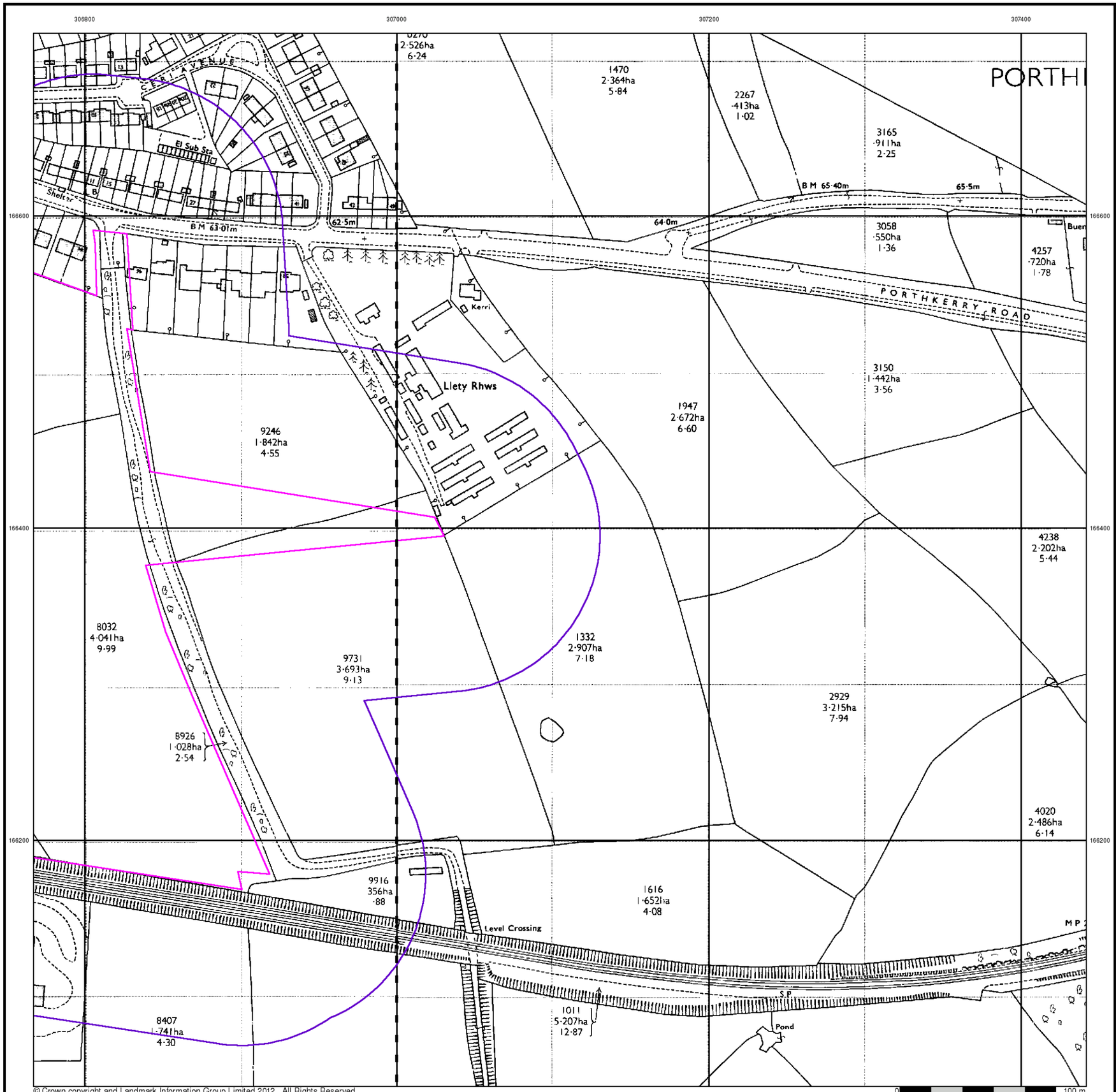
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

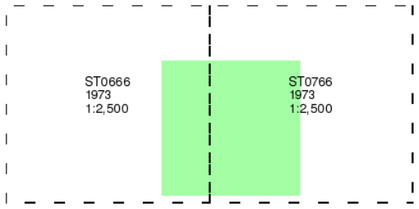
Ordnance Survey Plan

Published 1973

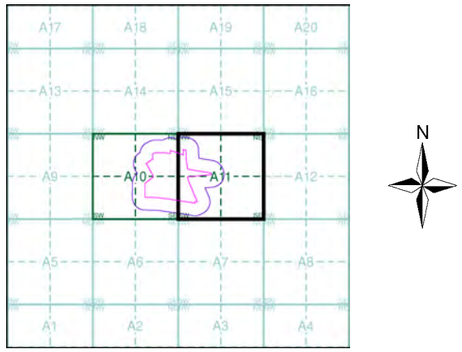
Source map scale - 1:2,500

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 A11



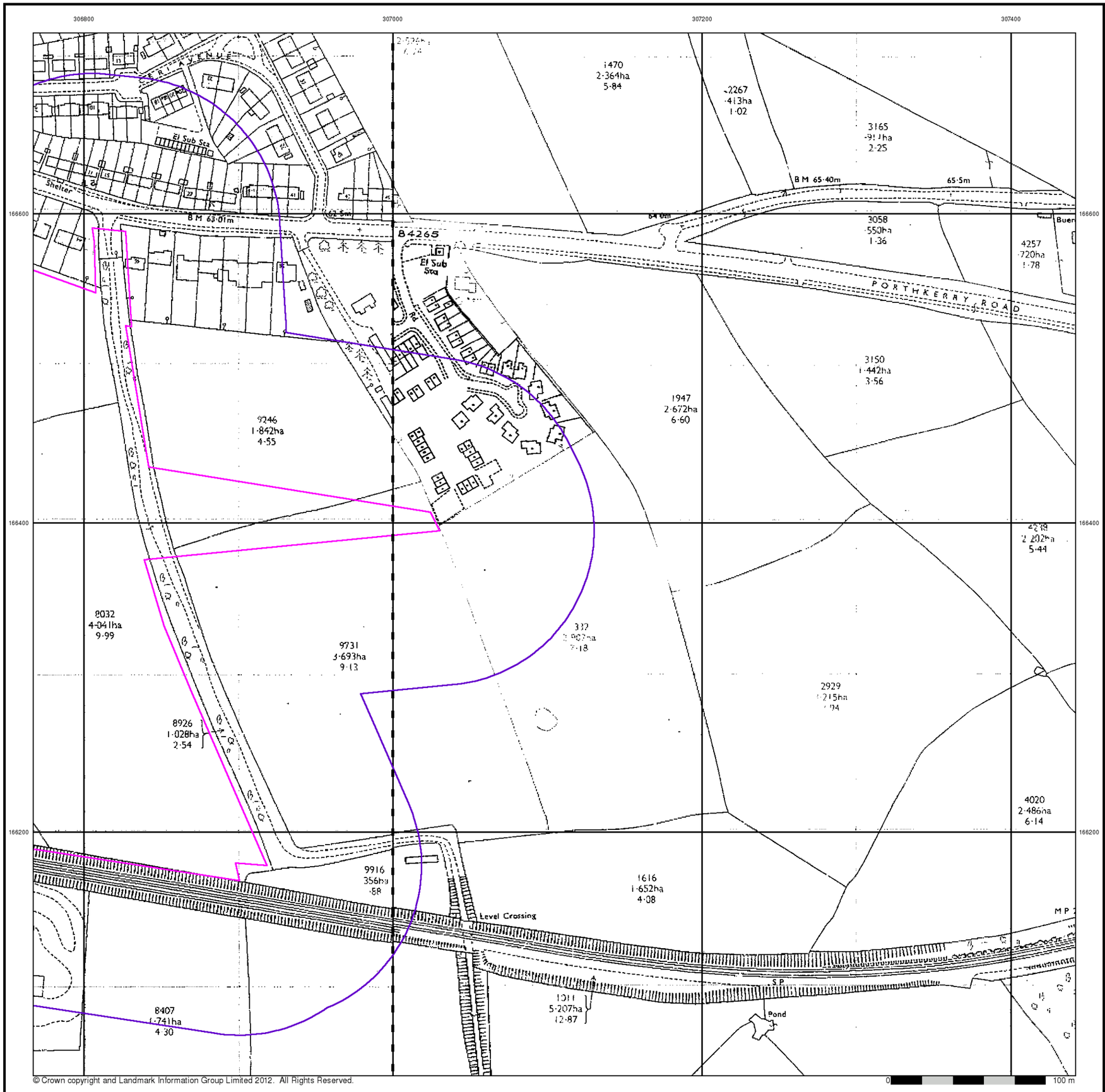
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

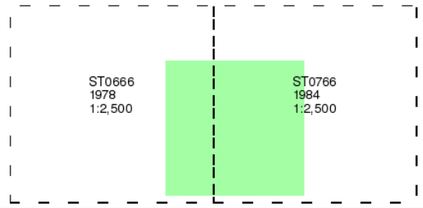
Additional SIMs

Published 1978 - 1984

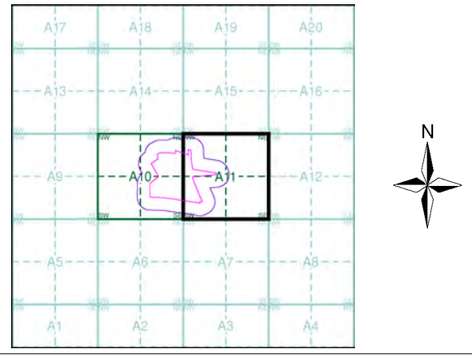
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A11



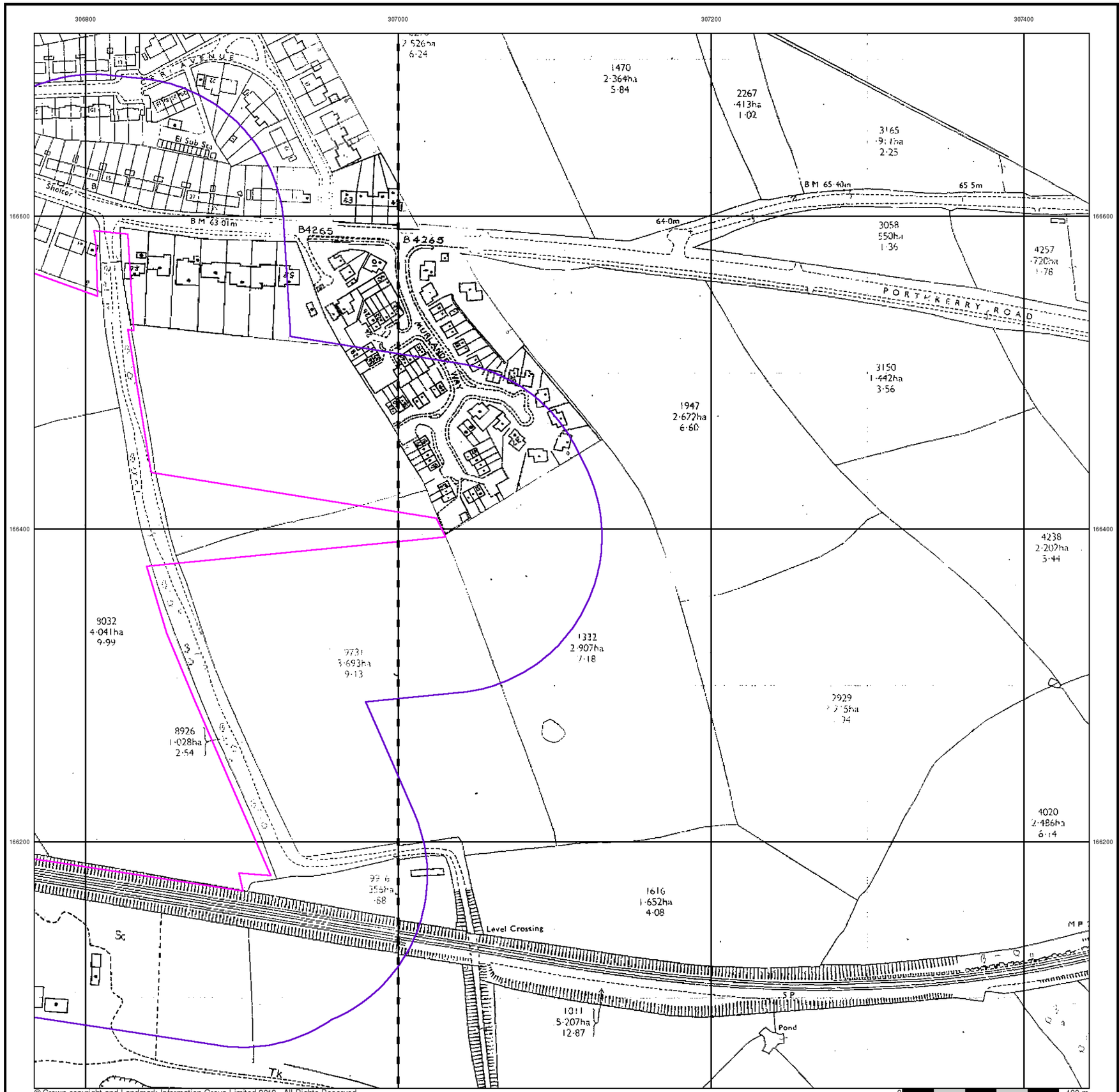
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

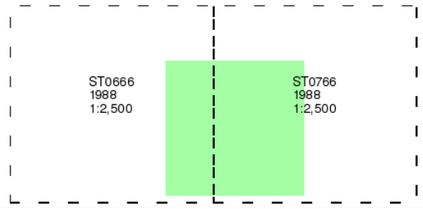
Additional SIMs

Published 1988

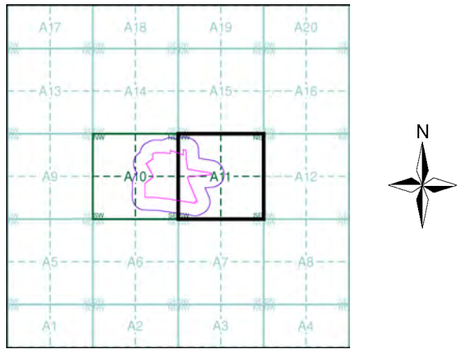
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A11



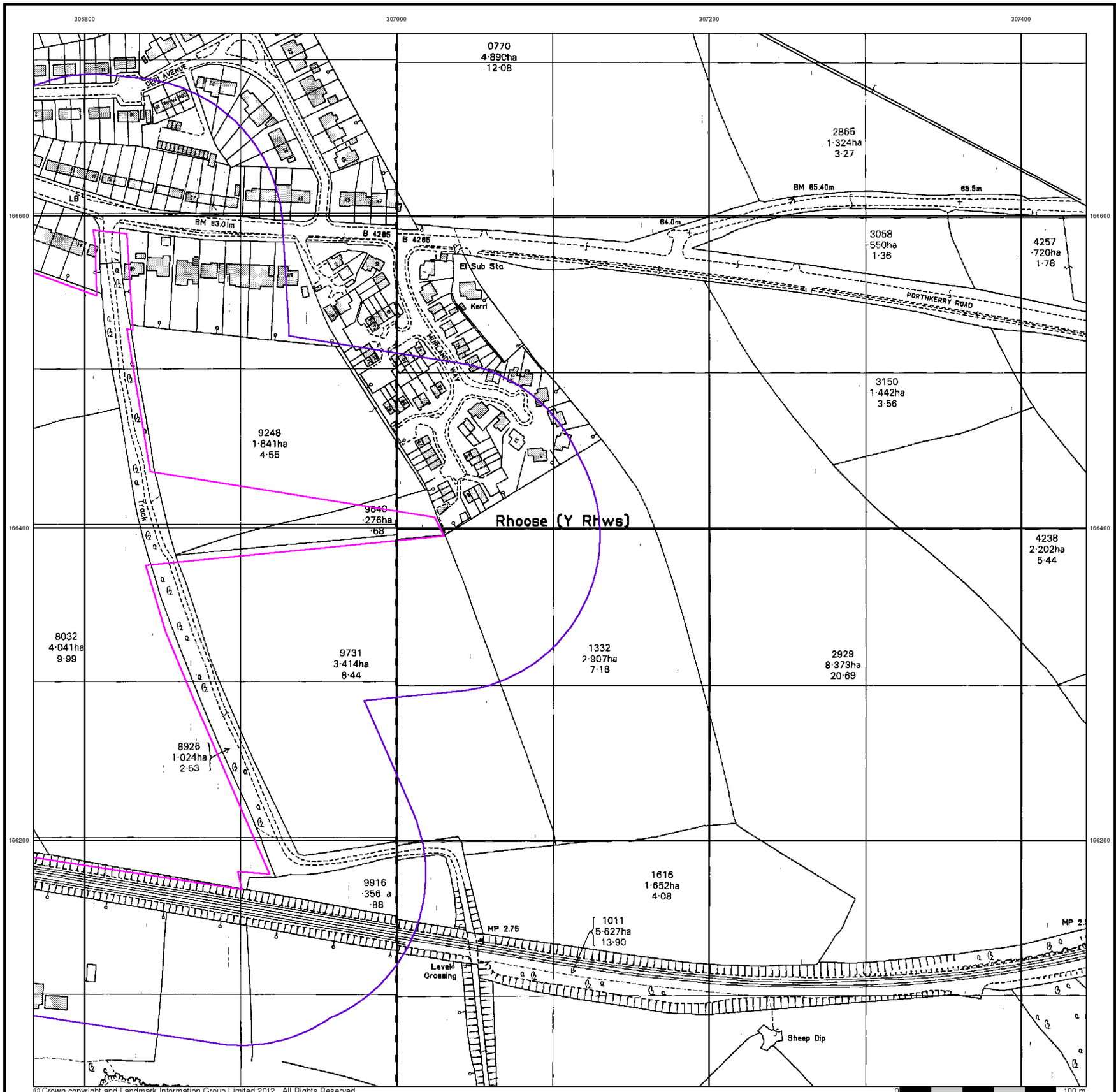
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

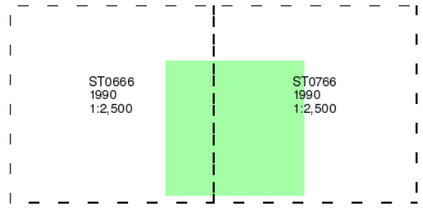
Ordnance Survey Plan

Published 1990

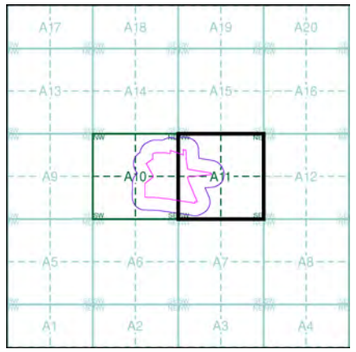
Source map scale - 1:2,500

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 A11



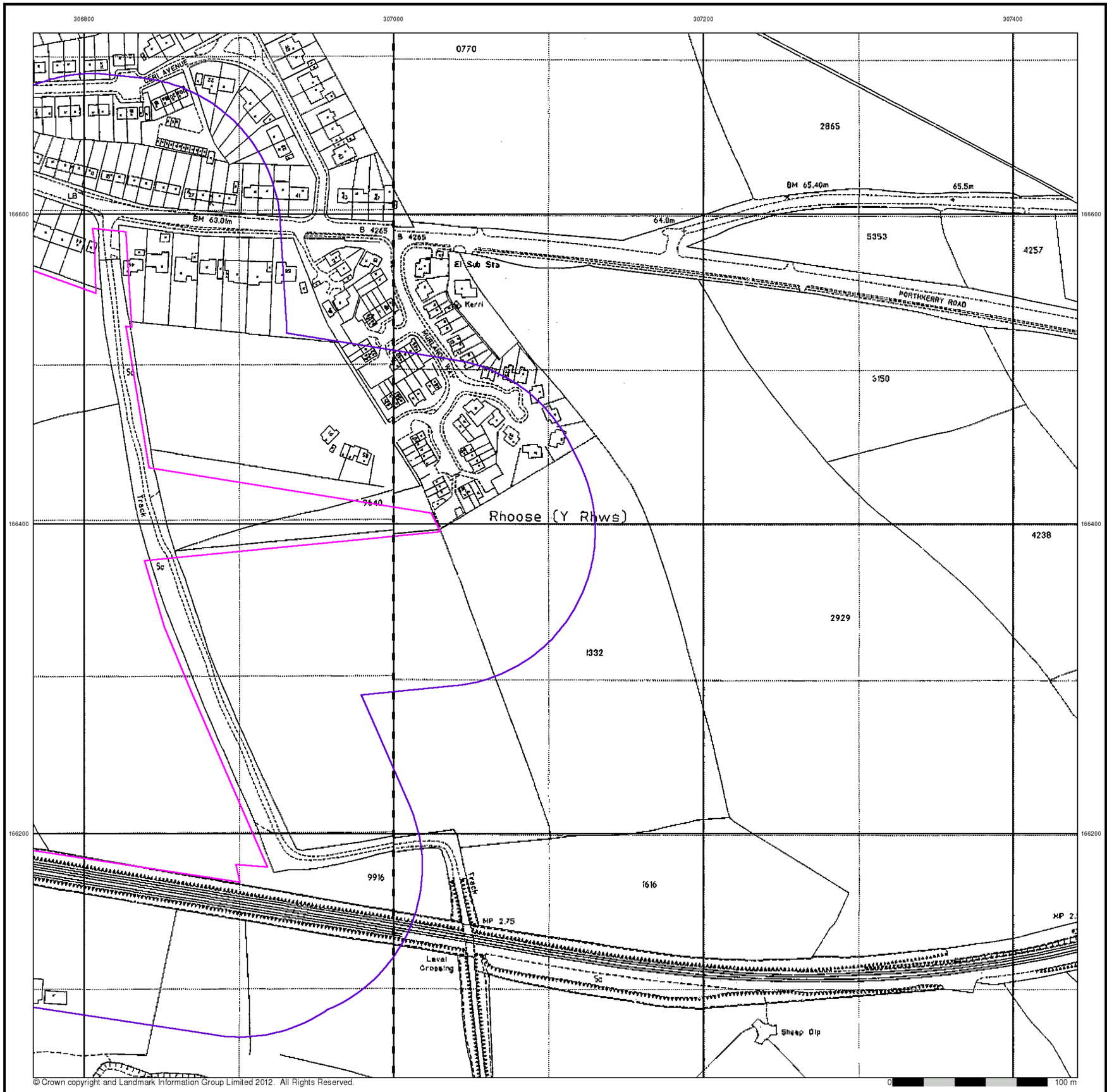
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

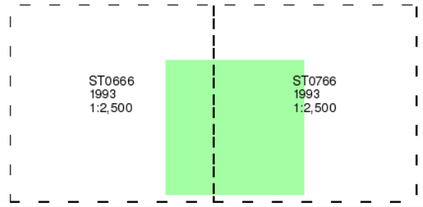
Large-Scale National Grid Data

Published 1993

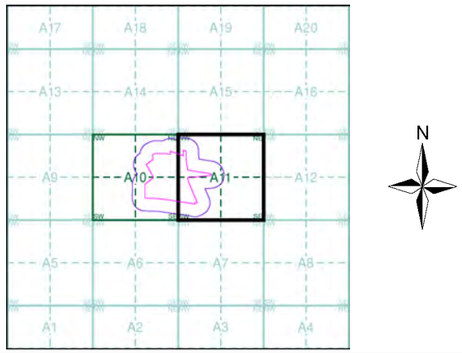
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A11



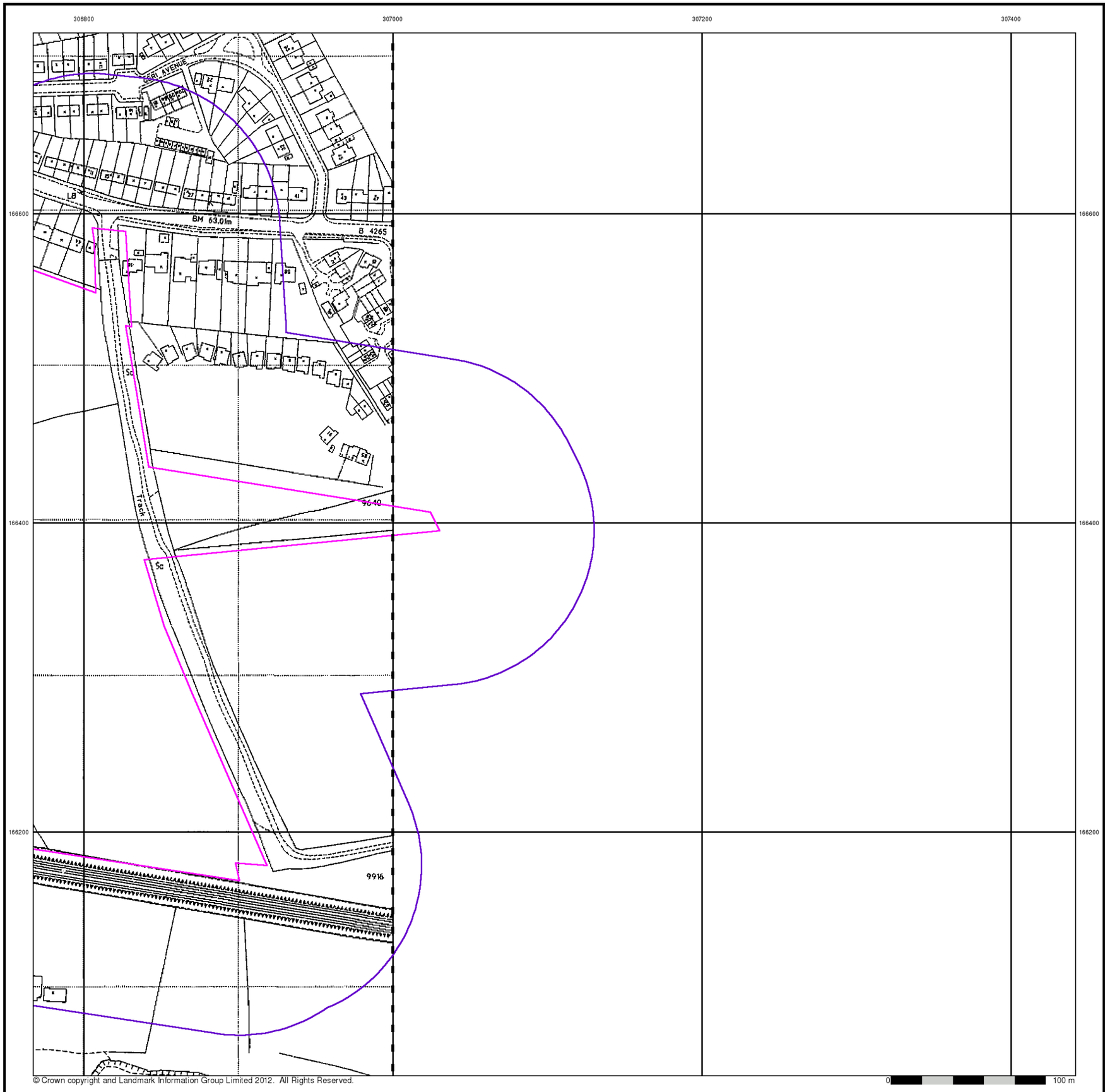
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

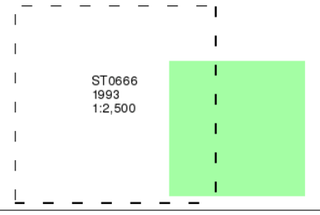
Large-Scale National Grid Data

Published 1993

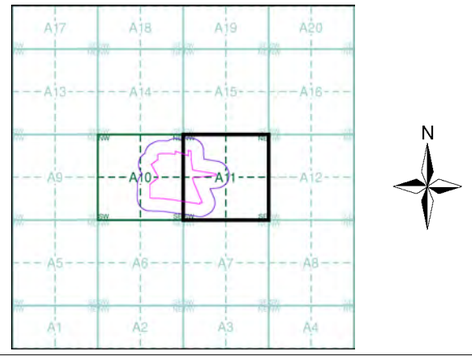
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A11



Order Details

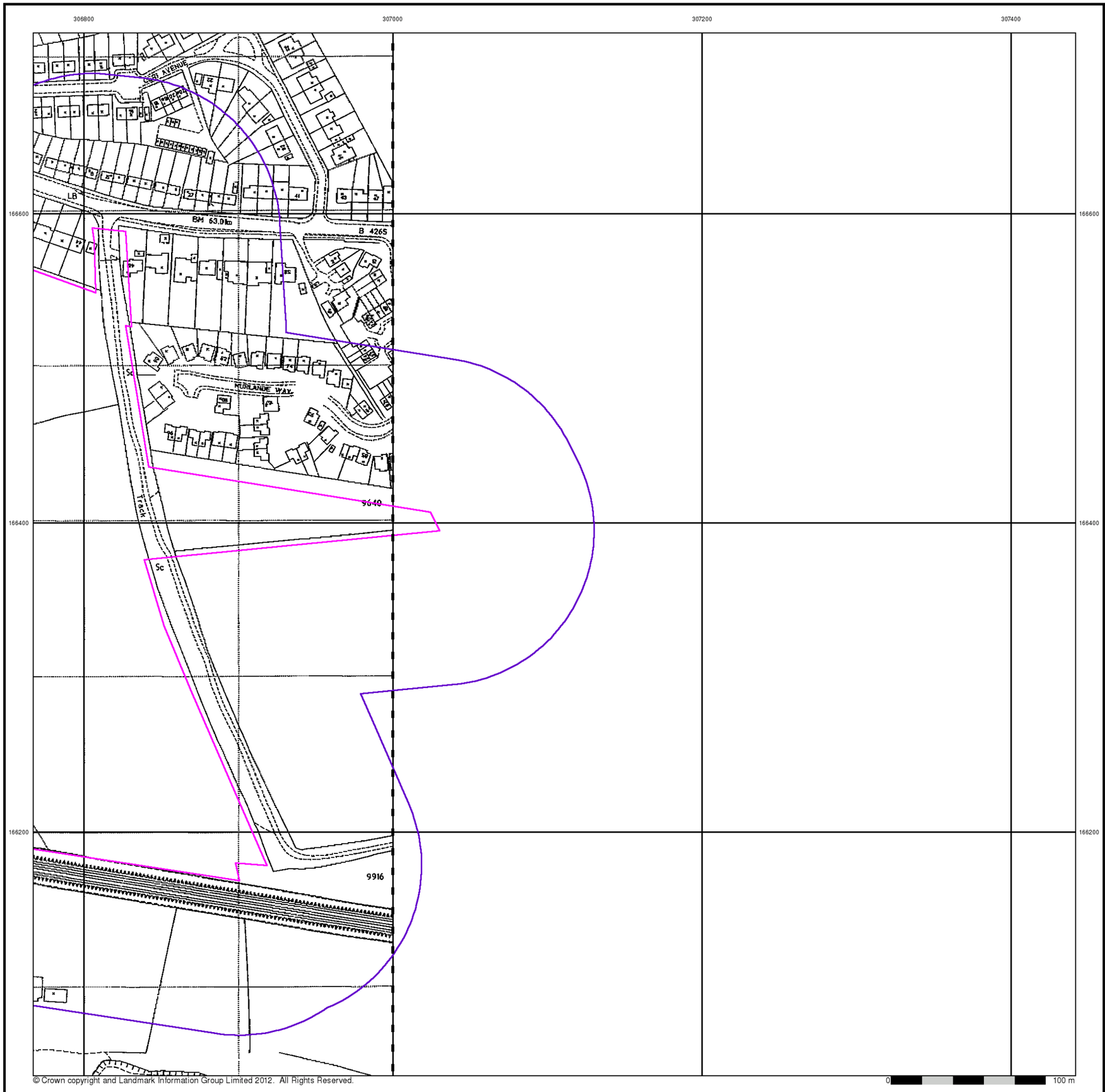
Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

Landmark Information Group

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

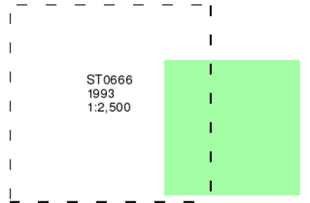
Large-Scale National Grid Data

Published 1993

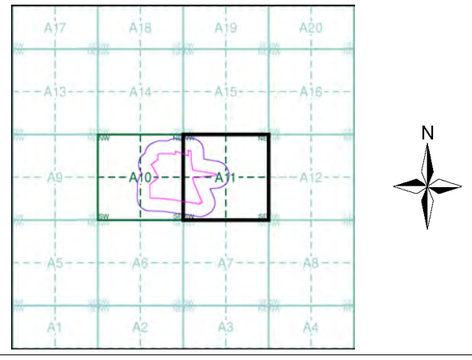
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A11



Order Details

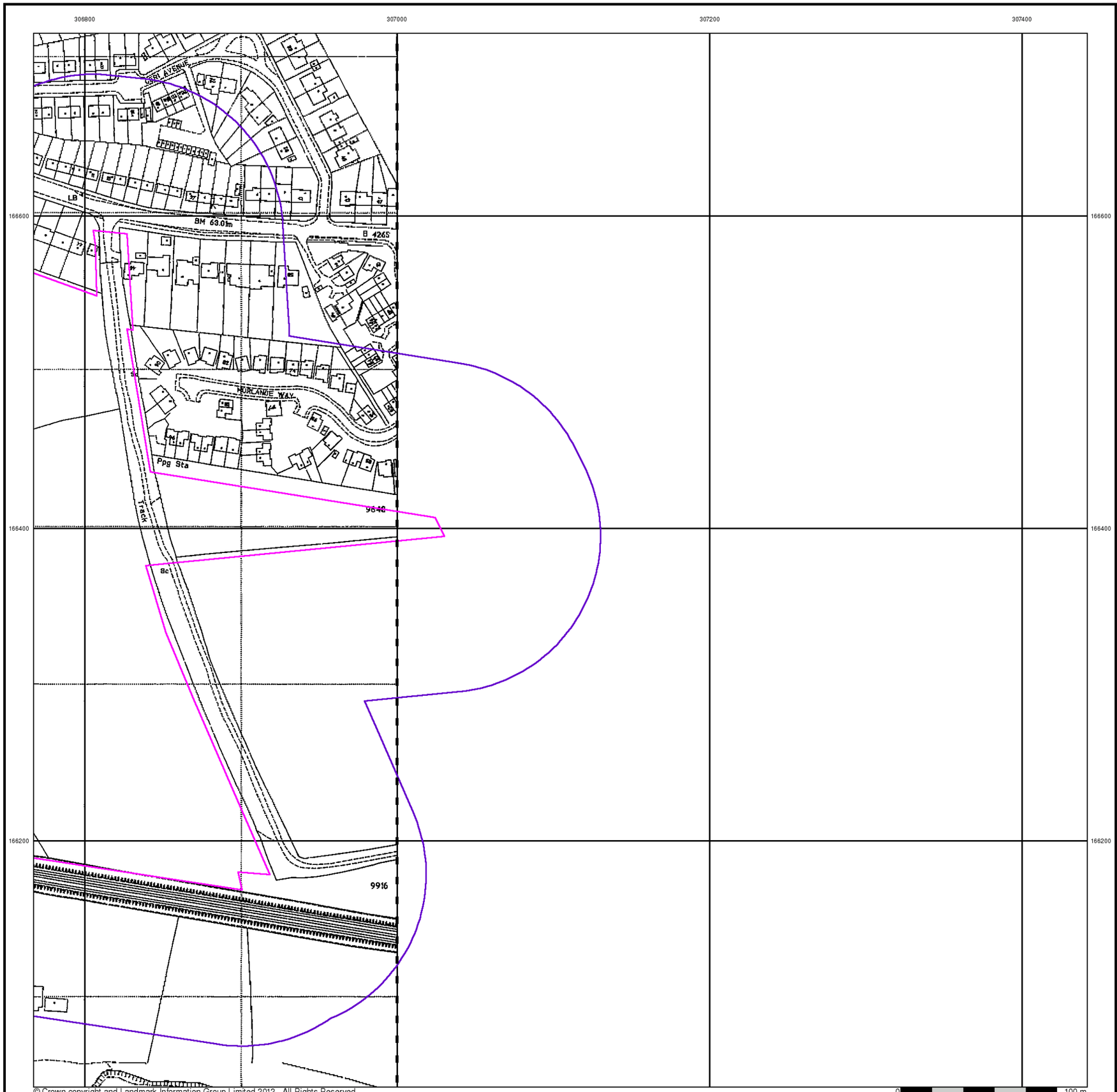
Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

Landmark Information Group

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

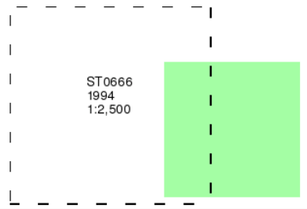
Large-Scale National Grid Data

Published 1994

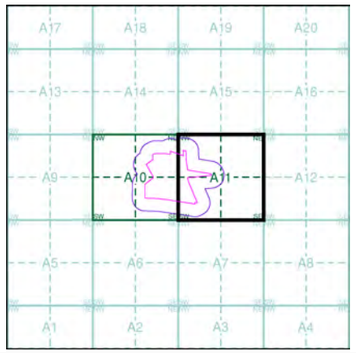
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A11



Order Details

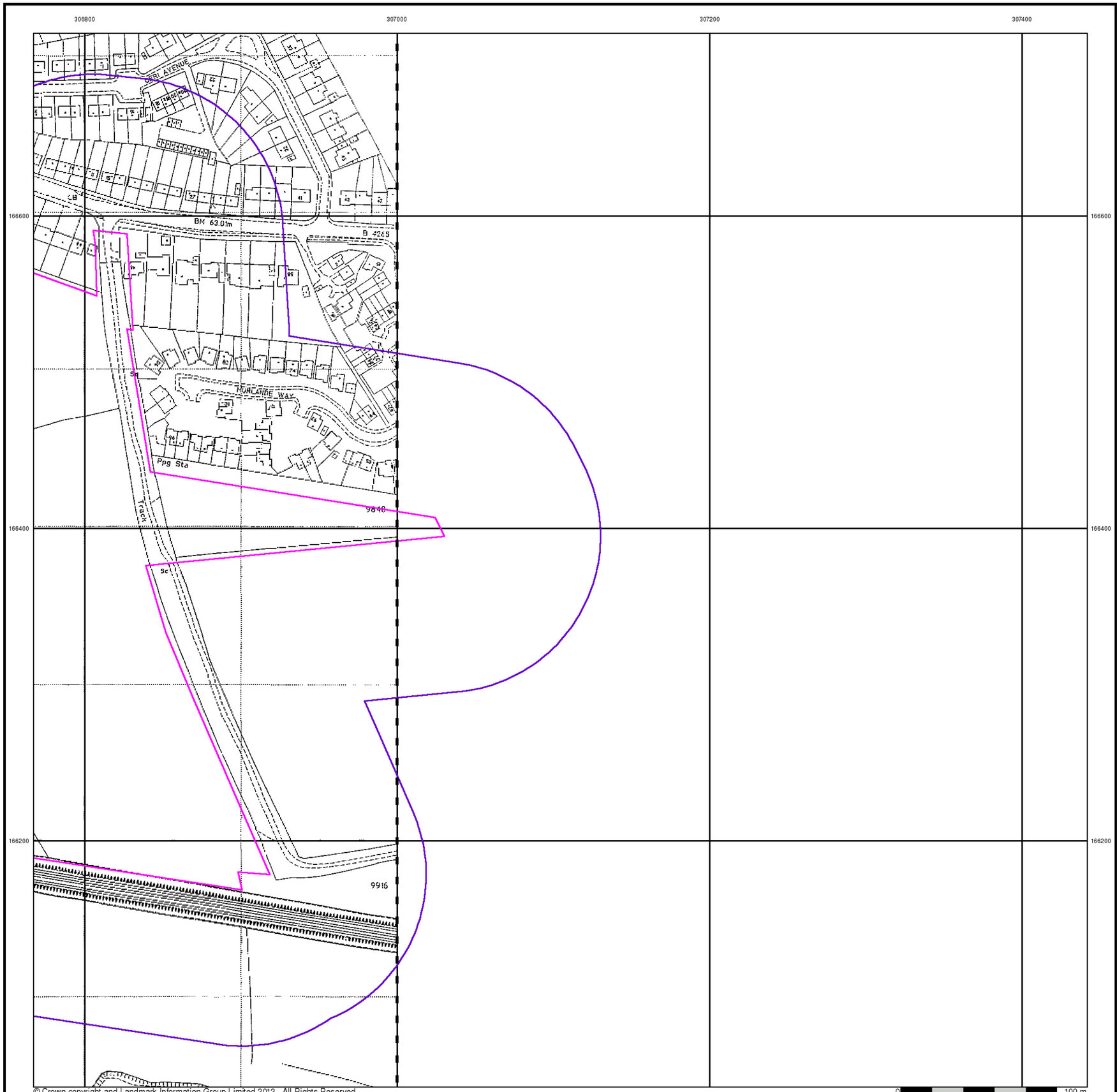
Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

Landmark Information Group

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



© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

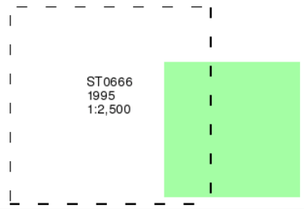
Large-Scale National Grid Data

Published 1995

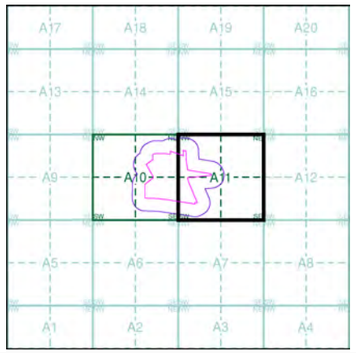
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A11



Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

Landmark Information Group

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

© Crown copyright and Landmark Information Group Limited 2012. All Rights Reserved.

Intégral Géotechnique

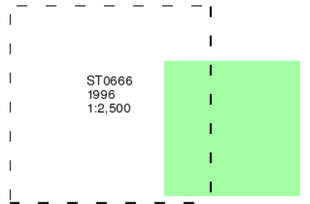
Large-Scale National Grid Data

Published 1996

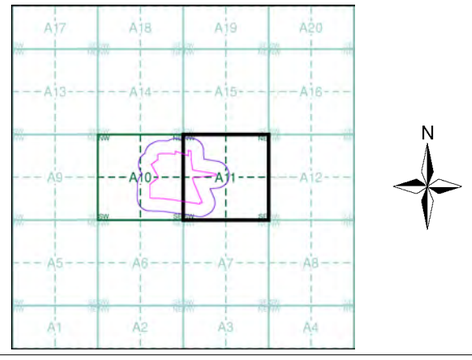
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A11



Order Details

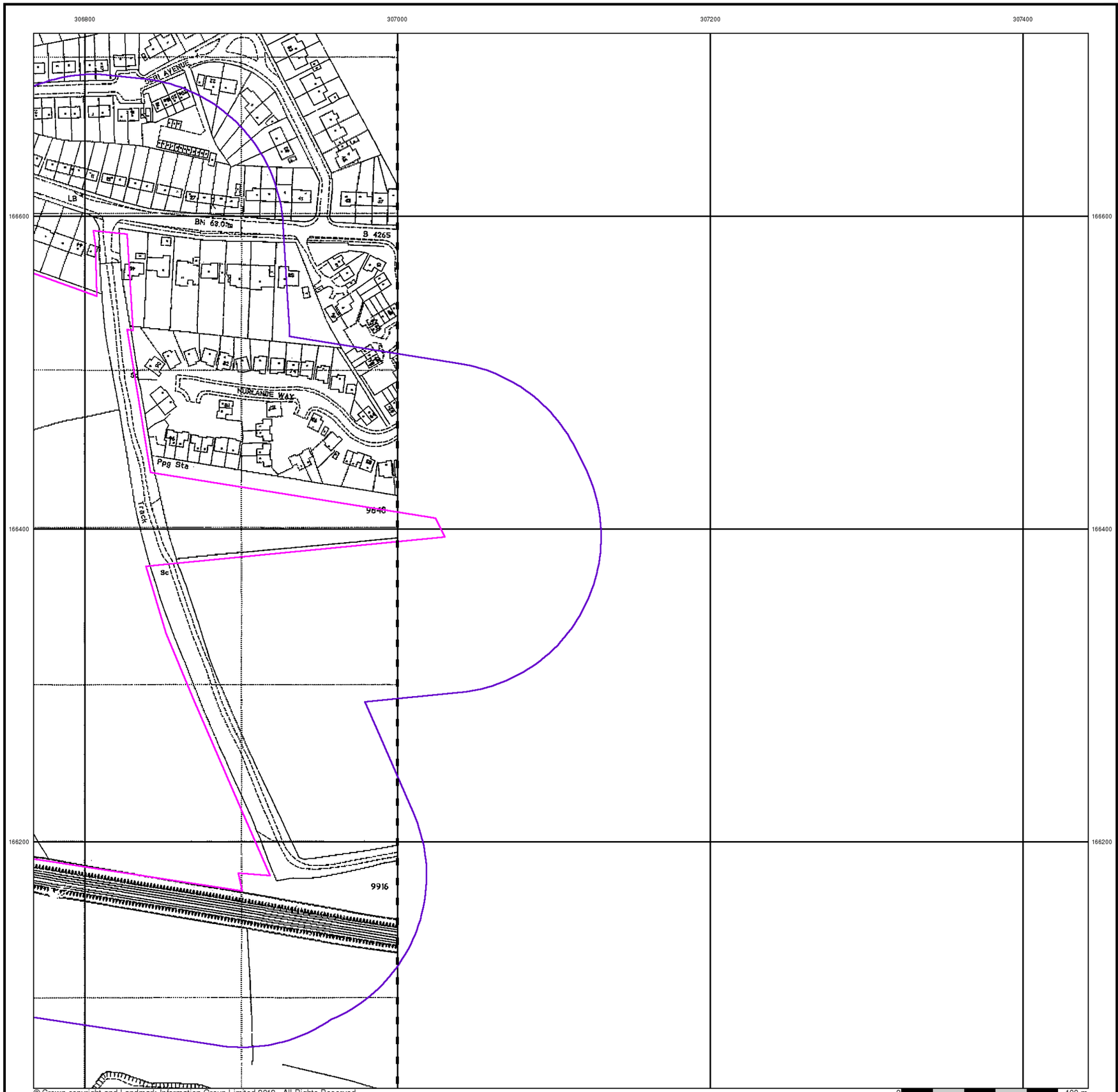
Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

Landmark Information Group

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



Intégral Géotechnique

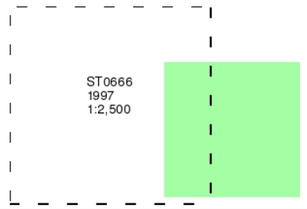
Large-Scale National Grid Data

Published 1997

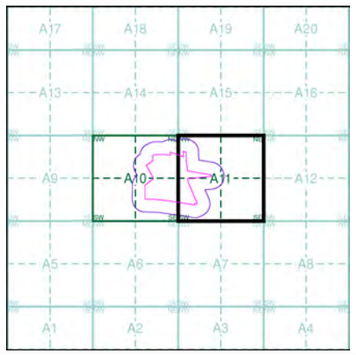
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A11



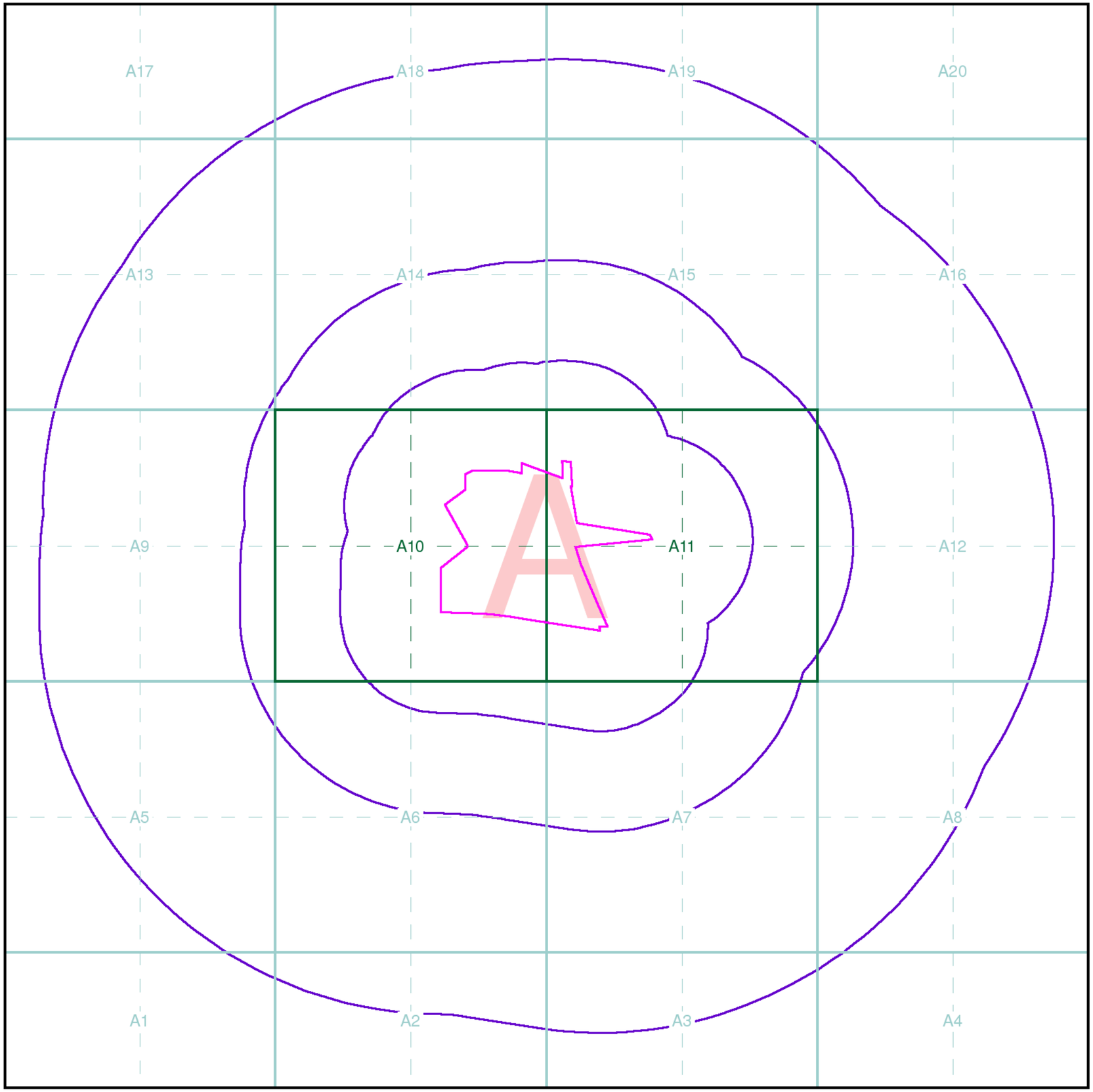
Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306740, 166370
Slice:	A
Site Area (Ha):	12.66
Search Buffer (m):	100

Site Details

Site at 306680, 166420

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



Intégral Géotechnique

Index Map

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

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

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

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

A selection of organisations who provide data within this report:

Ordnance Survey® Licensed Partner

British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL

Environment Agency

CYNGOR CEFN GWLAD CYMRU COUNTRYSIDE COUNCIL FOR WALES

Envirocheck reports are compiled from 136 different sources of data.

Client Details

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

Order Details

Order Number:	45159403_1_1
Customer Ref:	11164/DH
National Grid Reference:	306710, 166370
Site Area (Ha):	12.66
Search Buffer (m):	1000

Site Details

Site at 306680, 166420

Full Terms and Conditions can be found on the following link:
http://www.landmarkinfo.co.uk/Terms/Show/430

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

APPENDIX B

BGS RADON REPORT

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

GeoReports

Alison Trotman
Integral Geotechnique
Integral House
7 Beddau Way
Caerphilly
Cardiff
CF83 2AX

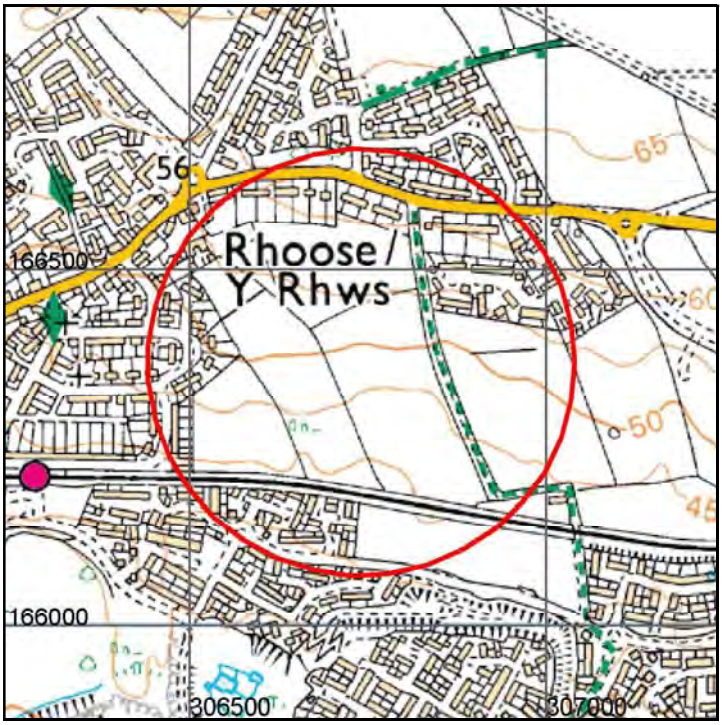
Radon Report: England and Wales

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: ***GR_206425/1***

Client reference: 11164/DH

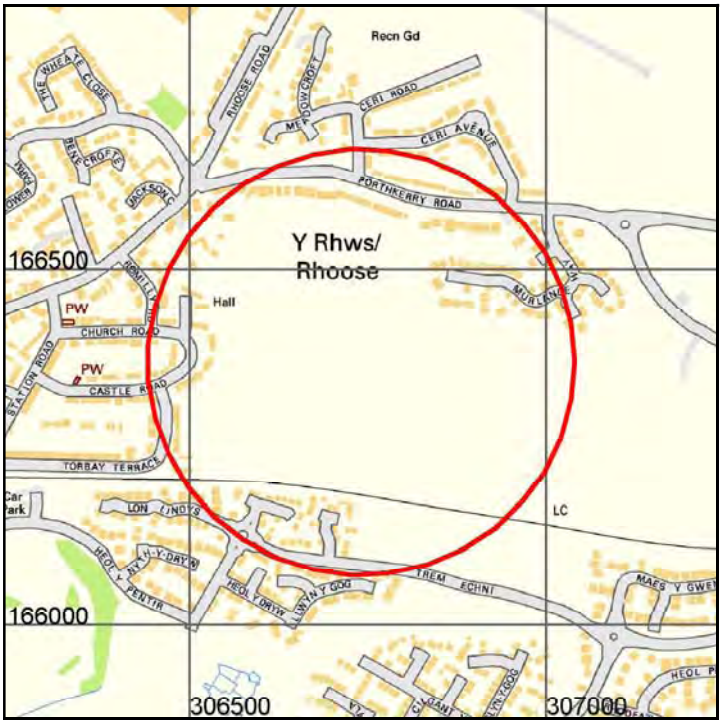
Search location



This product includes mapping data licensed from Ordnance Survey.
© Crown Copyright and/or database right 2013. Licence number 100037272
Scale: 1:10 000 (1cm = 100 m)

This report describes a site located at National Grid Reference 306740, 166370. 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.

Search location indicated in red



Contains Ordnance Survey data © Crown Copyright and database right 2013
OS Street View: Scale: 1:10 000 (1cm = 100 m)

© NERC, 2013. All rights reserved.

Radon Report: England and Wales

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 (2007 edition)*, which also provides guidance on what to do if the result indicates that protective measures are required.

NO RADON PROTECTIVE MEASURES ARE REQUIRED FOR THE REPORT AREA.

The BGS is not able to provide advice on the technical specifications of 'basic' and 'full' radon protective measures. This information is detailed in **BRE Report BR211 Radon: guidance on protective measures for new buildings** which may be purchased from **brebookshop.com.** This report offers guidance on the technical solutions that are required to satisfy Building Regulations requirements.

Technical solutions to radon protection in new build and existing dwellings in radon affected areas are available on the BRE web site at:
http://www.bre.co.uk/page.jsp?id=1626 and http://www.bre.co.uk/radon/ and in a range of technical reports available from **brebookshop.com;** Tel: 01923 664262, email: bookshop@bre.co.uk.
Summary guidance is available on the web at:
http://www.bre.co.uk/radon/protect.html.

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

© NERC, 2013. All rights reserved.

Radon in existing buildings

Is this property in a radon affected area – YES

The answer to the standard enquiry on house purchase known as **CON29 Standard Enquiry of Local Authority 3.13 Radon Gas: Location of the Property in a radon Affected Area is YES** this property is in a Radon Affected Area as defined by the Health Protection Agency (HPA).

The estimated probability of the property being above the Action Level for radon is: 1-3% (INTERMEDIATE PROBABILITY).

The result informs you of the estimated probability that this particular property is above the Action Level for radon. This does not necessarily mean there is a radon problem in the property. The only way to determine whether it is above or below the Action Level is to carry out a radon measurement within the existing property.

Radon Affected Areas are designated by the HPA. They advise that radon gas should be measured in all properties within Radon Affected Areas.

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 retested, and the that the results of re-testing confirmed the effectiveness of the measures.

In radon affected homes, the problem of radon can usually be tackled with simple, effective and relatively inexpensive measures. These measures are comparable in cost to work such as damp-proofing and timber treatment. You can get practical advice about construction work to reduce radon levels from the Building Control Officer at your local council.

For further information, advice about radon, its health risks and details of how to order the radon test, please contact the HPA Radon Helpline on 01235 822622 or go online at www.ukradon.org or write to Radon Survey, Health Protection Agency, Centre for Radiation, Chemical and Environmental Hazards, Chilton, Didcot, Oxon, OX11 0RQ, email: radon@hpa.org.uk. You can obtain an information pack from the HPA free Radon answerphone on 0800 614529

© NERC, 2013. All rights reserved.

What is radon?

Radon is a naturally occurring radioactive gas, which is produced by the radioactive decay of radium which, in turn, is derived from the radioactive decay of uranium. Uranium is found in small quantities in all soils and rocks, although the amount varies from place to place. Radon released from rocks and soils is quickly diluted in the atmosphere. Concentrations in the open air are normally very low and do not present a hazard. Radon that enters enclosed spaces such as some buildings (particularly basements), caves, mines, and tunnels may reach high concentrations in some circumstances. The construction method and degree of ventilation will influence radon levels in individual buildings. A person's exposure to radon will also vary according to how particular buildings and spaces are used.

Inhalation of the radioactive decay products of radon gas increases the chance of developing lung cancer. If individuals are exposed to high concentrations for significant periods of time, there may be cause for concern. In order to limit the risk to individuals, the Government has adopted an Action Level for radon in homes of 200 becquerels per cubic metre (Bq m^{-3}). The Government advises householders that, where the radon level exceeds the Action Level, measures should be taken to reduce the concentration.

Radon in workplaces

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

© **NERC, 2013. All rights reserved.**

Contact Details

Keyworth (KW) Office
British Geological Survey
Kingsley Dunham Centre
Keyworth
Nottingham
NG12 5GG
Tel: 0115 9363143
Fax: 0115 9363276
Email: enquiries@bgs.ac.uk

Wallingford (WL) Office
British Geological Survey
Maclean Building
Wallingford
Oxford
OX10 8BB
Tel: 01491 838800
Fax: 01491 692345
Email: hydroenq@bgs.ac.uk

Murchison House (MH) Office
British Geological Survey
Murchison House
West Mains Road
Edinburgh
EH9 3LA
Tel: 0131 650 0282
Fax: 0131 650 0252
Email: enquiry@bgs.ac.uk

© NERC, 2013. All rights reserved.

Terms and Conditions

General Terms & Conditions

This Report is supplied in accordance with the GeoReports Terms & Conditions available on the BGS website at www.bgs.ac.uk/georeports and also available from the BGS Central Enquiries Desk at the above address.

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 quite 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.

Copyright:
Copyright in materials derived from the British Geological Survey's work, is owned by the Natural Environment Research Council (NERC) and/ or the authority that commissioned the work. You may not copy or adapt this publication, or provide it to a third party, without first obtaining NERC's permission, but if you are a consultant purchasing this report solely for the purpose of providing advice to your own individual client you may incorporate it unaltered into your report to that client without further permission, provided you give a full acknowledgement of the source. Please contact the BGS Copyright Manager, British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham NG12 5GG. Telephone: 0115 936 3100.
© NERC 2013 All rights reserved.

This product includes mapping data licensed from the Ordnance Survey® with the permission of the Controller of Her Majesty's Stationery Office. © Crown Copyright 2013. All rights reserved. Licence number 100037272

Mapping sourced from Ordnance Survey®

Report issued by
BGS Enquiry Service

APPENDIX C

TRIAL PIT LOGS

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP1** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.20m
Date Excavated : 19/04/2013	Level : -	Depth : 0.55m; 0.60m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
			0.00			TOPSOIL: Soft to firm dark brown silty clay with occasional gravel of fine subangular and subrounded limestone and frequent rootlets.
			0.20			Firm brown slightly silty gravelly CLAY with occasional subrounded and subangular cobbles of limestone. Gravel is fine, medium and coarse subangular limestone.
			0.40			
			0.50			Dense grey COBBLES and BOULDERS of blocky, tabular and subangular micritic limestone. Boulder size of 0.2 x 0.3m in diameter.
			0.55			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight and locally open joints, generally orientated NE-SW (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 0.55 m

Remarks:
1. Refusal on suspected limestone bedrock at 0.55m depth.
2. Slow progress of excavation from 0.4m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426.58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP2** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	Depth : 0.65m; 1.40m; 0.60m
Date Excavated :	Level :	
19/04/2013	-	

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
			0.20			TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.30			Firm brown slightly silty slightly gravelly CLAY. Gravel is medium and coarse angular limestone.
			0.60			Dense grey and brown slightly clayey gravelly COBBLES of blocky micritic limestone.
			0.65			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 0.65 m

Remarks:
1. Refusal of excavation at 0.65m depth on suspected limestone bedrock.
2. Slow progress of excavation from 0.5m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP3** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.90m
Date Excavated : 19/04/2013	Level : -	Depth : 0.75m; 0.60m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft dark brown silty clay with occasional subangular gravel of fine subangular limestone and frequent rootlets.
			0.20			Firm brown slightly silty CLAY.
			0.30			Dense grey GRAVEL and COBBLES of blocky, tabular micritic limestone with occasional 0.2 x 0.3m sized pockets of firm gravelly clay.
			0.70			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
			0.75			Trial Pit Complete at 0.75 m

Remarks:
1. Refusal on suspected limestone bedrock at 0.75m depth.
2. Slow progress of excavation from 0.6m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP4** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.60m
Date Excavated : 19/04/2013	Level : -	Depth : 0.55m; 0.60m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
0.20	D		0.20			TOPSOIL: Soft to firm dark brown silty clay with occasional gravel of fine subangular and subrounded limestone and frequent rootlets.
			0.30			Firm brown slightly silty CLAY.
			0.50			Dense grey and brown slightly clayey gravelly COBBLES of blocky micritic limestone.
			0.55			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 0.55 m

Remarks:
1. Refusal on suspected limestone bedrock at 0.55m depth.
2. Slow progress of excavation from 0.4m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP5** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.90m
Date Excavated : 19/04/2013	Level : -	Depth : 0.55m; 0.60m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft to firm dark brown silty clay with occasional gravel of fine subangular and subrounded limestone and frequent rootlets.
			0.20			
			0.30			Firm light brown slightly silty slightly gravelly CLAY. Gravel is medium and coarse subangular limestone.
			0.50			Dense grey and brown slightly clayey gravelly COBBLES of blocky micritic limestone.
			0.55			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 0.55 m

0 1 2 3 4 5

Remarks:
1. Refusal on suspected limestone bedrock at 0.55m depth.
2. Slow progress of excavation from 0.4m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426.58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP6** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.90m
Date Excavated : 19/04/2013	Level : -	Depth : 0.85m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
0.20	D		0.25			TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.50			Firm light brown slightly silty slightly gravelly CLAY. Gravel is medium and coarse subangular limestone.
0.70	D		0.80			Dense grey gravelly COBBLES of blocky, tabular micritic limestone with occasional cobble sized pockets of firm brown gravelly clay.
			0.85			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 0.85 m

Remarks:
1. Refusal on suspected limestone bedrock at 0.85m depth.
2. Slow progress of excavation from 0.7m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP7** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	2.10m
Date Excavated : 19/04/2013	Level : -	Depth : 0.85m; 0.60m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.30			Firm light brown slightly silty slightly gravelly CLAY. Gravel is medium and coarse subangular limestone.
			0.50			Dense grey and brown clayey gravelly COBBLES of blocky subrounded and subangular micritic limestone.
			0.80			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
			0.85			Trial Pit Complete at 0.85 m

0 1 2 3 4 5

Remarks:
1. Refusal of excavation on suspected limestone bedrock at 0.85m depth
2. Slow progress of excavation from 0.7m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426.58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP8** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.90m
Date Excavated : 19/04/2013	Level : -	Depth : 0.65m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.20			Firm light brown slightly silty slightly gravelly CLAY. Gravel is medium and coarse subangular limestone.
			0.35			Dense grey and brown slightly clayey gravelly COBBLES of blocky, tabular subangular micritic limestone.
			0.60			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
			0.65			Trial Pit Complete at 0.65 m

Remarks:
1. Refusal on suspected limestone bedrock at 0.65m depth.
2. Slow progress of excavation from 0.5m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP9** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	2.20m
Date Excavated : 19/04/2013	Level : -	Depth : 1.45m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
0.20	D					TOPSOIL: Soft dark brown silty clay with frequent rootlets and occasional roots.
			0.30			Firm light brown silty very gravelly CLAY with occasional (becoming frequent below 0.9m) cobbles of angular, tabular limestone. Occasional boulder sized pockets of stiff very gravelly clay, 0.3 x 0.3m diameter.
0.90	D					
			1.40			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
			1.45			Trial Pit Complete at 1.45 m

Remarks:
1. Refusal on suspected limestone bedrock at 1.4m depth.
2. Slow progress of excavation from 1.3m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP10** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.90m
Date Excavated : 19/04/2013	Level : -	Depth : 1.15m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft dark brown silty clay with frequent rootlets and occasional roots.
			0.30			Soft becoming firm very gravelly silty CLAY with occasional cobbles of angular tabular limestone. Gravel is heavily weathered limestone.
			0.90			Dense grey gravelly COBBLES of blocky and tabular subanguar micritic limestone.
			1.10			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
			1.15			Trial Pit Complete at 1.15 m

Remarks:
1. Refusal on suspected limestone bedrock at 1.15m depth
2. Slow progress of excavation from 1.0m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP11** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.70m
Date Excavated : 19/04/2013	Level : -	Depth : 0.75m; 0.60m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.20			Firm light brown slightly silty slightly gravelly CLAY. Gravel is medium and coarse subangular limestone.
			0.35			Dense grey and brown gravelly COBBLES and BOULDERS of micritic subrounded and angular limestone with rare cobble sized pockets of firm to stiff gravelly clay. Boulders are 0.3 0 x0.2m in diameter.
			0.70			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
			0.75			Trial Pit Complete at 0.75 m

Remarks:
1. Refusal on suspected limestone bedrock at 0.75m depth.
2. Slow progress of excavation from 0.6m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP12** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.80m
Date Excavated : 19/04/2013	Level : -	Depth : 0.85m; 0.60m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft to firm dark brown silty clay with frequent rootlets.
			0.25			Firm brown silty CLAY with occasional roots.
			0.50			Dense grey COBBLES and BOULDERS of blocky, tabular subangular micritic limestone. Boulders are 0.3 x 0.3m in diameter.
			0.80			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
			0.85			Trial Pit Complete at 0.85 m

0 1 2 3 4 5

Remarks:
1. Refusal on suspected limestone bedrock at 0.85 m depth.
2. Slow progress of excavation from 0.75m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP13** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.80m
Date Excavated : 19/04/2013	Level : -	Depth : 1.15m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
			0.00			TOPSOIL: Soft to firm dark brown silty clay with frequent rootlets.
0.20	D		0.20			Soft to firm brown silty CLAY
			0.40			Firm light brown slightly silty gravelly CLAY with frequent subangular, tabular cobbles of limestone. Gravel is medium and coarse angular limestone.
			0.70			Dense grey and brown slightly clayey gravelly COBBLES of blocky micritic limestone.
			1.10			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
			1.15			Trial Pit Complete at 1.15 m

Remarks:
1. Refusal on suspected limestone bedrock at 1.15m depth.
2. Slow progress of excavation from 1.0m depth.

Groundwater : Dry

Stability : Stable for the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP14** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.80m
Date Excavated : 19/04/2013	Level : -	Depth : 0.85m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft to firm dark brown silty clay with frequent rootlets.
			0.30			Firm light brown slightly silty gravelly CLAY with occasional subrounded and subangular cobbles of limestone. Gravel is fine, medium and coarse subangular limestone.
			0.60			Dense grey and brown slightly clayey gravelly COBBLES of blocky micritic limestone.
			0.80			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
			0.85			Trial Pit Complete at 0.85 m

Remarks:
1. Refusal on suspected limestone bedrock at 0.85m depth.
2. Slow progress of excavation from 0.7m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP15** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.90m
Date Excavated : 19/04/2013	Level : -	Depth : 1.05m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft to firm dark brown silty clay with frequent rootlets.
			0.20			Soft to firm brown silty CLAY
			0.40			Firm light brown slightly silty gravelly CLAY with frequent angular, tabular cobbles of limestone. Gravel is coarse subangular limestone.
			0.65			Dense grey and brown slightly clayey gravelly COBBLES of blocky micritic limestone.
			1.00			
			1.05			Strong light grey thin to medium bedded, slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 1.05 m

Remarks:
1. Refusal on suspected limestone bedrock at 1.05 m depth.
2. Slow progress of excavation from 0.9m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bd 426.58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP16** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.90m
Date Excavated : 19/04/2013	Level : -	Depth : 1.15m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft dark brown slightly silty clay with frequent rootlets.
			0.25			Soft to firm light brown silty CLAY
			0.40			Firm light brown slightly silty gravelly CLAY with frequent subrounded and subangular, tabular cobbles of limestone. Gravel is medium and coarse subangular limestone.
			0.70			Dense grey gravelly COBBLES of blocky, tabular micritic limestone with occasional 0.3 x 0.3m pockets of firm gravelly clay
			1.10			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
			1.15			Trial Pit Complete at 1.15 m

0 1 2 3 4 5

Remarks:
1. Refusal on suspected limestone bedrock at 1.15 m depth.
2. Slow progress of excavation from 1.0m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP17** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.90m
Date Excavated : 19/04/2013	Level : -	Depth : 0.55m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft dark brown silty clay with rare subangular gravel of fine subangular and subrounded limestone and frequent rootlets.
			0.20			
0.40	D					Firm light brown slightly silty slightly gravelly CLAY with occasional tabular subangular cobbles of micritic limestone. Gravel is medium and coarse subangular limestone.
			0.50			
			0.55			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 0.55 m

0 1 2 3 4 5

Remarks:
1. Refusal of excavation on suspected bedrock at 0.55m depth.
2. Slow progress of excavation from 0.4m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP18** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.70m
Date Excavated : 22/04/2013	Level : -	Depth : 0.75m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.20			Firm light brown slightly silty slightly gravelly CLAY with occasional tabular subangular cobbles of micritic limestone. Gravel is medium and coarse subangular limestone.
			0.35			Dense grey and brown slightly clayey gravelly COBBLES of blocky micritic limestone.
			0.70			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
			0.75			Trial Pit Complete at 0.75 m

Remarks:
1. Refusal of excavation on suspected bedrock at 0.75m depth.
2. Slow progress of excavation from 0.6m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP19** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.60m
Date Excavated : 22/04/2013	Level : -	Depth : 0.85m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.30			Firm light brown slightly silty gravelly CLAY with frequent tabular subangular cobbles of micritic limestone. Gravel is medium and coarse subangular limestone.
			0.50			Dense grey and brown slightly clayey gravelly COBBLES of blocky micritic limestone.
			0.80			Strong light grey thin to medium bedded, slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
			0.85			Trial Pit Complete at 0.85 m

Remarks:
1. Refusal of excavation on suspected bedrock at 0.85m depth.
2. Slow progress of excavation from 0.7m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP20** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.90m
Date Excavated : 22/04/2013	Level : -	Depth : 1.00m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.20			Firm light brown slightly silty gravelly CLAY with occasional tabular subangular cobbles of micritic limestone and rare roots. Gravel is medium and coarse subangular limestone.
			0.80			Dense grey and brown slightly clayey gravelly COBBLES of blocky micritic limestone.
			0.95			
			1.00			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 1.00 m

Remarks:
1. Refusal of excavation on suspected bedrock at 1.0m depth.
2. Slow progress of excavation from 0.9m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP21** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.70m
Date Excavated : 22/04/2013	Level : -	Depth : 0.75m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft dark brown silty clay with frequent rootlets.
0.30	D		0.20			Soft to firm light brown slightly silty slightly gravelly CLAY with occasional tabular subangular cobbles of micritic limestone. Gravel is medium and coarse subangular limestone.
			0.50			Dense grey and brown slightly clayey gravelly COBBLES of blocky micritic limestone.
			0.70			Strong light grey thin to medium bedded, slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
			0.75			Trial Pit Complete at 0.75 m

Remarks:
1. Refusal of excavation on suspected bedrock at 0.75m depth.
2. Slow progress of excavation from 0.6m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP22** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.40m
Date Excavated : 22/04/2013	Level : -	Depth : 1.00m; 0.60m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
			0.20			TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.40			Firm light brown slightly silty CLAY
			0.80			Firm light brown slightly silty gravelly CLAY with occasional tabular subangular and subrounded cobbles of micritic limestone. Gravel is medium and coarse subangular limestone.
			0.95			Dense grey and brown slightly clayey gravelly COBBLES of blocky micritic limestone with and occasional cobble sized pockets of firm to stiff gravelly clay.
			1.00			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 1.00 m

Remarks:
1. Refusal of excavation on suspected bedrock at 1.0m depth.
2. Slow progress of excavation from 0.9m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426.58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP23** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.65m
Date Excavated : 22/04/2013	Level : -	Depth : 0.75m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.25			Firm brown slightly silty slightly gravelly CLAY with occasional tabular subangular cobbles of micritic limestone. Gravel is medium and coarse subangular limestone.
			0.40			Dense grey and brown slightly clayey gravelly COBBLES of subangular and subrounded blocky micritic limestone.
			0.70			Strong light grey thin to medium bedded, slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
			0.75			Trial Pit Complete at 0.75 m

Remarks:
1. Refusal of excavation on suspected bedrock at 0.75m depth.
2. Slow progress of excavation from 0.6m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP24** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.80m
Date Excavated : 22/04/2013	Level : -	Depth : 0.75m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.20			Firm brown slightly silty slightly gravelly CLAY with occasional tabular subangular cobbles of micritic limestone. Gravel is medium and coarse subangular limestone.
			0.40			Dense grey and brown slightly clayey gravelly COBBLES and BOULDERS of subangular and subrounded blocky micritic limestone. Boulders are 0.2 x 0.3m in diameter.
			0.70			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
			0.75			Trial Pit Complete at 0.75 m

Remarks:
1. Refusal of excavation on suspected bedrock at 0.75m depth.
2. Slow progress of excavation from 0.6m depth.

Groundwater : Dry

Stability : Stable for the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP25** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.70m
Date Excavated : 22/04/2013	Level : -	Depth : 0.75m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.35			Firm brown slightly silty gravelly CLAY with occasional tabular subangular and subrounded cobbles of micritic limestone. Gravel is medium and coarse subangular limestone.
			0.70			
			0.75			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 0.75 m

0 1 2 3 4 5

Remarks:
1. Refusal of excavation on suspected bedrock at 0.75m depth.
2. Slow progress of excavation from 0.6m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426.58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP26** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.50m
Date Excavated : 22/04/2013	Level : -	Depth : 0.65m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
0.30	D		0.35			TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.60			Firm brown slightly silty slightly gravelly CLAY with occasional subrounded cobbles of micritic limestone. Gravel is medium and coarse subrounded limestone.
			0.65			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 0.65 m

Remarks:
1. Refusal of excavation on suspected bedrock at 0.65m depth.
2. Slow progress of excavation from 0.5m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP27** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.40m
Date Excavated : 22/04/2013	Level : -	Depth : 0.65m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.35			Firm brown slightly silty slightly gravelly CLAY with rare subrounded cobbles of micritic limestone. Gravel is medium and coarse subrounded limestone.
			0.60			
			0.65			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 0.65 m

0 1 2 3 4 5

Remarks:
1. Refusal of excavation on suspected bedrock at 0.65m depth.
2. Slow progress of excavation from 0.5m depth.

Groundwater : Dry

Stability : Stable for the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP28** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.20m
Date Excavated : 22/04/2013	Level : -	Depth : 0.55m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
			0.00			TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.20			Firm brown slightly silty slightly gravelly CLAY. Gravel is medium and coarse subrounded limestone.
			0.30			Dense grey and brown slightly clayey gravelly COBBLES of blocky micritic limestone.
			0.50			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
			0.55			Trial Pit Complete at 0.55 m

Remarks:
1. Refusal of excavation on suspected bedrock at 0.55m depth.
2. Slow progress of excavation from 0.4m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426.58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP29** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.20m
Date Excavated : 22/04/2013	Level : -	Depth : 0.70m (0.70m)

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.20			Firm brown slightly silty slightly gravelly CLAY. Gravel is medium and coarse subrounded limestone.
			0.40			Dense grey and brown slightly clayey gravelly COBBLES of blocky and tabular micritic limestone.
			0.65			
			0.70			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 0.70 m

0 1 2 3 4 5

Remarks:
1. Refusal of excavation on suspected bedrock at 0.65m depth.
2. Slow progress of excavation from 0.5m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426.58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP30** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.20m
Date Excavated : 22/04/2013	Level : -	Depth : 0.40m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
			0.20			TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.35			Firm brown slightly silty slightly gravelly CLAY. Gravel is medium and coarse subrounded limestone.
			0.40			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK)
						Trial Pit Complete at 0.40 m

Remarks:
1. Refusal of excavation on suspected bedrock at 0.4m depth.
2. Slow progress of excavation from 0.35m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP31** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton		1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.80m
Date Excavated : 22/04/2013	Level : -	Depth : 0.95m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
			0.20			TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.60			Firm brown slightly silty slightly gravelly CLAY with frequent cobbles of subangular limestone. Gravel is medium and coarse subrounded limestone.
			0.90			Dense grey and brown slightly clayey gravelly COBBLES of blocky and tabular micritic limestone.
			0.95			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 0.95 m

0 1 2 3 4 5

Remarks:
1. Refusal of excavation on suspected bedrock at 0.95m depth.
2. Slow progress of excavation from 0.8m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP32** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton		1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.80m
Date Excavated :	Level :	Depth : 0.65m / 0.60m
22/04/2013	-	

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
			0.00			TOPSOIL: Soft to firm dark brown silty clay with frequent rootlets.
			0.20			Firm brown slightly silty CLAY.
			0.30			Firm light brown silty gravelly CLAY with frequent cobbles of subangular and angular tabular limestone. Gravel is medium and coarse subangular limestone.
			0.45			Dense COBBLES and BOULDERS of angular, tabular micritic limestone.
			0.60			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
			0.65			Trial Pit Complete at 0.65 m

Remarks:
1. Refusal of excavation on suspected bedrock at 0.65m depth.
2. Slow progress of excavation from 0.5m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP33** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.30m
Date Excavated : 22/04/2013	Level : -	Depth : 0.55m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
			0.00			TOPSOIL: Soft to firm dark brown silty clay with frequent rootlets.
0.30	D		0.20			Firm light brown slightly silty gravelly CLAY with frequent tabular angular cobbles of micritic limestone. Gravel is medium and coarse subrounded limestone.
			0.50			
			0.55			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 0.55 m

Remarks:
1. Refusal of excavation on suspected bedrock at 0.55m depth.
2. Slow progress of excavation from 0.4m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP34** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.80m
Date Excavated : 22/04/2013	Level : -	Depth : 0.45m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.20			Firm light brown slightly silty gravelly CLAY with frequent tabular angular cobbles of micritic limestone. Gravel is medium and coarse subrounded limestone.
			0.40			
			0.45			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 0.45 m

Remarks:
1. Refusal of excavation on suspected bedrock at 0.45m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bd 426.58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP35** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.90m
Date Excavated : 23/04/2013	Level : -	Depth : 0.55m; 0.60m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
			0.20			TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.50			Firm light brown slightly silty gravelly CLAY with frequent tabular angular cobbles of micritic limestone from 0.4m depth. Gravel is medium and coarse angular micritic limestone.
			0.55			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 0.55 m

Remarks:
1. Refusal of excavation on suspected bedrock at 0.55m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426.56) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP36** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton		1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.90m
Date Excavated : 22/04/2013	Level : -	Depth : 0.95m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.20			Firm brown slightly silty CLAY with occasional roots.
			0.60			Firm light brown slightly silty gravelly CLAY with occasional angular limestone cobbles.
			0.90			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
			0.95			Trial Pit Complete at 0.95 m

Remarks:
1. Refusal of excavation on suspected bedrock at 0.95m depth.
2. Slow progress of excavation from 0.8m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP37** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton		1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.90m
Date Excavated : 22/04/2013	Level : -	Depth : 0.85m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
			0.20			TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.50			Firm light brown slightly silty gravelly CLAY with occasional subrounded and subangular cobbles. Gravel is fine, medium and coarse subangular limestone.
			0.80			Dense light grey COBBLES and BOULDERS of blocky micritic limestone. Boulders are 0.3 x 0.2m in diameter.
			0.85			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 0.85 m

0 1 2 3 4 5

Remarks:
1. Refusal of excavation on suspected bedrock at 0.85m depth.
2. Slow progress of excavation from 0.7m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426.58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP38** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton		1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	0 mE - 0 mN	1.90m
Date Excavated : 22/04/2013	Level : 0.0 mAOD	Depth : 0.50m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.20	-0.20		
			0.30	-0.30		Firm light brown slightly silty gravelly CLAY with occasional subrounded and subangular cobbles. Gravel is fine, medium and coarse subangular limestone.
			0.45	-0.45		
			0.50	-0.50		Dense light grey COBBLES and BOULDERS of blocky micritic limestone. Boulders are 0.2 x 0.3m in diameter.
						Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 0.50 m

0 1 2 3 4 5

Remarks:
1. Refusal of excavation on suspected bedrock at 0.5m depth.
2. Slow progress of excavation from 0.4m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP39** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton	DH	1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.90m
Date Excavated : 23/04/2013	Level : -	Depth : 0.55m; 0.60m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
			0.20			TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.50			Firm light brown slightly silty gravelly CLAY with frequent tabular angular cobbles of micritic limestone. Gravel is medium and coarse angular micritic limestone.
			0.55			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 0.55 m

Remarks:
1. Refusal of excavation on suspected bedrock at 0.55m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426.56) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP40** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton		1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.80m
Date Excavated : 22/04/2013	Level : -	Depth : 0.90m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft to firm dark brown silty clay with frequent rootlets.
			0.20			Firm light brown slightly silty gravelly CLAY. Gravel is medium and coarse subangular limestone.
			0.50			Dense COBBLES and BOULDERS of blocky angular and tabular micritic limestone. Boulders are 0.3 x 0.3m in diameter.
			0.85 0.90			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 0.90 m

0 1 2 3 4 5

Remarks:
1. Refusal of excavation on suspected bedrock at 0.9m depth.
2. Slow progress of excavation from 0.75m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426.58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP41** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton		1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.70m
Date Excavated : 22/04/2013	Level : -	Depth : 0.55m; 0.60m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
						TOPSOIL: Soft dark brown silty clay with frequent rootlets.
0.25	D		0.20			
			0.30			Firm light brown slightly silty gravelly CLAY. Gravel is medium and coarse subangular limestone.
						Dense COBBLES and BOULDERS of blocky angular and tabular micritic limestone. Boulders are 0.2 x 0.3m in diameter.
			0.50			
			0.55			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 0.55 m

0 1 2 3 4 5

Remarks:
1. Refusal of excavation on suspected bedrock at 0.55m depth.
2. Slow progress of excavation from 0.40m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP42** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton		1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.90m
Date Excavated : 22/04/2013	Level : -	Depth : 0.65m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
			0.00			TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.20			Firm light brown slightly silty gravelly CLAY. Gravel is medium and coarse subangular limestone.
			0.40			Dense COBBLES and BOULDERS of blocky angular and tabular micritic limestone. Boulders are 0.2 x 0.3m in diameter.
			0.60			
			0.65			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 0.65 m

Remarks:
1. Refusal of excavation on suspected bedrock at 0.65m depth.
2. Slow progress of excavation from 0.50m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP43** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton		1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	-	1.90m
Date Excavated : 23/04/2013	Level : -	Depth : 0.95m; 1.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
			0.00			TOPSOIL: Soft dark brown silty clay with occasional subangular gravel of fine subangular and subrounded limestone and frequent rootlets.
			0.20			MADE GROUND: Soft to firm light brown slightly silty slightly gravelly clay. Gravel is fine and medium subangular limestone.
			0.40			MADE GROUND: Firm silty gravelly clay with occasional cobbles of subangular limestone and brick. Gravel is medium and coarse subangular limestone wioth occasional brick and porcelain fragments.
0.80	D		0.80			Dense grey COBBLES and BOULDERS of blocky and tabular subangular micritic limestone.
			0.90			
			0.95			Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 0.95 m

Remarks:
1. Refusal of excavation on suspected bedrock at 0.95m depth.
2. Slow progress of excavation from 0.8m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name :	Project No.:	Trial Pit No.:
Land at Upper House Farm	**11164**	**TP44** Sheet 1 of 1

Location :	Client :	Logged By :	Scale :
Rhoose	Lambert Smith Hampton		1:25

Equipment :	Coordinates :	Dimensions
CAT 428E	0 mE - 0 mN	1.90m
Date Excavated : 23/04/2013	Level : 0.0 mAOD	Depth : 0.85m; 0.70m

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
			0.20	-0.20		TOPSOIL: Soft dark brown silty clay with frequent rootlets.
			0.50	-0.50		Soft to firm brown slightly silty CLAY
0.70	D		0.80	-0.80		Firm light brown slightly silty gravelly CLAY with occasional subrounded and subangular cobbles. Gravel is fine, medium and coarse subangular and subrounded limestone.
			0.85	-0.85		Strong light grey thinly to medium bedded slightly weathered micritic LIMESTONE with vertical tight joints (SUSPECTED LIMESTONE BEDROCK).
						Trial Pit Complete at 0.85 m

Remarks:
1. Refusal of excavation on suspected bedrock at 0.85m depth.
2. Slow progress of excavation from 0.70m depth.

Groundwater : Dry

Stability : Stable in the short term

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

AGS

HoleBASE 3.1 (Bld 426,58) Standard Trialpit Log v2 dated 27th Nov 03

APPENDIX D

LABORATORY CHEMICAL TEST RESULTS

Dan Hopkins
Integral Geotechnique
Integral House
7 Beddau Way
Castlegate Business Park
CF83 2AX

t: 02920807991
f: 02920862176
e: danh@integralgeotec.com

i2 Analytical Ltd.
Building 19,
BRE,
Garston,
Watford,
WD25 9XX

t: 01923 67 00 20
f: 01923 67 00 30
e: reception@i2analytical.com

Analytical Report Number : 13-41899

Project / Site name:	Land at Upper House Farm, Rhoose	**Samples received on:**	25/04/2013
Your job number:	11164/DH	**Samples instructed on:**	25/04/2013
Your order number:		**Analysis completed by:**	02/05/2013
Report Issue Number:	1	**Report issued on:**	02/05/2013
Samples Analysed:	7 soil samples		

Signed:

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Rexona Rahman
Customer Services Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

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.

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.

Analytical Report Number: 13-41899

Project / Site name: Land at Upper House Farm, Rhoose

Lab Sample Number				259582	259583	259584	259585	259586
Sample Reference				TP4	TP9	TP9	TP13	TP33
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.20	0.90	0.20	0.30
Date Sampled				19/04/2013	19/04/2013	19/04/2013	19/04/2013	19/04/2013
Time Taken				1000	1130	1130	1300	1430
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	25	20	17	26	23
Total mass of sample received	kg	0.001	NONE	0.46	0.63	0.50	0.47	1.3
Asbestos in Soil Screen	P/A	N/A	ISO 17025	Absent	Absent	Absent	Absent	-
General Inorganics								
pH	pH Units	N/A	MCERTS	6.8	7.3	8.0	7.2	7.1
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	100	ISO 17025	1500	1300	760	1200	1600
Water Soluble Sulphate as SO_4 (2:1)	g/l	0.0025	MCERTS	0.056	0.059	0.035	0.071	0.046
Water Soluble Sulphate as SO_4 (2:1)	mg/kg	2.5	MCERTS	56	59	35	71	46
Sulphide	mg/kg	1	MCERTS	< 1.0	< 1.0	1.2	< 1.0	< 1.0
Total Sulphur	mg/kg	100	NONE	660	590	260	590	520
Total Organic Carbon (TOC)	%	0.1	MCERTS	4.0	3.5	1.2	3.8	3.2
Loss on Ignition @ 450°C	%	0.2	MCERTS	14	9.7	4.7	12	11
Total Phenols								
Total Phenols (monohydric)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Phenanthrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Pyrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(a)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	11	7.4	14	13
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.1	0.6	0.6	0.9	1.0
Boron (water soluble)	mg/kg	0.2	MCERTS	2.3	2.5	0.4	3.2	2.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.9	0.4	< 0.2	0.8	0.7
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	42	17	20	44	37
Copper (aqua regia extractable)	mg/kg	1	MCERTS	36	25	21	31	31
Lead (aqua regia extractable)	mg/kg	2	MCERTS	40	23	9.8	37	28
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	29	20	21	27	29
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	54	22	18	55	44
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	110	63	41	91	84

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.

Analytical Report Number: 13-41899

Project / Site name: Land at Upper House Farm, Rhoose

Lab Sample Number				259587	259588			
Sample Reference				TP41	TP43			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.25	0.80			
Date Sampled				19/04/2013	19/04/2013			
Time Taken				0945	1245			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1			
Moisture Content	%	N/A	NONE	22	21			
Total mass of sample received	kg	0.001	NONE	2.0	0.45			
Asbestos in Soil Screen	P/A	N/A	ISO 17025	Absent	-			
General Inorganics								
pH	pH Units	N/A	MCERTS	7.2	7.5			
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1			
Total Sulphate as SO_4	mg/kg	100	ISO 17025	1200	930			
Water Soluble Sulphate as SO_4 (2:1)	g/l	0.0025	MCERTS	0.050	0.066			
Water Soluble Sulphate as SO_4 (2:1)	mg/kg	2.5	MCERTS	50	66			
Sulphide	mg/kg	1	MCERTS	< 1.0	< 1.0			
Total Sulphur	mg/kg	100	NONE	490	350			
Total Organic Carbon (TOC)	%	0.1	MCERTS	2.8	2.0			
Loss on Ignition @ 450°C	%	0.2	MCERTS	11	8.3			
Total Phenols								
Total Phenols (monohydric)	mg/kg	2	MCERTS	< 2.0	< 2.0			
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10			
Fluorene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Phenanthrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10			
Fluoranthene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Pyrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Benzo(a)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10			
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10			
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.6	< 1.6			
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	19	22			
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.1	1.0			
Boron (water soluble)	mg/kg	0.2	MCERTS	2.0	1.7			
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	1.1	0.6			
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0			
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	48	34			
Copper (aqua regia extractable)	mg/kg	1	MCERTS	34	35			
Lead (aqua regia extractable)	mg/kg	2	MCERTS	38	31			
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3			
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	30	31			
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0			
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	71	36			
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	97	110			

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.

Analytical Report Number : 13-41899

Project / Site name: Land at Upper House Farm, Rhoose

* 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 topsoil/loam 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 2 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
259582	TP4	None Supplied	0.20	Brown sandy topsoil with gravel and vegetation.
259583	TP9	None Supplied	0.20	Brown sandy topsoil with gravel and vegetation.
259584	TP9	None Supplied	0.90	Light brown clay and sand with gravel.
259585	TP13	None Supplied	0.20	Brown sandy topsoil with vegetation.
259586	TP33	None Supplied	0.30	Brown sandy topsoil with vegetation.
259587	TP41	None Supplied	0.25	Brown sandy topsoil with gravel and vegetation.
259588	TP43	None Supplied	0.80	Brown topsoil and clay with gravel and vegetation.

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.

Analytical Report Number : 13-41899

Project / Site name: Land at Upper House Farm, Rhoose

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos Screening in Soil	Screening of samples for Asbestos in Soil. Standard practice is to screen a representative 100 g of the sample provided for the presence/absence of asbestos and identification.	In-house method based on HSG 248. All samples are screened by optical microscopy and identification is carried out using dispersion staining and polarised light	A001-UK	W	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 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	D	MCERTS
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In-house method 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 3, 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	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Stones not passing through a 10 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. Sample results are not corrected for the stone content of the sample.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by extraction with water followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	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 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	L023-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	ISO 17025

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.

Analytical Report Number : 13-41899

Project / Site name: Land at Upper House Farm, Rhoose

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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	NONE

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.

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.

APPENDIX E

LABORATORY PHYSICAL TEST RESULTS

Laboratory Report

GEO Site & Testing Services Limited

Contract Number: 19305

Client's Reference: 11164/DH

Report Date: 09-05-2013

Client Name: Integral Geotechnique (Wales) Limited
7 Beddau Way,
Castlegate Business Park,
Caerphilly,
Cardiff,

CF83 2AX

Contract Title: Land At Upper House Farm, Rhoose

For the attention of: Dan Hopkins

Date Received: 25-04-2013
Date Commenced: 25-04-2013
Date Completed: 08-05-2013

Test Description	Quantity	Checked	Approved
Moisture Content 1377 : 1990 Part 2 : 3.2 *	3		
4 Point Liquid & Plastic Limit (LL/PL) Part 2 : 4.3 & 5.3 *	3		
pH Value of Soil 1377 : 1990 Part 3 : 9	3		
Water Soluble Sulphate 2:1 extract 1377 : 1990 Part 3 : 5	3		

Notes: **Observations and Interpretations are outside the UKAS Accreditation**
*** - Denotes test included in laboratory scope of accreditation**
 # - Denotes test carried out by approved contractor

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced in full, without the prior written approval of the laboratory.

Approved Signatories:
Paul Evans (Quality Manager), Emma Williams (Office Manager),
Benjamin Sharp (Laboratory Coordinator), Alex Wynn (Business Development Manager).

Client ref: 11164/DH

Location: Land At Upper House Farm, Rhoose

Contract Number: 19305-250413

Hole Number	Sample Number	Type	Depth (m)	Description of Sample*
TP6			0.70	Brown slightly fine gravelly silty CLAY.
TP17			0.40	Brown slightly (fine to medium) gravelly silty CLAY.
TP44			0.70	Brown fine gravelly clayey SILT.

Note: Results on this table are in summary format and may not meet the requirements of the relevant standards, additional information is held by the laboratory

GSTL
GEO Site & Testing Services Limited

Checked By

D P Evans
Approved By:

Date Approved: 8.5.13

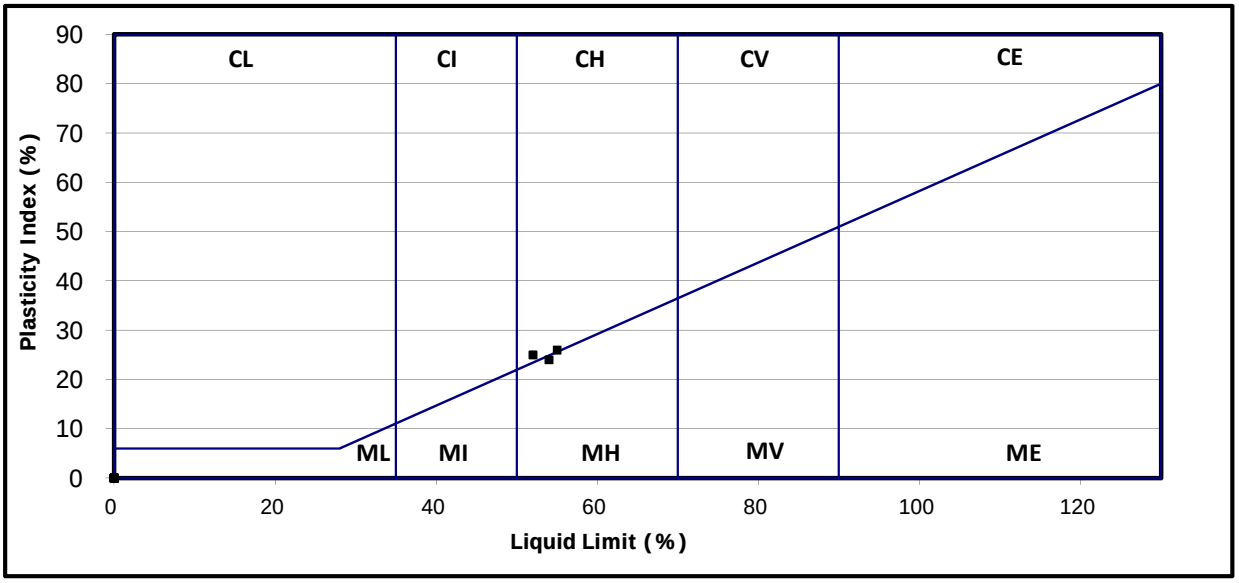
Test Report: **Method of the Determination of the plastic limit and plasticity index**
BS 1377 : Part 2 : 1990 Method 5

Client ref: **11164/DH**
Location: **Land At Upper House Farm, Rhoose**
Contract Number: **19305-250413**

Hole / Sample Number	Sample Type	Depth m	Moisture Content % Cl. 3.2	Liquid Limit % Cl. 4.3/4.4	Plastic Limit % Cl. 5.	Plasticity Index % Cl. 6.	% Passing .425mm	Remarks
TP6		0.70	33	55	29	26	96	CH High Plasticity
TP17		0.40	30	52	27	25	96	CH High Plasticity
TP44		0.70	34	54	30	24	93	MH High Plasticity

Symbols: **NP : Non Plastic** **# : Liquid Limit and Plastic Limit Wet Sieved**

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.
BS 5930:1999+A2:2010



GSTL
GEO Site & Testing Services Limited

Checked By

Approved By:

Date Approved: 8.5.13

UKAS TESTING 2788

Unit 4
Heol Aur
Dafen Ind Estate
Dafen
Carmarthenshire
SA14 8QN
Tel: 01554 784040
01554 750752
Fax: 01554 770529
01554 784041
Web: www.geo.uk.com

Certificate of Analysis

Date:	03/05/2013
Client:	Integral
Our Reference:	19305-250413
Client Reference:	11164/DH
Contract Title:	Land At Upper House Farm, Rhoose
Description: (Total Samples)	3
Date Received:	25/04/2013
Date Started:	26/04/2013
Date Completed:	02/05/2013
Test Procedures:	(B.S. 1377 : PART 3 : 1990)

Notes:

Solid samples will be disposed 1 month and liquids 2 weeks

Approved By:

Authorised Signatories:	Emma Williams Laboratory Office Manager	Wayne Honey Laboratory Technician	Paul Evans Quality Manager

Contract No: 19305-250413
Client Ref: 11164/DH
Location: Land At Upper House Farm, Rhoose
Date: 02/05/2013

GSTL
GEO Site & Testing Services Limited

SUMMARY OF CHEMICAL ANALYSIS

(B.S. 1377 : PART 3 : 1990)

Hole Number	Sample Number	Depth m	Sulphate Content SO3 (as SO_4)			Chloride Content		pH Value @ 25°C	Organic Matter Content %	Loss on Ignition %	Remarks
			Acid Soluble Sulphate as % SO_4	Aqueous Extract Sulphate as g/l SO_4	Ground-water g/l	Soluble Chloride as % equiv. NaCl	Ground-water g/l				
			Clause 5.5.	Clause 5.5.	Clause 5.4.	Clause 7.3	Clause 7.2	Clause 9.	Clause 3.	Clause 4.	
TP6		0.70		0.03 (0.03)				6.93			
TP17		0.40		0.01 (0.02)				7.11			
TP44		0.70		0.01 (0.02)				7.52			

NCP - No Chloride present

APPENDIX F

SUMMARY OF CHEMICAL TEST RESULTS

SUMMARY OF LABORATORY SOIL TEST RESULTS

Job No.: 11164
Site: Land at Upper House Farm, Rhoose
Soil Type: Natural Ground
Soil Organic Matter: 1%

METALS AND SEMI-METALS

No.	Location	Depth (m)	Arsenic (mg/kg)	Boron (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (Elemental) (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
1	TP4	0.20	16	2.3	1.1	0.9	42	< 4.0	36	40	< 0.3	29	< 1.0	54	110
2	TP9	0.20	11	2.5	0.6	0.4	17	< 4.0	25	23	< 0.3	20	< 1.0	22	63
3	TP9	0.90	7.4	0.4	0.6	< 0.2	20	< 4.0	21	9.8	< 0.3	21	< 1.0	18	41
4	TP13	0.20	14	3.2	0.9	0.8	44	< 4.0	31	37	< 0.3	27	< 1.0	55	91
5	TP33	0.30	13	2.2	1	0.7	37	< 4.0	31	28	< 0.3	29	< 1.0	44	84
6	TP41	0.25	19	2	1.1	1.1	48	< 4.0	34	38	< 0.3	30	< 1.0	71	97
	Screening Criteria Value		32.0	291.0	51.0	10.0	4.3	4.3	2330.0	450.0	1.0	130.0	350.0	75.0	3750.0
	Source of Screening Criteria Value		SGV	LQM	LQM	SGV	LQM	LQM	LQM	SGV	SGV	SGV	SGV	LQM	LQM

Intégral Géotechnique

SUMMARY OF LABORATORY SOIL TEST RESULTS

Job No.: 11164
Site: Land at Upper House Farm, Rhoose
Soil Type: Natural Ground
Soil Organic Matter: 1%

INORGANIC CHEMICALS & OTHERS

No.	Location	Depth (m)	Cyanide (mg/kg)	Loss on ignition, dried solids (%)	Moisture content at 30 C (%)	Monohydric phenols (mg/kg)	pH (pH units)	Sulphate as SO4 (g/l)	Sulphate Total as SO4 (mg/kg)	Sulphide (mg/kg)	Sulphur (Elemental) (mg/kg)	TOC by Ignition in O2 (%)
1	TP4	0.20	< 1	14	25	< 2.0	6.8	0.056	1500	< 1.0	#N/A	4
2	TP9	0.20	< 1	9.7	20	< 2.0	7.3	0.059	1300	< 1.0	#N/A	3.5
3	TP9	0.90	< 1	4.7	17	< 2.0	8	0.035	760	1.2	#N/A	1.2
4	TP13	0.20	< 1	12	26	< 2.0	7.2	0.071	1200	< 1.0	#N/A	3.8
5	TP33	0.30	< 1	11	23	< 2.0	7.1	0.046	1600	< 1.0	#N/A	3.2
6	TP41	0.25	< 1	11	22	< 2.0	7.2	0.05	1200	< 1.0	#N/A	2.8
	Screening Criteria Value		34.0	10.0	-	420.0	5.0	0.5	2000.0	250.0	5000.0	6.0
	Source of Screening Criteria Value		ATRISK	WAC	-	SGV	-	BRE	BRE	EA	EA	WAC

Intégral Géotechnique

SUMMARY OF LABORATORY SOIL TEST RESULTS

Job No.: 11164
Site: Land at Upper House Farm, Rhoose
Soil Type: Natural Ground
Soil Organic Matter: 1%

POLYAROMATIC HYDROCARBONS (PAH)

No.	Location	Depth (m)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(ghi)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(ah)anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(123cd)pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
1	TP4	0.20	< 0.10	< 0.20	< 0.10	< 0.20	< 0.10	< 0.10	< 0.05	< 0.20	< 0.05	< 0.20	< 0.20	< 0.20	< 0.20	< 0.05	< 0.20	< 0.20
2	TP9	0.20	< 0.10	< 0.20	< 0.10	< 0.20	< 0.10	< 0.10	< 0.05	< 0.20	< 0.05	< 0.20	< 0.20	< 0.20	< 0.20	< 0.05	< 0.20	< 0.20
3	TP9	0.90	< 0.10	< 0.20	< 0.10	< 0.20	< 0.10	< 0.10	< 0.05	< 0.20	< 0.05	< 0.20	< 0.20	< 0.20	< 0.20	< 0.05	< 0.20	< 0.20
4	TP13	0.20	< 0.10	< 0.20	< 0.10	< 0.20	< 0.10	< 0.10	< 0.05	< 0.20	< 0.05	< 0.20	< 0.20	< 0.20	< 0.20	< 0.05	< 0.20	< 0.20
5	TP33	0.30	< 0.10	< 0.20	< 0.10	< 0.20	< 0.10	< 0.10	< 0.05	< 0.20	< 0.05	< 0.20	< 0.20	< 0.20	< 0.20	< 0.05	< 0.20	< 0.20
6	TP41	0.25	< 0.10	< 0.20	< 0.10	< 0.20	< 0.10	< 0.10	< 0.05	< 0.20	< 0.05	< 0.20	< 0.20	< 0.20	< 0.20	< 0.05	< 0.20	< 0.20
	Screening Criteria Value		210.0	170.0	2300.0	3.1	0.8	5.6	44.0	8.5	6.0	0.8	260.0	160.0	3.2	1.5	92.0	560.0
	Source of Screening Criteria Value		LQM	LQM	LQM	LQM	LQM	LQM	LQM	LQM	LQM	LQM	LQM	LQM	LQM	LQM	LQM	LQM

Intégral Géotechnique

SUMMARY OF LABORATORY SOIL TEST RESULTS

Job No.: 11164
Site: Land at Upper House Farm, Rhoose
Soil Type: Made Ground
Soil Organic Matter: 1%

METALS AND SEMI-METALS

No.	Location	Depth (m)	Arsenic (mg/kg)	Boron (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (Elemental) (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
7	TP43	0.80	22	1.7	1	0.6	34	< 4.0	35	31	< 0.3	31	< 1.0	36	110
	Screening Criteria Value		32.0	291.0	51.0	10.0	4.3	4.3	2330.0	450.0	1.0	130.0	350.0	75.0	3750.0
	Source of Screening Criteria Value		SGV	LQM	LQM	SGV	LQM	LQM	LQM	SGV	SGV	SGV	SGV	LQM	LQM

Intégral Géotechnique

SUMMARY OF LABORATORY SOIL TEST RESULTS

Job No.: 11164
Site: Land at Upper House Farm, Rhoose
Soil Type: Made Ground
Soil Organic Matter: 1%

INORGANIC CHEMICALS & OTHERS

No.	Location	Depth (m)	Cyanide (mg/kg)	Loss on ignition, dried solids (%)	Moisture content at 30 C (%)	Monohydric phenols (mg/kg)	pH (pH units)	Sulphate as SO4 (g/l)	Sulphate Total as SO4 (mg/kg)	Sulphide (mg/kg)	Sulphur (Elemental) (mg/kg)	TOC by Ignition in O2 (%)
7	TP43	0.80	< 1	8.3	21	< 2.0	7.5	0.066	930	< 1.0	#N/A	2
	Screening Criteria Value		34.0	10.0	-	420.0	5.0	0.5	2000.0	250.0	5000.0	6.0
	Source of Screening Criteria Value		ATRISK	WAC	-	SGV	-	BRE	BRE	EA	EA	WAC

Intégral Géotechnique

SUMMARY OF LABORATORY SOIL TEST RESULTS

Job No.: 11164
Site: Land at Upper House Farm, Rhoose
Soil Type: Made Ground
Soil Organic Matter: 1%

POLYAROMATIC HYDROCARBONS (PAH)

No.	Location	Depth (m)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(ghi)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(ah)anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(123cd)pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
7	TP43	0.80	< 0.10	< 0.20	< 0.10	< 0.20	< 0.10	< 0.10	< 0.05	< 0.20	< 0.05	< 0.20	< 0.20	< 0.20	< 0.20	< 0.05	< 0.20	< 0.20
	Screening Criteria Value		210.0	170.0	2300.0	3.1	0.8	5.6	44.0	8.5	6.0	0.8	260.0	160.0	3.2	1.5	92.0	560.0
	Source of Screening Criteria Value		LQM	LQM	LQM	LQM	LQM	LQM	LQM	LQM	LQM	LQM	LQM	LQM	LQM	LQM	LQM	LQM

Intégral Géotechnique

FIGURES

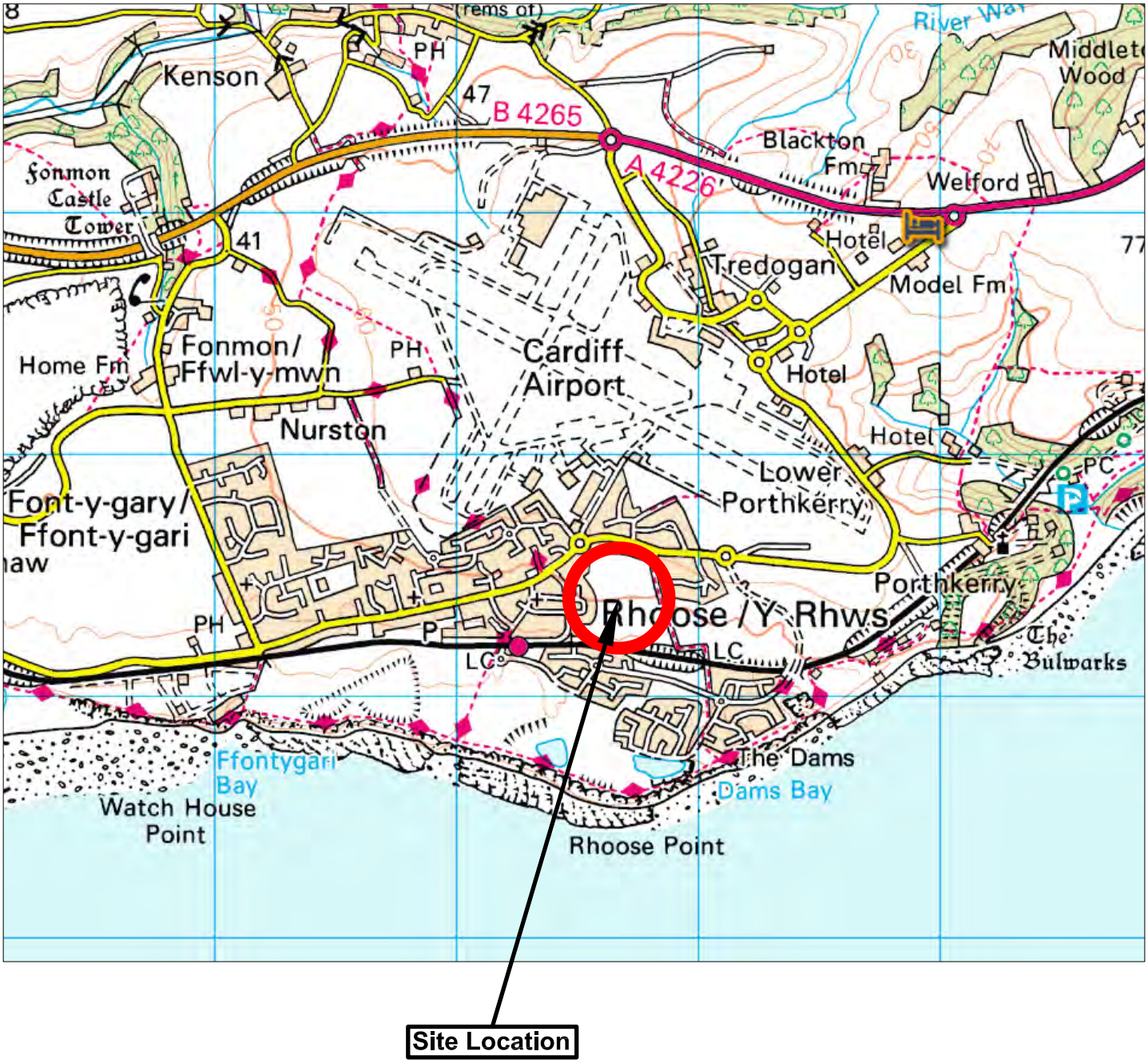


Figure 1: Site Location

Project: Land at Upper House Farm, Rhoose	Job no.: 11164	Intégral Géotechnique	Integral House, 7 Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX. Tel: 029 2080 7991
Client: Lambert Smith Hampton	Scale: 1:25,000 at A4		

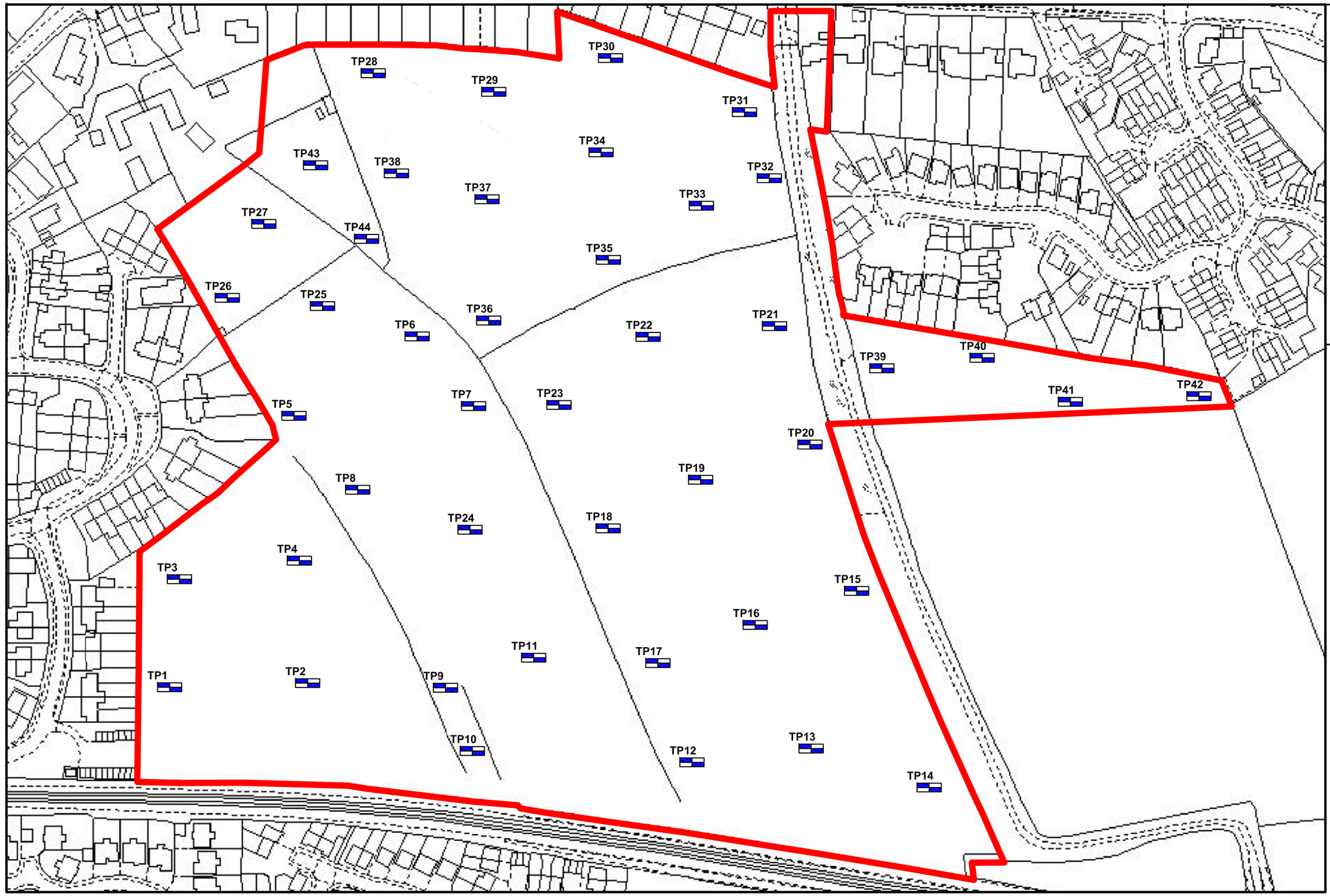


Figure 2: Trial Pit Location Plan

Project: Land at Upper House Farm, Rhoose	Job No.: 11164	Intégral Géotechnique
Client: Lambert Smith Hampton	Scale: 1:1500 at A3	Integral House, 7 Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX. Tel: 029 2080 7991