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Campdown, Land off College Road, Purbrook, Waterlooville, PO7 8AA

Geo-environmental site assessment

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RSK GENERAL NOTES

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1 INTRODUCTION

RSK Environment Limited (RSK) was commissioned by Radian to carry out a geo-environmental assessment of the land off College Road, Purbrook, Waterlooville, Hampshire, PO7 8AA known as Campdown and hereafter referred to as 'the site'. It is understood the site is being considered for low-rise residential redevelopment with car parking and areas of soft landscaping and sports facilities.

This report is subject to the RSK service constraints given in Appendix A.

1.1 Objective

The objective of the work is to evaluate client liabilities as part of a due diligence process to support a planning application and also to provide information for foundation design and associated works.

1.2 Scope

The scope of the investigation and layout of this report has been designed with consideration of CLR11 (Environment Agency, 2014) and BS 10175: 2013 (BSI, 2013) and guidance on land contamination reports issued by the Environment Agency (EA) (2010a).

The project was carried out to an agreed brief as set out in RSK's proposal (ref. 28720T01 (02)/rs, dated 28th July 2016). The scope of works for the assessment included:

- a preliminary risk assessment (PRA) to include a review of existing reports, geological, hydrogeological and hydrological information, a commercially available environmental database, and historical plans; correspondence with regulatory authorities; and a site walkover – this information is used to develop an initial conceptual site model to consider any potentially complete pollutant linkages
- a review of published geological data to assess ground stability
- an intrusive investigation consisting of 18 boreholes with falling head tests, laboratory analysis plus subsequent groundwater and gas monitoring
- development of a refined conceptual site model followed by generic quantitative risk assessment (GQRA) to assess complete pollutant linkages that may require the implementation of mitigation measures to facilitate redevelopment
- identification of outline mitigation measures for complete pollutant linkages or recommendations for further work

- interpretation of ground conditions and geotechnical data to provide recommendations with respect to foundations and infrastructure design
- a factual and interpretative report with recommendations for further works (i.e. undertake a remedial options appraisal to identify appropriate mitigation measures/produce a remedial implementation and verification plan) and/or remediation as necessary

1.3 Existing reports

No existing reports were made available to RSK prior to completing this report.

1.4 Limitations

The comments given in this report and the opinions expressed are based on the ground conditions encountered during the site work and on the results of tests made in the field and in the laboratory. However, there may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account. In particular, it should be noted that there may be areas of made ground not detected due to the limited nature of the investigation or the thickness and quality of made ground across the site may be variable. In addition, groundwater levels and ground gas concentrations and flows may vary from those reported due to seasonal, or other, effects.

2 THE SITE

2.1 Site location and description

The site is located south of South Downs College, College Road, Widley, Waterlooville, Hampshire PO7 8AA at National Grid reference 468760, 106730, as shown on **Figure 1**.

The area around the site is comprised of mixed land uses as detailed in **Table 1**.

Table 1: Site setting

To the north:	South Downs College, wooded land, some residential developments
To the east:	A3 Road, wooded land and residential developments.
To the south:	Open fields and a waste management company
To the west:	Residential developments.

The site covers approximately 26 hectares at an elevation of approximately 30-55m above Ordnance Datum (AOD) with large undulations across the site and comprises the following main attributes (some of which are shown on **Figure 2**):

- two large fields, with some disparate trees with hedgerows;
- the topography of the site falls generally to the east; and
- the fields are currently used for tenant pastoral farming for approximately 30 horses

2.2 Proposed development

The subject site is being considered for low-rise residential redevelopment with private gardens and car parking and sports facilities. The planned layout of the site is yet to be finalised.

3 PRELIMINARY RISK ASSESSMENT (PRA)

3.1 Site walkover

A site walkover was undertaken by RSK on the 2nd August 2016. Photographs and a site walkover checklist are provided in **Appendix C**. No potentially significant ground contamination was identified on or in the vicinity of the site. With respect to geotechnical issues, consideration will need to be given to construction on sloping ground and construction within the influencing distance of trees and hedgerows.

The site comprises of open undeveloped fields that are used as grazing land for horses. The west of the site is undulating with the east of the site sloping moderately down to the south. The south of the site is relatively flat lying. There are some moderately steep slopes present on site.

Japanese knotweed was not identified during the site visit although its absence cannot be discounted.

3.2 Ground conditions

3.2.1 Geology

Published records (British Geological Survey, 1998) for the area indicate the geology of the site to be characterised by the succession recorded in **Table 2**.

Table 2: Geology at the site

Geological unit	Description
Superficial Head Deposits	Polymict deposit: comprises gravel, sand and clay depending on upslope source and distance from source.
Wittering Formation (north east of the site only)	Greyish brown laminated clay; wavy- to lenticular-bedded sand interbedded with clay in equal proportions; and fine- to medium- grained sand and very silty clay above.
London Clay Formation	Bioturbated or poorly laminated, blue-grey or grey-brown, slightly calcareous, silty to very silty clay, clayey silt, with some layers of sandy clay.
Bognor Sand Member	Glauconitic bioturbated or cross-bedded fine and medium grained sands, partially cemented
Portsdown Chalk Member	White Chalk with flints and any thin marly beds (out crops approximately 50m south of the site.

The site is located close to the feathering margin of the Ports Down anticline. It is of note that the historical maps indicate 'chalk pits' close to the southern boundary of the site and hence, the thickness of the geological stratum in **Table 1** are likely to be very thin or absent.

Based on the history of the site, made ground is not expected to be present at the site although its absence cannot be discounted.

3.2.2 Radon

An environmental database report (Envirocheck report, August 2016) indicates that the site is not located within a radon 'Affected Area' as defined by the Documents of the National Radiological Protection Board (Radon Atlas of England and Wales, NRPB-W26-2002). Therefore, the risk of significant ingress of radon into structures on-site is considered to be low and no radon protective measures are required within new dwellings at the site.

3.2.3 Mining and quarrying

Evidence has been sought to identify any mining and quarrying operations, past and present, which have taken place in the vicinity of the site. The sources of information referenced in this element of the desk study include:

- the Envirocheck report
- records held by local authority/EA
- old Ordnance Survey maps and plans
- geological maps

With reference to the above data, there are no recorded mines or quarries within a 250m radius of the site, although a number of small gravel and chalk pits were present historically in the surrounding area. These features do not appear to have been infilled and remain on current mapping as disused features.

3.2.4 Landfilling and land reclamation

Evidence has been sought to identify any landfilling or land reclamation operations, past and present, which have taken place in the vicinity of the site. The sources of information referenced in this element of the desk study include:

- the Envirocheck report
- records held by local authority/EA
- old Ordnance Survey maps and plans
- geological maps

There are no records of landfill sites (former or current) within 250m of the site (i.e. within the planning consultation zone). Furthermore, there are no records of landfills within a 0.5km radius of the site.

3.3 Hydrogeology

3.3.1 Aquifer characteristics

Based on the published geological map referred to above, the hydrogeology of the site is likely to be characterised by the presence of shallow head deposits with the Wittering Formation and Bognor Sand Member also shown to be at shallow depths.

The presence of low permeability clay at relatively shallow depths beneath the site, while restricting downwards migration, may increase the potential for lateral migration of shallow groundwater and therefore mobile contamination, if present.

3.3.2 Vulnerability of groundwater resources

The site has been classified by the EA website to overlie a:

- secondary A aquifer: 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; and
- 'unproductive' strata: low permeability with negligible significance for water supply or river base flow.

The soils beneath the site are classified as having LOW (L) leaching potential.

L – soils where pollutants are unlikely to penetrate the soil layer either as a result of largely horizontal water movement or because the soil has the ability to attenuate diffuse pollutants. Lateral flow in these soils may contribute to groundwater recharge elsewhere in the catchment and generally have a high clay content.

3.3.3 Licensed groundwater abstraction

No groundwater abstractions have been identified within a 2km radius of the site.

In terms of aquifer protection, the EA generally adopts a three-fold classification of source protection zones (SPZ) for public supply abstraction wells. These are:

- zone 1 or 'inner protection zone' is located immediately adjacent to the groundwater source and is based on a 50-day travel time from any point below the water table to the source. It is designed to protect against the effects of human activity and biological/chemical contaminants that may have an immediate effect on the source

- zone 2 or 'outer protection zone' is defined by a 400-day travel time from a point below the water table to the source. The travel time is designed to provide delay and attenuation of slowly degrading pollutants.
- zone 3 or 'total catchment' is the area around the source within which all groundwater recharge is presumed to be discharged at the source.

Information available on the EA website indicates that the site lies within zone 1 and 1c of the groundwater SPZ.

3.4 Hydrology

3.4.1 Surface watercourses

The nearest identified surface feature is in the south west of the site. This is shown as a drainage ditch labelled as 'issues'.

3.4.2 Surface water abstractions

No surface water abstractions were identified within a 2km radius of the site.

3.4.3 Site drainage

Surface drainage from the site appears to be discharged into the drainage shown in the south and south west of the site. The site sloped to the south and so it is expected water will drain in this direction.

3.4.4 Preliminary flood risk assessment

The indicative floodplain map for the area, published by the EA, shows that the site does not lie within a designated floodplain.

3.4.5 Preliminary UXO risk assessment

Due to the location of the site, a preliminary Unexploded Ordnance (UXO) risk assessment was carried out for the site. The surrounding area suffered extensive bombing, however records were not found to confirm a strike within the site footprint. Records are acknowledged to be incomplete and may include omissions and errors. Therefore the site is considered to have a medium risk for UXO. A copy of the risk assessment is included in Appendix M.

3.5 History of site and surrounding area

The history of the land-use and development of the site and surrounding area has been assessed based on the following sources:

- historical maps within the environmental database from 1868 to 2016
- town plans
- internet search

Copies of OS and County Series maps are included in the environmental database report in Appendix L. Reference to historical maps provides invaluable information regarding the land use history of the site, but historical evidence may be incomplete for the period pre-dating the first edition and between successive maps.

The development history of the site and surrounding area from the above sources is detailed in Table 3.

Table 3: Summary of historical development

Date	Land use/features on site	Land use/features in vicinity of site (of relevance to the assessment)
1868-1870	Open fields and woodland towards the south and centre of site (Crookhorn Wood & Privet Wood).	Area around the site comprised predominately open undeveloped fields and woodland with several chalk pits and quarries, the closest of which was an old chalk pit adjacent to the southern boundary.
1898	The woodland was not longer present, with the site appearing to be occupied by open fields. A small pond was present in the south west of the site at this time and a larger pond and drainage ditch/stream present in the north west of the site.	No significant changes.
1932-1938	Site of ancient Roman villa and Roman road shown in the north of site. The pond in the south west of the site appeared to have been infilled.	Farlington Redoubt (a Victorian Fort) shown to be c. 250 m to the south west of the site.
1963	No significant changes	Morelands Camp constructed adjacent to the western boundary. Residential development c. 250 m to the east and south.
1982	By this time the large pond in the north west of the site appears to have been infilled along with part of the drainage ditch/stream. The remaining section of the stream concur with that remaining to the present day.	Further residential development to the east, south and west. The South Downs College shown adjacent to the northern boundary. City of Portsmouth Golf Course to the south west of the site.

		A3(M) road located adjacent to the eastern boundary. Commercial works buildings located c. 300 m to the north east.
2000	No significant changes	Farlington Reboubt labelled as a depot, believed to be a waste transfer station at this time.
2016	Site remains as open undeveloped land, with a drainage ditch in the south west.	The South Downs College is located adjacent to the northern boundary. Golf course along the southern boundary. A3(M) road along the eastern boundary. College Road along the western boundary with residential developments beyond.

3.6 Sensitive land uses

No national or internationally designated sensitive land uses such as sites of special scientific interest (SSSI) were identified in the vicinity of the site. There are five records shown on the Envirocheck report for Ancient and Semi-Natural Woodland within 250m of the site boundary. The site is also located within a nitrate vulnerable zone.

3.7 Local authority environmental health department information

An enquiry has been sent to the environmental health department of Havant Borough Council, however at the time of issue a response had not been received.

3.8 Initial conceptual model

The information presented in Sections 2 and 3.1 to 3.7, has been used to compile an initial conceptual model. The identified potential sources of contamination, associated contaminants and receptors have been considered with plausible pathways that may link them. The resulting potential pollutant linkages are considered in Section 3.8.4. The risk classification has been estimated in accordance with information in Appendix D.

3.8.1 Summary of potential contaminant sources

Potential sources and contaminants of concern are summarised in Table 4.

Table 4: Potential sources and types of contamination

Potential sources	Contaminants of concern
On-site historical	
Made ground associated with infilled ponds and drainage ditch.	Unknown fill material (but potentially including heavy metals, ash, clinker, sulphates, polycyclic aromatic hydrocarbons (PAHs), asbestos).
Off-site	
Historical developments and chalk pit adjacent to the site boundaries	Potential for unknown fill material (but potentially including heavy metals, ash, clinker, sulphates, polycyclic aromatic hydrocarbons (PAHs), asbestos).
Gas **sources and gas generation potential in line with BS8576**	
Onsite	
Made ground associated with infilled ponds and drainage ditch.	Carbon dioxide and methane
Off-site	
Potential off-site made ground - Old chalk pits in the surrounding area and golf course adjacent to the southern boundary	Carbon dioxide and methane

3.8.2 Sensitive receptors

Sensitive receptors at this site include:

- future site occupants
- adjacent site users
- vegetation
- potable water supply pipes
- groundwater beneath the site

Please note that construction workers have not been identified in the conceptual model as receptors because risks are considered to be managed through health and safety procedures including CDM regulations.

3.8.3 Summary of plausible pathways

The plausible pathways are summarised below:

- direct contact (soil, dust and vegetable ingestion, dermal contact, dust and fibre inhalation)
- ground gas and soil gas inhalation
- vertical and lateral migration including leaching

- root uptake
- chemical attack of infrastructure (including water supply pipes) and buildings.

3.8.4 Potentially complete pollutant linkages

An estimate of the risk associated with each linkage is summarised in Table 5. The risk classification has been undertaken in accordance with CIRIA C552 (Rudland et al., 2001), a summary of which is included in Appendix D.

Table 5: Risk estimation for potentially complete pollutant linkages

Potential Contaminant	Potential receptor	Possible pathway	Likelihood	Severity	Risk and justification
Contaminants of concern associated with potential on site and off site made ground infill materials	Future site users (Human health)	Ingestion of contaminated soil, dust, liquid Inhalation of contaminated dust and vapours/gases	Low likelihood	Medium	**Moderate/Low** If present, contaminants could affect future residents via direct contact pathways in areas of soft landscaping
	Adjacent site users		Unlikely	Medium	**Low** Potential for contamination at the site is considered relatively low based on the nature of the potential sources identified (infilled surface water features) and the anticipated cohesive nature of the underlying head deposits. Therefore the likelihood of adjacent users coming into contact with any contamination is considered low.
	Vegetation	Plant uptake	Low likelihood	Medium	**Moderate/Low** If present, contaminants could affect vegetation in areas of soft landscaping.
	Water supply pipes	Direct contact	Unlikely	Medium	**Low** If present, contaminants may affect plastic utilities via direct contact pathways.
	Secondary A Aquifer	Vertical migration-soil leaching	Unlikely	Medium	**Low** If present, contaminants may leach into underlying aquifer. However, given the cohesive nature of head deposits leaching of contaminants vertically and laterally would be expected to be limited.
Ground gases/ vapours (methane and carbon dioxide) associated with potential infill materials on	Building/ structures	Ingress into building structures	Unlikely	Severe	**Moderate/Low** Small quantities of potential made ground on site and off site may be producing ground gases, which have the potential to migrate and accumulate into buildings on site.

Potential Contaminant	Potential receptor	Possible pathway	Likelihood	Severity	Risk and justification
site and off site	Human health (future site users)	Inhalation of vapours/gases Ingress into building structures	Low likelihood	Medium	**Moderate/Low** Small quantities of potential made ground on site and off site may be producing soil and ground gases, which have the potential to migrate and accumulate in buildings on site, potentially causing harm to human health via inhalation.

The potential pollutant linkages with a risk of moderate/low or above that may drive site investigation works are:

- Contaminants of concern within soils across the site to future site user and vegetation
- Ground gas ingress into structures and buildings; and
- Inhalation of ground gases by future site users.

4 SITE INVESTIGATION METHODOLOGY

RSK carried out intrusive investigation work and subsequent ground gas and groundwater monitoring on 2nd, 4th and 19th August and 2nd and 16th September 2016 to further investigate the potential pollutant linkages identified in the outline conceptual model and to inform geotechnical constraints.

4.1 Sampling strategy and methodology

The techniques adopted for the investigation have been chosen considering the anticipated ground conditions, existing land use and the proposed development.

Drive-in sampler probeholes were drilled to provide information on underlying ground conditions at shallow depths and allow for installation of gas monitoring wells.

4.1.1 Investigation locations

The site work was carried out by RSK between 2nd and 4th August 2016, and comprised the activities summarised in Table 6, along with a justification for each exploratory hole location. The investigation and the soil descriptions were carried out in general accordance with BS5930: 2015 - Code of Practice for Ground Investigations. The exploratory hole logs and other site work records are presented in **Appendix E**.

The locations of the intrusive investigations are shown in Figure 2. The rationale for these locations is given in Table 6. The investigation was designed to provide information on the underlying ground conditions within the proposed areas of development.

Table 6: Exploratory hole and monitoring well location rationale

Investigation Type	Exploratory hole number	Response zone (m bTOC)	Rationale
Boreholes – by drive-in-sampler	BH1-BH18	NA	Non-targeted assessment to determine the contamination status of the ground and collect geotechnical samples
Monitoring well installations	BH1, BH3, BH5, BH7, BH9, BH13, BH15, BH16-BH18		Shallow ground gas and groundwater monitoring installations to assess the ground gas risk to the future site development

The investigation and the soil descriptions were carried out in general accordance with 'BS 5930:2015 Code of Practice for Ground Investigations' (BSI, 2015) and 8576. The exploratory hole records are presented in Appendix E.

The investigation points were located approximately by reference to a topographical survey.

4.1.2 Soil sampling, in-situ testing and laboratory analysis

Soils collected for laboratory analysis were collected in a variety of containers appropriate to the anticipated testing suite required. Samples were stored in accordance with the RSK quality procedures to maintain sample integrity and preservation and to minimise the chance of cross contamination.

Samples were taken and are recorded together with their depths on the exploratory hole records in Appendix E. The samples were transported to the laboratory in chilled cool boxes. Laboratory chain of custody forms can be provided if required. The rationale for soil sample chemical analysis is presented in Table 7.

Table 7: Scheduled analysis – soil

Exploratory hole no. and sample depth (m bgl)	Analyte	Rationale
BH1 at 0.10-0.20 BH3 at 0.10-0.20 BH5 at 0.50 BH7 at 1.10-1.20 BH8 at 0.10-0.20 BH10 at 0.10-0.20 BH12 at 0.10-0.20 BH14 at 0.10-0.20 BH15 at 0.10-0.20 BH16 at 0.10-0.20 BH17 at 0.10-0.20	Envirolab suite 2 (speciated PAHs, TPHCWG, pH, metals and sulphates)	General suite of contaminants
BH3 at 0.10-0.20 BH7 at 0.50 BH7 at 1.10-1.20 BH8 at 0.10-0.20 BH10 at 0.10-0.20 BH12 at 0.10-0.20 BH15 at 0.10-0.20 BH16 at 0.10-0.20 BH17 at 0.10-0.20	Asbestos screen	To assess for the presence of asbestos fibres

Standard penetration tests (SPTs) were carried out at 1m intervals in selected borehole locations. Test results are given on the borehole records presented in Appendix E. Disturbed samples were taken from each stratum encountered for subsequent geotechnical analysis.

4.1.3 Ground gas monitoring

In line with the conceptual model which indicating potential gas sources associated with on site and off site made ground infill materials, response zones were installed to target these sources and pathways as detailed in Table 5. Dual gas taps were installed in line with BS8576.

Three monitoring rounds have been undertaken to date to provide data to support the conceptual model. Monitoring included periods of falling atmospheric pressures and after/during rainfall.

An infrared gas meter was used to measure gas flow, concentrations of carbon dioxide (CO_2), methane (CH_4) and oxygen (O_2) in percentage by volume. Initial and steady state concentrations were recorded.

The atmospheric pressure before and during monitoring, together with the weather conditions, was recorded.

All monitoring results together with the temporal conditions are contained within Appendix F and discussed in Section 5.2.

4.1.4 In-situ infiltration testing

Borehole soakage (falling head) tests were undertaken within monitoring wells in BH1, BH5, BH7, BH9, BH15, BH16 and BH17 to ascertain the infiltration rate of the underlying strata. The results are presented in **Appendix N**.

5 GROUND CONDITIONS

The results of the intrusive investigation and subsequent laboratory analysis undertaken are detailed below. The descriptions of the strata encountered, notes regarding visual or olfactory evidence of contamination, list of samples taken, field observations of soil and groundwater, in-situ testing and details of monitoring well installations are included on the exploratory hole records presented in Appendix E.

5.1 Soil

The exploratory holes revealed that the site is underlain by a variable thickness of topsoil over Head Deposits with Bognor Sand Member and Lambeth Group also encountered at shallow depths. This appears to confirm the stratigraphical succession described within the initial conceptual model. For the purpose of discussion, the ground conditions are summarised in Table 8 and the strata discussed in subsequent subsections.

Table 8: General succession of strata encountered

Strata	Exploratory holes encountered	Depth to top of stratum m bgl	Thickness (m)
Topsoil	All locations	GL	0.20-0.35
Made ground	BH7	0.30	1.20
Head Deposits	BH1-BH7, BH9-BH18	0.20-1.50	0.70->3.25
Bognor Sand Member	BH8 and BH12	0.20-1.70	>3.25
Lambeth Group	BH13 and BH14	1.00-1.10	>2.45

5.1.1 Topsoil

The topsoil generally comprised of brown to orange brown sandy gravelly CLAY with gravel of flint. Brick was noted to be present in some locations. Topsoil comprising of sand was found to be present at BH8.

5.1.2 Made ground

Made ground was found to be present at BH7 only to a depth of 1.50m. This comprised of reworked orange brown clay with pockets of grey clay with brick and clinker encountered between 1.00-1.50m depth within a brown silty slightly gravelly clay.

5.1.3 Head deposits

This stratum was encountered from beneath the topsoil and made ground and comprised a layer of firm orange grey brown mottled sandy clay, with flint gravels in some locations, between 0.70m and >3.25m in thickness. The clay was assessed to be predominantly of medium shrinkage potential.

A summary of the in-situ and laboratory test results in this stratum is presented in **Table 9**.

Table 9: Summary of in-situ and laboratory test results for alluvial clay

Soil parameters	Range	Reference
Liquid limit (%)	35-68	**Appendix K**
Plasticity limit (%)	17-32	
Plasticity index (%)	18-40	
Modified plasticity index (%)	18-40	
Plasticity term	Intermediate to high	
Moisture content (%)	20-32	
SPT 'N' values	7-24	**Appendix E**
Stiffness term	Firm to stiff	

5.1.4 Bognor Sand Member

This stratum was encountered at a depth of between 0.2m and 1.7m below ground level and is greater than 3.25m in thickness. The Bognor Sand Member comprised of an orange brown silty sand.

5.1.5 Lambeth Group

Lambeth Group was encountered at a depth of 1.0m to 1.1m below ground level to the full depth of investigation in BH13 and BH14. Based on the site descriptions and in-situ testing carried out this stratum can be described as a firm to very stiff overconsolidated red grey mottled clay of medium plasticity.

A summary of the in-situ and laboratory test results in this stratum is presented in **Table 10**.

Table 10: Summary of in-situ and laboratory test results for London Clay

Soil parameters	Range	Reference
Liquid limit (%)	49	**Appendix K**
Plasticity limit (%)	23	
Plasticity index (%)	26	
Modified plasticity index (%)	23.4	
Plasticity term	Intermediate	
Moisture content (%)	16	
SPT 'N' values	8-16	**Appendix E**
Stiffness term	Firm to very stiff	

5.1.6 Groundwater

Groundwater was encountered during the investigation as detailed in Table 11.

Table 11: Groundwater results during investigation

BH	Stratum	Strike (m bgl)
BH4	Head deposits	1.20-1.25
BH15	Head deposits	2.00-2.50

It should be noted that groundwater levels might fluctuate for a number of reasons including seasonal variations. Ongoing monitoring would be required to establish both the full range of conditions and any trends in groundwater levels.

5.1.7 Results of soakaway testing

The results of soakaway testing are summarised in **Table 12**.

Table 12: Borehole soakage test results

Monitoring well	Geological unit	Test results (m/s)
BH1	Head Deposits	1.65×10^{-7}
BH5	Head Deposits	1.2×10^{-7}
BH7	Head Deposits	1.38×10^{-7}
BH9	Head Deposits	2.82×10^{-7}
BH15	Head Deposits	4.05×10^{-7}
BH16	Head Deposits	1.24×10^{-7}
BH17A (test 1)	Head Deposits	5.37×10^{-7}

Monitoring well	Geological unit	Test results (m/s)
BH17B (test 2)	Head Deposits	8.28×10^{-7}

The above results indicate that the Head Deposits are of low permeability i.e. poor drainage characteristics.

5.1.8 Visual/olfactory evidence of soil and groundwater contamination

No visual or olfactory evidence of soil and groundwater contamination was identified during the investigation.

5.2 Ground gas regime

The results of the ground gas monitoring and testing carried out are given in **Appendix F**. The minimum and maximum results are recorded in **Table 13**.

Table 13: Summary of ground gas monitoring results

Borehole	Response zone/strata	Number of monitoring visits	Methane (%)	Carbon dioxide (%)	Oxygen (%)	Flow rate (l/hr)	Water level (m b TOC)	Atmospheric pressure (mbar)
BH1	Head	3	0.1	2.7	18.9	0.1	1.78	999
BH3		3	0.1	4.0	18.3	<0.1	2.09	999
BH5		3	0.1	5.4	17.1	0.1	1.77	999
BH7		3	0.1	5.9	16.8	0.1	1.10	999
BH9		3	0.1	1.7	19.8	<0.1	1.00	999
BH13	Lambeth	3	0.1	1.3	19.5	<0.1	1.35	999
BH15	Head	3	0.1	0.9	20.2	0.1	0.17	999
BH16		3	0.1	1.5	19.8	0.1	1.58	999
BH17		3	0.1	2.3	17.2	0.1	DRY	999
BH18		3	0.1	2.5	18.1	0.1	1.95	999

5.3 Refinement of the initial conceptual site model

The investigation showed that the site is underlain with a variable thickness of topsoil underlain by Head Deposits across the majority of the site. The Bognor Sand Member

and Lambeth Group were also found to be present within the southern areas of the site. This confirms that described in the initial conceptual site model.

Groundwater was found to be present in two locations during the initial investigation and all but two monitoring well locations during the first gas monitoring round.

Based on the findings of the investigation the following pollutant linkages require further assessment:

- Direct contact with impacted soil by future residents
- Inhalation exposure of future residents to asbestos fibres
- Uptake of contaminants by vegetation potentially impacting plant growth
- Contaminants permeating potable water supply pipes
- Potential ground gas generation beneath the site.

6 QUANTITATIVE RISK ASSESSMENT

In line with CLR11 (EA, 2014), there are two stages of quantitative risk assessment, generic and detailed. The GQRA comprises the comparison of soil, groundwater, soil gas and ground gas results with generic assessment criteria (GAC) that are appropriate to the linkage being assessed. This comparison can be undertaken directly against the laboratory results or following statistical analysis depending upon the sampling procedure that was adopted.

6.1 Linkages for assessment

Section 5.3 presents the refined conceptual model which identified the linkages that required assessment after the findings of the site investigation had been considered. These linkages together with the method of assessment are presented in Table 14.

Table 14: Linkages for generic quantitative risk assessment

Potentially relevant pollutant linkage	Assessment method
1. Direct contact with impacted soil by future residents	Human health GAC in Appendix H for a proposed residential end use with private gardens since proposed end use includes residential gardens. Direct comparison to the GAC undertaken due to a number of different soil types tested across the site.
2. Inhalation exposure of future residents to asbestos fibres	Qualitative assessment based on the asbestos minerals present, their form, concentration, location and the nature of the proposed development.
3. Uptake of contaminants by vegetation potentially impacting plant growth	Comparison of soil data to GAC in Appendix I
4. Contaminants permeating potable water supply pipes	Comparison of soil data to GAC in Appendix J for plastic water supply pipes using UKWIR (2010) guidance.
5. Concentrations of methane and carbon dioxide in ground gas entering and accumulating in: depressions and excavations that could affect workers enclosed spaces or small rooms in new buildings, which could affect future residents. In the case of methane this could create a potentially explosive atmosphere, while	Gas screening values (GSV) have been calculated using maximum methane and carbon dioxide concentrations with maximum flow rates recorded at the site. The GSV have been compared with the generic Traffic Lights, as presented within the NHBC ground gases guide (Boyle and Witherington, 2007) and the aforementioned CIRIA report C665, owing to the development comprising low-rise housing with suspended floors.

Potentially relevant pollutant linkage	Assessment method
death by asphyxiation could result from carbon dioxide.	

6.2 Methodology and results

The methodology and results of the GQRA are presented for each relevant pollutant linkage in turn.

6.2.1 Direct contact with impacted soil by future residents

Due to the amount of different soil types tested across the site, results have been compared directly against the GAC for Human Health. A Soil Organic Matter (SOM) of 1% has been used as the most conservative approach.

All samples are below the GAC for Human Health at 1% SOM. This shows that the soils tested across the site are suitable for use.

Based on the above assessment, no potentially significant risks associated with the soil contamination have been identified and it is considered that the site may be regarded as suitable for the proposed end use.

6.2.2 Inhalation exposure of future residents to asbestos fibres

The visual inspection at the laboratory identified no materials suspected of potentially containing asbestos and the scheduled laboratory screening for asbestos found no detectable asbestos fibres within the samples of topsoil and made ground.

6.2.3 Uptake of contaminants by vegetation potentially inhibiting plant growth

The results have been compared with the GAC presented in Appendix I for this linkage. The results indicate that a relevant pollutant is unlikely to exist associated with phytotoxic effects.

6.2.4 Impact of organic contaminants on potable water supply pipes

For initial assessment purposes, the results of the investigation have been compared with the GAC presented in Appendix J for this linkage, which are reproduced from *UKWIR Report 10/WM/03/21. Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites* (UKWIR, 2010).

The results indicate that a relevant linkage is unlikely to exist associated with organic contaminants and therefore pollutant polyethylene (PE) and polyvinyl chloride (PVC) water supply pipes are expected to be suitable for use on the development.

It should be noted that at the time of this investigation the future routes of water supply pipes had not been established, hence the investigation and sampling strategy may not be fully compliant with UKWIR recommendations. Consequently, a targeted investigation and specific sampling/analytical strategy may be required at a later date once the route(s) of the supply pipe(s) is/are known. In addition, it is recommended that the relevant water supply company be contacted at an early stage to confirm its requirements for assessment, which may not necessarily be the same as those recommended by UKWIR.

6.2.5 Ground gas assessment

The results have been assessed in accordance with the guidance provided in BS8576, NHBC guidance and *CIRIA Report C665*. In the assessment of risks and selection of appropriate mitigation measures, both reports highlight the importance of the conceptual model.

6.2.5.1 General

CIRIA C665 identifies two types of development, termed Situation A (modified Wilson and Card method), appropriate to all development excluding traditional low-rise construction, and Situation B (National House-Building Council, NHBC) only appropriate to traditional low-rise construction with ventilated sub-floor voids.

Both methods are based on calculations of the limiting borehole gas volume flow for methane and carbon dioxide, renamed as the gas screening value (GSV). The GSV (litres of gas per hour) is calculated by multiplying borehole flow rate (litres per hour) and gas concentration (percent by volume).

In both situations, it is important to note that the GSV thresholds are guideline values and not absolute. The GSV thresholds may be exceeded in certain circumstances, if the site conceptual model indicates it is safe to do so. Similarly, consideration of additional factors such as very high concentrations of methane, should lead to consideration of the need to adopt a higher risk classification than the GSV threshold indicates.

The site is to be redeveloped with traditional low-rise residential housing and therefore falls under Situation B.

Situation B is a characterisation system developed by the NHBC (Boyle and Witherington, 2007), which relates only to low rise housing development constructed with a clear ventilated underfloor void. The system provides a risk-based approach that is designed to allow an identification of the required gas protection measures for low-rise housing by comparing the measured gas emission rates to generic "Traffic Lights". The Traffic Lights include typical maximum concentrations that are provided for initial screening purposes and risk-based GSVs for situations where the typical maximum concentrations are exceeded. Based on the typical maximum gas concentrations and the GSVs, the appropriate Traffic Light, ranging from Green through Amber 1 and Amber 2 to Red, is determined from Table 8.7 of CIRIA C665.

6.2.5.2 *Assessment of data*

The site is to be redeveloped with traditional low-rise residential housing and therefore falls under Situation B. The gas monitoring data to date has identified a maximum methane concentration of 0.1% and a maximum concentration of carbon dioxide of 5.9%. A maximum gas flow rate of 0.1l/hr has been recorded. The calculated GSV for methane is 0.0001 l/hr and the GSV for carbon dioxide is 0.59l/hr. Based on the GSVs the site has been characterised as Green due to the lack of flow recorded across the site.

6.3 Environmental assessment conclusions

The results of the GQRA indicate that relevant pollutant linkages are absent and therefore the site is suitable for the proposed end use.

7 GEOTECHNICAL SITE ASSESSMENT

7.1 Engineering considerations

It is understood that consideration is being given to redevelopment of the site with low-rise housing and associated infrastructure with sports facilities in the south. At this stage no specific information relating to building loads has been provided and therefore a wall loading of 100kN/m has been considered.

7.2 Geotechnical hazards

A summary of commonly occurring geotechnical hazards is given in **Table 15** together with an assessment of whether the site may be affected by each of the stated hazards.

Table 15: Summary of main potential geotechnical hazards that may affect site

Hazard category (excluding contamination issues)	Hazard status based on investigation findings and proposed development			Engineering considerations if hazard affects site
	Found to be present on site	Could be present but not found	Unlikely to be present and/or affect site	
Sudden lateral changes in ground conditions		X clay and sand		Likely to affect ground engineering and foundation design and construction
Shrinkable clay soils	X	sandy clay of medium shrinkage potential		Design to NHBC Standards Chapter 4.
Highly compressible and low bearing capacity soils, (including peat and soft clay)			X	Likely to affect ground engineering and foundation design and construction
Silt-rich soils susceptible to rapid loss of strength in wet conditions		X		Likely to affect ground engineering and foundation design and construction
Running sand at and below water table		X		Likely to affect ground engineering and foundation design and construction
Ground subject to or at risk from landslides	X			Likely to require special stabilisation measures
Ground subject to peri-glacial valley cambering			X	Likely to affect ground engineering and foundation

Hazard category (excluding contamination issues)	Hazard status based on investigation findings and proposed development			Engineering considerations if hazard affects site
	Found to be present on site	Could be present but not found	Unlikely to be present and/or affect site	
with gulls possibly present				design and construction
Ground subject to or at risk from coastal or river erosion			X	Likely to require special protection/stabilisation measures
High groundwater table (including waterlogged ground)		X		May affect temporary and permanent works
Rising groundwater table due to diminishing abstraction in urban area			X	May affect deep foundations, basements and tunnels
Karstic dissolution features (including 'swallow holes' in Chalk terrain). Chalk pits noted along the southern boundary		X		May affect ground engineering and foundation design and construction –
Underground mining (i.e. associated with chalk)			X	Unlikely but cannot be discounted. Likely to require special stabilisation measures
Existing sub-structures (e.g. tunnels, foundations, basements, and adjacent sub-structures)			X	Likely to affect ground engineering and foundation design and construction
Filled and made ground (including embankments, infilled ponds and quarries)			X	Likely to affect ground engineering and foundation design and construction
Adverse ground chemistry (including expansive slags and weathering of sulphides to sulphates)			X	May affect ground engineering and foundation design and construction

7.3 Foundations

7.3.1 General suitability

Given the presence of competent natural soils at a relatively shallow depth, it is considered that the ground conditions are suitable for the adoption of traditional, spread type foundations for low-rise housing.

7.3.2 Spread foundations

The recommendations for the design and construction of spread foundations in relation to the ground conditions are set out in **Table 16**.

Table 16: Design considerations

Design/construction considerations	Design/construction recommendations
Founding stratum	Head Deposit typically comprising firm sandy Clay (PI_m typically <40%) and sand.
Depth	Foundations must be taken down through any made ground (generally absent although to 1.5m depth in BH7) and founded at a minimum depth of 0.9m below finished ground level and at least 0.1m into the founding stratum or to any greater depth as required in respect of the special design considerations given below.
Special design considerations	Owing to the presence of shrinkable clay soils, foundations must be designed taking into account all the normal precautions, including minimum founding depths, to minimise the risk of future foundation movements in accordance with NHBC standards, Chapter 4.2, 'Building near trees'. The findings of the ground investigation indicate that foundations should be designed for shrinkable soils of medium volume change potential. There is the potential for lateral variation of ground condition i.e. clay and sand. Where variable ground conditions are encountered then nominal mesh reinforcement must be provided to foundations to overcome the potential for differential settlement. In the vicinity of BH7, beneath made ground to 1.5m depth, soft silty clay was encountered to the full depth of boring of 3mbgl. It is recommended that supplementary investigations i.e. trial pits be undertaken to assess more thoroughly ground conditions in this area. Piled foundations may prove to be a more viable option for affected plots in this area.
Bearing capacity	Spread foundations with a width of up to1m and constructed on the firm sandy Clay at a minimum depth of 0.9m may be designed using a net allowable bearing pressure of 100kN/m^2. The allowable bearing capacity includes an overall safety factor of 3

Design/construction considerations	Design/construction recommendations
	against bearing capacity failure and with total settlements associated with the bearing pressure estimated to be less than 25mm.
Stability of excavations	Generally, the boreholes remained stable during drilling, however no trial pits have been undertaken so no comment can be made on the stability of excavations. Whilst no shallow groundwater seepages were encountered at the time of the investigation, the sides of excavations could potentially be unstable associated with any seepages and groundwater 'issues', see **Section 7.3.7**.
Dewatering	The cohesive nature of the soils encountered across the majority of the site suggests that pumping from open sumps should be sufficient to keep the excavations reasonably dry.
Construction considerations	Proposed formation soils must be closely inspected. Should any made ground, soft organic or otherwise unsuitable materials be encountered then the foundation must be locally deepened to a suitable founding stratum.

7.3.3 Foundation works risk assessment

It is considered that a foundation works risk assessment report will not be because concentrations of contaminants of potential concern (COPC) within made ground and natural soils were typically below corresponding GAC.

7.3.4 Floor slabs

Whilst the shallow ground conditions are considered potentially suitable for the adoption of ground bearing floors, it is recommended that ground floors be suspended throughout. Suspended floors must be designed in accordance with NHBC standards, Chapter 5.2, 'Suspended ground floors'.

7.3.5 Roads, hardstanding and drainage

In the 1m to 1.5m below the proposed finished ground level, the boreholes have revealed a soil profile comprising topsoil over sandy clay and sand. In pavement design terms, the groundwater conditions are anticipated to comprise a low water table, i.e. at least 1m below the pavement formation level.

The potentially poorest sub-grade material within this profile is considered to be the sandy clay (PI_m typically <40%).

The estimated minimum, equilibrium soil-suction, California bearing ratio (CBR) value for the soils and groundwater conditions described above under a completed pavement is 2% to 3%, based upon Table C1 in TRRL (1984) Report LR1132. It is recommended that further assessment be carried out on the proposed formation soils to confirm CBR for pavement design.

7.3.6 Chemical attack on buried concrete

This assessment of the potential for chemical attack on buried concrete is based on current BRE guidance. The desk study and site walkover indicate that, for the purposes of this assessment of the aggressive chemical environment, the site should be considered as a Greenfield site where the underlying geology is not known to contain significant pyrite that could result in additional sulphate when disturbed during the earthworks phase of construction.

The "Characteristic value" is the highest result, or the mean of the two highest results if more than 5 results from the same stratum are available. The maximum water-soluble sulphate content in soil of 0.287g/l has been taken as the characteristic value. Result One for the Design Sulphate Class for the site is therefore DS-1. In the absence of shallow groundwater, there is no Result 2.

From consideration of the characteristic pH value and assuming static groundwater conditions, an Aggressive Chemical Environment for Concrete classification of AC-1_s may be adopted for design purposes.

7.3.7 Slopes

The site comprises sloping land albeit relatively shallow slopes. It is recommended that once construction levels have been confirmed, a preliminary slope stability assessment is carried out. Should a more detailed slope stability assessment be required then supplementary investigations comprising boreholes and groundwater monitoring wells will be required.

It is noted the presence of 'issues' on the Envirocheck report 1:10,000 scale geological map (2000) that is indicative of groundwater seepages at the surface. Consideration will need to be given to the potential for groundwater seepages on slope stability, foundation construction and site drainage.

7.3.8 Soakaways

Based upon the results of the soakaway tests presented in **Section 5.1.7**, the ground conditions associated with the Head Deposits have relatively poor drainage characteristics (1.2×10^{-7} to 8×10^{-7}m/sec). Subject to further assessment, the more granular deposits encountered in the vicinity of BH8, BH12, BH15 could potentially be suitable.

8 REUSE OF MATERIALS AND WASTE

8.1 Reuse of suitable materials

Under the Waste Framework Directive naturally occurring soils are not considered waste if re-used on the site of origin for the purposes of development.

In accordance with the definition provided in the Waste Framework Directive, materials are only considered waste if 'they are discarded, intended to be discarded or required to be discarded, by the holder'. Thus, soils that are not of clean and natural origin, i.e. made ground (whether contaminated or not) and other materials such as recycled aggregate, do not become waste until the aforementioned criteria are met.

The Definition of Waste: Development Industry Code of Practice (CL:AIRE, 2011) (CoP) was developed in consultation with the Environment Agency and development industry to enable the re-use of materials under certain scenarios and subject to demonstrating that specific criteria are met. The current re-use scenarios covered by the CoP comprise:

- Re-use on the site of origin (with or without treatment)
- Direct transfer of clean and natural soils between sites
- Use in the development of land other than the site of origin following treatment at an authorised Hub site (including a fixed Soil Treatment Facility).

The importation of made ground soils (irrespective of contamination status) or crushed demolition materials is not currently permitted under the CoP and requires either a standard rules environmental permit or a U1 waste exemption (see below).

In the context of excavated materials used on sites undergoing development, four factors are considered to be of particular relevance in determining if the material is a waste or when it ceases to be waste:

- the aim of the Waste Framework Directive is not undermined, i.e. if the use of the material will create an unacceptable risk of pollution of the environment or harm to human health it is likely to be waste
- the material is certain to be used
- the material is suitable for use both chemically and geotechnically
- only the required quantity of material will be used.

The CoP requires the preparation of a materials management plan (MMP) that confirms the above factors will be met. This plan needs to be reviewed by a 'Qualified Person' (QP) who will then issue a declaration form to the EA. As the project progresses, data must be collated and on completion a verification report produced that shows the MMP was followed and describes any changes.

The MMP establishes whether specific materials are classified as waste and how excavated materials will be treated and/or re-used in line with the CoP. The MMP is likely to form part of the site waste management plan.

As the site has not been previously developed all excavation works are expected to generate only clean and naturally occurring soils. Under the Waste Framework Directive naturally occurring soils are not considered waste if re-used on the site of origin. However, if it is proposed to import clean and naturally occurring soils direct from another site, an MMP would need to be in place at the receiving site.

8.2 Treatment to meet suitable-for-use criteria

Where materials do not meet the suitable for use criteria it may be possible to treat them under an environmental permit (mobile treatment licence) to enable them to be reused onsite.

To enable the treatment options to be determined, an options appraisal and a remediation strategy document will be necessary to support discussion of the issues with regulators and third parties.

8.3 Reuse of waste materials

If material is discarded as waste then its reuse on site may still be possible. Waste soils and recycled aggregate can be reused on site under a standard rules environmental permit or a U1 waste exemption from the Environmental Permitting (England and Wales) Regulations 2010 provided that they are suitable for the proposed use, i.e. not cause harm to human health or the environment. However, it should be noted that these have strict limits on the quantity of material that can be reused.

8.4 Wastes for landfill disposal

Wastes require pre-treatment prior to disposal at landfill. Pre-treatment must be a physical, thermal, chemical or biological process (including sorting) that changes the characteristics of the waste to reduce its volume, reduce its hazardous nature, facilitate its handling and enhance its recovery.

The latest, edition of the EA's 'Technical Guidance WM3' (2015) Guidance on the classification and assessment of waste, requires that within a mixed waste the separately identifiable wastes are assessed separately. Mixing of different types of hazardous waste and hazardous waste with other waste substances is prohibited under the Waste Framework Directive. Wastes that have been mixed must be separated whenever possible.

It is best practice to provide your waste carrier (or the disposal site) with details of how the waste has been treated. Your waste carrier may provide a pre-treatment confirmation form or space on the waste transfer note to detail the pre-treatment.

The classification of waste soil is a two-stage process, the first being an assessment of whether the soil is considered hazardous or not following the guidance within Technical Guidance WM3. For off-site disposal to landfill the results of Waste Acceptance Criteria (WAC) testing must then be reviewed to establish if the soil is acceptable at the relevant class of landfill or requires pre-treatment to reduce specific hazardous properties.

8.4.1 Waste acceptance criteria

All inert, stable non-reactive hazardous and hazardous wastes have limit values (waste acceptance criteria) set out in legislation that must be met before that class of landfill can accept the waste. Currently, no WAC are in place for non-hazardous waste.

Soil and other materials that are found not to be hazardous may be classified as either non hazardous or inert. In order to determine whether they can be classed as inert the soil must be tested and found to be below the inert waste acceptance criteria.

8.4.2 Waste sampling plan

Technical Guidance WM3 sets out in Appendix D requirements for waste sampling. It is a legal requirement to correctly assess and classify waste. The level of sampling should be proportionate to the volume of waste and its heterogeneity. At this stage RSK consider that the level of soil sampling is/is not sufficient to robustly/fully categorise the material.

RSK recommends that a Sampling Plan be prepared to support any waste classifications and hazardous waste assessments, prior to development.

8.4.3 Preliminary waste assessment

Given the level of data obtained, scale of the development and heterogeneity of the site soils the following assessment should be considered indicative and further assessment should be undertaken following the preparation of a Waste Sampling Plan.

Envirolab (an RSK company) has developed a waste soils characterisation assessment tool (HASWASTE), which follows the guidance within Technical Guidance WM3. The analytical results have been assessed using this tool for potential off-site disposal of materials in the future. The results are presented in Appendix O.

None of the samples were classified as hazardous waste. Therefore to determine whether waste might be classified as inert or non hazardous WAC testing will need to be undertaken.

8.4.4 Asbestos within waste soils

The latest, edition of Technical Guidance WM3, requires that within a mixed waste the separately identifiable wastes be assessed separately.

For instance, where waste soil contains identifiable pieces of asbestos (visible to the naked eye) the asbestos should, where feasible, be separated from the soil and classified separately.

Samples of potential asbestos containing material were collected from site and analysed for the presence of asbestos, the results of which are presented in Appendix G. Analysis confirmed that asbestos is not present within samples collected across the site.

8.5 Landfill tax

Waste producers disposing of material to landfill are required to pay landfill tax by HM Revenue and Customs.

The tax is chargeable by weight (tonnage) and two rates apply, either standard or lower rate. The lower rate only applies to those less polluting wastes as set out in the Landfill Tax (Qualifying Material) Order 2011, which include naturally occurring rock and soil, concrete, some minerals, some furnace slags and ash, and some low-activity organic compounds. Evidence confirming that the waste qualifies for the lower rate will be required, and standard rate tax will apply for the whole waste load for any loads of mixed waste.

Currently (since April 2016), standard rate landfill tax is £84.40 per tonne.

The lower rate of landfill tax applicable to less polluting wastes (i.e. 'inert' wastes) is £2.65 per tonne.

Material disposed of at a soil treatment centre will not be subject to landfill tax.

8.6 Groundwater

When there is an intention to discard groundwater, chemical test results will indicate the appropriate disposal options. This could include disposal to treatment facility, via consent (issued by the water authority) to foul sewer or via consent (issued by the EA) to a watercourse or land.

8.7 Waste recommendations

RSK recommends that consideration as to how potentially waste soils will be dealt with as part of this development/remediation is given as early in the project planning process as possible. Such planning can lead to cost savings where potentially waste soils are viewed as a resource and retained on-site as part of the development. We also recommend, where off-site disposal is being considered, that appropriate facilities are identified and discussions initiated to confirm suitability of the facility to take the material. Potentially, these may include soil treatment facilities as well as landfills.

RSK can provide specialist advice to assist in this process, which can be complex and subject to regular regulatory change.

9 CONCLUSIONS AND RECOMMENDATIONS

9.1 Environmental

The results of the GQRA indicate that relevant pollutant linkages are absent and therefore the site is suitable for the proposed end use.

The visual inspection at the laboratory identified no materials suspected of potentially containing asbestos and the scheduled laboratory screening for asbestos found no detectable asbestos fibres within the samples of topsoil and made ground.

Based on the GSVs the site has been characterised *as* Green due to the lack of flow recorded across the site. Therefore based on the data collected to date no gas mitigation measures are required at the site.

9.2 Reuse of materials and waste

None of the samples were classified as hazardous waste. Therefore, to determine whether waste might be classified as inert or non hazardous WAC testing will need to be undertaken.

RSK recommends that consideration as to how potentially waste soils will be dealt with as part of this development/remediation is given as early in the project planning process as possible. Such planning can lead to cost savings where potentially waste soils are viewed as a resource and retained on-site as part of the development. We also recommend, where off-site disposal is being considered, that appropriate facilities are identified and discussions initiated to confirm suitability of the facility to take the material. Potentially, these may include soil treatment facilities as well as landfills.

RSK can provide specialist advice to assist in this process, which can be complex and subject to regular regulatory change.

9.3 Geotechnical

The ground conditions typically comprise sandy clay of medium shrinkage potential and sand. Made ground is generally absent.

Given the presence of competent natural soils at a relatively shallow depth, it is considered that traditional spread foundations will be suitable for the majority of the site although consideration will need to be given to the relatively soft ground conditions encountered in the vicinity of BH7. Here supplementary investigation i.e. trial pits are recommended to assess more thoroughly ground conditions in this area. Piled foundations may prove to be a more viable proposition for affected plots in this area.

Spread foundations must be taken down through any made ground and founded in the underlying firm sandy clay or sand at a minimum depth of 0.9m below final or existing level whichever is lower. A maximum net allowable bearing pressure of 100kN/m^2 can be assumed. Nominal mesh reinforcement will be required for formations soil varying between clay and sand.

Once levels for the proposed construction platform have been established, it is recommended that consideration be given to slope stability. Further investigations comprising boreholes including groundwater monitoring may be required to provide a more detailed assessment.

It is recommended that buried concrete be designed assuming a Design Sulphate Class DS-1 and an Aggressive Chemical Environment for Concrete classification of AC-1_s.

The ground conditions associated with the Head Deposits underlying the site do not appear to be suitable for the use of borehole or pit soakaways. Further investigations comprising trial pit soakage tests are recommended to assess the infiltration characteristics of more granular stratum.

For pavement design, the potentially poorest sub-grade material is considered to be sandy clay of medium shrinkage potential. A California Bearing Ratio (CBR) of 2% to 3% can be assumed for preliminary design purposes. Further assessment is recommended once proposed sub-grade levels have been established.

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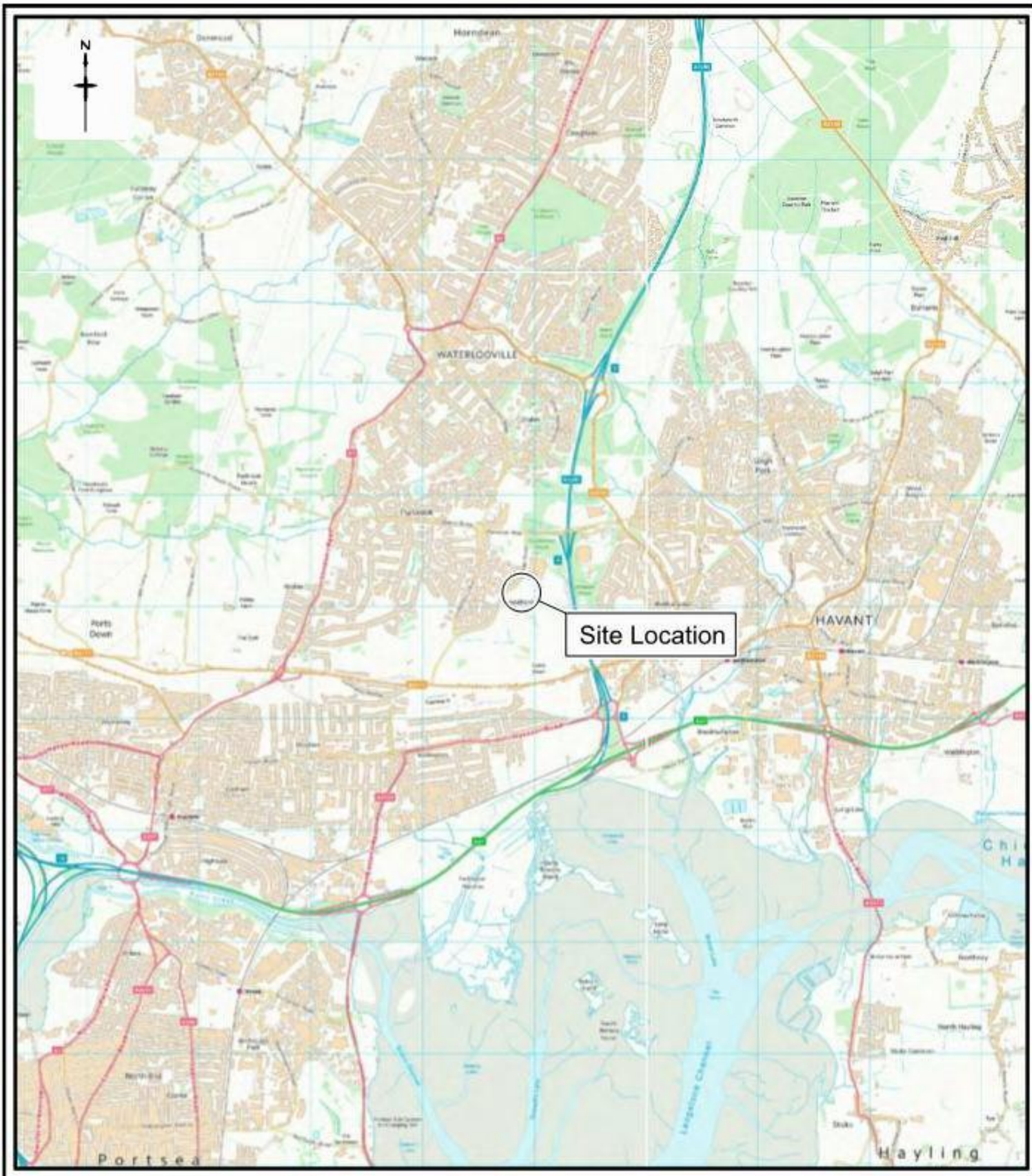
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FIGURES



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United Kingdom

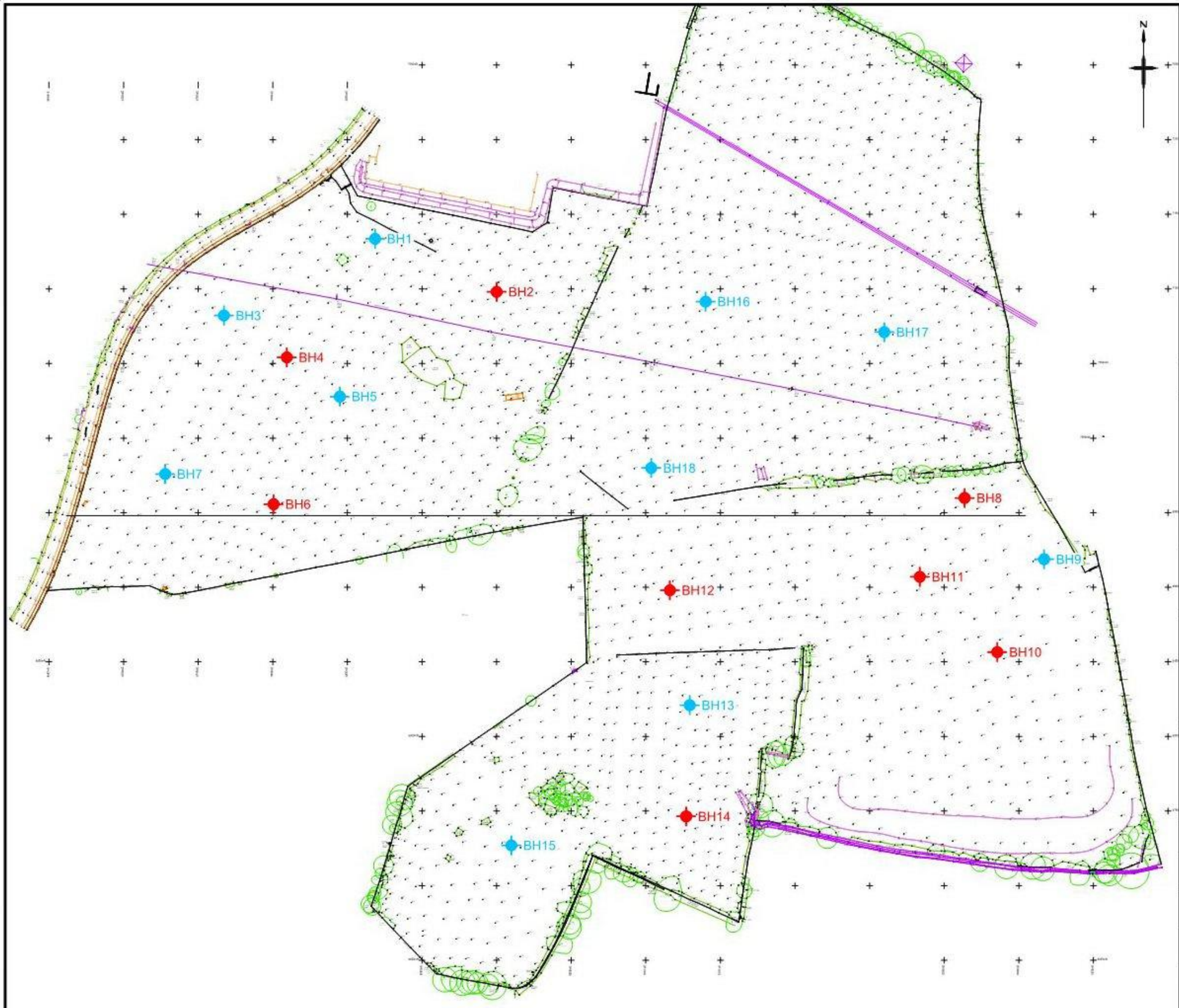
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Client	
	RADIAN
Project Title	
	CAMPDOWN, WATERLOOVILLE
Drawing Title	
	SITE LOCATION PLAN

Rev	Drawn	Date	Checked	Date	Approved	Date
01	ASC	10.08.16	ARJ	10.08.16	ARJ	10.08.16

Dimensions	Scale	Original Size
m	1:50,000	A4

Project Number	Drawing File	Drawing Number
28720 - R01 (00)	28720 - SLP.dwg	FIGURE 1



LEGEND

- Borehole Location
- Borehole Location with Installation

Rev.	Date	Amendment	Drawn	Chkd.	Appd.

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Client

RADIAN

Project Title

CAMPDOWN,
WATERLOOVILLE

Drawing Title

EXPLORATORY HOLE
LOCATION PLAN

Drawn	Date	Checked	Date	Approved	Date
ASC	11.08.16	ARJ	11.08.16	ARJ	11.08.16

Scale	Orig Size	Dimensions
1:2500	A3	m

Project No.	Drawing File
28720 - R01 (00)	28720 (R01-00) Fig 2.dwg

Drawing No.	Rev.
FIGURE 2	P1

Scale 1 : 2,500

0 20 40 60 80 100 120 140 160 180 200m

APPENDIX A
SERVICE CONSTRAINTS

1. This report and the site investigation carried out in connection with the report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) for Radian (the "client") in accordance with the terms of a contract between RSK and the "client", dated 28th July 2016 The Services were performed by RSK with the skill and care ordinarily exercised by a reasonable environmental consultant at the time the Services were performed. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the client.

2. Other than that expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services.

3. Unless otherwise agreed in writing the Services were performed by RSK exclusively for the purposes of the client. RSK is not aware of any interest of or reliance by any party other than the client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent or condone any party other than the client relying upon the Services. Should this report or any part of this report, or otherwise details of the Services or any part of the Services be made known to any such party, and such party relies thereon that party does so wholly at its own and sole risk and RSK disclaims any liability to such parties. **Any such party would be well advised to seek independent advice from a competent environmental consultant and/or lawyer.**

4. It is RSK's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the client without RSK 's review and advice shall be at the client's sole and own risk. Should RSK be requested to review the report after the date of this report, RSK shall be entitled to additional payment at the then existing rates or such other terms as agreed between RSK and the client.

5. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the report in the future shall be at the client's own and sole risk. Should RSK be requested to review the report in the future, RSK shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between RSK and the client.

6. The observations and conclusions described in this report are based solely upon the Services which were provided pursuant to the agreement between the client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, RSK did not seek to evaluate the presence on or off the site of asbestos, electromagnetic fields, lead paint, heavy metals, radon gas or other radioactive or hazardous materials.

7. The Services are based upon RSK's observations of existing physical conditions at the Site gained from a walk-over survey of the site together with RSK's interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The Services are also based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely. The Services clearly are limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the walk-over survey. Further RSK was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services. RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK and including the doing of any independent investigation of the information provided to RSK save as otherwise provided in the terms of the contract between the client and RSK.

8. The intrusive environmental site investigation aspects of the Services is a limited sampling of the site at pre-determined borehole and soil vapour locations based on the operational configuration of the site. The conclusions given in this report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and RSK] [based on an understanding of the available operational and historical information,] and it should not be inferred that other chemical species are not present.

9. Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (boreholes, trial pits etc) annotated on site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for setting out and should be considered indicative only.

APPENDIX B
SUMMARY OF LEGISLATION AND POLICY RELATING TO CONTAMINATED LAND

Part IIA of the Environmental Protection Act 1990 (EPA) and its associated Contaminated Land Regulations 2000 (SI 2000/227), which came into force in England on 1 April 2000, formed the basis for the current regulatory framework and the statutory regime for the identification and remediation of contaminated land. Part IIA of the EPA 1990 defines contaminated land as 'any land which appears to the Local Authority in whose area it is situated to be in such a condition by reason of substances in, on or under the land, that significant harm is being caused, or that there is significant possibility of significant harm being caused, or that pollution of controlled waters is being or is likely to be caused'. Controlled waters are considered to include all groundwater, inland waters and estuaries.

In August 2006, the Contaminated Land (England) Regulations 2006 (SI 2006/1380) were implemented, which extended the statutory regime to include Part IIA of the EPA as originally introduced on 1 April 2000, together with changes intended chiefly to address land that is contaminated by virtue of radioactivity. These have been replaced subsequently by the Contaminated Land (England) (Amendment) Regulations 2012, which now exclude land that is contaminated by virtue of radioactivity.

The intention of Part IIA of the EPA is to deal with contaminated land issues that are considered to cause significant harm on land that is not undergoing development (see Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance, April 2012). This document replaces Annex III of Defra Circular 01/2006, published in September 2006 (the remainder of this document is now obsolete).

Water Framework Directive (WFD)

The Water Framework Directive 2000/60/EC is designed to:

- enhance the status and prevent further deterioration of aquatic ecosystems and associated wetlands that depend on the aquatic ecosystems
- promote the sustainable use of water
- reduce pollution of water, especially by 'priority' and 'priority hazardous' substances
- ensure progressive reduction of groundwater pollution.

The WFD requires a management plan for each river basin be developed every six years.

Groundwater Directive (GWD)

The 1980 Groundwater Directive 80/68/EEC and the 2006 Groundwater Daughter Directive 2006/118/EC of the WFD are the main European legislation in place to protect groundwater. The 1980 Directive is due to be repealed in December 2013. The European legislation has been transposed into national legislation by regulations and directions to the Environment Agency.

Environmental Permitting Regulations (EPR)

The Environmental Permitting (England and Wales) Regulations 2010 provide a single regulatory framework that streamlines and integrates waste management licensing, pollution prevention and control, water discharge consenting, groundwater authorisations, and radioactive substances regulation. Schedule 22, paragraph 6 of EPR 2010 states: 'the regulator must, in exercising its relevant functions, take all necessary measures - (a) to prevent the input of any hazardous substance to groundwater; and (b) to limit the input of non-hazardous pollutants to groundwater so as to ensure that such inputs do not cause pollution of groundwater.'

Water Resources Act (WRA)

The Water Resources Act 1991 (Amendment) (England and Wales) Regulations 2009 updated the Water Resources Act 1991, which introduced the offence of causing or knowingly permitting pollution of controlled waters. The Act provides the Environment Agency with powers to implement remediation necessary to protect controlled waters and recover all reasonable costs of doing so.

Priority Substances Directive (PSD)

The Priority Substances Directive 2008/105/EC is a 'Daughter' Directive of the WFD, which sets out a priority list of substances posing a threat to or via the aquatic environment. The PSD establishes environmental quality standards for priority substances, which have been set at concentrations that are safe for the aquatic environment and for human health. In addition, there is a further aim of reducing (or eliminating) pollution of surface water (rivers, lakes, estuaries and coastal waters) by pollutants on the list. The WFD requires that countries establish a list of dangerous substances that are being discharged and EQS for them. In England and Wales, this list is provided in the River Basin Districts Typology, Standards and Groundwater threshold values (Water Framework Directive) (England and Wales) Directions 2010. In order to achieve the objectives of the WFD, classification schemes are used to describe where the water environment is of good quality and where it may require improvement.

Planning Policy

Contaminated land is often dealt with through planning because of land redevelopment. This approach was documented in Planning Policy Statement: Planning and Pollution Control PPS23, which states that it remains the responsibility of the landowner and developer to identify land affected by contamination and carry out sufficient remediation to render the land suitable for use.

PPS23 was withdrawn early in 2012 and has been replaced by much reduced guidance within the National Planning Policy Framework (NPPF).

The new framework has only limited guidance on contaminated land, as follows:

- *"planning policies and decisions should also ensure that:*
    - *the site is suitable for its new use taking account of ground conditions and land instability, including from natural hazards or former activities such as mining, pollution arising from previous uses and any proposals for mitigation including land remediation or impacts on the natural environment arising from that remediation;*
    - *after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990; and*
    - *adequate site investigation information, prepared by a competent person, is presented".*

APPENDIX C
SITE PHOTOGRAPHS AND WALKOVER CHECKLIST

PHOTOGRAPHIC LOG

Site Location: Campdown

Photo No. 1	
Date: 02/08/16	
View of eastern boundary	

Photo No. 2	
Date: 02/08/16	
View west from east	

PHOTOGRAPHIC LOG

Site Location: Campdown

Photo No. 3 **Date:** 02/08/16 Southern boundary looking from east	
Photo No. 4 **Date:** 02/08/16 Looking north from the southern boundary	

PHOTOGRAPHIC LOG

Site Location: Campdown

Photo No. 5 **Date:** 02/08/16 Looking south east from central region	
Photo No. 6 **Date:** 02/08/16 View looking south from central region	

PHOTOGRAPHIC LOG

Site Location: Campdown

Photo No. 7 **Date:** 02/08/16 View of southernmost part of site	
Photo No. 8 **Date:** 02/08/16 View looking north west	

PHOTOGRAPHIC LOG

Site Location: Campdown

Photo No. 9	
Date: 02/08/16	
Soils from BH14	
Photo No. 10	
Date: 02/08/16	
Soils from BH8	

PHOTOGRAPHIC LOG

Site Location: Campdown

Photo No. 11 **Date:** 02/08/16 Soils from BH18	
Photo No. 12 **Date:** 02/08/16 View looking west from central region	

WALKOVER SURVEY CHECKLIST

SITE NAME Campdown SITE REFERENCE 28720
NGR 468760, 106730

These inspections can provide useful information on:

- Potential geotechnical hazards
- Suitable and appropriate locations for investigation
- The groundwater and surface water environments
- Potentially sensitive receptors (targets) including issues that require further investigation, e.g. ecology surveys
- Potential sources of contaminants
- Nature of contamination
- Potential migration routes (pathways)

Mark locations of features described on a map and give them a reference number.
Describe features in as much detail as possible. Continue on the back of the checklist if necessary, using the feature letter for reference. Take photos of site and relevant features in immediate surrounding area.
The walkover survey can also provide information for the environmental consultant in planning the site investigation.

Points that should be addressed in a walkover survey are as follows:

Features	Description	Photo no.	Map ref.
a) Describe materials exposed in nearby road or railway cuttings, in pits and quarries and natural exposures of soils and rocks near to the site. *This will give an indication of the geology beneath the site*	Brown clay		
b) Describe surrounding properties/land use *This will identify any potential sources of contamination from adjacent sites and any sensitive receptors*	South down college to north A3(M) to east Golf course to south Residential to west		
c) Describe present land use *Especially crops, for consideration of appropriate timing for further investigation, compensation and reinstatement. Also note hardstanding, obstructions etc. Note any old buildings/ivy covered trees as these may be used by owls or bats*	Undeveloped scrubland used for horse grazing		

WALKOVER SURVEY CHECKLIST Continued

NGR

Features	Description	Photo no.	Map ref.
d) Describe the site in terms of ground slopes and changes in slope. *Old scarps or hummocky ground may be evidence of previous landslips that could be reactivated. A terraced appearance may be indicative of superficial solifluction movement or cambering.*	Undulating with general trend sloping to south. Steeper slopes in central and western areas		
e) Describe the types and condition of surface vegetation. *Nettles may indicate an old cesspit for example or unhealthy vegetation may indicate the presence of phytotoxic fill or landfill gas. Note invasive weeds, e.g. Japanese knotweed.*	Grassland with trees and hedges.		
f) Note the number, location, height and species of trees and hedges. *This is important in terms of shrinking and swelling ground. Trees that are leaning may indicate instability or general slope movement. Trees and hedgerows may be protected; their condition should be noted along with any restrictions they will impose for site access.* *It is important to note any areas with the potential for nesting birds, roosting bats, water voles and badger setts.*	Mature trees across the site in along boundary with golf course in the south.		
g) Describe any evidence of animal activity. *For example obvious animal paths or areas of excavations and burrows.*	None		
h) Describe any damage to existing structures on site or adjacent to the site *For example, cracks in buildings both on the site and in the neighbourhood, and other evidence of settlement or differential settlement.* *Note presence of any suspected asbestos-containing materials (ACM)*	None		
i) Note the remains of structures that have been demolished. Look for evidence of remnants of any historical structures. *This will provide valuable information on the location of previous foundations, processes etc.* *Note presence of any suspected asbestos-containing materials (ACM)*	None		

WALKOVER SURVEY CHECKLIST Continued

NGR

Features	Description	Photo no.	Map ref.
j) Note any abrupt changes in ground level. *May indicate that minerals have been worked in surface excavations.*	None		
k) Note any surface hollows. *Which may indicate the presence of solution features or swallow holes in rocks such as chalk limestone, gypsum and salt, or collapsed underground workings in these materials. May also indicate badger setts or other wildlife activity.*	None		
l) In areas of country underlain by coal or other minerals note any hummocky ground. *Which may be the remnants of spoil tips and surface depressions that may indicate collapsed shallow workings. Areas of general unevenness may be evidence of waste disposal activities.*	N/A		
m) Note any evidence of gas from nearby landfill sites *Can be indicated for example by poor vegetation or gas bubbles in water-filled trenches.*	None		
n) Note the location of streams, ponds, seepages and sinks and signs of previous flooding. *If ponds are present on site they may contain great crested newts. Ditches, streams and rivers that border or run through a site may contain water voles, otters or white-clawed crayfish. Presence of water features on site may prompt the need for a survey during a site investigation.*	None		
o) All surface waters should be examined for evidence of contamination. *For example, oil sheen, silt, solid matter, discoloured sediment.*	None identified		
p) Note any discoloured ground. *This may provide evidence of contamination.*	None		
q) Identify any old structures, pipework etc. wherever possible and, if safe, inspect for evidence of stored waste. *Old tanks may contain oil. Old electricity transformers should be noted.* *Asbestos risk should be assessed together with the need for a specialist hazardous materials survey.*	None		

WALKOVER SURVEY CHECKLIST Continued

NGR

Features	Description	Photo no.	Map ref
r) Examine surrounding areas for evidence of contamination which could migrate onto the site. *For example a leaking oil tank on an adjacent site.*	None		
s) Note the presence of any underground structures, services, mine workings, tunnels etc *From a safety point of view for development of the site and also as they may provide contaminant migration routes.*	None		
t) Note any anecdotal information in past uses of the site. *Local street names etc. can provide indicators of past industry or ground problems*	None		
u) Identify potential access routes to the site for plant for the site investigation *Excavators and drilling rigs may be required for the next stage of the investigation, or if the access is limited window sampling techniques may need to be specified. Note any specific obstructions such as unsafe/unstable ground, protected trees or hedgerows, or protected buildings.*	Via gate off College Road in north west of site		
v) Evidence of buried services (water, gas, electricity, telephone, cable, television, pipelines) *Both for safety considerations and in the case of water as supply for further investigation. As well as danger, there is the question of considerable expense, which can arise from an inadequate knowledge of the location of buried services. The locations and heights of overhead cables may be important when considering the movement of site equipment.*	None		

Walkover survey completed Approved: _____ Signature R. Speight

Name Russell Speight

Date 02/08/16

Notes

APPENDIX D
RISK ASSESSMENT METHODOLOGY

CLR11 outlines the framework to be followed for risk assessment in the UK. The framework is designed to be consistent with UK legislation and policies including planning. Under CLR11, three stages of risk assessment exist: preliminary, generic quantitative and detailed quantitative. An outline conceptual model should be formed at the preliminary risk assessment stage that collates all the existing information pertaining to a site in text, tabular or diagrammatic form. The outline conceptual model identifies potentially complete (termed possible) pollutant linkages (contaminant–pathway–receptor) and is used as the basis for the design of the site investigation. The outline conceptual model is updated as further information becomes available, for example as a result of the site investigation.

Production of a conceptual model requires an assessment of risk to be made. Risk is a combination of the likelihood of an event occurring and the magnitude of its consequences. Therefore, both the likelihood and the consequences of an event must be taken into account when assessing risk. RSK has adopted guidance provided in CIRIA C552 for use in the production of conceptual models.

The likelihood of an event can be classified on a four-point system using the following terms and definitions based on CIRIA C552:

- highly likely: the event appears very likely in the short term and almost inevitable over the long term or there is evidence at the receptor of harm or pollution
- likely: it is probable that an event will occur or circumstances are such that the event is not inevitable, but possible in the short term and likely over the long term
- low likelihood: circumstances are possible under which an event could occur, but it is not certain even in the long term that an event would occur and it is less likely in the short term
- unlikely: circumstances are such that it is improbable the event would occur even in the long term.

The severity can be classified using a similar system also based on CIRIA C552. The terms and definitions relating to severity are:

- severe: short term (acute) risk to human health likely to result in 'significant harm' as defined by the Environment Protection Act 1990, Part IIA. Short-term risk of pollution of sensitive water resources. Catastrophic damage to buildings or property. Short-term risk to an ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Draft Circular on Contaminated Land', DETR 2000)
- medium: chronic damage to human health ('significant harm' as defined in 'Draft Circular on Contaminated Land', DETR 2000), pollution of sensitive water resources, significant change in an ecosystem or organism forming part of that ecosystem

- mild: pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ('significant harm' as defined in 'Draft Circular on Contaminated Land', DETR 2000). Damage to sensitive buildings, structures or the environment
- minor: harm, not necessarily significant, but that could result in financial loss or expenditure to resolve. Non-permanent human health effects easily prevented by use of personal protective clothing. Easily repairable damage to buildings, structures and services.

Once the probability of an event occurring and its consequences have been classified, a risk category can be assigned according to the table below.

		Consequences			
		Severe	**Medium**	**Mild**	**Minor**
Probability	**Highly likely**	Very high	High	Moderate	Moderate/low
	Likely	High	Moderate	Moderate/low	Low
	Low likelihood	Moderate	Moderate/low	Low	Very low
	Unlikely	Moderate/low	Low	Very low	Very low

Definitions of these risk categories are as follows together with an assessment of the further work that may be required:

- Very high: there is a high probability that severe harm could occur or there is evidence that severe harm is currently happening. This risk, if realised, could result in substantial liability; urgent investigation and remediation are likely to be required.
- High: harm is likely to occur. Realisation of the risk is likely to present a substantial liability. Urgent investigation is required. Remedial works may be necessary in the short term and are likely over the long term.
- Moderate: it is possible that harm could arise, but it is unlikely that the harm would be severe and it is more likely that the harm would be relatively mild. Investigation is normally required to clarify the risk and determine the liability. Some remedial works may be required in the longer term.
- Low: it is possible that harm could occur, but it is likely that if realised this harm would at worst normally be mild.
- Very low: there is a low possibility that harm could occur and if realised the harm is unlikely to be severe.

APPENDIX E
EXPLORATORY HOLE RECORDS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Campdown	**Radian**	**BH1**

Contract Ref:	Start: **07.09.16** End: **02.08.16**	Ground Level:	Co-ordinates:	Sheet:
28720		**---**	**---**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10-0.20	1	ES				MADE GROUND: (Firm) orange brown sandy slightly gravelly CLAY. Sand is fine. Gravel is subangular to subrounded fine to medium of brick. (Topsoil)	(0.35)	
								0.35	
	0.50	2	D				Firm medium strength orange brown mottled grey slightly sandy CLAY. Sand is fine. (HEAD DEPOSITS)		
	0.50		V	c_r=66					
	1.00-1.45	1	SPT	N=10					
	1.10		V	c_r=66					
	1.50	3	D					(3.10)	
	2.00-2.45	2	SPT	N=16					
	2.50	4	D						
	3.00-3.45	3	SPT	N=23			. . . Below 3.00m bgl, high strength		
								3.45	
							Borehole terminated at 3.45m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered
2. Gas and groundwater monitoring well installed to 3.00m depth

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Archway Competitor+**	**ADavidson**	**RSpeight**	

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_013 PrjVersion: v8_06 - Core+Logs - 001 | Log WINDOW SAMPLE LOG - A4P | 28720 CAMPDOWN.GPJ - v8_06, RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk. | 08/09/16 - 13:58 | EH1 |

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Campdown	**Radian**	**BH2**

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
28720	End: **02.08.16**	**---**	**---**	**1** of **1**

Progress	Samples / Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10-0.20	1	ES				MADE GROUND: (Firm) orange brown sandy slightly gravelly CLAY. Sand is fine. Gravel is subangular to subrounded fine to medium of brick. (Topsoil)	(0.35)	
								0.35	
	0.50	2	D				Firm medium strength orange brown mottled grey sandy CLAY. Sand is fine. (HEAD DEPOSITS)		
	0.50		V	c_r=57					
	1.00		V	c_r=67					
	1.50	3	D					(2.65)	
							. . . Below 2.00m bgl, orange red brown mottled grey.		
	2.30		V	c_r=80			. . . Below 2.30m bgl, high strength		
	2.50	4	D						
								3.00	
							Borehole terminated at 3.00m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered
2. Borehole backfilled with arisings upon completion

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Archway Competitor**	**Michael O'Shea**	**RSpeight**	

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WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Campdown	**Radian**	**BH3**

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
28720	End: **07.09.16** / **02.08.16**	**---**	**---**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10-0.20	1	ES				MADE GROUND: Grass over friable sandy gravelly CLAY. Sand is fine. Gravel is angular to subrounded fine to coarse of flint. (Topsoil)	(0.30)	
								0.30	
	0.50	2	D				Firm medium strength orange brown mottled grey slightly sandy gravelly CLAY. Sand is fine. Gravel is angular to subrounded fine to coarse of flint. (HEAD DEPOSITS)	(0.60)	
	0.60		V	c_r=45					
								0.90	
	1.00-1.45	1	SPT	N=11			Firm medium strength orange red brown mottled grey slightly sandy CLAY. Sand is fine. (HEAD DEPOSITS)		
	1.40		V	c_r=61				(1.10)	
	1.50	3	D						
								2.00	
	2.00-2.45	2	SPT	N=7			Firm medium strength orange brown mottled grey slightly sandy silty CLAY. (HEAD DEPOSITS)		
	2.30		V	c_r=41					
	2.50	4	D					(1.45)	
	3.00-3.45	3	SPT	N=7					
								3.45	
							Borehole terminated at 3.45m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered
2. Gas and groundwater monitoring well installed to 3.00m depth

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Archway Competitor+**	**ADavidson**	**RSpeight**	

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WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Campdown	**Radian**	**BH4**

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
28720	End: **02.08.16**	**---**	**---**	**1** of **1**

Progress	Samples / Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10-0.20	1	ES				MADE GROUND: Grass over friable sandy gravelly CLAY. Sand is fine. Gravel is angular to subrounded fine to coarse of flint. (Topsoil)	(0.30)	
								0.30	
	0.50	2	D				Firm medium strength orange brown mottled grey sandy slightly gravelly CLAY. Sand is fine. Gravel is angular to subrounded fine to medium of flint. (HEAD DEPOSITS)	(0.70)	
	0.80		V	c_u=44				1.00	
					▼1		Firm grey brown slightly sandy CLAY with occasional flint gravel. Sand is fine. Gravel is angular to subrounded fine to medium. (HEAD DEPOSITS)		
	1.40	3	D				. . . Between 1.20 and 1.25m bgl, gravel band with water.	(1.00)	
							. . . Between 1.90 and 2.00m bgl, gravel band with water.	2.00	
	2.40	4	D				Firm orange grey brown mottled sandy silty CLAY. Sand is fine. (HEAD DEPOSITS)	(1.00)	
								3.00	
							Borehole terminated at 3.00m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Groundwater was encountered between 1.20-1.25m
2. Borehole backfilled with arisings upon completion

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Archway Competitor**	**Michael O'Shea**	**RSpeight**	

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WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Campdown	**Radian**	**BH5**

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
28720	**07.09.16** End: **02.08.16**	**---**	**---**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10-0.20	1	ES				MADE GROUND: Grass over friable sandy gravelly CLAY. Sand is fine. Gravel is angular to subrounded fine to coarse of flint. (Topsoil)	(0.30)	
								0.30	
	0.50	2	D				Firm medium strength orange brown grey mottled silty CLAY. (HEAD DEPOSITS)		
	0.50		V	c_v=67					
							. . . Below 0.80m bgl, flint gravel with red orange clay band.		
	1.00-1.45	1	SPT	N=10					
	1.50	3	D				. . . Below 1.40m bgl, grey brown with occasional decomposed plant matter and flint gravel.		
	1.60		V	c_v=60				(3.15)	
	2.00-2.45	2	SPT	N=10					
	2.70	4	D						
	3.00-3.45	3	SPT	N=8					
								3.45	
							Borehole terminated at 3.45m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered
2. Gas and groundwater monitoring well installed to 3.00m

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Archway Competitor+**	**ADavidson**	**RSpeight**	

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WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Campdown	**Radian**	**BH6**

Contract Ref:	Start: **02.08.16** End: **02.08.16**	Ground Level:	Co-ordinates:	Sheet:
28720		**---**	**---**	**1** of **1**

Progress	Samples / Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10-0.20	1	ES				MADE GROUND: Grass over friable sandy gravelly CLAY. Sand is fine. Gravel is angular to subrounded fine to coarse of flint. (Topsoil)	(0.30)	
								0.30	
	0.50	2	D				Firm medium to high strength orange brown mottled grey slightly sandy CLAY. (HEAD DEPOSITS)		
	0.60		V	c_r=58					
	0.90		V	c_r=75					
	1.00-1.45	1	SPT	N=11					
	1.50		V	c_r=89					
	1.60	3	D				. . . At 1.60m bgl, single flint gravel, subrounded, coarse.	(3.15)	
	2.00-2.45	2	SPT	N=12			. . . Below 2.00m bgl, firm to stiff red orange brown grey mottled.		
	2.50		V	c_r=89					
	2.60	4	D						
	3.00-3.45	3	SPT	N=12					
							Borehole terminated at 3.45m depth.	3.45	

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered
2. Rootlets to 1.00m depth
3. Borehole backfilled with arisings upon completion

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Archway Competitor**	**Michael O'Shea**	**RSpeight**	

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WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Campdown	**Radian**	**BH7**

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
28720	End: **07.09.16** / **02.08.16**	**---**	**---**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10-0.20	1	ES				MADE GROUND: Grass over friable sandy gravelly CLAY. Sand is fine. Gravel is angular to subrounded fine to coarse of flint. (Topsoil)	(0.30) 0.30	
	0.50	2	ES				MADE GROUND: Orange brown sandy slightly gravelly CLAY with occasional pockets of grey clay. Sand is fine. Gravel is angular to subrounded fine to coarse of flint. (Reworked Natural)	(0.70) 1.00	
	1.10-1.20	3	ES				MADE GROUND: (Firm) grey brown silty slightly gravelly CLAY. Gravel is subrounded to subangular fine to coarse of brick and clinker.	(0.50) 1.50	
	1.70		V	c_v=35			Soft becoming firm low strength orange brown mottled grey silty CLAY. (HEAD DEPOSITS)	(1.50) 3.00	
	2.30	4	D						
							Borehole terminated at 3.00m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered
2. Gas and groundwater monitoring well installed to 3.00m

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Archway Competitor+**	**ADavidson**	**RSpeight**	

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WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Campdown	**Radian**	**BH8**

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
28720	**03.08.16** End: **03.08.16**	**---**	**---**	**1** of **1**

Progress	Samples / Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.00-0.20	1	ES				TOPSOIL: Light brown slightly clayey SAND. Sand is fine.	0.20	
	0.50	2	D				Dense orange brown very silty clayey fine SAND. (BOGNOR SAND MEMBER) . . . At 0.60m bgl, single subangular coarse flint gravel.	(3.25)	
	1.00-1.45	1	SPT	N=38					
	1.30	3	D						
	2.00-2.45	2	SPT	N=41					
	2.50	4	D						
	3.00-3.45	3	SPT	N=40				3.45	
							Borehole terminated at 3.45m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered
2. Borehole backfilled with arisings upon completion

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Archway Competitor**	**Michael O'Shea**	**RSpeight**	

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WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Campdown	**Radian**	**BH9**

Contract Ref:	Start: **07.09.16** End: **03.08.16**	Ground Level:	Co-ordinates:	Sheet:
28720		**---**	**---**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10-0.20	1	ES				TOPSOIL: Brown sandy gravelly CLAY. Sand is fine. Gravel is subangular to subrounded fine to coarse of flint.	(0.35)	
								0.35	
	0.50	2	D				Firm medium to high strength orange brown mottled grey silty CLAY. (HEAD DEPOSITS)		
	0.50		V	c_r=65					
	1.00-1.45	1	SPT	N=7			. . . Below 1.00m bgl, occasional orange brown silty sand parting.		
	1.15		V	c_r=66					
	1.40	3	D						
	1.80		V	c_r=76				(3.10)	
	2.00-2.45	2	SPT	N=8			. . . Below 2.00m bgl, red orange brown grey mottled.		
	2.60	4	D						
	3.00-3.45	3	SPT	N=17					
								3.45	
							Borehole terminated at 3.45m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered
2. Gas and groundwater monitoring well installed to 3.00m

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Archway Competitor+**	**ADavidson**	**RSpeight**	

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WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Campdown	**Radian**	**BH10**

Contract Ref:	Start: **07.09.16** End: **03.08.16**	Ground Level:	Co-ordinates:	Sheet:
28720		**---**	**---**	**1** of **1**

Progress	Samples / Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10-0.20	1	ES				TOPSOIL: Brown sandy gravelly CLAY. Sand is fine. Gravel is subangular to subrounded fine to coarse of flint.	(0.30)	
								0.30	
	0.50	2	D				Firm medium strength orange brown mottled grey slightly gravelly silty CLAY. Gravel is subangular to subrounded fine to coarse of flint. (HEAD DEPOSITS)		
	0.50		V	c_r=52					
							. . . Below 1.00m bgl, red brown orange grey mottled and no gravel.		
	1.30	3	D						
	1.30		V	c_r=53				(2.70)	
	2.50	4	D						
	2.50		V	c_r=63					
								3.00	
							Borehole terminated at 3.00m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered
2. Borehole backfilled with arisings upon completion

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Archway Competitor+**	**ADavidson**	**RSpeight**	AGS

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WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Campdown	**Radian**	**BH11**

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
28720	End: **03.08.16**	**---**	**---**	**1** of **1**

Progress	Samples / Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10-0.20	1	ES				TOPSOIL: Brown sandy gravelly CLAY. Sand is fine. Gravel is subangular to subrounded fine to coarse of flint.	0.20	
	0.40	2	D				Firm brown sandy gravelly CLAY. Sand is fine. Gravel is subangular to subrounded fine to coarse of flint. (HEAD DEPOSITS)	(0.30) 0.50	
	0.70		V	c_r=46			Firm medium strength orange grey brown mottled slightly sandy silty CLAY with occasional silty sand partings. (HEAD DEPOSITS)		
	0.80	3	D						
	1.00-1.45	1	SPT	N=8					
	1.50		V	c_r=63					
	1.60	4	D						
	2.00-2.45	2	SPT	N=11			. . . Below 2.00m bgl, red orange grey brown mottled.	(2.95)	
	2.50	5	D						
	2.50		V	c_r=64					
	3.00-3.45	3	SPT	N=13					
							Borehole terminated at 3.45m depth.	3.45	

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered
2. Borehole backfilled with arisings upon completion

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Archway Competitor**	**Michael O'Shea**	**RSpeight**	

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_013 PrjVersion: v8_06 - Core+Logs - 001 | Log WINDOW SAMPLE LOG - A4P | 28720 CAMPDOWN.GPJ - v8_06. | 08/09/16 - 13:58 | EH1 |
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500. Fax: 01442 437550. Web: www.rsk.co.uk. | 08/09/16

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Campdown	**Radian**	**BH12**

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
28720	End: **03.08.16**	**---**	**---**	**1** of **1**

Progress	Samples / Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10-0.20	1	ES				TOPSOIL: Red brown grey mottled sandy CLAY.	(0.30)	
								0.30	
	0.40	2	D				Firm medium strength orange brown grey mottled sandy CLAY. (HEAD DEPOSITS)		
	0.50		V	c_r=72					
								(1.40)	
	1.40	3	D						
	1.50		V	c_r=65					
								1.70	
	1.90	4	D				Orange brown silty SAND. (BOGNOR SAND MEMBER) . . . Below 2.00m bgl, slightly damp.		
								(1.30)	
	2.50	5	D						
								3.00	
							Borehole terminated at 3.00m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered
2. Borehole backfilled with arisings upon completion

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Archway Competitor**	**Michael O'Shea**	**RSpeight**	

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_013 PrjVersion: v8_06 - Core+Logs - 001 | Log WINDOW SAMPLE LOG - A4P | 28720 CAMPDOWN.GPJ - v8_06, 08/09/16 - 13:58 | EH1 |
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk. | 08/09/16

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Campdown	**Radian**	**BH13**

Contract Ref:	Start: **07.09.16** End: **03.08.16**	Ground Level:	Co-ordinates:	Sheet:
28720		**---**	**---**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10-0.20	1	ES				TOPSOIL: Red brown grey mottled sandy CLAY.	(0.30)	
								0.30	
	0.50	2	D				Firm medium strength orange brown mottled grey slightly sandy silty CLAY. Sand is fine. (HEAD DEPOSITS)		
	0.50		V	c_u=50				(0.70)	
								1.00	
	1.00-1.45	1	SPT	N=8			Firm medium strength red orange brown grey mottled CLAY. (LAMBETH GROUP) . . . Below 1.00m bgl, red orange brown grey mottled.		
	1.50	3	D						
	1.50		V	c_u=65					
	2.00-2.45	2	SPT	N=10				(2.45)	
	2.70	4	D				. . . Below 2.50m bgl, becoming fissured with no sand.		
	3.00-3.45	3	SPT	N=16					
								3.45	
							Borehole terminated at 3.45m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered
2. Gas and groundwater monitoring well installed to 3.00m

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Archway Competitor+**	**ADavidson**	**RSpeight**	

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_013 PrjVersion: v8_06 - Core+Logs - 001 | Log WINDOW SAMPLE LOG - A4P | 28720 CAMPDOWN.GPJ - v8_06, RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk. | 08/09/16 - 13:58 | EH1 |

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Campdown	**Radian**	**BH14**

Contract Ref:	Start: **03.08.16** End: **03.08.16**	Ground Level:	Co-ordinates:	Sheet:
28720		**---**	**---**	**1** of **1**

Progress	Samples / Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10-0.20	1	ES				TOPSOIL: Red brown grey mottled sandy CLAY.	(0.30) 0.30	
	0.60	2	D				Orange brown slightly sandy gravelly CLAY. Sand is fine. Gravel is angular to subangular medium to coarse of flint. (HEAD DEPOSITS)	(0.80) 1.10	
	1.30	3	D				Firm high strength red grey mottled slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is angular to rounded fine to coarse of flint. (LAMBETH GROUP) . . . Below 1.50m bgl, becoming stiff to very stiff with no gravel.	(1.90) 3.00	
	1.60		V	c,=>120					
	2.40	4	D						
							Borehole terminated at 3.00m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered
2. Borehole backfilled with arisings upon completion

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Archway Competitor**	**Michael O'Shea**	**RSpeight**	

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_013 PrjVersion: v8_06 - Core+Logs - 001 | Log WINDOW SAMPLE LOG - A4P | 28720 CAMPDOWN.GPJ - v8_06.
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk. | 08/09/16 - 13:58 | EH1 |

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Campdown	**Radian**	**BH15**

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
28720	End: **07.09.16** / **03.08.16**	**---**	**---**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10-0.20	1	ES				TOPSOIL: Red brown grey mottled sandy CLAY.	(0.30)	
								0.30	
	0.50	2	D				Soft orange grey brown mottled very sandy slightly gravelly CLAY. Sand is fine. Gravel is angular to subangular fine to medium of flint. (HEAD DEPOSITS)	(0.70)	
								1.00	
	1.00-1.45	1	SPT	N=24			Grey high strength orange mottled clayey SAND with rare flint gravel and occasional band of clay. Gravel is angular to subangular fine to coarse. (HEAD DEPOSITS)		
	1.40	3	D						
	2.00-2.45	2	SPT	N=16	▼		. . . Below 2.00m bgl, medium strength.	(2.45)	
	2.70	4	D						
	3.00-3.45	3	SPT	N=9					
								3.45	
							Borehole terminated at 3.45m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Groundwater encountered between 2.00-2.50m
2. Gas and groundwater monitoring well installed to 3.00m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Archway Competitor+**	**ADavidson**	**RSpeight**	

GINT_LIBRARY_V8_05.GLB LibVersion: v8_06_013 PrjVersion: v8_06 - Core+Logs - 001 | Log WINDOW SAMPLE LOG - A4P | 28720 CAMPDOWN.GPJ - v8_06_
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk. | 08/09/16 - 13:58 | EH1 |

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Campdown	**Radian**	**BH16**

Contract Ref:	Start: **07.09.16** End: **04.08.16**	Ground Level:	Co-ordinates:	Sheet:
28720		**---**	**---**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10-0.20	1	ES				Grass over firm medium strength orange brown mottled grey slightly sandy silty CLAY with occasional silty sand partings. Sand is fine. (HEAD DEPOSITS)		
	0.50	2	D						
	0.50		V	c_r=75					
	1.00-1.45	1	SPT	N=10			. . . Below 1.00m bgl, becoming sandy silty clay.		
	1.20		V	c_r=54					
	1.40	3	D					(3.45)	
	2.00-2.45	2	SPT	N=18					
	2.50	4	D						
	3.00-3.45	3	SPT	N=18					
								3.45	
							Borehole terminated at 3.45m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered
2. Roots present to 0.80m
3. Gas and groundwater monitoring well installed to 3.00m

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Archway Competitor+**	**ADavidson**	**RSpeight**	

AGS

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_013 PrjVersion: v8_06 - Core+Logs - 001 | Log WINDOW SAMPLE LOG - A4P | 28720 CAMPDOWN.GPJ - v8_06.
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437550, Web: www.rsk.co.uk | 08/09/16 - 13:58 | EH1 |

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Campdown	**Radian**	**BH17**

Contract Ref:	Start: **07.09.16** End: **04.08.16**	Ground Level:	Co-ordinates:	Sheet:
28720		**---**	**---**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10-0.20	1	ES				TOPSOIL: Firm brown sandy gravelly CLAY. Sand is fine. Gravel is subangular to subrounded fine to medium of chalk and rare brick.	0.25	
	0.50	2	D				Firm medium to high strength orange brown slightly sandy CLAY. Sand is fine. Occasional mottled grey. (HEAD DEPOSITS)		
	0.50		V	c_v=64					
	1.00-1.45	1	SPT	N=10					
	1.20		V	c_v=71					
	1.30	3	D						
	1.60		V	c_v=86				(3.20)	
	2.00-2.45	2	SPT	N=13			. . . Below 2.00m bgl, occasional pockets of fine to medium sand.		
	2.40	4	D						
	3.00-3.45	3	SPT	N=13				3.45	
							Borehole terminated at 3.45m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered
2. Gas and groundwater monitoring well installed to 3.00m depth

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Archway Competitor+**	**ADavidson**	**RSpeight**	

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_013 PrjVersion: v8_06 - Core+Logs - 001 | Log WINDOW SAMPLE LOG - A4P | 28720 CAMPDOWN.GPJ - v8_06, RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk. | 08/09/16 - 13:58 | EH1 |

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Campdown	**Radian**	**BH18**

Contract Ref:	Start: **07.09.16** End: **04.08.16**	Ground Level:	Co-ordinates:	Sheet:
28720		**---**	**---**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10-0.20	1	ES				TOPSOIL: Brown grey mottled slightly sandy silty CLAY.	0.25	
	0.40	2	D				Firm medium strength orange brown grey mottled sandy silty CLAY. Sand is fine. (HEAD DEPOSITS)		
	0.50		V	c_r=43					
	0.80		V	c_r=48					
	1.00-1.45	1	SPT	N=9			. . . Below 1.00m bgl, red brown grey mottled, slightly sandy.		
	1.20	3	D						
	1.40		V	c_r=70				(3.20)	
	1.90		V	c_r=75					
	2.00-2.45	2	SPT	N=11					
	2.30	4	D						
	3.00-3.45	3	SPT	N=12					
							Borehole terminated at 3.45m depth.	3.45	

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered
2. Gas and groundwater monitoring well installed to 3.00m depth

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Archway Competitor+**	**ADavidson**	**RSpeight**	

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_013 PrjVersion: v8_06 - Core+Logs - 001 | Log WINDOW SAMPLE LOG - A4P | 28720 CAMPDOWN.GPJ - v8_06.
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APPENDIX F
GROUND GAS MONITORING DATA

IN-SITU GAS MONITORING RESULTS

[Pressures]	Previous	During	Start	End	Equipment Used & Remarks
Round 1	-	-	999	999	GA2000 + Weather: Overcast with showers + Ground: Wet + Wind: Medium + Air Temp: 17DegC
Round 2	-	-	1011	1011	GA2000 + Weather: Overcast + Ground: Wet + Wind: Light + Air Temp: 19DegC
Round 3	Rising	Falling	1007	1004	GA2000 + Weather: Cloudy + Ground: Wet + Wind: Light + Air Temp: 18DegC

Exploratory Position ID	Monitoring Round	Measured Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
BH1	1	2.80	19/08/2016	-	999	$0.0_{(SS)}$	1.78	0.0	0.1	21.2	1.0	-	-	-	
BH1	1	---	15 secs	-	-	-	-	2.1	0.1	20.3	1.0	-	-	-	
BH1	1	---	30 secs	-	-	-	-	2.1	0.1	20.3	1.0	-	-	-	
BH1	1	---	60 secs	-	-	-	-	2.1	0.1	20.0	1.0	-	-	-	
BH1	1	---	90 secs	-	-	-	-	2.1	0.1	20.2	1.0	-	-	-	
BH1	1	---	120 secs	-	-	-	-	2.1	0.1	20.2	1.0	-	-	-	
BH1	2	2.79	02/09/2016	-	1011	$0.1_{(SS)}$	1.81	0.1	0.0	21.0	0.0	-	-	-	
BH1	2	---	15 secs	-	-	-	-	1.7	0.0	20.6	0.0	-	-	-	
BH1	2	---	30 secs	-	-	-	-	1.6	0.0	20.4	0.0	-	-	-	
BH1	2	---	60 secs	-	-	-	-	1.6	0.0	20.3	0.0	-	-	-	
BH1	2	---	90 secs	-	-	-	-	1.6	0.0	20.3	0.0	-	-	-	
BH1	2	---	120 secs	-	-	-	-	1.6	0.0	20.3	0.0	-	-	-	
BH1	2	---	180 secs	-	-	-	-	1.7	0.0	20.3	0.0	-	-	-	
BH1	2	---	240 secs	-	-	-	-	1.7	0.0	20.3	0.0	-	-	-	
BH1	3	1.82	16/09/2016	1004	1004	$0.0_{(SS)}$	DRY	0.0	0.0	20.9	-	1.7	0.0	0.0	
BH1	3	---	15 secs	-	-	-	-	2.7	0.0	20.0	-	-	0.0	0.0	
BH1	3	---	30 secs	-	-	-	-	2.5	0.0	19.1	-	-	0.0	0.0	
BH1	3	---	60 secs	-	-	-	-	2.5	0.0	19.0	-	-	0.0	0.0	

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
BH1	3	---	90 secs	-	-	-	-	2.5	0.0	19.0	-	-	0.0	0.0	
BH1	3	---	120 secs	-	-	-	-	2.5	0.0	19.0	-	-	0.0	0.0	
BH1	3	---	180 secs	-	-	-	-	2.5	0.0	19.0	-	-	0.0	0.0	
BH1	3	---	240 secs	-	-	-	-	2.5	0.0	18.9	-	-	0.0	0.0	
BH1	3	---	300 secs	-	-	-	-	2.5	0.0	18.9	-	-	0.0	0.0	
BH3	1	2.55	19/08/2016	-	999	$0.0_{(SS)}$	2.39	0.1	0.1	21.2	1.0	-	-	-	
BH3	1	---	15 secs	-	-	-	-	3.8	0.1	20.2	1.0	-	-	-	
BH3	1	---	30 secs	-	-	-	-	4.0	0.1	19.7	1.0	-	-	-	
BH3	1	---	60 secs	-	-	-	-	4.0	0.1	19.7	1.0	-	-	-	
BH3	1	---	90 secs	-	-	-	-	4.0	0.1	19.7	1.0	-	-	-	
BH3	1	---	120 secs	-	-	-	-	4.0	0.1	19.7	1.0	-	-	-	
BH3	2	2.55	02/09/2016	-	1011	$0.0_{(SS)}$	2.14	0.1	0.0	21.0	0.0	-	-	-	
BH3	2	---	15 secs	-	-	-	-	3.8	0.0	19.8	0.0	-	-	-	
BH3	2	---	30 secs	-	-	-	-	3.3	0.0	19.3	0.0	-	-	-	
BH3	2	---	60 secs	-	-	-	-	3.4	0.0	19.2	0.0	-	-	-	
BH3	2	---	90 secs	-	-	-	-	3.4	0.0	19.2	0.0	-	-	-	
BH3	2	---	120 secs	-	-	-	-	3.4	0.0	19.2	0.0	-	-	-	
BH3	2	---	180 secs	-	-	-	-	3.4	0.0	19.2	0.0	-	-	-	
BH3	3	2.56	16/09/2016	1007	1007	$0.0_{(SS)}$	2.09	0.0	0.0	20.9	0.0	0.4	0.0	-	
BH3	3	---	15 secs	-	-	-	-	3.9	0.0	20.1	0.0	-	0.0	-	
BH3	3	---	30 secs	-	-	-	-	3.7	0.0	18.9	0.0	-	0.0	-	
BH3	3	---	60 secs	-	-	-	-	3.6	0.0	18.6	0.0	-	0.0	-	
BH3	3	---	90 secs	-	-	-	-	3.6	0.0	18.6	0.0	-	0.0	-	
BH3	3	---	120 secs	-	-	-	-	3.6	0.0	18.6	0.0	-	0.0	-	

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
BH3	3	---	180 secs	-	-	-	-	3.7	0.0	18.3	0.0	-	0.0	-	
BH3	3	---	240 secs	-	-	-	-	3.7	0.0	18.3	0.0	-	0.0	-	
BH3	3	---	300 secs	-	-	-	-	3.7	0.0	18.3	0.0	-	0.0	-	
BH5	1	2.73	19/08/2016	-	999	$0.0_{(SS)}$	DRY	0.1	0.1	21.3	1.0	-	-	-	
BH5	1	---	15 secs	-	-	-	-	1.9	0.1	20.8	1.0	-	-	-	
BH5	1	---	30 secs	-	-	-	-	2.2	0.1	20.4	1.0	-	-	-	
BH5	1	---	60 secs	-	-	-	-	3.0	0.1	19.9	1.0	-	-	-	
BH5	1	---	90 secs	-	-	-	-	4.1	0.1	19.3	1.0	-	-	-	
BH5	1	---	120 secs	-	-	-	-	4.9	0.1	18.9	1.0	-	-	-	
BH5	1	---	180 secs	-	-	-	-	5.0	0.1	18.9	1.0	-	-	-	
BH5	2	2.71	02/09/2016	-	1013	$0.1_{(SS)}$	DRY	0.0	0.0	20.9	0.0	-	-	-	
BH5	2	---	15 secs	-	-	-	-	3.6	0.0	19.5	0.0	-	-	-	
BH5	2	---	30 secs	-	-	-	-	3.2	0.0	19.1	0.0	-	-	-	
BH5	2	---	60 secs	-	-	-	-	3.3	0.0	19.0	0.0	-	-	-	
BH5	2	---	90 secs	-	-	-	-	3.4	0.0	19.0	0.0	-	-	-	
BH5	2	---	120 secs	-	-	-	-	3.4	0.0	19.0	0.0	-	-	-	
BH5	2	---	180 secs	-	-	-	-	3.3	0.0	19.0	0.0	-	-	-	
BH5	2	---	240 secs	-	-	-	-	3.3	0.0	19.0	0.0	-	-	-	
BH5	3	1.83	16/09/2016	-	1004	$0.0_{(SS)}$	1.77	0.0	0.0	20.9	-	0.2	0.0	0.0	
BH5	3	---	15 secs	-	-	-	-	5.4	0.0	19.5	-	-	0.0	0.0	
BH5	3	---	30 secs	-	-	-	-	5.0	0.0	17.5	-	-	0.0	0.0	
BH5	3	---	60 secs	-	-	-	-	5.0	0.0	17.1	-	-	0.0	0.0	
BH5	3	---	90 secs	-	-	-	-	4.9	0.0	17.2	-	-	0.0	0.0	
BH5	3	---	120 secs	-	-	-	-	4.9	0.0	17.2	-	-	0.0	0.0	

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
BH5	3	---	180 secs	-	-	-	-	4.8	0.0	17.2	-	-	0.0	0.0	
BH5	3	---	240 secs	-	-	-	-	4.7	0.0	17.3	-	-	0.0	0.0	
BH5	3	---	300 secs	-	-	-	-	4.7	0.0	17.3	-	-	0.0	0.0	
BH5	3	---	360 secs	-	-	-	-	4.6	0.0	17.4	-	-	0.0	0.0	
BH5	3	---	420 secs	-	-	-	-	4.6	0.0	17.4	-	-	0.0	0.0	
BH5	3	---	480 secs	-	-	-	-	4.6	0.0	17.4	-	-	0.0	0.0	
BH7	1	2.44	19/08/2016	-	999	0.0 (SS)	1.10	0.0	0.1	20.4	1.0	-	-	-	
BH7	1	---	15 secs	-	-	-	-	4.5	0.1	19.3	1.0	-	-	-	
BH7	1	---	30 secs	-	-	-	-	4.8	0.1	18.8	1.0	-	-	-	
BH7	1	---	60 secs	-	-	-	-	5.0	0.1	18.7	1.0	-	-	-	
BH7	1	---	90 secs	-	-	-	-	5.1	0.1	18.7	1.0	-	-	-	
BH7	1	---	120 secs	-	-	-	-	4.8	0.1	19.0	1.0	-	-	-	
BH7	1	---	180 secs	-	-	-	-	3.5	0.1	19.4	1.0	-	-	-	
BH7	2	2.45	02/09/2016	-	1012	0.1 (SS)	DRY	0.1	0.0	21.0	0.0	-	-	-	
BH7	2	---	15 secs	-	-	-	-	2.4	0.0	20.1	0.0	-	-	-	
BH7	2	---	30 secs	-	-	-	-	2.0	0.0	20.0	0.0	-	-	-	
BH7	2	---	60 secs	-	-	-	-	2.2	0.0	20.0	0.0	-	-	-	
BH7	2	---	90 secs	-	-	-	-	2.2	0.0	19.9	0.0	-	-	-	
BH7	2	---	120 secs	-	-	-	-	2.2	0.0	19.9	0.0	-	-	-	
BH7	2	---	180 secs	-	-	-	-	2.4	0.0	19.9	0.0	-	-	-	
BH7	2	---	240 secs	-	-	-	-	2.4	0.0	19.8	0.0	-	-	-	
BH7	3	1.52	16/09/2016	1004	1004	0.0 (SS)	1.14	0.0	0.0	20.9	-	0.7	0.0	0.0	
BH7	3	---	15 secs	-	-	-	-	5.2	0.0	19.6	-	-	0.0	0.0	
BH7	3	---	30 secs	-	-	-	-	4.9	0.0	17.9	-	-	0.0	0.0	

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IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
BH7	3	---	60 secs	-	-	-	-	4.9	0.0	17.5	-	-	0.0	0.0	
BH7	3	---	90 secs	-	-	-	-	4.9	0.0	17.4	-	-	0.0	0.0	
BH7	3	---	120 secs	-	-	-	-	5.0	0.0	17.4	-	-	0.0	0.0	
BH7	3	---	180 secs	-	-	-	-	5.1	0.0	17.3	-	-	0.0	0.0	
BH7	3	---	240 secs	-	-	-	-	5.3	0.0	17.2	-	-	0.0	0.0	
BH7	3	---	300 secs	-	-	-	-	5.4	0.0	17.1	-	-	0.0	0.0	
BH7	3	---	360 secs	-	-	-	-	5.5	0.0	17.0	-	-	0.0	0.0	
BH7	3	---	420 secs	-	-	-	-	5.7	0.0	17.0	-	-	0.0	0.0	
BH7	3	---	480 secs	-	-	-	-	5.8	0.0	16.9	-	-	0.0	0.0	
BH7	3	---	540 secs	-	-	-	-	5.8	0.0	16.8	-	-	0.0	0.0	
BH7	3	---	600 secs	-	-	-	-	5.9	0.0	16.8	-	-	0.0	0.0	
BH9	1	2.94	19/08/2016	-	999	$0.0_{(SS)}$	1.24	0.1	0.1	20.8	1.0	-	-	-	
BH9	1	---	15 secs	-	-	-	-	1.6	0.1	20.1	1.0	-	-	-	
BH9	1	---	30 secs	-	-	-	-	1.7	0.1	19.9	1.0	-	-	-	
BH9	1	---	60 secs	-	-	-	-	1.7	0.1	19.8	1.0	-	-	-	
BH9	1	---	90 secs	-	-	-	-	1.7	0.1	19.8	1.0	-	-	-	
BH9	1	---	120 secs	-	-	-	-	1.7	0.1	19.8	1.0	-	-	-	
BH9	2	2.92	02/09/2016	-	1013	$0.0_{(SS)}$	1.00	0.0	0.0	21.1	0.0	-	-	-	
BH9	2	---	15 secs	-	-	-	-	0.8	0.0	20.7	0.0	-	-	-	
BH9	2	---	30 secs	-	-	-	-	0.7	0.0	20.6	0.0	-	-	-	
BH9	2	---	60 secs	-	-	-	-	0.7	0.0	20.7	0.0	-	-	-	
BH9	2	---	90 secs	-	-	-	-	0.7	0.0	20.7	0.0	-	-	-	
BH9	2	---	120 secs	-	-	-	-	0.8	0.0	20.7	0.0	-	-	-	
BH9	2	---	240 secs	-	-	-	-	0.8	0.0	20.7	0.0	-	-	-	

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IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
BH9	2	---	300 secs	-	-	-	-	0.8	0.0	20.7	0.0	-	-	-	
BH9	2	---	360 secs	-	-	-	-	0.8	0.0	20.8	0.0	-	-	-	
BH9	3	2.99	16/09/2016	1004	1004	$0.0_{(SS)}$	1.14	0.0	0.0	20.9	-	1.9	0.0	0.0	
BH9	3	---	15 secs	-	-	-	-	0.7	0.0	20.6	-	-	2.0	0.0	
BH9	3	---	30 secs	-	-	-	-	0.7	0.0	20.2	-	-	3.0	0.0	
BH9	3	---	60 secs	-	-	-	-	0.7	0.0	20.2	-	-	3.0	0.0	
BH9	3	---	90 secs	-	-	-	-	0.7	0.0	20.2	-	-	3.0	0.0	
BH9	3	---	120 secs	-	-	-	-	0.7	0.0	20.2	-	-	3.0	0.0	
BH9	3	---	180 secs	-	-	-	-	0.7	0.0	20.2	-	-	3.0	0.0	
BH9	3	---	240 secs	-	-	-	-	0.7	0.0	20.2	-	-	3.0	0.0	
BH9	3	---	300 secs	-	-	-	-	0.7	0.0	20.2	-	-	3.0	0.0	
BH13	1	2.75	19/08/2016	-	999	$0.0_{(SS)}$	2.50	0.1	0.1	20.7	1.0	-	-	-	
BH13	1	---	15 secs	-	-	-	-	1.1	0.1	19.9	1.0	-	-	-	
BH13	1	---	30 secs	-	-	-	-	1.2	0.1	19.7	1.0	-	-	-	
BH13	1	---	60 secs	-	-	-	-	1.2	0.1	19.6	1.0	-	-	-	
BH13	1	---	90 secs	-	-	-	-	1.3	0.1	19.6	1.0	-	-	-	
BH13	1	---	120 secs	-	-	-	-	1.3	0.1	19.6	1.0	-	-	-	
BH13	2	2.74	02/09/2016	-	1013	$0.0_{(SS)}$	1.35	0.0	0.0	21.1	0.0	-	-	-	
BH13	2	---	15 secs	-	-	-	-	1.1	0.0	20.6	0.0	-	-	-	
BH13	2	---	30 secs	-	-	-	-	1.0	0.0	20.4	0.0	-	-	-	
BH13	2	---	60 secs	-	-	-	-	1.0	0.0	20.3	0.0	-	-	-	
BH13	2	---	90 secs	-	-	-	-	1.0	0.0	20.3	0.0	-	-	-	
BH13	2	---	120 secs	-	-	-	-	1.0	0.0	20.3	0.0	-	-	-	
BH13	2	---	180 secs	-	-	-	-	1.1	0.0	20.3	0.0	-	-	-	

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IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
BH13	2	---	240 secs	-	-	-	-	1.1	0.0	20.3	0.0	-	-	-	
BH13	2	---	300 secs	-	-	-	-	1.1	0.0	20.3	0.0	-	-	-	
BH13	3	2.83	16/09/2016	1004	1004	$0.0_{(SS)}$	1.56	0.0	0.0	20.9	-	1.3	0.0	0.0	
BH13	3	---	15 secs	-	-	-	-	1.2	0.0	20.4	-	-	3.0	0.0	
BH13	3	---	30 secs	-	-	-	-	1.1	0.0	19.7	-	-	3.0	0.0	
BH13	3	---	60 secs	-	-	-	-	1.1	0.0	19.6	-	-	3.0	0.0	
BH13	3	---	90 secs	-	-	-	-	1.1	0.0	19.6	-	-	3.0	0.0	
BH13	3	---	120 secs	-	-	-	-	1.1	0.0	19.5	-	-	3.0	0.0	
BH13	3	---	180 secs	-	-	-	-	1.2	0.0	19.5	-	-	3.0	0.0	
BH13	3	---	240 secs	-	-	-	-	1.2	0.0	19.5	-	-	3.0	0.0	
BH13	3	---	300 secs	-	-	-	-	1.2	0.0	19.5	-	-	3.0	0.0	
BH15	1	2.60	19/08/2016	-	999	$0.0_{(SS)}$	0.20	0.0	0.1	21.1	1.0	-	-	-	
BH15	1	---	15 secs	-	-	-	-	0.0	0.1	21.1	1.0	-	-	-	
BH15	1	---	30 secs	-	-	-	-	0.0	0.1	21.1	1.0	-	-	-	
BH15	1	---	60 secs	-	-	-	-	0.0	0.1	21.1	1.0	-	-	-	
BH15	1	---	90 secs	-	-	-	-	0.0	0.1	21.1	1.0	-	-	-	
BH15	2	2.55	02/09/2016	-	1013	$0.1_{(SS)}$	0.25	0.1	0.0	21.1	0.0	-	-	-	
BH15	2	---	15 secs	-	-	-	-	0.3	0.0	20.9	0.0	-	-	-	
BH15	2	---	30 secs	-	-	-	-	0.3	0.0	20.8	0.0	-	-	-	
BH15	2	---	60 secs	-	-	-	-	0.3	0.0	20.8	0.0	-	-	-	
BH15	2	---	90 secs	-	-	-	-	0.3	0.0	20.8	0.0	-	-	-	
BH15	2	---	120 secs	-	-	-	-	0.3	0.0	20.8	0.0	-	-	-	
BH15	2	---	180 secs	-	-	-	-	0.3	0.0	20.8	0.0	-	-	-	
BH15	3	1.87	16/09/2016	1004	1004	$0.0_{(SS)}$	0.17	0.0	0.0	20.9	-	1.3	0.0	0.0	

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IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
BH15	3	---	15 secs	-	-	-	-	0.9	0.0	20.6	-	-	6.0	0.0	
BH15	3	---	30 secs	-	-	-	-	0.8	0.0	20.2	-	-	8.0	0.0	
BH15	3	---	60 secs	-	-	-	-	0.8	0.0	20.2	-	-	8.0	0.0	
BH15	3	---	90 secs	-	-	-	-	0.8	0.0	20.2	-	-	8.0	0.0	
BH15	3	---	120 secs	-	-	-	-	0.8	0.0	20.2	-	-	8.0	0.0	
BH15	3	---	180 secs	-	-	-	-	0.8	0.0	20.2	-	-	8.0	0.0	
BH15	3	---	240 secs	-	-	-	-	0.8	0.0	20.2	-	-	8.0	0.0	
BH15	3	---	300 secs	-	-	-	-	0.8	0.0	20.2	-	-	8.0	0.0	
BH16	1	2.80	19/08/2016	-	999	$0.0_{(SS)}$	1.58	0.1	0.1	21.0	1.0	-	-	-	
BH16	1	---	15 secs	-	-	-	-	0.8	0.1	20.8	1.0	-	-	-	
BH16	1	---	30 secs	-	-	-	-	0.8	0.1	20.8	1.0	-	-	-	
BH16	1	---	60 secs	-	-	-	-	1.0	0.1	20.7	1.0	-	-	-	
BH16	1	---	90 secs	-	-	-	-	1.1	0.1	20.7	1.0	-	-	-	
BH16	1	---	120 secs	-	-	-	-	1.3	0.1	20.6	1.0	-	-	-	
BH16	1	---	180 secs	-	-	-	-	1.3	0.1	20.6	1.0	-	-	-	
BH16	2	2.78	02/09/2016	-	1012	$0.1_{(SS)}$	1.59	0.1	0.0	21.0	0.0	-	-	-	
BH16	2	---	15 secs	-	-	-	-	1.0	0.0	20.7	0.0	-	-	-	
BH16	2	---	30 secs	-	-	-	-	0.8	0.0	20.5	0.0	-	-	-	
BH16	2	---	60 secs	-	-	-	-	0.9	0.0	20.5	0.0	-	-	-	
BH16	2	---	90 secs	-	-	-	-	0.9	0.0	20.5	0.0	-	-	-	
BH16	2	---	120 secs	-	-	-	-	0.9	0.0	20.5	0.0	-	-	-	
BH16	2	---	180 secs	-	-	-	-	0.9	0.0	20.5	0.0	-	-	-	
BH16	3	1.86	16/09/2016	1003	1004	$0.0_{(SS)}$	1.67	0.0	0.0	20.9	-	0.4	0.0	-	
BH16	3	---	15 secs	-	-	-	-	1.5	0.0	20.4	-	-	7.0	-	

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IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
BH16	3	---	30 secs	-	-	-	-	1.4	0.0	19.9	-	-	9.0	-	
BH16	3	---	60 secs	-	-	-	-	1.4	0.0	19.8	-	-	9.0	-	
BH16	3	---	90 secs	-	-	-	-	1.4	0.0	19.8	-	-	9.0	-	
BH16	3	---	120 secs	-	-	-	-	1.3	0.0	19.8	-	-	9.0	-	
BH16	3	---	180 secs	-	-	-	-	1.3	0.0	19.8	-	-	8.0	-	
BH16	3	---	240 secs	-	-	-	-	1.3	0.0	19.9	-	-	8.0	-	
BH16	3	---	300 secs	-	-	-	-	1.2	0.0	19.9	-	-	8.0	-	
BH16	3	---	360 secs	-	-	-	-	1.2	0.0	19.9	-	-	8.0	-	
BH16	3	---	420 secs	-	-	-	-	1.2	0.0	19.9	-	-	7.0	-	
BH17a	1	2.93	19/08/2016	-	999	$0.0_{(SS)}$	DRY	0.0	0.1	20.3	1.0	-	-	-	
BH17a	1	---	15 secs	-	-	-	-	2.0	0.1	19.7	1.0	-	-	-	
BH17a	1	---	30 secs	-	-	-	-	2.3	0.1	19.1	1.0	-	-	-	
BH17a	1	---	60 secs	-	-	-	-	2.3	0.1	19.1	1.0	-	-	-	
BH17a	1	---	90 secs	-	-	-	-	2.3	0.1	19.1	1.0	-	-	-	
BH17a	1	---	120 secs	-	-	-	-	2.3	0.1	19.1	1.0	-	-	-	
BH17a	2	2.92	02/09/2016	-	1013	$0.1_{(SS)}$	DRY	0.1	0.0	21.0	0.0	-	-	-	
BH17a	2	---	15 secs	-	-	-	-	1.5	0.0	20.3	0.0	-	-	-	
BH17a	2	---	30 secs	-	-	-	-	1.2	0.0	20.0	0.0	-	-	-	
BH17a	2	---	60 secs	-	-	-	-	1.3	0.0	19.9	0.0	-	-	-	
BH17a	2	---	90 secs	-	-	-	-	1.4	0.0	19.8	0.0	-	-	-	
BH17a	2	---	120 secs	-	-	-	-	1.4	0.0	19.8	0.0	-	-	-	
BH17a	2	---	180 secs	-	-	-	-	1.4	0.0	19.8	0.0	-	-	-	
BH17a	2	---	240 secs	-	-	-	-	1.5	0.0	19.8	0.0	-	-	-	
BH17a	2	---	300 secs	-	-	-	-	1.5	0.0	19.8	0.0	-	-	-	

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
BH17a	3	1.98	16/09/2016	1004	1004	$0.0_{(SS)}$	DRY	0.0	0.0	20.9	-	0.5	0.0	-	
BH17a	3	---	15 secs	-	-	-	-	2.1	0.0	19.4	-	-	0.0	-	
BH17a	3	---	30 secs	-	-	-	-	1.9	0.0	17.7	-	-	0.0	-	
BH17a	3	---	60 secs	-	-	-	-	2.0	0.0	17.5	-	-	0.0	-	
BH17a	3	---	90 secs	-	-	-	-	2.0	0.0	17.4	-	-	0.0	-	
BH17a	3	---	120 secs	-	-	-	-	2.0	0.0	17.4	-	-	0.0	-	
BH17a	3	---	180 secs	-	-	-	-	2.0	0.0	17.3	-	-	0.0	-	
BH17a	3	---	240 secs	-	-	-	-	2.0	0.0	17.3	-	-	0.0	-	
BH17a	3	---	300 secs	-	-	-	-	2.0	0.0	17.2	-	-	0.0	-	
BH18	1	2.94	19/08/2016	-	999	$0.0_{(SS)}$	2.72	0.0	0.1	20.4	1.0	-	-	-	
BH18	1	---	15 secs	-	-	-	-	2.0	0.1	19.4	1.0	-	-	-	
BH18	1	---	30 secs	-	-	-	-	2.0	0.1	19.4	1.0	-	-	-	
BH18	1	---	60 secs	-	-	-	-	2.0	0.1	19.3	1.0	-	-	-	
BH18	1	---	90 secs	-	-	-	-	2.0	0.1	19.3	1.0	-	-	-	
BH18	1	---	120 secs	-	-	-	-	2.0	0.1	19.3	1.0	-	-	-	
BH18	2	2.93	02/09/2016	-	1013	$0.1_{(SS)}$	2.21	0.1	0.0	21.2	0.0	-	-	-	
BH18	2	---	15 secs	-	-	-	-	2.1	0.0	20.0	0.0	-	-	-	
BH18	2	---	30 secs	-	-	-	-	1.9	0.0	19.8	0.0	-	-	-	
BH18	2	---	60 secs	-	-	-	-	1.9	0.0	19.7	0.0	-	-	-	
BH18	2	---	90 secs	-	-	-	-	1.9	0.0	19.7	0.0	-	-	-	
BH18	2	---	120 secs	-	-	-	-	1.9	0.0	19.6	0.0	-	-	-	
BH18	2	---	180 secs	-	-	-	-	2.0	0.0	19.6	0.0	-	-	-	
BH18	2	---	240 secs	-	-	-	-	2.0	0.0	19.6	0.0	-	-	-	
BH18	2	---	300 secs	-	-	-	-	2.0	0.0	19.6	0.0	-	-	-	

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
BH18	2	---	360 secs	-	-	-	-	2.0	0.0	19.6	0.0	-	-	-	
BH18	3	2.03	16/09/2016	1004	1004	$0.0_{(SS)}$	1.95	0.0	0.0	20.9	-	0.6	0.0	0.0	
BH18	3	---	15 secs	-	-	-	-	2.5	0.0	19.6	-	-	0.0	0.0	
BH18	3	---	30 secs	-	-	-	-	2.3	0.0	18.4	-	-	0.0	0.0	
BH18	3	---	60 secs	-	-	-	-	2.3	0.0	18.2	-	-	0.0	0.0	
BH18	3	---	90 secs	-	-	-	-	2.3	0.0	18.2	-	-	0.0	0.0	
BH18	3	---	120 secs	-	-	-	-	2.3	0.0	18.2	-	-	0.0	0.0	
BH18	3	---	180 secs	-	-	-	-	2.3	0.0	18.2	-	-	0.0	0.0	
BH18	3	---	240 secs	-	-	-	-	2.3	0.0	18.2	-	-	0.0	0.0	
BH18	3	---	300 secs	-	-	-	-	2.3	0.0	18.1	-	-	0.0	0.0	

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

RSK Environment Ltd
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Compiled By	Date	Checked By	Date	Contract Ref:
[redacted]	30/09/16			28720

Contract: **Campdown**

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AGS

APPENDIX G
LABORATORY CERTIFICATES FOR SOIL ANALYSIS

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 16/04864
Issue Number: 1 **Date:** 16 August, 2016

Client:
RSK Environment Ltd Hemel
18 Frogmore Road
Hemel Hempstead
Hertfordshire
UK
HP3 9RT

Project Manager: Andrew James/Nigel Austin/Russell Speight
Project Name: Campdown
Project Ref: 28720
Order No: N/A
Date Samples Received: 04/08/16
Date Instructions Received: 08/08/16
Date Analysis Completed: 16/08/16

Prepared by:

[redacted]

Melanie Marshall
Laboratory Coordinator

Approved by:

[redacted]

Georgia King
Client Service Manager

MCERTS
UKAS TESTING
1247

Envirolab Job Number: 16/04864

Client Project Name: Campdown

Client Project Ref: 28720

Lab Sample ID	16/04864/1	16/04864/2	16/04864/3	16/04864/4	16/04864/5	16/04864/6	16/04864/7	16/04864/8	Units	Method ref
Client Sample No										
Client Sample ID	BH1	BH3	BH7	BH8	BH10	BH5	BH12	BH14		
Depth to Top	0.10	0.10	1.10	0.00	0.10	0.50	0.10	0.10		
Depth To Bottom	0.20	0.20	1.20	0.20	0.20		0.20	0.20		
Date Sampled	02-Aug-16	02-Aug-16	02-Aug-16	03-Aug-16	03-Aug-16	02-Aug-16	03-Aug-16	03-Aug-16		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	4E	4E	6A	4E	4AE	6A	4E	4E		
% Stones >10mm$_A$ #	<0.1	<0.1	<0.1	<0.1	7.6	1.8	<0.1	<0.1	% w/w	A-T-044
pH$_D$ M#	6.01	5.71	6.98	5.31	7.75	6.62	5.42	6.30	pH	A-T-031s
Sulphate (water sol 2:1)$_D$ M#	<0.01	0.03	0.03	<0.01	0.02	0.04	<0.01	0.04	g/l	A-T-029s
Sulphate (acid soluble)$_D$ M#	530	620	420	520	410	260	380	1200	mg/kg	A-T-029s
Arsenic$_D$ M#	2	3	7	4	5	2	5	2	mg/kg	A-T-024s
Cadmium$_D$ M#	0.9	0.8	1.4	0.9	1.2	0.9	1.1	1.3	mg/kg	A-T-024s
Copper$_D$ M#	3	3	8	6	6	4	1	7	mg/kg	A-T-024s
Chromium$_D$ M#	18	17	36	21	24	24	20	34	mg/kg	A-T-024s
Lead$_D$ M#	15	18	21	25	23	27	21	26	mg/kg	A-T-024s
Mercury$_D$	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	mg/kg	A-T-024s
Nickel$_D$ M#	8	8	14	9	12	11	7	19	mg/kg	A-T-024s
Selenium$_D$	1	<1	1	<1	<1	<1	<1	1	mg/kg	A-T-024s
Zinc$_D$ M#	31	26	51	35	37	26	27	72	mg/kg	A-T-024s

Envirolab Job Number: 16/04864

Client Project Name: Campdown

Client Project Ref: 28720

Lab Sample ID	16/04864/1	16/04864/2	16/04864/3	16/04864/4	16/04864/5	16/04864/6	16/04864/7	16/04864/8	Units	Method ref
Client Sample No										
Client Sample ID	BH1	BH3	BH7	BH8	BH10	BH5	BH12	BH14		
Depth to Top	0.10	0.10	1.10	0.00	0.10	0.50	0.10	0.10		
Depth To Bottom	0.20	0.20	1.20	0.20	0.20		0.20	0.20		
Date Sampled	02-Aug-16	02-Aug-16	02-Aug-16	03-Aug-16	03-Aug-16	02-Aug-16	03-Aug-16	03-Aug-16		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	4E	4E	6A	4E	4AE	6A	4E	4E		
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_A^*$	-	NAD	NAD	NAD	NAD	-	NAD	-		A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	-	N/A	N/A	N/A	N/A	-	N/A	-		Gravimetry

Envirolab Job Number: 16/04864

Client Project Name: Campdown

Client Project Ref: 28720

Lab Sample ID	16/04864/1	16/04864/2	16/04864/3	16/04864/4	16/04864/5	16/04864/6	16/04864/7	16/04864/8	Units	Method ref
Client Sample No										
Client Sample ID	BH1	BH3	BH7	BH8	BH10	BH5	BH12	BH14		
Depth to Top	0.10	0.10	1.10	0.00	0.10	0.50	0.10	0.10		
Depth To Bottom	0.20	0.20	1.20	0.20	0.20		0.20	0.20		
Date Sampled	02-Aug-16	02-Aug-16	02-Aug-16	03-Aug-16	03-Aug-16	02-Aug-16	03-Aug-16	03-Aug-16		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	4E	4E	6A	4E	4AE	6A	4E	4E		
PAH 16										
Acenaphthene$_A^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-019s
Anthracene$_A^{M\#}$	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	0.07	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	0.11	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	A-T-019s
Chrysene$_A^{M\#}$	<0.06	0.12	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	mg/kg	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	0.13	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	mg/kg	A-T-019s
Fluorene$_A^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	0.08	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	A-T-019s
Naphthalene$_A^{M\#}$	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	A-T-019s
Pyrene$_A^{M\#}$	<0.07	0.13	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	A-T-019s
PAH (total 16)$_A^{M\#}$	<0.08	0.91	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	mg/kg	A-T-019s

Envirolab Job Number: 16/04864

Client Project Name: Campdown

Client Project Ref: 28720

Lab Sample ID	16/04864/1	16/04864/2	16/04864/3	16/04864/4	16/04864/5	16/04864/6	16/04864/7	16/04864/8	Units	Method ref
Client Sample No										
Client Sample ID	BH1	BH3	BH7	BH8	BH10	BH5	BH12	BH14		
Depth to Top	0.10	0.10	1.10	0.00	0.10	0.50	0.10	0.10		
Depth To Bottom	0.20	0.20	1.20	0.20	0.20		0.20	0.20		
Date Sampled	02-Aug-16	02-Aug-16	02-Aug-16	03-Aug-16	03-Aug-16	02-Aug-16	03-Aug-16	03-Aug-16		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	4E	4E	6A	4E	4AE	6A	4E	4E		
TPH CWG										
Ali >C5-C6$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Ali >C6-C8$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Ali >C8-C10$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Ali >C10-C12$_A^{\#}$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022s
Ali >C12-C16$_A^{\#}$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022s
Ali >C16-C21$_A^{\#}$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022s
Ali >C21-C35$_A^{\#}$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022s
Total Aliphatics$_A$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022s+23s
Aro >C5-C7$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Aro >C7-C8$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Aro >C8-C9$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Aro >C9-C10$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Aro >C10-C12$_A^{\#}$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022s
Aro >C12-C16$_A^{\#}$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022s
Aro >C16-C21$_A^{\#}$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022s
Aro >C21-C35$_A^{\#}$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022s
Total Aromatics$_A$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022s+23s
TPH (Ali & Aro)$_A$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022s+23s
BTEX - Benzene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
BTEX - Toluene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
BTEX - o Xylene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
MTBE$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s

Envirolab Job Number: 16/04864

Client Project Name: Campdown

Client Project Ref: 28720

Lab Sample ID	16/04864/9	16/04864/10	16/04864/11	16/04864/12					Units	Method ref
Client Sample No										
Client Sample ID	BH15	BH16	BH17	BH7						
Depth to Top	0.10	0.10	0.10	0.50						
Depth To Bottom	0.20	0.20	0.20							
Date Sampled	03-Aug-16	04-Aug-16	04-Aug-16	02-Aug-16						
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES						
Sample Matrix Code	6E	4AE	4AE	5A5A						
% Stones >10mm$_A$ #	<0.1	<0.1	0.8	-					% w/w	A-T-044
pH$_D$ MU	5.86	5.31	6.69	-					pH	A-T-031s
Sulphate (water sol 2:1)$_D$ MU	0.02	<0.01	<0.01	-					g/l	A-T-028s
Sulphate (acid soluble)$_D$ MU	730	660	810	-					mg/kg	A-T-028s
Arsenic$_D$ MU	3	4	5	-					mg/kg	A-T-024s
Cadmium$_D$ MU	0.9	1.1	1.3	-					mg/kg	A-T-024s
Copper$_D$ MU	3	3	9	-					mg/kg	A-T-024s
Chromium$_D$ MU	14	23	31	-					mg/kg	A-T-024s
Lead$_D$ MU	21	22	36	-					mg/kg	A-T-024s
Mercury$_D$	<0.17	<0.17	<0.17	-					mg/kg	A-T-024s
Nickel$_D$ MU	9	10	15	-					mg/kg	A-T-024s
Selenium$_D$	1	<1	<1	-					mg/kg	A-T-024s
Zinc$_D$ MU	38	34	45	-					mg/kg	A-T-024s

Envirolab Job Number: 16/04864

Client Project Name: Campdown

Client Project Ref: 28720

Lab Sample ID	16/04864/9	16/04864/10	16/04864/11	16/04864/12					Units	Method ref
Client Sample No										
Client Sample ID	BH15	BH16	BH17	BH7						
Depth to Top	0.10	0.10	0.10	0.50						
Depth To Bottom	0.20	0.20	0.20							
Date Sampled	03-Aug-16	04-Aug-16	04-Aug-16	02-Aug-16						
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES						
Sample Matrix Code	6E	4AE	4AE	5A5A						
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_A^*$	NAD	NAD	NAD	NAD						A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	N/A	N/A	N/A	N/A						Gravimetry

Envirolab Job Number: 16/04864

Client Project Name: Campdown

Client Project Ref: 28720

Lab Sample ID	16/04864/9	16/04864/10	16/04864/11	16/04864/12					Units	Method ref
Client Sample No										
Client Sample ID	BH15	BH16	BH17	BH7						
Depth to Top	0.10	0.10	0.10	0.50						
Depth To Bottom	0.20	0.20	0.20							
Date Sampled	03-Aug-16	04-Aug-16	04-Aug-16	02-Aug-16						
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES						
Sample Matrix Code	6E	4AE	4AE	5A5A						
PAH 16										
Acenaphthene$_A^{M\#}$	<0.01	<0.01	<0.01	-					mg/kg	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	<0.01	<0.01	-					mg/kg	A-T-019s
Anthracene$_A^{M\#}$	<0.02	<0.02	<0.02	-					mg/kg	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	<0.04	<0.04	-					mg/kg	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	<0.04	<0.04	-					mg/kg	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	<0.05	<0.05	-					mg/kg	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	<0.05	<0.05	-					mg/kg	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	<0.07	<0.07	-					mg/kg	A-T-019s
Chrysene$_A^{M\#}$	<0.06	<0.06	<0.06	-					mg/kg	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	<0.04	<0.04	-					mg/kg	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	<0.08	<0.08	-					mg/kg	A-T-019s
Fluorene$_A^{M\#}$	<0.01	<0.01	<0.01	-					mg/kg	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	<0.03	<0.03	-					mg/kg	A-T-019s
Naphthalene$_A^{M\#}$	<0.03	<0.03	<0.03	-					mg/kg	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	<0.03	<0.03	-					mg/kg	A-T-019s
Pyrene$_A^{M\#}$	<0.07	<0.07	<0.07	-					mg/kg	A-T-019s
PAH (total 16)$_A^{M\#}$	<0.08	<0.08	<0.08	-					mg/kg	A-T-019s

Envirolab Job Number: 16/04864

Client Project Name: Campdown

Client Project Ref: 28720

Lab Sample ID	16/04864/9	16/04864/10	16/04864/11	16/04864/12					Units	Method ref
Client Sample No										
Client Sample ID	BH15	BH16	BH17	BH7						
Depth to Top	0.10	0.10	0.10	0.50						
Depth To Bottom	0.20	0.20	0.20							
Date Sampled	03-Aug-16	04-Aug-16	04-Aug-16	02-Aug-16						
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES						
Sample Matrix Code	6E	4AE	4AE	5A5A						
TPH CWG										
Ali >C5-C6$_A^{\#}$	<0.01	<0.01	<0.01	-					mg/kg	A-T-022s
Ali >C6-C8$_A^{\#}$	<0.01	<0.01	<0.01	-					mg/kg	A-T-022s
Ali >C8-C10$_A^{\#}$	<0.01	<0.01	<0.01	-					mg/kg	A-T-022s
Ali >C10-C12$_A^{\#}$	<0.1	<0.1	<0.1	-					mg/kg	A-T-022s
Ali >C12-C16$_A^{\#}$	<0.1	<0.1	<0.1	-					mg/kg	A-T-022s
Ali >C16-C21$_A^{\#}$	<0.1	<0.1	<0.1	-					mg/kg	A-T-022s
Ali >C21-C35$_A^{\#}$	<0.1	<0.1	<0.1	-					mg/kg	A-T-022s
Total Aliphatics$_A$	<0.1	<0.1	<0.1	-					mg/kg	A-T-022s+23s
Aro >C5-C7$_A^{\#}$	<0.01	<0.01	<0.01	-					mg/kg	A-T-022s
Aro >C7-C8$_A^{\#}$	<0.01	<0.01	<0.01	-					mg/kg	A-T-022s
Aro >C8-C9$_A^{\#}$	<0.01	<0.01	<0.01	-					mg/kg	A-T-022s
Aro >C9-C10$_A^{\#}$	<0.01	<0.01	<0.01	-					mg/kg	A-T-022s
Aro >C10-C12$_A^{\#}$	<0.1	<0.1	<0.1	-					mg/kg	A-T-022s
Aro >C12-C16$_A^{\#}$	<0.1	<0.1	<0.1	-					mg/kg	A-T-022s
Aro >C16-C21$_A^{\#}$	<0.1	<0.1	<0.1	-					mg/kg	A-T-022s
Aro >C21-C35$_A^{\#}$	<0.1	<0.1	<0.1	-					mg/kg	A-T-022s
Total Aromatics$_A$	<0.1	<0.1	<0.1	-					mg/kg	A-T-022s+23s
TPH (Ali & Aro)$_A$	<0.1	<0.1	<0.1	-					mg/kg	A-T-022s+23s
BTEX - Benzene$_A^{\#}$	<0.01	<0.01	<0.01	-					mg/kg	A-T-022s
BTEX - Toluene$_A^{\#}$	<0.01	<0.01	<0.01	-					mg/kg	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	<0.01	<0.01	<0.01	-					mg/kg	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	<0.01	<0.01	<0.01	-					mg/kg	A-T-022s
BTEX - o Xylene$_A^{\#}$	<0.01	<0.01	<0.01	-					mg/kg	A-T-022s
MTBE$_A^{\#}$	<0.01	<0.01	<0.01	-					mg/kg	A-T-022s

REPORT NOTES

Notes - Soil chemical analysis
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones and brick and concrete fragments >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General
This report shall not be reproduced, except in full, without written approval from Envirolab.
Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.
All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supersedes any "A" subscripts.
All analysis is performed on the sample as received for soil samples which are positive for asbestos and/or if they are from outside the European Union and this supercedes any "D" subscripts.
Superscript "M" indicates method accredited to MCERTS.
If results are in italic font they are associated with an AQC failure. These are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

TPH analysis of water by method A-T-007
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Asbestos in soil
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if present as discrete fibres/fragments. Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

APPENDIX H
HUMAN HEALTH GENERIC ASSESSMENT CRITERIA

Generic assessment criteria for human health: residential scenario with home-grown produce

Background

RSK's generic assessment criteria (GAC) were initially prepared following the publication by the Environment Agency (EA) of soil guideline value (SGV) and toxicological (TOX) reports, and associated publications in 2009[1]. RSK GAC were updated following the publication of GAC by LQM/CIEH in 2009[2]. RSK GAC are periodically revised when updated information on toxicological, land use or receptor parameters is published.

Updates to the RSK GAC

In 2014, the publication of Category 4 Screening Levels (C4SL)[3,4], as part of the Defra-funded research project SP1010, included modifications to certain exposure assumptions documented within EA Science Report SC050221/SR3 (herein after referred to as SR3)[5] used in the generation of SGVs.

C4SL were published for six substances (cadmium, arsenic, benzene, benzo(a)pyrene, chromium VI and lead) for a sandy loam soil type with 6% soil organic matter, based on a low level of toxicological concern (LLTC; see Section 2.3 of research project report SP1010[3]). Where a C4SL has been published, the RSK GAC duplicates the C4SL published values using all input parameters within the SP1010 final project report[3] and associated appendices[6], and adopts them as GAC for these six substances.

For all other substances the C4SL exposure modifications, with the exception of the "top two" produce type approach taken in the C4SL, have been applied to the current RSK GAC. These include alterations to daily inhalation rates for residential and commercial scenarios, reducing soil adherence factors in children (age classes 1 to 12 only) for residential land use, reducing exposure frequency for dermal contact outdoors for residential land use, and updated produce type consumption rates (90th percentile) based on recent data from the National Diet and Nutrition Survey.

The RSK GAC have also been revised with updated toxicology published by LQM/CIEH in 2015[7] or by the USEPA[14], where a C4SL has not been published.

RSK GAC derivation for metals and organic compounds

Model selection

Soil assessment criteria (SAC) were calculated using the Contaminated Land Exposure Assessment (CLEA) tool v1.071, supporting EA guidance[5,8,9] and revised exposure scenarios published for the C4SL[3]. Groundwater assessment criteria (GrAC) protective of human health via the inhalation pathway were derived using the RBCA 2.51 model with the Johnson and Ettinger model for soil and groundwater volatilisation. RSK has updated the inputs within RBCA to reflect EA guidance[1,5,8,9]. The SAC and GrAC collectively are termed GAC.

Conceptual model

In accordance with SR3[5], the residential with home-grown produce scenario considers risks to a female child between the ages of 0 and 6 years old as the highest risk scenario. In accordance

with Box 3.1 of SR3[5], the pathways considered for production of the SAC in the residential with home-grown produce scenario are

- direct soil and dust ingestion
- consumption of home-grown produce
- consumption of soil attached to home-grown produce
- dermal contact with soil and indoor dust
- inhalation of indoor and outdoor dust and vapours.

Figure 1 is a conceptual model illustrating these linkages.

In line with guidance in the EA SGV report for cadmium[1], the RSK GAC for cadmium has been derived based on estimates representative of lifetime exposure. Although young children are generally more likely to have higher exposures to soil contaminants, the renal toxicity of cadmium, and the derivation of the TDI_{oral} and TDI_{inh}, are based on considerations of the kidney burden accumulated over 50 years or so. It is therefore reasonable to consider exposure not just in childhood but averaged over a longer period.

The pathway considered in production of the GrAC is the volatilisation of compounds from groundwater and subsequent vapour inhalation by residents while indoors. Figure 2 illustrates this linkage. Although the outdoor air inhalation pathway is also valid, this contributes little to the overall risks owing to the dilution in outdoor air. Within RBCA, the solubility limit of the chemical restricts the extent of volatilisation, which in turn drives the indoor air inhalation pathway. While the same restriction is not built into the CLEA model, the CLEA model output cells are flagged red where the soil saturation limit has been exceeded.

With respect to volatilisation, the CLEA model assumes a simple linear partitioning of a chemical in the soil between the sorbed, dissolved and vapour phase[9]. The upper boundaries of this partitioning are represented by the maximum aqueous solubility and pure saturated vapour concentration of the chemical. The CLEA model estimates saturated soil concentrations where these limits are reached[9]. The CLEA software uses a traffic light system to identify when individual and/or combined assessment criteria exceed the lower of either the aqueous- or vapour-based soil saturation limits. Model output cells are flagged red where the saturated soil concentration has been exceeded and the contribution of the indoor and outdoor vapour pathway to total exposure is greater than 10%. In this case, further consideration of the following is required[9]:

- Free phase contamination may be present.
- Exposure from the vapour pathways will be over-predicted by the model, as in reality the vapour phase concentration will not increase at concentrations above saturation limits
- Where the vapour pathway contribution is greater than 90%, it is unlikely the relevant health criteria value (HCV) will be exceeded at soil concentrations at least a factor of ten higher than the relevant HCV.

Where the vapour pathway is the predominant pathway (contributes greater than 90% of exposure) or the only exposure route considered and the cell is highlighted red (SAC exceeds saturation limit), the risk based on the assumed conceptual model is likely to be negligible as the vapour risk is assumed to be tolerable at maximum possible soil concentrations. In such circumstances, the vapour pathway exposure should be considered based on the presence of free phase or non-aqueous phase liquid sources and the measured concentrations of volatile organic compounds (VOC) in the vapour phase. Screening could be considered based on setting

the SAC as the modelled soil saturation limits. However, as stated within the CLEA handbook[9], this is likely to not be practical in many cases because of the very low saturation limits and, in any case, is highly conservative.

It should also be noted that for mixtures of compounds, free phase may be present where soil (or groundwater) concentrations are well below saturation limits for individual compounds.

Where the vapour pathway is only one of the exposure pathways considered, an additional approach can then be utilised as detailed within Section 4.12 of the CLEA model handbook[9], which explains how to calculate an effective assessment criterion manually.

SR3[5] states that, as a general rule of thumb, it is recognised that estimating vapour phase concentrations from dissolved and sorbed phase contamination by petroleum hydrocarbons are at least a factor of ten higher than those likely to be measured on-site. RSK has therefore applied an empirical subsurface to indoor air correction factor of 10 into the CLEA model chemical database and to outputs from the RBCA model for all petroleum hydrocarbon fractions (including BTEX, trimethylbenzenes and the polycyclic aromatic hydrocarbons (PAH) naphthalene, acenaphthene and acenaphthylene) to reduce this conservatism.

Input selection

The most up-to-date published chemical and toxicological data was obtained from EA Report SC050021/SR7[10], the EA TOX[1] reports, the C4SL SP1010 project report and associated appendices[3,6], the 2015 LQM/CIEH report[7] or the USEPA IRIS database[14]. Where a C4SL has been published, the RSK GAC have duplicated the C4SL published values using all input parameters within the SP1010 final project report[3] and associated appendices[6], and has adopted them as GAC for these six substances. Toxicological and specific chemical parameters for aromatic hydrocarbon C_8–C_9 (styrene), 1,2,4-trimethylbenzene and methyl tertiary-butyl ether (MTBE) were obtained from the CL:AIRE Soil Generic Assessment Criteria report[11].

For TPH, aromatic hydrocarbons C_5–C_8 were not modelled, as this range comprises benzene and toluene, which are modelled separately. The aromatic C_8–C_9 hydrocarbon fraction comprises ethylbenzene, xylene and styrene. As ethylbenzene and xylene are being modelled separately, the physical, chemical and toxicological data for aromatic C_8–C_9 have been taken from styrene.

For the GrAC, the HCV used in the modelling were derived using the toxicological data for the SAC amended as follows:

- A child weighing 13.3kg (average of 0-6 year old female in accordance with Table 4.6 of SR3[5]) and breathing 8.77m^3 (average daily inhalation rate for a 0-6yr old female in accordance with SP1010 final project report for the C4SL (Table 3.2[3]) and USEPA data(14)
- Background inhalation (mean daily intake (MDI)) for a child (Age Classes 1-6)
- Residential amendments to the MDI for younger age groups following Table 3.4 and Section 3.4.1 of SR2[8],; amended to reflect average daily inhalation rates in accordance with SP1010 final project report for the C4SL (Table 3.2[3]) and USEPA data[12].

Physical parameters

For the residential with home-grown produce scenario, the CLEA default building is a small, two-storey terrace house with a concrete ground-bearing slab. The house is assumed to have a 100m^2 private garden consisting of lawn and flowerbeds, incorporating a 20m^2 plot for growing fruit and vegetables consumed by the residents. SR3[5] notes this residential building type to be

the most conservative in terms of potential for vapour intrusion. The building parameters used in the production of the RSK GACs are the default CLEA v1.06 inputs presented in Table 3.3 of SR3[3], with a dust loading factor detailed in Section 9.3 of SR3[5]. The parameters for a sandy loam soil type were used in line with Table 4.4 of SR3[5]. This includes a value of 6% for the percentage of soil organic matter (SOM) within the soil. In RSK's experience, this is rather high for many sites. To avoid undertaking site-specific risk assessments for SOM, RSK has produced an additional set of GAC for SOM of 1% and 2.5% for all substances using the CLEA tool.

For the GrAC, the depth to groundwater was taken as 2.5m based on RSK's experience of assessing the volatilisation pathway from groundwater. The GrAC were produced using the input parameters in Table 4.

Summary of modifications to the default CLEA SR3[5] input parameters for residential with home-grown produce land-use scenario

In summary, the RSK GAC were produced using the default input parameters for soil properties, the air dispersion model, building properties and the vapour model detailed in SR3[5]. Modifications to the default SR3[5] exposure scenarios based on the C4SL exposure scenarios[3] are presented in Tables 2 and 3 below.

The final selected GAC are presented by pathway in Table 5 and the combined GAC in Table 6.

Figure 1: Conceptual model for residential scenario with home-grown produce

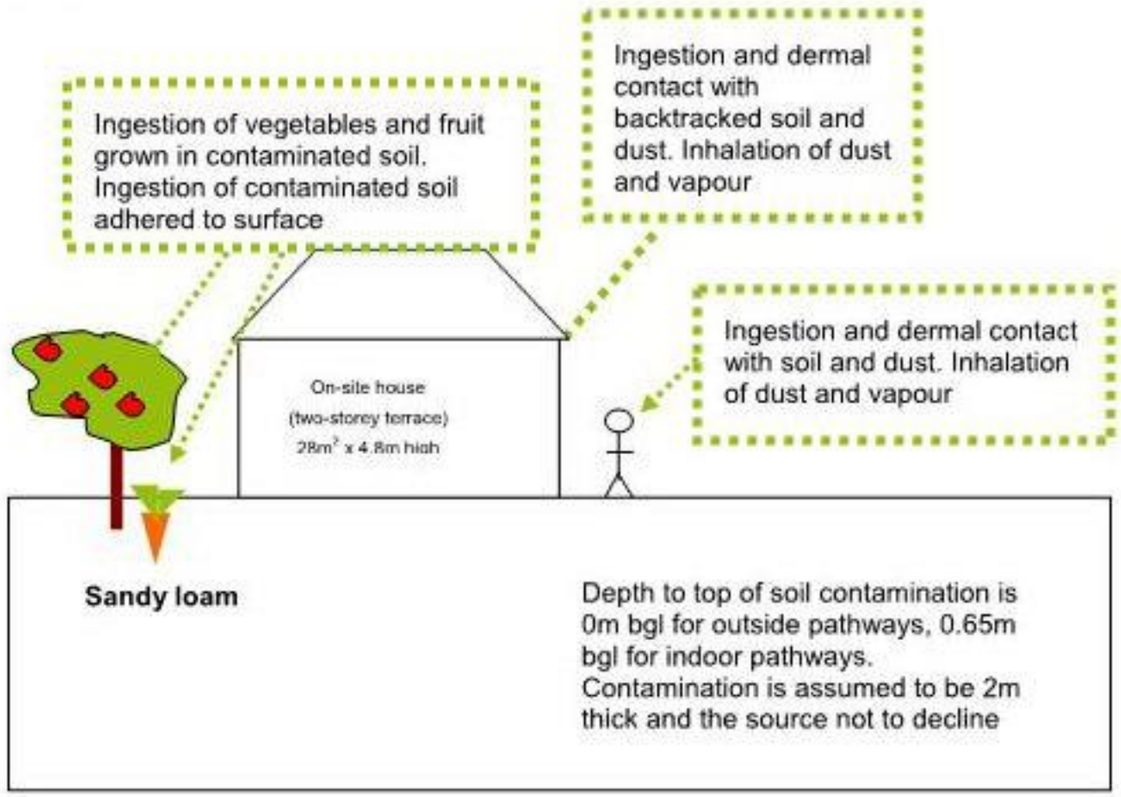


Table 1: Exposure assessment parameters for residential scenario with home-grown produce – inputs for CLEA model

Parameter	Value	Justification
Land use	Residential with homegrown produce	Chosen land use
Receptor	Female child age 1 to 6	Key generic assumption given in Box 3.1, SR3[5]
Building	Small terraced house	Key generic assumption given in Box 3.1, SR3. Small, two-storey terraced house chosen, as it is the most conservative residential building type in terms of protection from vapor intrusion (Section 3.4.6, SR3)[5]
Soil type	Sandy Loam	Most common UK soil type (Section 4.3.1, from Table 3.1, SR3)[5]
Start AC (age class)	1	Range of age classes corresponding to key generic assumption that the critical receptor is a young female child aged 0–6. From Box 3.1, SR3[5]
End AC (age class)	6	
SOM (%)	6	Representative of sandy loamy soil according to EA guidance note dated January 2009 entitled 'Changes We Have Made to the CLEA Framework Documents'[13]
	1	To provide SAC for sites where SOM <6% as often observed by RSK
	2.5	
pH	7	Model default

Table 2: Residential with home-grown produce – modified home-grown produce data

Name	Consumption rate 90th percentile (g FW kg^{-1} BW day^{-1}) by age class						Dry weight conversion factor (g DW g^{-1} FW)	Home-grown fraction (average)	Home-grown fraction (high end)	Soil loading factor (g g^{-1} DW)	Preparation correction factor
	1	2	3	4	5	6					
Green vegetables	7.12	5.87	5.87	5.87	4.53	4.53	0.096	0.05	0.33	1.00E-03	2.00E-01
Root vegetables	10.7	2.83	2.83	2.83	2.14	2.14	0.103	0.06	0.4	1.00E-03	1.00E+00
Tuber vegetables	16	6.6	6.6	6.6	4.95	4.95	0.21	0.02	0.13	1.00E-03	1.00E+00
Herbaceous fruit	1.83	3.39	3.39	3.39	2.24	2.24	0.058	0.06	0.4	1.00E-03	6.00E-01
Shrub fruit	2.23	0.46	0.46	0.46	0.19	0.19	0.166	0.09	0.6	1.00E-03	6.00E-01
Tree fruit	3.82	10.3	10.3	10.3	5.16	5.16	0.157	0.04	0.27	1.00E-03	6.00E-01
Justification	Table 3.4, SP1010 [3]						Table 6.3, SR3[5]	Table 4.19, SR3[5]		Table 6.3, SR3[5]	

Table 3: Residential with home-grown produce – modified and use and receptor data

Parameter	Unit	Age class					
		1	2	3	4	5	6
EF (soil and dust ingestion)	day yr^{-1}	180	365	365	365	365	365
EF (consumption of home-grown produce)	day yr^{-1}	180	365	365	365	365	365
EF (skin contact, indoor)	day yr^{-1}	180	365	365	365	365	365
EF (skin contact, outdoor)	day yr^{-1}	170	170	170	170	170	170
EF (inhalation of dust and vapour, indoor)	day yr^{-1}	365	365	365	365	365	365
EF (inhalation of dust and vapour, outdoor)	day yr^{-1}	365	365	365	365	365	365
Justification		Table 3.5, SP1010[3]; Table 3.1, SR3[5]					
Soil to skin adherence factor (outdoor)	mg cm^{-2} day^{-1}	0.1	0.1	0.1	0.1	0.1	0.1
Justification		Table 3.5, SP1010[3]					
Inhalation rate	m^3 day^{-1}	5.4	8.0	8.9/f	10.1	10.1	10.1
Justification		Mean value USEPA, 2011[12]; Table 3.2, SP1010[3]					

Notes: For **cadmium**, the exposure assessment for a residential land use is based on estimates representative of lifetime exposure AC1-18. This is because the TDI_{oral} and TDI_{inh} are based on considerations of the kidney burden accumulated over 50 years. It is therefore reasonable to consider exposure not just in childhood but averaged over a longer period. See the Environment Agency Science Report SC05002/ TOX 3[1], Science Report SC050021/Cadmium SGV[1] and the project report SP1010[3] for more information.

Figure 2: GrAC conceptual model for RBCA residential with home-grown produce scenario

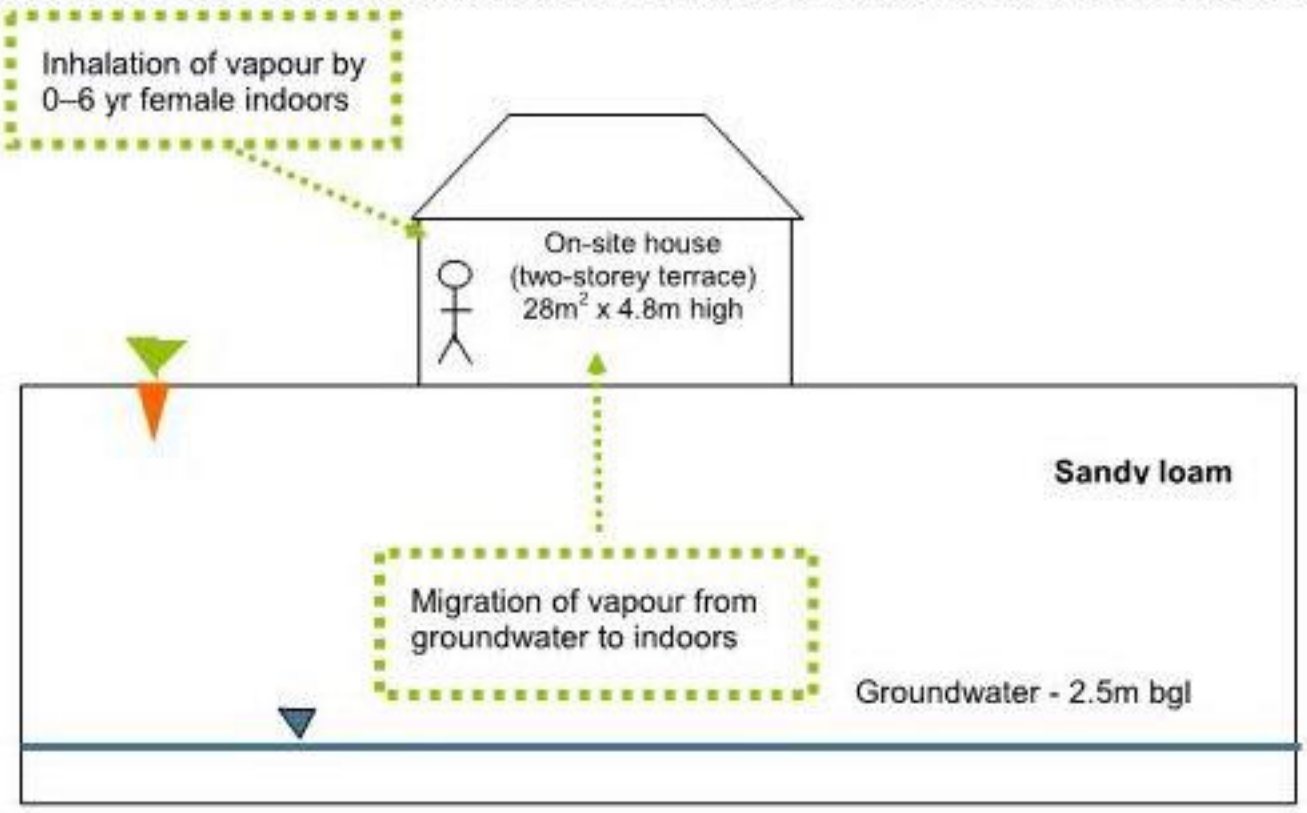


Table 4: Residential with home-grown produce – RBCA inputs

Parameter	Unit	Value	Justification
Receptor			
Averaging time	Years	6	From Box 3.1, SR3[5]
Receptor weight	kg	13.3	Average of CLEA 0–6 year old female data, Table 4.6, SR3[5]
Exposure duration	Years	6	From Box 3.1, report, SR3[5]
Exposure frequency	Days/yr	350	Weighted using occupancy period of 23 hours per day for 365 days of the year
Soil type – sandy loam			
Total porosity	-	0.53	CLEA value for sandy loam. Parameters for sandy loam from Table 4.4, SR3[5]
Volumetric water content	-	0.33	
Volumetric air content	-	0.20	
Dry bulk density	g cm^{-3} or kg/L	1.21	
Vertical hydraulic conductivity	cm s^{-1}	3.56E-3	CLEA value for saturated conductivity of sandy loam, Table 4.4, SR3[5] equivalent to 307 cm/day
Vapour permeability	m^2	3.05E-12	Calculated for sandy loam using equations in Appendix 1, SR3[5]
Capillary zone thickness	m	0.1	Professional judgement
Fraction organic carbon	%	0.0348	Representative of sandy loam according to EA guidance note dated January 2009 entitled 'Changes We Have Made to the CLEA Framework Documents'[13]
Building			
Building volume/area ratio	m	4.8	Table 3.3, SR3[5]
Foundation area	m^2	28	
Foundation perimeter	m	22	Calculated assuming building measures 7m x 4m to give 28m^2 foundation area
Building air exchange rate	d^{-1}	12	Table 3.3, SR3[5] Building air exchange rate equivalent to 1.4E-04 s^{-1}
Depth to bottom of foundation slab	m	0.15	
Foundation thickness	m	0.15	
Foundation crack fraction	-	0.0151	Calculated from floor crack area of 423 cm^2 and building footprint of 28m^2 in Table 4.21, SR3[5]
Volumetric water content of cracks	-	0.33	Assumed equal to underlying soil type in assumption that cracks become filled with soil over time. Parameters for sandy loam from Table 4.4, SR3[5]
Volumetric air content of cracks	-	0.2	
Indoor/outdoor differential pressure	Pa	3.1	From Table 3.3, SR3[5 Equivalent to 31 g/cm/s^2

References

1. Environment Agency (2009), 'Science Reports SC050021 - SGV and TOX reports for: benzene, toluene, ethylbenzene, xylene, mercury, selenium, nickel, arsenic, cadmium, phenol, dioxins, furans and dioxin-like PCBs'; 'Supplementary information for the derivation of SGV for: benzene, toluene, ethylbenzene, xylene, mercury, selenium, nickel, arsenic, cadmium, phenol, dioxins, furans and dioxin-like PCBs', and 'Contaminants in soil: updated collation of toxicological data and intake values for humans: benzene, toluene, ethylbenzene, xylene, mercury, selenium, nickel, arsenic, cadmium, phenol, dioxins, furans and dioxin-like PCBs'. Available at: https://www.gov.uk/government/publications/contaminants-in-soil-updated-collation-of-toxicological-data-and-intake-values-for-humans and https://www.gov.uk/government/publications/land-contamination-soil-guideline-values-sgvs (accessed 4 February 2015)

2. Nathanial, C. P., McCaffrey, C., Ashmore, M., Cheng, Y., Gillet, A. G., Ogden, R. C. and Scott, D. (2009), *LQM/CIEH Generic Assessment Criteria for Human Health Risk Assessment*, second edition (Nottingham: Land Quality Press).

3. Contaminated Land: Applications in Real Environment (CL:AIRE) (2014). 'Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination', Revision 2, DEFRA research project SP1010.

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5. Environment Agency (2009), *Science Report – SC050021/SR3. Updated technical background to the CLEA model* (Bristol: Environment Agency).

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GENERIC ASSESSMENT CRITERIA FOR HUMAN HEALTH - RESIDENTIAL WITH HOME-GROWN PRODUCE

Table 5

Human Health Generic Assessment Criteria by Pathway for Residential With Home-Grown Produce Scenario

RSK

Compound	Notes	GrAC (µg/l)	SAC Appropriate to Pathway SOM 1% (mg/kg)			Soil Saturation Limit (mg/kg)	SAC Appropriate to Pathway SOM 2.5% (mg/kg)			Soil Saturation Limit (mg/kg)	SAC Appropriate to Pathway SOM 6% (mg/kg)			Soil Saturation Limit (mg/kg)
			Oral	Inhalation	Combined		Oral	Inhalation	Combined		Oral	Inhalation	Combined	
Metals														
Arsenic	(a,b)	-	3.71E+01	5.26E+02	NR	NR	3.71E+01	5.26E+02	NR	NR	3.71E+01	5.26E+02	NR	NR
Cadmium	(a)	-	2.30E+01	4.88E+02	2.21E+01	NR	2.30E+01	4.88E+02	2.21E+01	NR	2.30E+01	4.88E+02	2.21E+01	NR
Chromium (III) - trivalent	(c)	-	1.84E+04	9.07E+02	NR	NR	1.84E+04	9.07E+02	NR	NR	1.84E+04	9.07E+02	NR	NR
Chromium (VI) - hexavalent	(a,d)	-	5.85E+01	2.06E+01	NR	NR	5.85E+01	2.06E+01	NR	NR	5.85E+01	2.06E+01	NR	NR
Copper		-	2.72E+03	1.41E+04	2.47E+03	NR	2.72E+03	1.41E+04	2.47E+03	NR	2.72E+03	1.41E+04	2.47E+03	NR
Lead	(a)	-	2.01E+02	NR	NR	NR	2.01E+02	NR	NR	NR	2.01E+02	NR	NR	NR
Elemental Mercury (Hg^0)	(d)	1.25E+01	NR	2.35E-01	NR	4.31E+00	NR	5.60E-01	NR	1.07E+01	NR	1.22E+00	NR	2.58E+01
Inorganic Mercury (Hg^{2+})		-	3.95E+01	3.63E+03	3.91E+01	NR	3.95E+01	3.63E+03	3.91E+01	NR	3.95E+01	3.63E+03	3.91E+01	NR
Methyl Mercury (Hg^{1+})		2.22E+04	1.20E+01	1.87E+01	7.52E+00	7.33E+01	1.20E+01	3.62E+01	9.34E+00	1.42E+02	1.20E+01	7.68E+01	1.08E+01	3.04E+02
Nickel	(d)	-	1.27E+02	1.81E+02	NR	NR	1.27E+02	1.81E+02	NR	NR	1.27E+02	1.81E+02	NR	NR
Selenium	(b)	-	2.58E+02	NR	NR	NR	2.58E+02	NR	NR	NR	2.58E+02	NR	NR	NR
Zinc	(b)	-	3.86E+03	3.63E+07	NR	NR	3.86E+03	3.63E+07	NR	NR	3.86E+03	3.63E+07	NR	NR
Cyanide (free)		-	1.37E+00	1.37E+04	1.37E+00	NR	1.37E+00	1.37E+04	1.37E+00	NR	1.37E+00	1.37E+04	1.37E+00	NR
Volatile Organic Compounds														
Benzene	(a)	2.30E+04	2.62E-01	9.01E-01	2.03E-01	1.22E+03	5.39E-01	1.68E+00	4.06E-01	2.26E+03	1.16E+00	3.48E+00	8.72E-01	4.71E+03
Toluene		5.96E+05	1.53E+02	9.09E+02	1.31E+02	8.69E+02	3.49E+02	2.03E+03	2.97E+02	1.92E+03	7.95E+02	4.55E+03	6.77E+02	4.36E+03
Ethylbenzene		1.25E+05	1.10E+02	8.34E+01	4.74E+01	5.18E+02	2.61E+02	1.96E+02	1.12E+02	1.22E+03	6.00E+02	4.59E+02	2.60E+02	2.84E+03
Xylene - m		1.16E+05	2.10E+02	8.25E+01	5.92E+01	6.25E+02	5.01E+02	1.95E+02	1.40E+02	1.47E+03	1.15E+03	4.56E+02	3.27E+02	3.46E+03
Xylene - o		1.41E+05	1.92E+02	8.87E+01	6.07E+01	4.78E+02	4.56E+02	2.08E+02	1.43E+02	1.12E+03	1.05E+03	4.86E+02	3.32E+02	2.62E+03
Xylene - p		1.21E+05	1.98E+02	7.93E+01	5.66E+01	5.76E+02	4.70E+02	1.86E+02	1.33E+02	1.35E+03	1.08E+03	4.36E+02	3.10E+02	3.17E+03
Total xylene		1.16E+05	1.92E+02	7.93E+01	5.66E+01	6.25E+02	4.56E+02	1.86E+02	1.33E+02	1.47E+03	1.05E+03	4.36E+02	3.10E+02	3.46E+03
Methyl tertiary-Butyl ether (MTBE)		9.32E+06	1.54E+02	1.04E+03	1.34E+02	2.04E+04	2.97E+02	1.68E+03	2.53E+02	3.31E+04	6.03E+02	3.21E+03	5.08E+02	6.27E+04
Trichloroethene		6.44E+01	2.83E-01	1.72E-02	1.62E-02	1.54E+03	6.26E-01	3.59E-02	3.40E-02	3.22E+03	1.41E+00	7.98E-02	7.55E-02	7.14E+03
Tetrachloroethene		4.08E+02	4.49E+00	1.79E-01	1.76E-01	4.24E+02	1.04E+01	4.02E-01	3.94E-01	9.51E+02	2.38E+01	9.21E-01	9.04E-01	2.18E+03
1,1,1-Trichloroethane		3.59E+04	3.33E+02	9.01E+00	8.77E+00	1.43E+03	7.26E+02	1.84E+01	1.80E+01	2.92E+03	1.62E+03	4.04E+01	3.94E+01	6.39E+03
1,1,1,2 Tetrachloroethane		2.84E+03	5.39E+00	1.54E+00	1.20E+00	2.60E+03	1.27E+01	3.56E+00	2.78E+00	6.02E+03	2.93E+01	8.29E+00	6.46E+00	1.40E+04
1,1,2,2-Tetrachloroethane		1.85E+04	2.81E+00	3.92E+00	1.64E+00	2.67E+03	6.10E+00	8.04E+00	3.47E+00	5.46E+03	1.38E+01	1.76E+01	7.67E+00	1.25E+04
Carbon Tetrachloride		6.10E+01	3.10E+00	2.58E-02	2.57E-02	1.52E+03	7.11E+00	5.85E-02	5.82E-02	3.32E+03	1.62E+01	1.28E-01	1.27E-01	7.54E+03
1,2-Dichloroethane		9.70E+01	3.17E-02	9.80E-03	7.13E-03	3.41E+03	5.73E-02	1.33E-02	1.08E-02	4.91E+03	1.09E-01	2.28E-02	1.88E-02	8.43E+03
Vinyl Chloride		6.20E+00	3.82E-03	7.73E-04	6.43E-04	1.36E+03	6.87E-03	1.90E-03	8.73E-04	1.76E+03	1.25E-02	1.53E-03	1.30E-03	2.69E+03
1,2,4-Trimethylbenzene		5.92E+03	NR	1.78E+00	NR	4.74E+02	NR	4.28E+00	NR	1.16E+03	NR	9.72E+00	NR	2.76E+03
1,3,5-Trimethylbenzene	(e)	-	NR	NR	NR	2.30E+02	NR	NR	NR	5.52E+02	NR	NR	NR	1.30E+03
Semi-Volatile Organic Compounds														
Acenaphthene		4.21E+03	2.27E+02	4.86E+04	2.26E+02	5.70E+01	5.41E+02	1.16E+05	5.38E+02	1.41E+02	1.18E+03	2.68E+05	1.17E+03	3.36E+02
Acenaphthylene		7.95E+03	1.85E+02	4.59E+04	1.84E+02	8.61E+01	4.42E+02	1.11E+05	4.40E+02	2.12E+02	9.78E+02	2.53E+05	9.74E+02	5.06E+02
Anthracene		-	2.43E+03	1.53E+05	2.39E+03	1.17E+00	5.53E+03	3.77E+05	5.45E+03	2.91E+00	1.10E+04	8.76E+05	1.08E+04	6.96E+00
Benzo(a)anthracene		-	1.01E+01	2.47E+01	7.16E+00	1.71E+00	1.42E+01	4.37E+01	1.07E+01	4.28E+00	1.69E+01	6.26E+01	1.33E+01	1.03E+01
Benzo(b)fluoranthene		-	2.96E+00	1.93E+01	2.56E+00	1.22E+00	3.89E+00	2.13E+01	3.29E+00	3.04E+00	4.43E+00	2.22E+01	3.89E+00	7.29E+00
Benzo(g,h,i)perylene		-	3.77E+02	1.97E+03	3.14E+02	1.54E-02	4.08E+02	1.94E+03	3.38E+02	3.85E-02	4.23E+02	1.97E+03	3.48E+02	9.23E-02
Benzo(k)fluoranthene		-	8.92E+01	5.41E+02	7.66E+01	6.87E-01	1.10E+02	5.76E+02	9.22E+01	1.72E+00	1.21E+02	5.91E+02	1.00E+02	4.12E+00
Chrysene		-	1.66E+01	1.19E+02	1.46E+01	4.40E-01	2.54E+01	1.48E+02	2.17E+01	1.10E+00	3.19E+01	1.66E+02	2.67E+01	2.64E+00
Dibenzo(a,h)anthracene		-	2.90E-01	1.45E+00	2.41E-01	3.93E-03	3.43E-01	1.64E+00	2.84E-01	9.82E-03	3.88E-01	1.74E+00	3.04E-01	2.36E-02
Fluoranthene		-	2.87E+02	3.83E+04	2.86E+02	1.89E+01	5.63E+02	6.87E+04	5.66E+02	4.73E+01	9.00E+02	1.83E+05	8.96E+02	1.13E+02
Fluorene		-	1.77E+02	6.20E+03	1.72E+02	3.09E+01	4.19E+02	1.53E+04	4.07E+02	7.65E+01	8.98E+02	3.62E+04	8.77E+02	1.83E+02
Indeno(1,2,3-cd)pyrene		-	3.09E+01	2.12E+02	2.70E+01	6.13E-02	4.22E+01	2.38E+02	3.59E+01	1.53E-01	4.92E+01	2.50E+02	4.11E+01	3.68E-01
Phenanthrene		-	9.85E+01	7.17E+03	9.72E+01	3.60E+01	2.24E+02	1.76E+04	2.22E+02	8.96E+01	4.48E+02	4.07E+04	4.43E+02	2.14E+02
Pyrene		-	8.25E+02	8.79E+04	8.20E+02	2.20E+00	1.25E+03	2.04E+05	1.24E+03	5.49E+00	2.05E+03	4.23E+05	2.04E+03	1.32E+01
Benzo(a)pyrene	(a)	-	4.96E+00	3.51E+01	NR	9.11E-01	4.98E+00	3.77E+01	NR	2.28E+00	4.98E+00	3.89E+01	NR	5.46E+00
Naphthalene		1.99E+04	2.78E+01	2.83E+01	1.27E+01	7.64E+01	6.66E+01	5.58E+01	3.04E+01	1.83E+02	1.53E+02	1.31E+02	7.06E+01	4.32E+02
Phenol		-	1.60E+02	4.58E+02	1.20E+02	2.42E+04	2.96E+02	6.95E+02	2.09E+02	3.81E+04	5.86E+02	1.19E+03	3.93E+02	7.03E+04

GENERIC ASSESSMENT CRITERIA FOR HUMAN HEALTH - RESIDENTIAL WITH HOME-GROWN PRODUCE

Table 5

Human Health Generic Assessment Criteria by Pathway for Residential With Home-Grown Produce Scenario

Compound	Notes	GrAC (µg/l)	SAC Appropriate to Pathway SOM 1% (mg/kg) Oral	Inhalation	Combined	Soil Saturation Limit (mg/kg)	SAC Appropriate to Pathway SOM 2.5% (mg/kg) Oral	Inhalation	Combined	Soil Saturation Limit (mg/kg)	SAC Appropriate to Pathway SOM 6% (mg/kg) Oral	Inhalation	Combined	Soil Saturation Limit (mg/kg)
Total Petroleum Hydrocarbons														
Aliphatic hydrocarbons EC_5-EC_6		2.00E+04	4.99E+03	4.24E+01	4.23E+01	3.04E+02	1.13E+04	7.79E+01	7.78E+01	5.58E+02	2.74E+04	1.61E+02	1.60E+02	1.15E+03
Aliphatic hydrocarbons >EC_6-EC_8		5.07E+03	1.49E+04	1.04E+02	1.03E+02	1.44E+02	3.43E+04	2.31E+02	2.31E+02	3.22E+02	7.11E+04	5.29E+02	5.28E+02	7.36E+02
Aliphatic hydrocarbons >EC_8-EC_{10}		8.27E+02	1.61E+03	2.68E+01	2.67E+01	7.77E+01	2.91E+03	6.55E+01	6.51E+01	1.90E+02	4.25E+03	1.56E+02	1.54E+02	4.51E+02
Aliphatic hydrocarbons >EC_{10}-EC_{12}		3.09E+01	4.57E+03	1.30E+03	1.22E+02	4.75E+01	5.51E+03	3.31E+02	3.26E+02	1.18E+02	5.89E+03	7.93E+02	7.85E+02	2.83E+02
Aliphatic hydrocarbons >EC_{12}-EC_{16}		7.59E-01	6.27E+03	1.15E+03	1.06E+03	2.37E+01	6.54E+03	2.78E+03	2.41E+03	5.91E+01	6.98E+03	6.67E+03	4.34E+03	1.42E+02
Aliphatic hydrocarbons >EC_{16}-EC_{35}	(b)	-	6.46E+04	NR	NR	8.48E+00	9.17E+04	NR	NR	2.12E+01	1.10E+05	NR	NR	5.09E+01
Aliphatic hydrocarbons >EC_{35}-EC_{44}	(b)	-	6.46E+04	NR	NR	8.48E+00	9.17E+04	NR	NR	2.12E+01	1.10E+05	NR	NR	5.09E+01
Aromatic hydrocarbons >EC_5-EC_8 (styrene)		2.60E+05	1.08E+01	5.22E+02	1.06E+01	6.26E+02	2.53E+01	1.20E+03	2.49E+01	1.44E+03	5.81E+01	2.76E+03	5.69E+01	3.35E+03
Aromatic hydrocarbons >EC_8-EC_{10}		2.00E+04	5.76E+01	4.74E+01	3.45E+01	6.13E+02	1.38E+02	1.16E+02	8.38E+01	1.50E+03	3.07E+02	2.77E+02	1.96E+02	3.58E+02
Aromatic hydrocarbons >EC_{10}-EC_{12}		2.45E+04	8.29E+01	2.58E+02	7.52E+01	3.64E+02	1.98E+02	6.39E+02	1.79E+02	8.89E+02	4.25E+02	1.52E+03	3.91E+02	2.15E+03
Aromatic hydrocarbons >EC_{12}-EC_{16}		5.75E+03	1.47E+02	2.85E+03	1.45E+02	1.69E+02	3.36E+02	7.07E+03	3.32E+02	4.19E+02	6.81E+02	1.68E+04	6.74E+02	1.00E+03
Aromatic hydrocarbons >EC_{16}-EC_{21}	(b)	-	2.63E+02	NR	NR	5.37E+01	5.45E+02	NR	NR	1.34E+02	9.34E+02	NR	NR	3.21E+02
Aromatic hydrocarbons >EC_{21}-EC_{35}	(b)	-	1.09E+03	NR	NR	4.83E+00	1.47E+03	NR	NR	1.21E+01	1.70E+03	NR	NR	2.90E+01
Aromatic hydrocarbons >EC_{35}-EC_{44}	(b)	-	1.09E+03	NR	NR	4.83E+00	1.47E+03	NR	NR	1.21E+01	1.70E+03	NR	NR	2.90E+01

Notes:

EC - equivalent carbon; GrAC - groundwater assessment criteria; SAC - soil assessment criteria.

The CLEA model output is colour coded depending upon whether the soil saturation limit has been exceeded.

Calculated SAC exceeds soil saturation limit and may significantly effect the interpretation of any exceedances since the contribution of the indoor and outdoor vapour pathway to total exposure is >10%. This shading has also been used for the RBCA output where the theoretical solubility limit has been exceeded.

Calculated SAC exceeds soil saturation limit but will not effect the SSV significantly since the contribution of the indoor and outdoor vapour pathway to total exposure is <10%.

Calculated SAC does not exceed the soil saturation limit.

For consistency where the theoretical solubility limit within RBCA has been exceeded in production of the GrAC, these cells have also been hatched red.

The SAC for organic compounds are dependant upon soil organic matter (SOM) (%) content. To obtain SOM from total organic carbon (TOC) (%) divide by 0.58. 1% SOM is 0.58% TOC. DL Rowell Soil Science: Methods and Applications, Longmans, 1994.

SAC for TPH fractions, PAHs napthalene, acenaphthene and acenaphthylene, MTBE, BTEX and trimethylbenzene compounds were produced using an attenuation factor for the indoor air inhalation pathway of 10 to reduce conservatism associated with the vapour inhalation pathway (Section 10.1.1, SR3)

(a) SAC for arsenic, benzene, benzo(a)pyrene, cadmium, chromium VI and lead are derived using the C4SL toxicology data.

(b) SAC for selenium should not include the inhalation pathway as no expert group HCV has been derived; aliphatic and aromatic hydrocarbons >EC16 should not include inhalation pathway due to their non-volatile nature and inhalation exposure being minimal (oral, dermal and inhalation exposure is compared to the oral HCV); arsenic should only be based on oral contribution (rather than combined) owing to the relative small contribution from inhalation in accordance with the SGV report. The Oral SAC should be adopted for zinc and benzo(a)pyrene.

(c) SAC for CrIII should be based on the lower of the oral and inhalation SAC (see LQM/CIEH 2015 Section 6.8)

(d) SAC for elemental mercury, chromium VI and nickel should be based on the inhalation pathway only.

(e) SAC for 1,3,5-trimethylbenzene is not recorded owing to the lack of toxicological data. SAC for 1,2,4 trimethylbenzene may be used.

GENERIC ASSESSMENT CRITERIA FOR HUMAN HEALTH - RESIDENTIAL WITH HOME-GROWN PRODUCE

Table 6
Human Health Generic Assessment Criteria for Residential with home-grown produce

Compound	GrAC for Groundwater (µg/l)	SAC for Soil SOM 1% (mg/kg)	SAC for Soil SOM 2.5% (mg/kg)	SAC for Soil SOM 6% (mg/kg)
Metals				
Arsenic	-	37	37	37
Cadmium	-	22	22	22
Chromium (III) - trivalent	-	910	910	910
Chromium (VI) - hexavalent	-	21	21	21
Copper	-	2,500	2,500	2,500
Lead	-	200	200	200
Elemental Mercury (Hg^0)	12.90	0.2	0.6	1.2
Inorganic Mercury (Hg^{2+})	-	39	39	39
Methyl Mercury (Hg^{4+})	22180	10	10	10
Nickel	-	130	130	130
Selenium	-	258	258	258
Zinc	-	3,900	3,900	3,900
Cyanide (free)	-	1.4	1.4	1.4
Volatile Organic Compounds				
Benzene	23000	0.20	0.41	0.87
Toluene	590000	130	300	680
Ethylbenzene	124600	50	110	260
Xylene - m	115900	59	140	327
Xylene - o	141400	61	143	332
Xylene - p	121100	57	133	310
Total xylene	115900	57	133	310
Methyl tertiary-Butyl ether (MTBE)	9320000	130	250	510
Trichloroethene	64	0.02	0.03	0.08
Tetrachloroethene	408	0.2	0.4	0.9
1,1,1-Trichloroethane	35900	9	18	39
1,1,1,2 Tetrachloroethane	2800	1.2	2.8	6.5
1,1,2,2-Tetrachloroethane	18500	1.6	3.5	7.7
Carbon Tetrachloride	61	0.026	0.056	0.127
1,2-Dichloroethane	97	0.007	0.011	0.019
Vinyl Chloride	6	0.0006	0.0009	0.0014
1,2,4-Trimethylbenzene	5920	1.8	4.3	9.7
1,3,5-Trimethylbenzene	-	NR	NR	NR
Semi-Volatile Organic Compounds				
Acenaphthene	4150	230	540	1,170
Acenaphthylene	7950	180	440	970
Anthracene	-	2,400	5,500	10,900
Benzo(a)anthracene	-	7	11	13
Benzo(b)fluoranthene	-	2.6	3.3	3.7
Benzo(g,h,i)perylene	-	310	340	350
Benzo(k)fluoranthene	-	77	92	100
Chrysene	-	15	22	27
Dibenzo(a,h)anthracene	-	0.24	0.28	0.30
Fluoranthene	-	290	560	900
Fluorene	-	170	410	880
Indeno(1,2,3-cd)pyrene	-	27	36	41
Phenanthrene	-	100	220	440
Pyrene	-	620	1,240	2,040
Benzo(a)pyrene	-	5	5	5
Naphthalene	19000	13	30	71
Phenol	-	120	210	390
Total Petroleum Hydrocarbons				
Aliphatic hydrocarbons EC_5-EC_6	20000	42	78	160
Aliphatic hydrocarbons >EC_6-EC_8	5370	100	230	530
Aliphatic hydrocarbons >EC_8-EC_{10}	427	27	65	154
Aliphatic hydrocarbons >EC_{10}-EC_{12}	32.9	130 (48)	330 (118)	760 (285)
Aliphatic hydrocarbons >EC_{12}-EC_{16}	0.759	1,100 (24)	2,400 (59)	4,300 (142)
Aliphatic hydrocarbons >EC_{16}-EC_{35}	-	65,000 (8)	92,000 (21)	110,000
Aliphatic hydrocarbons >EC_{35}-EC_{44}	-	65,000 (8)	92,000 (21)	110,000
Aromatic hydrocarbons >EC_8-EC_9 (styrene)	290000	11	25	57
Aromatic hydrocarbons >EC_9-EC_{10}	20000	30	80	190
Aromatic hydrocarbons >EC_{10}-EC_{12}	24000	80	180	390
Aromatic hydrocarbons >EC_{12}-EC_{16}	5750	140	330	670
Aromatic hydrocarbons >EC_{16}-EC_{21}	-	260	540	930
Aromatic hydrocarbons >EC_{21}-EC_{35}	-	1,100	1,500	1,700
Aromatic hydrocarbons >EC_{35}-EC_{44}	-	1,100	1,500	1,700
Minerals				
Asbestos	-	No asbestos detected with ID or <0.001% dry weight[1]		

Notes:

'-' Generic assessment criteria not calculated owing to low volatility of substance and therefore no pathway, or an absence of toxicological data.

NR - SAC for 1,3,5-trimethylbenzene is not recorded owing to the lack of toxicological data. SAC for 1,2,4-trimethylbenzene may be used.

EC - equivalent carbon. GrAC - groundwater assessment criteria. SAC - soil assessment criteria.

[1] LOD for weight of asbestos per unit weight of soil calculated on a dry weight basis using PLM, handpicking and gravimetry.

The SAC for organic compounds are dependent on Soil Organic Matter (SOM) (%) content. To obtain SOM from total organic carbon (TOC) (%) divide by 0.58.
1% SOM is 0.58% TOC. DL Rowell Soil Science: Methods and Applications, Longmans, 1994.

SAC and GrAC for TPH fractions, PAHs napthalene, acenaphthene and acenaphthylene, MTBE, BTEX and trimethylbenzene compounds were produced using an attenuation factor for the indoor air inhalation pathway of 10 to reduce conservatism associated with the vapour inhalation pathway, section 10.1.1, SR3.

VALUE IN BRACKETS The SAC has been set as the model calculated SAC with the saturation limit shown in brackets.
RSK has adopted an approach for petroleum hydrocarbons in accordance with LQM/CIEH whereby the concentration modelled for each petroleum hydrocarbon fraction has been tabulated as the SAC with the corresponding solubility or vapour saturation limits given in brackets.

For consistency where the GrAC exceeds the solubility limit, GrAC has been set at the solubility limit. The GrAC is conservative since concentrations of the chemical are very unlikely to be at sufficient concentration to result in an exceedance of the health criteria value at the point of exposure (i.e. indoor air) provided free-phase product is absent.

APPENDIX I
GENERIC ASSESSMENT CRITERIA FOR PHYTOTOXIC EFFECTS

Several compounds can inhibit plant growth; hence it is important to have generic assessment criteria (GAC) to promote healthy plant growth. In the absence of other published GAC, the GAC have been obtained from legislation (UK and European) and guidance related to the use of sewage sludge on agricultural fields.

The Council of European Communities Sewage Sludge Directive (86/278/EEC) dated 1986, has been transposed into UK law by Statutory Instrument No. 1263, The Sludge (use in Agriculture) Regulations 1989 (Public Health England, Wales and Scotland), as ammended in 1990 and The Sludge (use in Agriculture) Regulations (Northern Ireland) SR No, 245, 1990. In addition the Department of Environment (DoE) produced a Code of Practice (CoP) (Updated 2nd Edition) in 2006 which provided guidance on the application of sewage sludge on agricultural land (however the status of this document is unclear as it is on the archive section of the Defra website).

The directive seeks to encourage the use of sewage sludge in agriculture and to regulate its use in such a way as to "***prevent harmful effects on soil, vegetation, animals and man".*** To this end, it prohibits the use of untreated sludge on agricultural land unless it is injected or incorporated into the soil. Treated sludge is defined as having undergone "biological, chemical or heat treatment, long-term storage or any other appropriate process so as significantly to reduce its fermentability and the health hazards resulting from its use". To provide protection against potential health risks from residual pathogens, sludge must not be applied to soil in which fruit and vegetable crops are growing, or less than ten months before fruit and vegetable crops are to be harvested. Grazing animals must not be allowed access to grassland or forage land less than three weeks after the application of sludge.

The specified limits of concentrations of selected elements in soil are presented in Table 4 of the updated 2nd Edition of the DoE Code of Practice and are designed to protect plant growth. It is noted that these values are more stringent than the values set in current UK regulations. However since they were ammended following recommendations from the Independent Scientific Committee in 1993. (MAFF/DOE 1993). The GAC are presented in Table 1.

Table 1: Generic assessment criteria

Determinant	Generic assessment criteria (mg/kg)			
	pH 5.0 < 5.5	pH 5.5 < 6.0	pH 6.0 < 7.0	pH >7.0
Zinc	200	200	200	300
Copper	80	100	135	200
Nickel	50	60	75	110
Lead	300	300	300	300
Cadmium	3	3	3	3
Mercury	1	1	1	1

Note: Only compounds with assessment criteria documented within the Directive 86/278/EEC have been included, although criteria for 5 additional compounds have been presented within the 2006 CoP.

APPENDIX J
GENERIC ASSESSMENT CRITERIA FOR POTABLE WATER SUPPLY PIPES

A range of pipe materials is available and careful selection, design and installation is required to ensure that water supply pipes are satisfactorily installed and meet the requirements of the Water Supply (Water Fittings) Regulations 1999 in England and Wales, the Byelaws 2000 in Scotland and the Northern Ireland Water Regulations. The regulations include a requirement to use only suitable materials when laying water pipes and laying water pipes without protection is not permitted at contaminated sites. The water supply company has a statutory duty to enforce the regulations.

Contaminants in the ground can pose a risk to human health by permeating potable water supply pipes. To fulfil their statutory obligation, UK water supply companies require robust evidence from developers to demonstrate either that the ground in which new plastic supply pipes will be laid is free from specific contaminants, or that the proposed remedial strategy will mitigate any existing risk. If these requirements cannot be demonstrated to the satisfaction of the relevant water company, it becomes necessary to specify an alternative pipe material on the whole development or in specific zones.

In 2010, UK Water Industry Research (UKWIR) published *Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites* (Report Ref. No. 10/WM/03/21). This report reviewed previously published industry guidelines and threshold concentrations adopted by individual water supply companies.

The focus of the UKWIR research project was to develop clear and concise procedures, which provide consistency in the pipe selection decision process. It was intended to provide guidance that can be used to ensure compliance with current regulations and to prevent water supply pipe failing prematurely due to the presence of contamination.

The report concluded that in most circumstances only organic contaminants pose a potential risk to plastic pipe materials and Table 3.1 of the report provides threshold concentrations for polyethylene (PE) and polyvinyl chloride (PVC) pipes for the organic contaminants of concern. The report also makes recommendations for the procedures to be adopted in the design of site investigations and sampling strategies, and the assessment of data, to ensure that the ground through which water supply pipes will be laid is adequately characterised.

Risks to water supply pipes have therefore been assessed against the threshold concentrations for PE and PVC pipe specified in Table 3.1 of Report 10/WM/03/21, which have been adopted as the GAC for this linkage and are reproduced in Table A3 below.

Since water supply pipes are typically laid at a minimum depth of 0.75m below finished ground levels, sample results from depths between 0.5m and 1.5m below finished level are generally considered suitable for assessing risks to water supply. Samples outside these depths can be

used, providing the stratum is the same as that in which water supply pipes are likely to be located. The report specifies that sampling should characterise the ground conditions to a minimum of 0.5m below the proposed depth of the pipe.

It should be noted that the assessment provided in this report is a guide and the method of assessment and recommendations should be checked with the relevant water supply company.

Table A3: Generic assessment criteria for water supply pipes

		Pipe material	
		GAC (mg/kg)	
	Parameter group	PE	PVC
1	Extended VOC suite by purge and trap or head space and GC-MS with TIC (Not including compounds within group 1a)	0.5	0.125
1a	• BTEX + MTBE	0.1	0.03
2	SVOCs TIC by purge and trap or head space and GC-MS with TIC (aliphatic and aromatic C_5–C_{10}) (Not including compounds within group 2e and 2f)	2	1.4
2e	• Phenols	2	0.4
2f	• Cresols and chlorinated phenols	2	0.04
3	Mineral oil C_{11}–C_{20}	10	Suitable
4	Mineral oil C_{21}–C_{40}	500	Suitable
5	Corrosive (conductivity, redox and pH)	Suitable	Suitable
Specific suite identified as relevant following site investigation			
2a	Ethers	0.5	1
2b	Nitrobenzene	0.5	0.4
2c	Ketones	0.5	0.02
2d	Aldehydes	0.5	0.02
6	Amines	Not suitable	Suitable
Notes: where indicated as 'suitable', the material is considered resistant to permeation or degradation and no threshold concentration has been specified by UKWIR.			

APPENDIX K
CERTIFICATES OF GEOTECHNICAL ANALYSIS

STRUCTURAL SOILS LTD

TEST REPORT

Report No. 583477-01 (00)

1774

Date	19-August-2016	Contract	Campdown

Client RSK
Address 18 Frogmore Rd
Apsley
Hemel Hempstead
Hertfordshire
HP3 9RT

For the Attention of Andrew James

Samples submitted by client	10-August-2016	Client Reference	28720
Testing Started	11-August-2016	Client Order No.	n/a
Testing Completed	16-August-2016	Instruction Type	Written

Tests marked 'Not UKAS Accredited' in this report are not included in the UKAS Accreditation Schedule for our Laboratory.

UKAS Accredited Tests

1.01	Moisture Content (oven drying method) BS1377:Part 2:1990:clause 3.2 (superseded)*
1.03	Liquid Limit (one point method) & Plastic Limit BS1377:Part 2:1990,clause 4.4/5.3
1.10	Particle Size Distribution wet sieve method BS1377:Part 2:1990,clause 9.2

Undertaken by a sub-contractor

2.04	Sulphate content (water extract) in accordance with BRE Special Digest 1:2005
2.05	Total sulphur in accordance with BRE Special Digest 1:2005
2.06	Sulphate content (acid extract) in accordance with BRE Special Digest 1:2005
2.07	pH value in accordance with BRE Special Digest 1:2005

* This clause of BS1377 is no longer the most up to date method due to the publication of ISO17892

Please Note: Remaining samples will be retained for a period of one month from today and will then be disposed of .
Test were undertaken on samples 'as received' unless otherwise stated.
Opinions and interpretations expressed in this report are outside the scope of accreditation for this laboratory.

TESTING VERIFICATION CERTIFICATE

UKAS TESTING
1774

The test results included in this report are certified as:-

ISSUE STATUS: **FINAL**

In accordance with the Structural Soils Ltd Laboratory Quality Management System, results sheets and summaries of results issued by the laboratory are checked by an approved signatory. The integrity of the test data and results are ensured by control of the computer system employed by the laboratory as part of the Software Verification Program as detailed in the Laboratory Quality Manual.

This testing verification certificate covers all testing compiled on or before the following datetime: **22/08/2016 16:36:51**.

Testing reported after this date is not covered by this Verification Certificate.

[redacted]

Approved Signatory
Dimitris Xirouchakis (Associate Laboratory Director)

(Head Office)
Bristol Laboratory
Unit 1A, Princess Street
Bedminster
Bristol
BS3 4AG

Castleford Laboratory
The Potteries, Pottery Street
Castleford
West Yorkshire
WF10 1NJ

Hemel Laboratory
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Tonbridge Laboratory
Anerley Court, Half Moon Lane
Hildenborough
Tonbridge
TN11 9HU

STRUCTURAL SOILS LTD	Contract: **Campdown**	Job No: **583477**

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_013 PrjVersion: v8_06 - Core+Geotech Lab-Hemel - 003 | GrfcText L - LAB VERIFICATION REPORT - V02 - A4P | 583477 CAMPDOWN - RSK 28720.GPJ - v8_06
Structural Soils Ltd, Branch Office - Hemel Hempstead: 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 262323, Fax: 01442 262683, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/16 - 16:37 | DX1 |

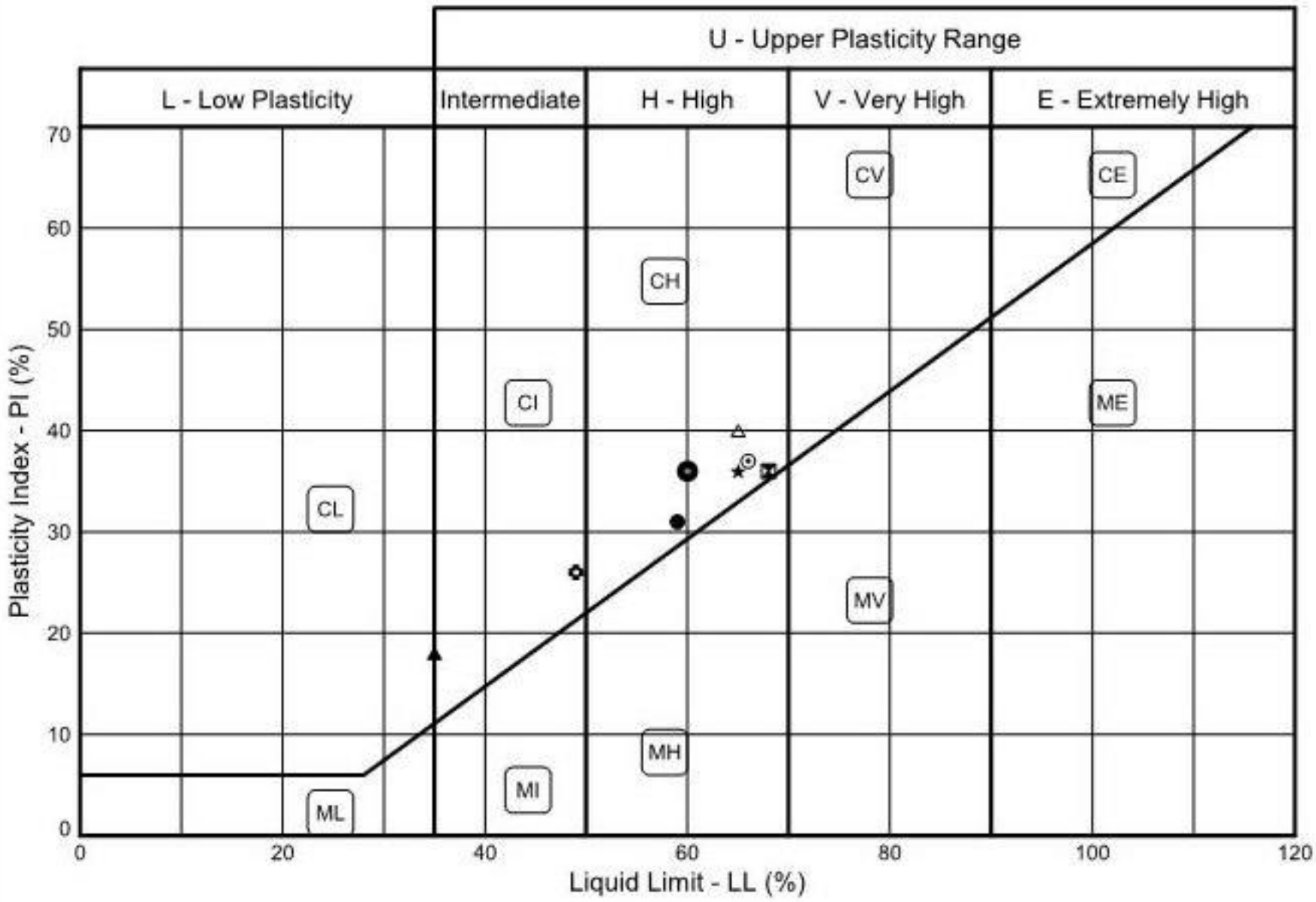
SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
BH1		D	1.50	32	59	28	31	100	Brown mottled grey slightly sandy CLAY
BH3		D	1.50	22	68	32	36	93	Brown mottled orangish brown sandy slightly gravelly CLAY
BH4		D	1.40	20	35	17	18	100	Bluish grey mottled greyish brown CLAY
BH6		D	1.60	28	65	29	36	100	Brown slightly sandy CLAY
BH11		D	1.60	30	66	29	37	97	Orangish brown mottled brown mottled grey slightly gravelly CLAY with some shell. Gravel is claystone
BH14		D	1.30	16	49	23	26	90	Reddish brown mottled pale grey slightly sandy slightly gravelly CLAY
BH16		D	1.40	30	60	24	36	100	Orangish brown mottled grey very sandy CLAY
BH18		D	2.30	31	65	25	40	100	Brown mottled grey slightly sandy CLAY

PLASTICITY CHART - PI Vs LL

In accordance with clause 42.3 of BS5930:1999
Testing in accordance with BS1377-2:1990



Sample Identification				BS Test Method #	Preparation Method +	MC %	LL %	PL %	PI %	<425um %	Lab location	
	Exploratory Position ID	Sample	Depth (m)									
●	BH1	D	1.50	3.2/4.4/5.3/5.4	4.2.3	32	59	28	31	100	H	
⊠	BH3	D	1.50	3.2/4.4/5.3/5.4	4.2.4	22	68	32	36	93	H	
▲	BH4	D	1.40	3.2/4.4/5.3/5.4	4.2.3	20	35	17	18	100	H	
★	BH6	D	1.60	3.2/4.4/5.3/5.4	4.2.3	28	65	29	36	100	H	
⊙	BH11	D	1.60	3.2/4.4/5.3/5.4	4.2.4	30	66	29	37	97	H	
✿	BH14	D	1.30	3.2/4.4/5.3/5.4	4.2.4	16	49	23	26	90	H	
●	BH16	D	1.40	3.2/4.4/5.3/5.4	4.2.3	30	60	24	36	100	H	
△	BH18	D	2.30	3.2/4.4/5.3/5.4	4.2.3	31	65	25	40	100	H	

Tested in accordance with the following clauses of BS1377-2:1990.

3.2 - Moisture Content
4.3 - Cone Penetrometer Method
4.4 - One Point Cone Penetrometer Method
4.6 - One Point Casagrande Method
5.3 - Plastic Limit Method
5.4 - Plasticity Index

+ Tested in accordance with the following clauses of BS1377-2:1990.

4.2.3 - Natural State
4.2.4 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

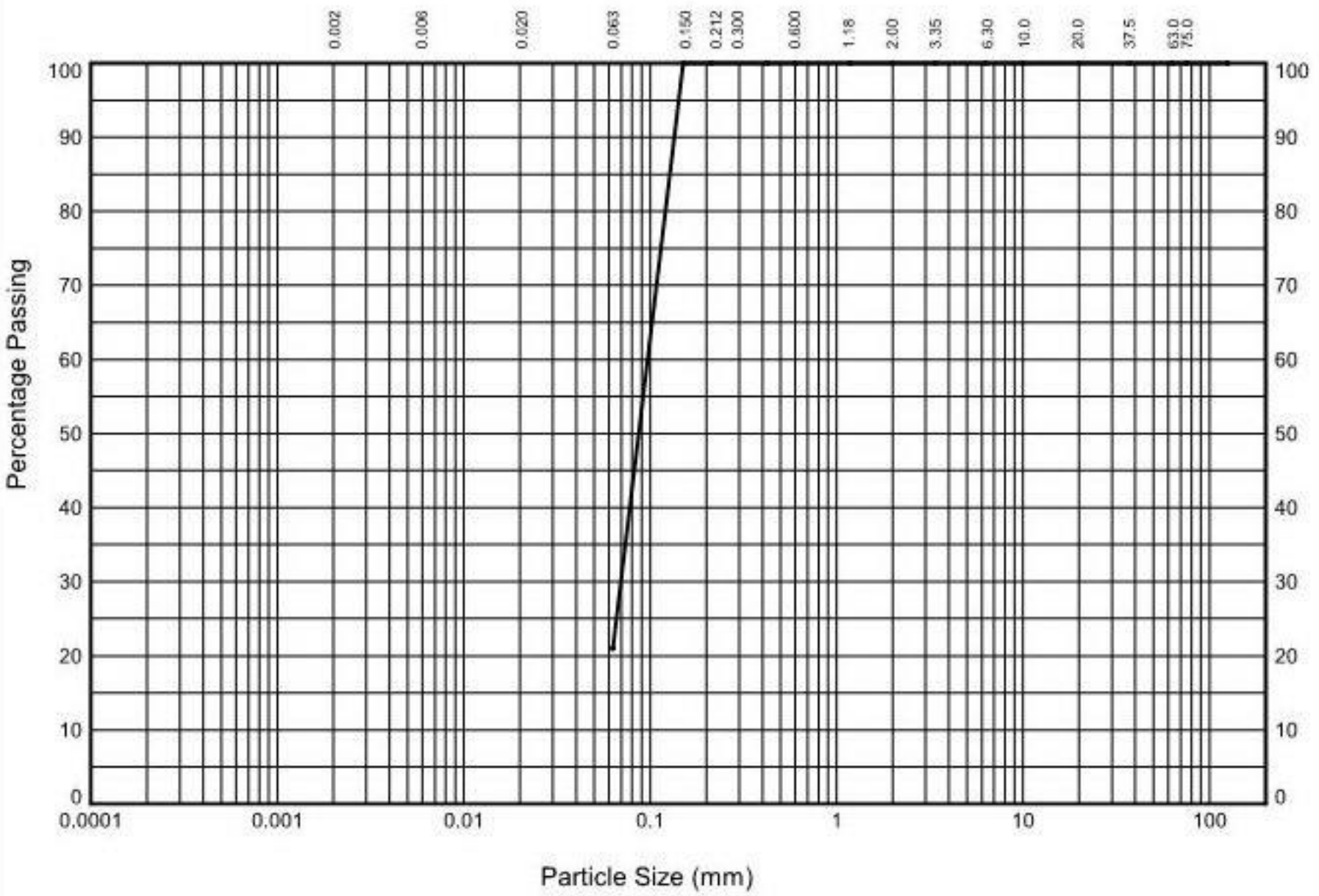
Compiled By		Date
[redacted]	SHARON CAIRNS	19/08/16
Contract: Campdown	Contract Ref: 583477	

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Structural Soils Ltd, Branch Office - Hemel Hempstead: 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 262323, Fax: 01442 262683, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 19/08/16 - 12:18 | SC1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 9.2 of BS1377:Part 2:1990

Borehole: **BH8** Sample Ref: **-** Sample Type: **B** Depth (m): **1.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**100**
3.35	**100**
2.00	**100**
1.18	**100**
0.600	**100**
0.425	**100**
0.212	**100**
0.150	**100**
0.063	**21**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Soil Fraction	Sieve Percentage (%)
GRAVEL	**0**
SAND	**79**
SILT/CLAY	**21**

Soil Description:

Yellowish brown very clayey SAND

STRUCTURAL SOILS
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Compiled By		Date
[redacted]	**SHARON CAIRNS**	**19/08/16**

Contract	Contract Ref:
Campdown	**583477**

AGS

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_013 PrjVersion: v8_05 - Core+Geotech Lab-Hemel - 003 | Graph L - PSD - A4P | 583477 CAMPDOWN - RSK 28720.GPJ - v8_06.
Structural Soils Ltd, Branch Office - Hemel Hempstead: 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442-262323, Fax: 01442-262683, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 19/08/16 - 12:19 | SC1 |

Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 16/05062
Issue Number: 1 **Date:** 18 August, 2016

Client: Structural Soils Limited (Hemel Hempstead Lab)
18 Frogmore Road
Hemel Hempstead
UK
HP3 9RT

Project Manager: Hemel Lab
Project Name: Campdown
Project Ref: 28720
Order No: N/A
Date Samples Received: 15/08/16
Date Instructions Received: 15/08/16
Date Analysis Completed: 18/08/16

Prepared by:

[redacted]
Melanie Marshall
Laboratory Coordinator

Approved by:

[redacted]
Lianne Bromiley
Senior Client Manager

1247

Envirolab Job Number: 16/05062

Client Project Name: Campdown

Client Project Ref: 28720

Lab Sample ID	16/05062/1	16/05062/2	16/05062/3	16/05062/4	16/05062/5	16/05062/6	16/05062/7		Units	Method ref
Client Sample No										
Client Sample ID	BH4	BH18	BH8	BH10	BH5	BH2	BH14			
Depth to Top	1.40	1.20	2.50	1.30	1.50	1.50	2.40			
Depth To Bottom										
Date Sampled		04-Aug-16	03-Aug-16	03-Aug-16	02-Aug-16	02-Aug-16	02-Aug-16			
Sample Type	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D			
Sample Matrix Code	5A	3	1	3	6	3	5			
% Stones >10mm$_A^{\#}$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		% w/w	A-T-044
pH BRE$_D^{M\#}$	7.27	8.19	7.22	7.77	6.66	6.45	6.34		pH	A-T-031s
Sulphate BRE (water sol 2:1)$_D^{M\#}$	35	72	17	287	35	64	31		mg/l	A-T-028s
Sulphate BRE (acid sol)$_D^{M\#}$	<0.02	0.02	0.02	0.05	<0.02	<0.02	-		% w/w	A-T-028s
Sulphur BRE (total)$_D$	0.02	<0.01	<0.01	0.02	0.01	<0.01	-		% w/w	A-T-024s

REPORT NOTES

Notes - Soil chemical analysis
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General
This report shall not be reproduced, except in full, without written approval from Envirolab.
Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.
All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supersedes any "A" subscripts.
All analysis is performed on the sample as received for soil samples which are positive for asbestos and/or if they are from outside the European Union and this supercedes any "D" subscripts.
Superscript "M" indicates method accredited to MCERTS.
If results are in italic font they are associated with an AQC failure. These are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

TPH analysis of water by method A-T-007
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Asbestos in soil
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if present as discrete fibres/fragments. Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

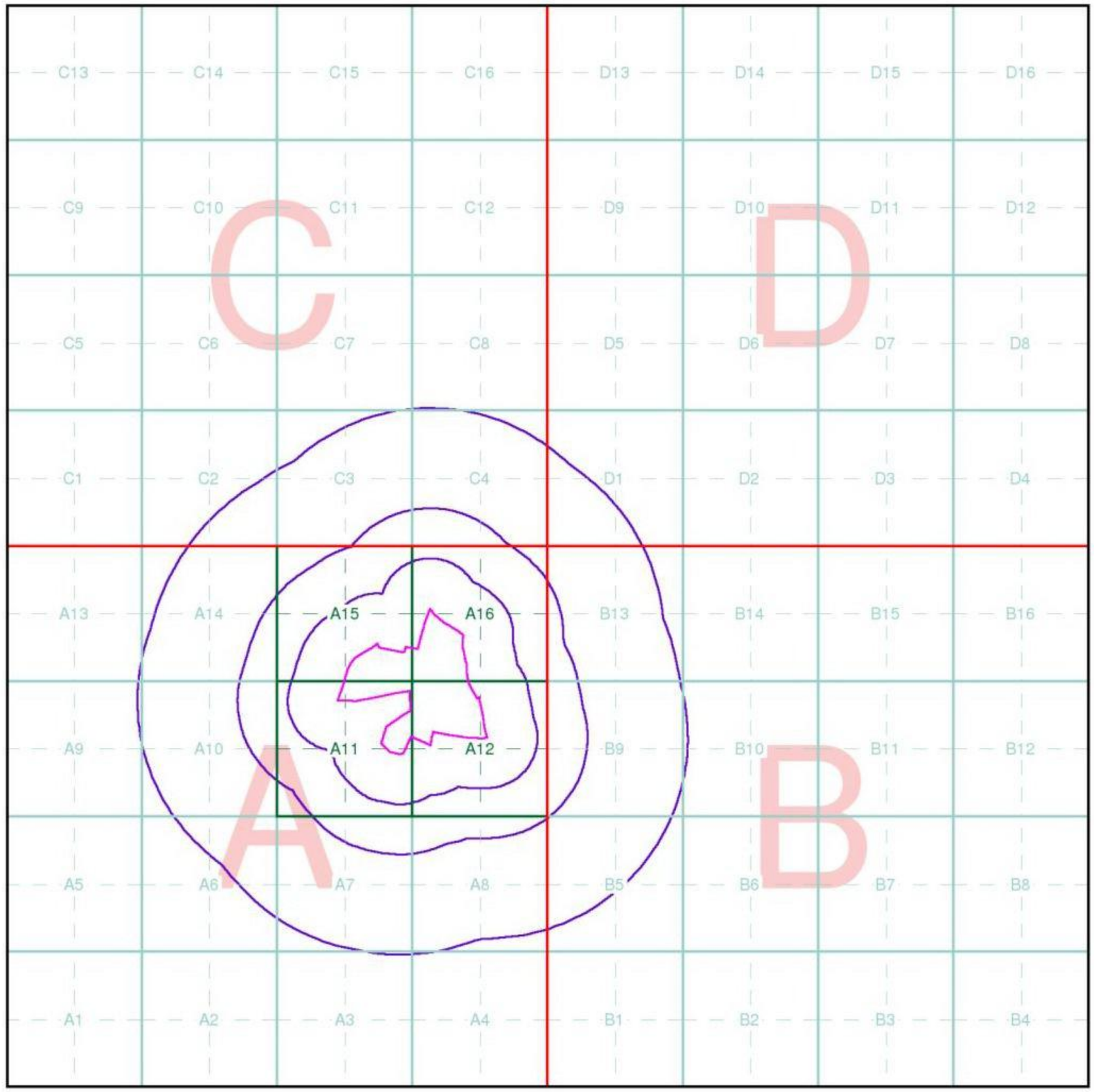
Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

APPENDIX L
ENVIROCHECK REPORT



Envirocheck®

Index Map

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

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

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

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

A selection of organisations who provide data within this report:

Map data

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Environment Agency

NATURAL ENGLAND

Envirocheck reports are compiled from 136 different sources of data.

Client Details

Mr R Speight, RSK Environment Ltd, Unit 18, Basepoint Abbey Enterprise Centre, Premier Way, Romsey, Hampshire, SO51 9AQ

Order Details

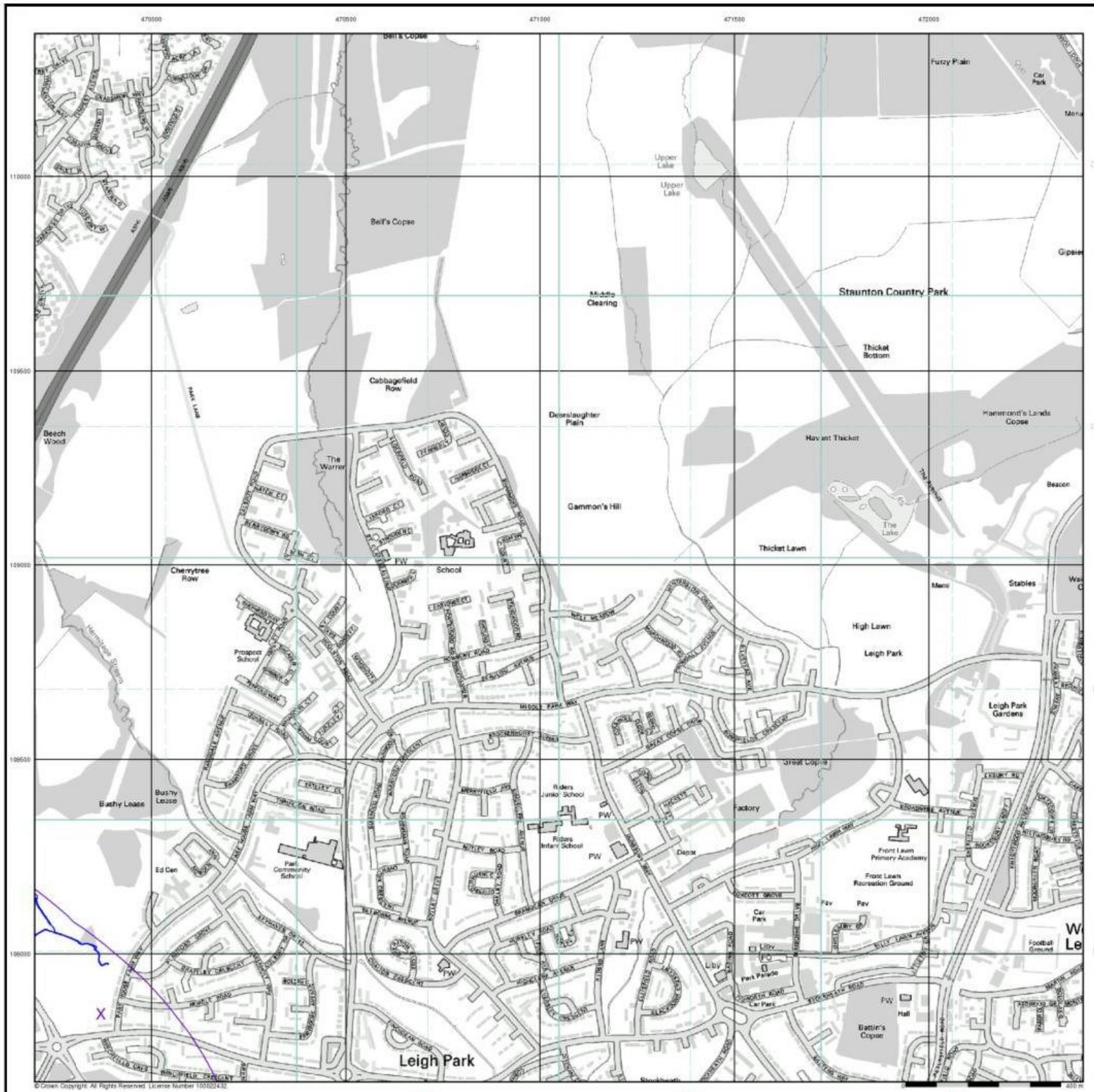
Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	469060, 106970
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

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

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



Envirocheck®

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

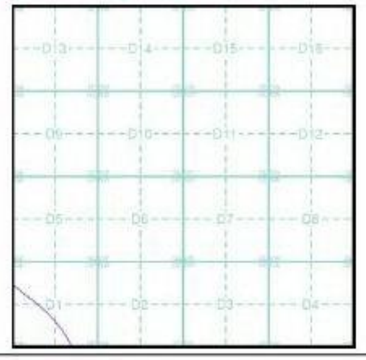
Waste

- 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 (Pass Buffered to 100m)
- Registered Landfill Site (Pass 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 D



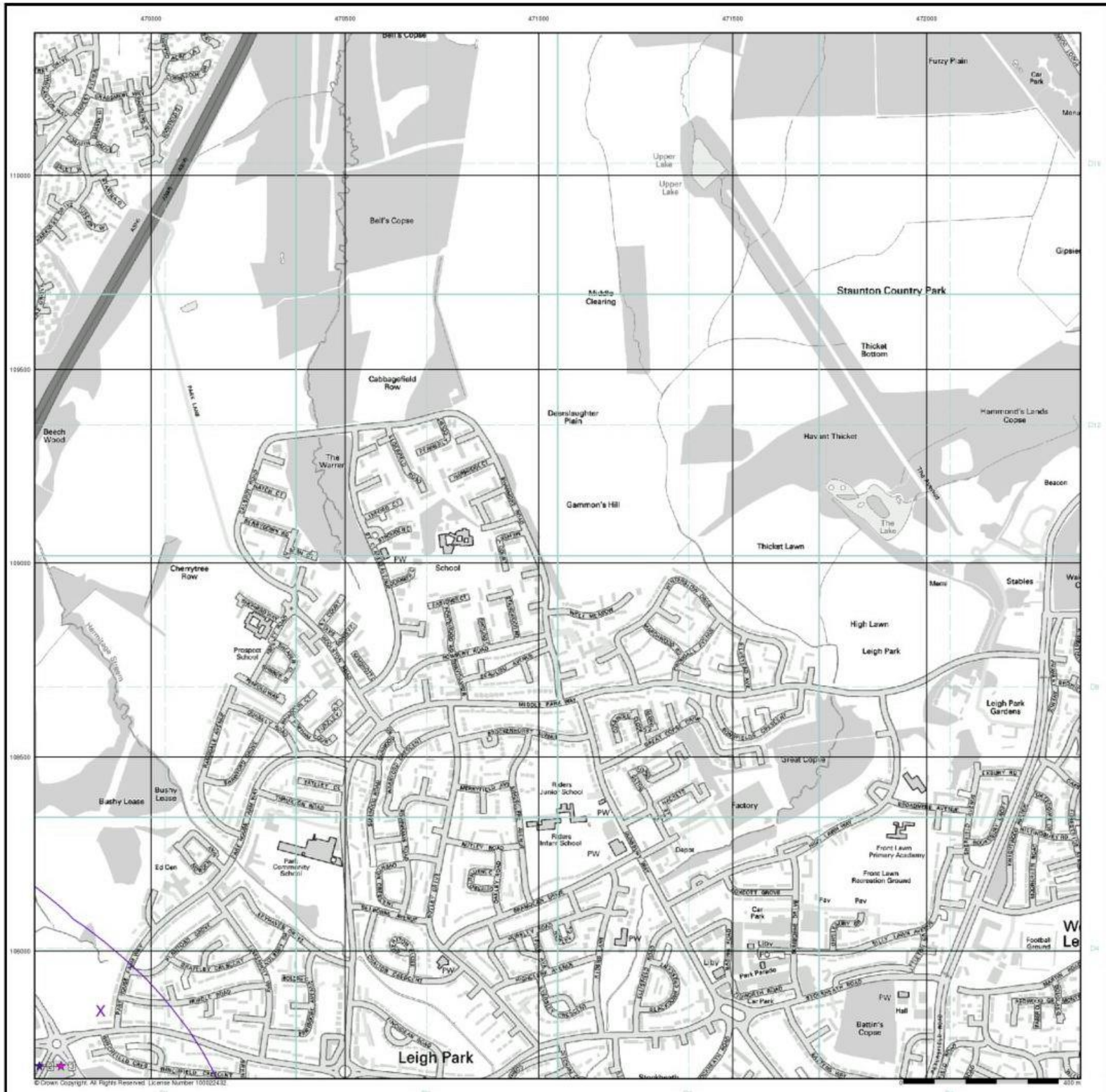
Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	469870, 107850
Slice:	D
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

Landmark Information Group
Tel: 0844 844 9952
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Industrial Land Use Map

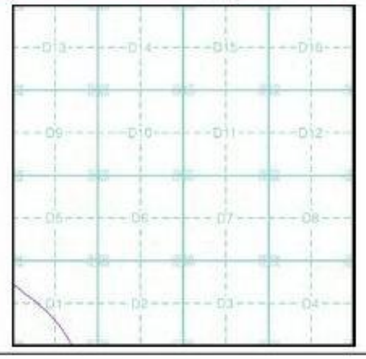
General

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

Industrial Land Use

Contemporary Trade Directory Entry
Fuel Station Entry
Gas Pipeline
Underground Electrical Cables

Industrial Land Use Map - Slice D



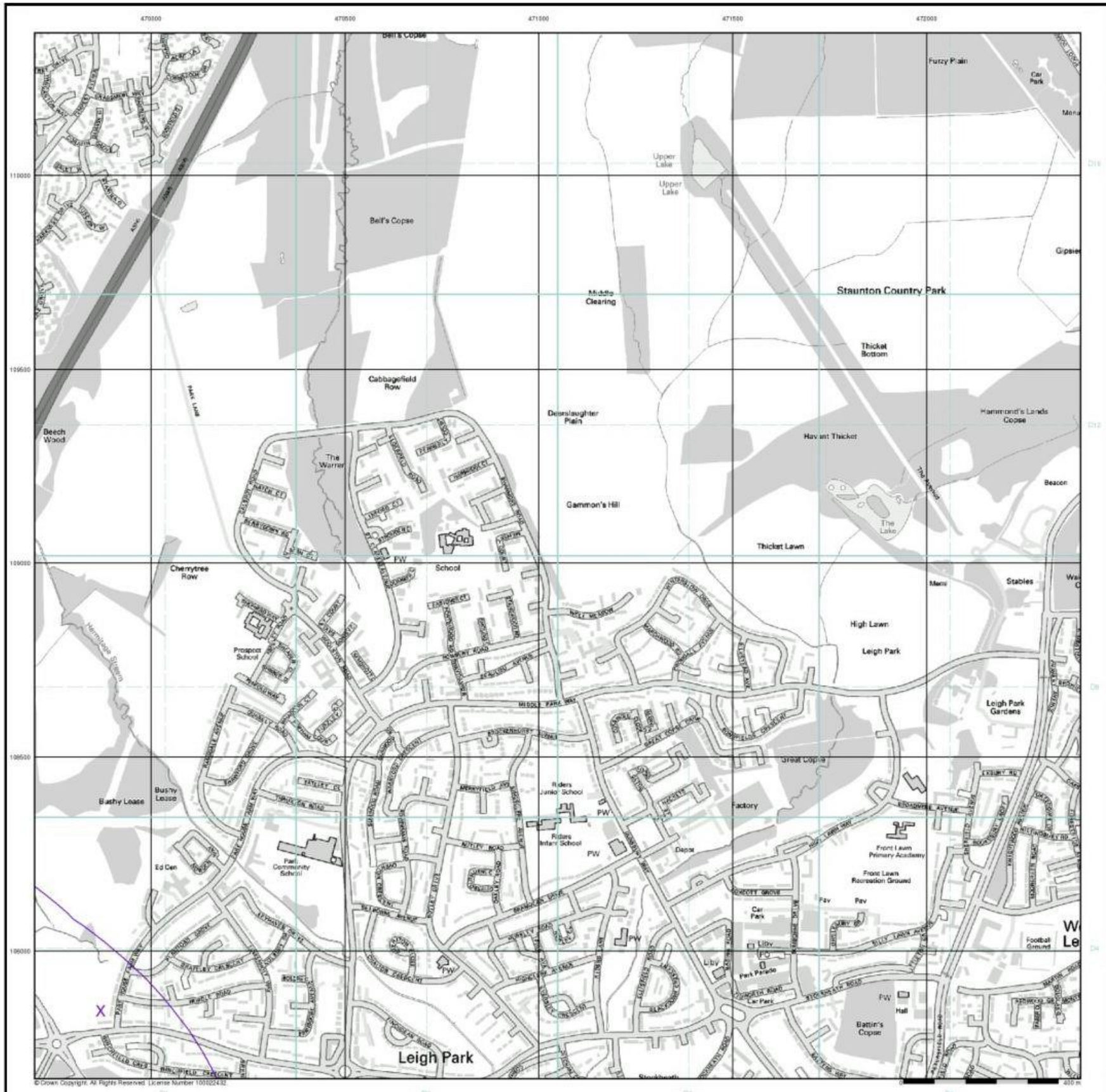
Order Details

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National Grid Reference:	469870, 107850
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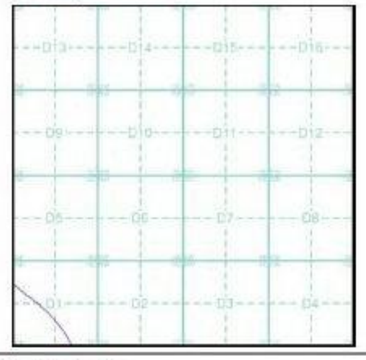
General

- Specified Site
- Specified Buffer(s)
- X 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 D



Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	469870, 107850
Slice:	D
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

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General

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

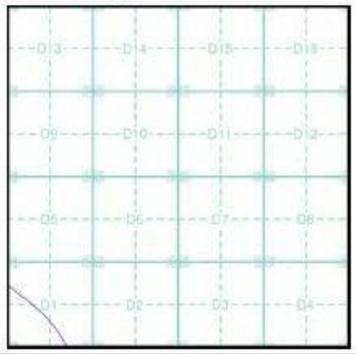
Agency and Hydrological (Boreholes)

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

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

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

Borehole Map - Slice D

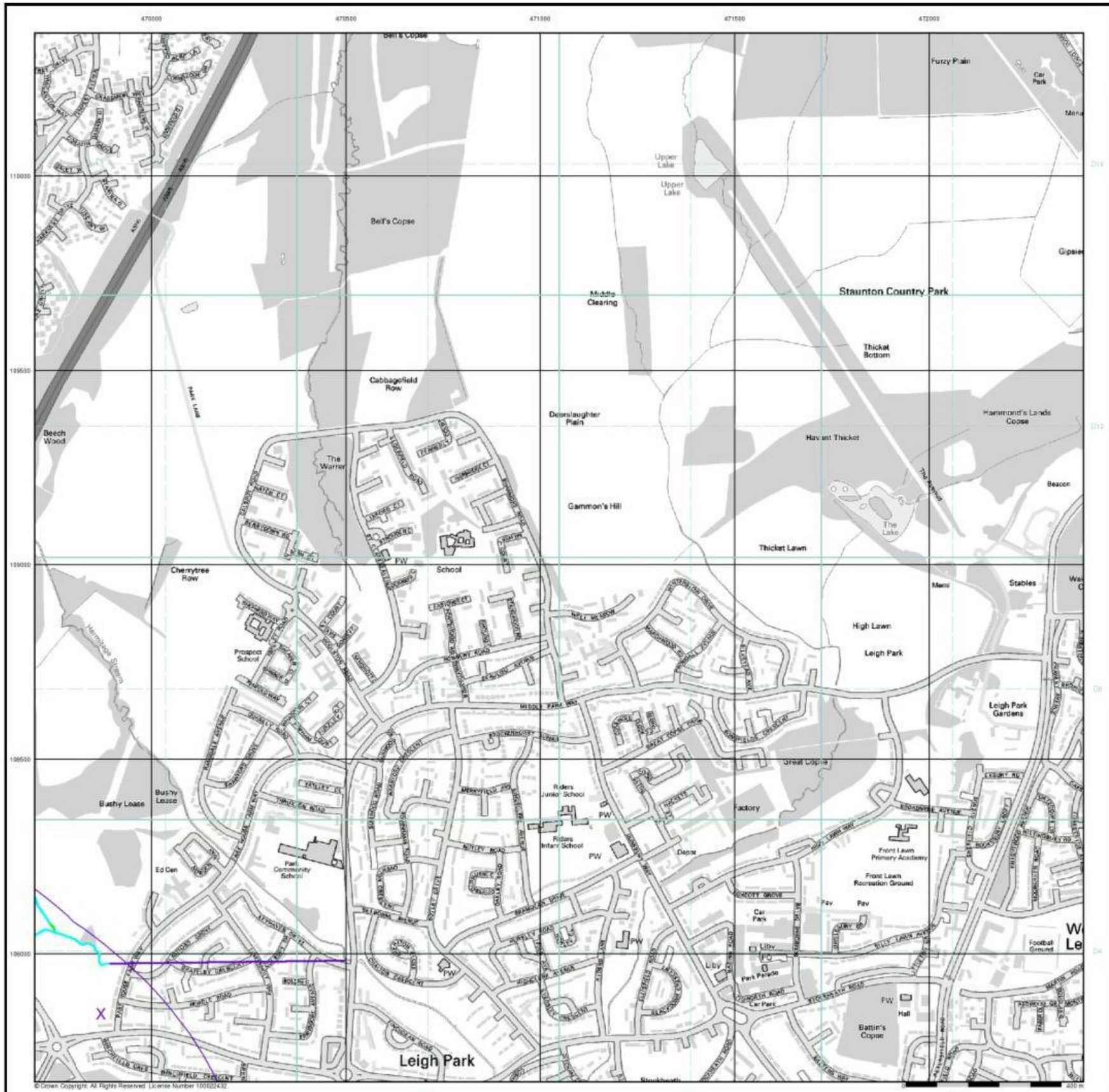


Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	469870, 107850
Slice:	D
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



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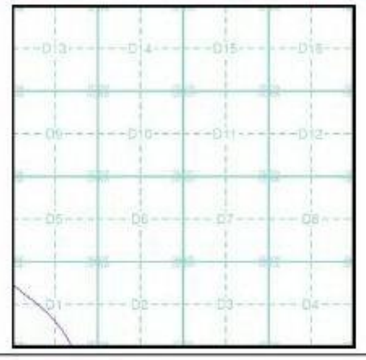
General

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

Detailed River Network Data

- Primary River
- Secondary River
- Tertiary River
- Canal
- Canal Tunnel
- Undefined River
- Lake/Reservoir
- Offline Drainage Feature
- Extended Culvert (greater than 50m)
- Underground River (inferred)
- Underground River (local knowledge)
- Downstream of High Water Mark
- Downstream of Seaward Extension
- Not assigned River feature

EA/NRW Detailed River Network Map - Slice D



Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	469870, 107850
Slice:	D
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

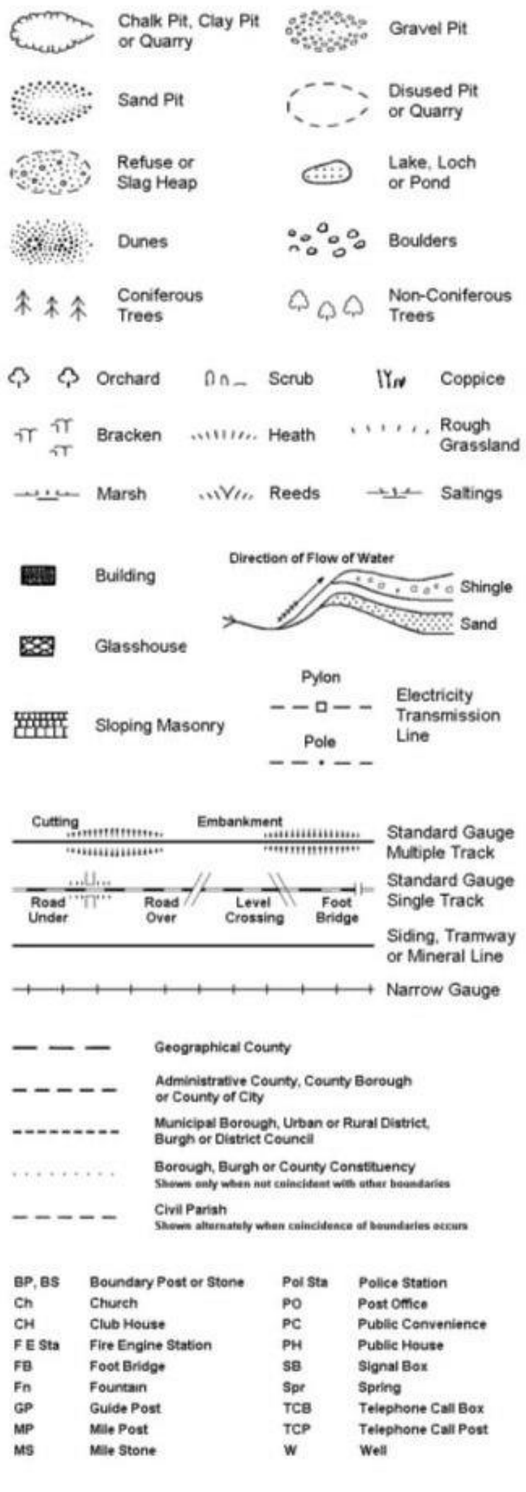
Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

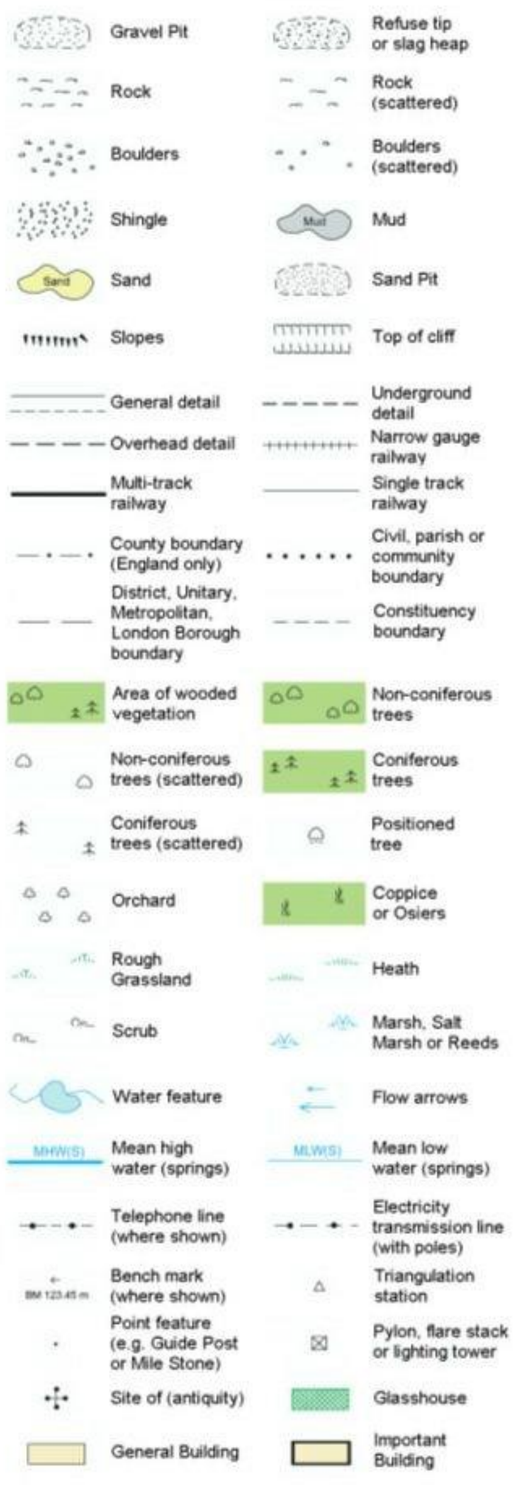


Ordnance Survey Plan 1:10,000



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

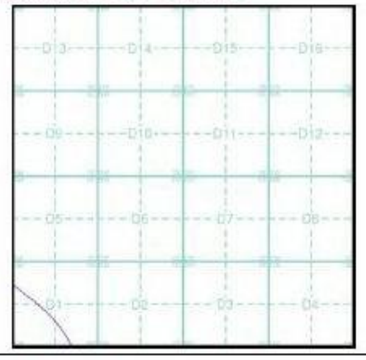


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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Hampshire & Isle Of Wight	1:10,560	1870	2
Sussex	1:10,560	1880	3
Hampshire & Isle Of Wight	1:10,560	1897 - 1898	4
Sussex	1:10,560	1899	5
Hampshire & Isle Of Wight	1:10,560	1909 - 1910	6
Sussex	1:10,560	1914	7
Sussex	1:10,560	1914	8
Sussex	1:10,560	1914	9
Hampshire & Isle Of Wight	1:10,560	1931 - 1933	10
Hampshire & Isle Of Wight	1:10,560	1931	11
Hampshire & Isle Of Wight	1:10,560	1933	12
Hampshire & Isle Of Wight	1:10,560	1938 - 1942	13
Ordnance Survey Plan	1:10,000	1962 - 1963	14
Ordnance Survey Plan	1:10,000	1966	15
Ordnance Survey Plan	1:10,000	1975	16
Ordnance Survey Plan	1:10,000	1980 - 1982	17
Ordnance Survey Plan	1:10,000	1991 - 1992	18
10K Raster Mapping	1:10,000	2000	19
Street View	1:10,000	2016	20

Historical Map - Slice D



Order Details

Order Number: 92122794_1_1
Customer Ref: 28720
National Grid Reference: 469870, 107850
Slice: D
Site Area (Ha): 26.37
Search Buffer (m): 1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

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Hampshire & Isle Of Wight

Published 1870

Source map scale - 1:10,560

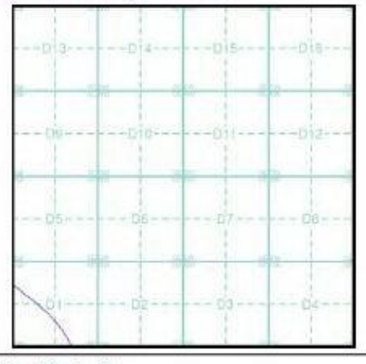
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some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

06800
1870
1:10,560

07800
1870
1:10,560

Historical Map - Slice D



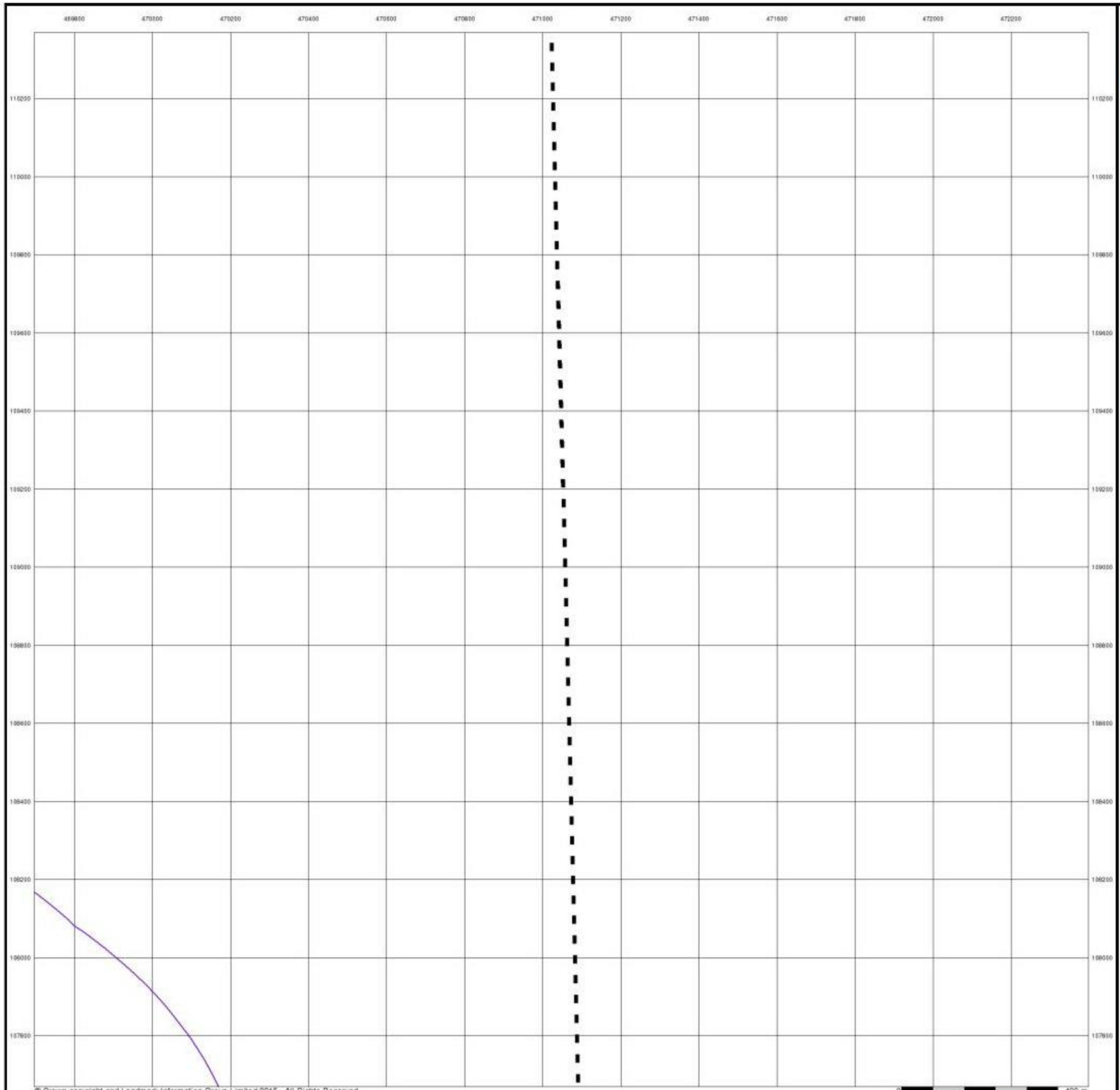
Order Details

Order Number:	92122794_1_1
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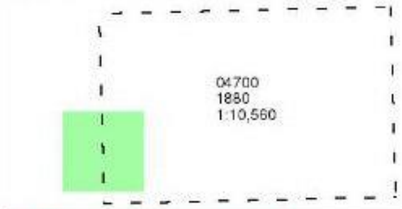
Sussex

Published 1880

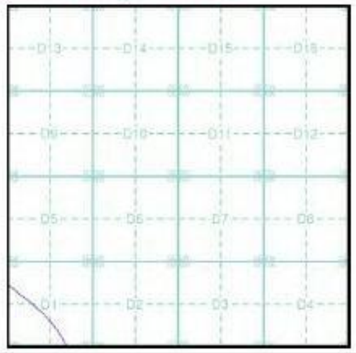
Source map scale - 1:10,560

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 D



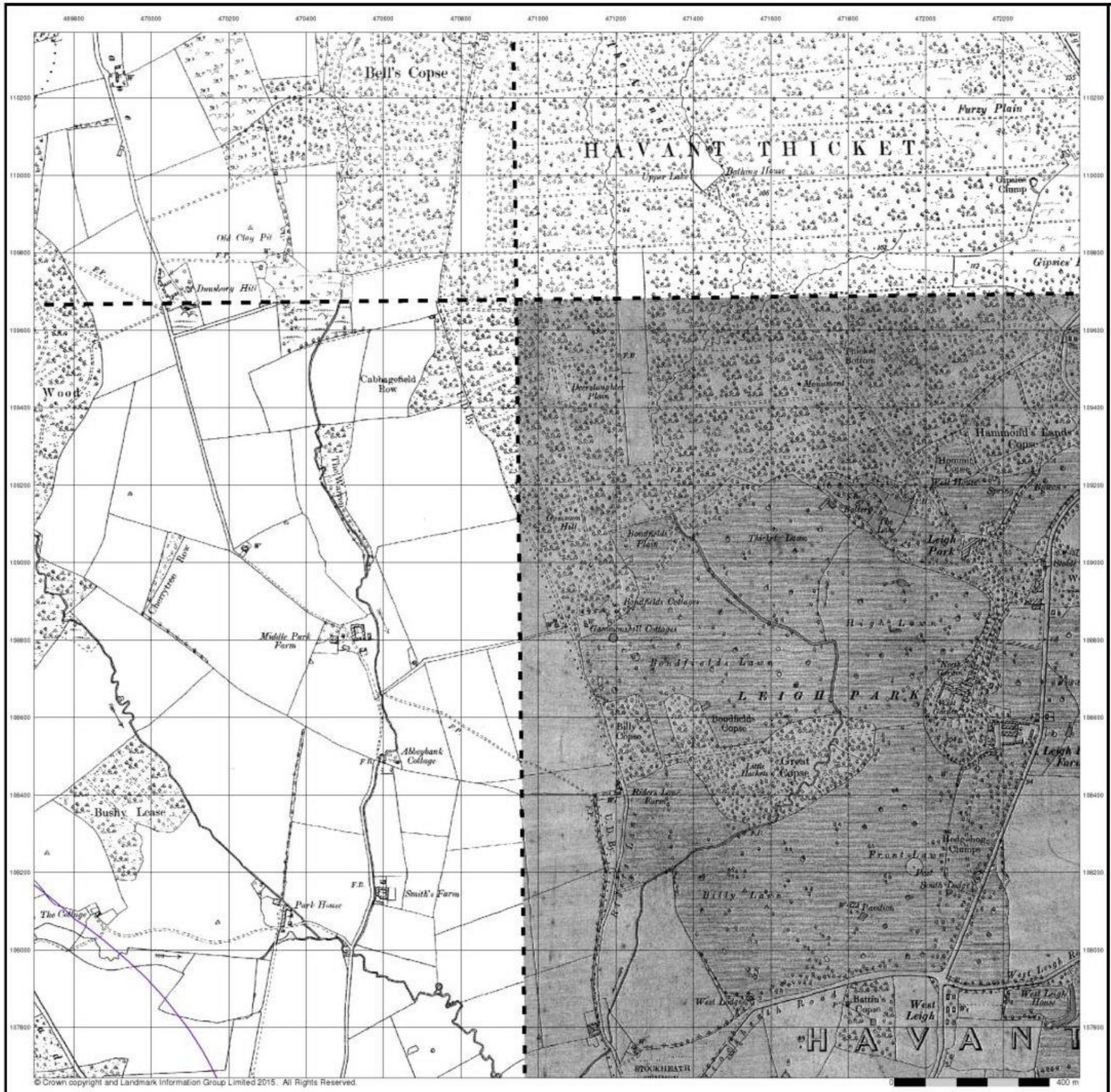
Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	469870, 107850
Slice:	D
Site Area (Ha):	26.37
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Site Details

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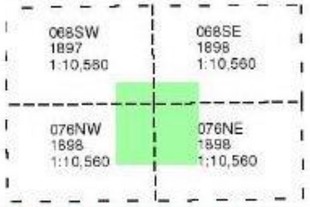
Hampshire & Isle Of Wight

Published 1897 - 1898

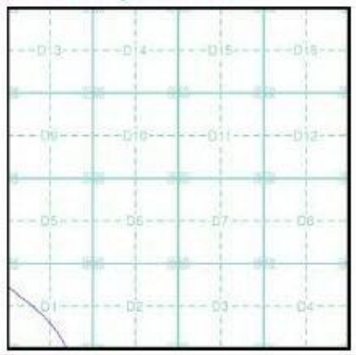
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice D



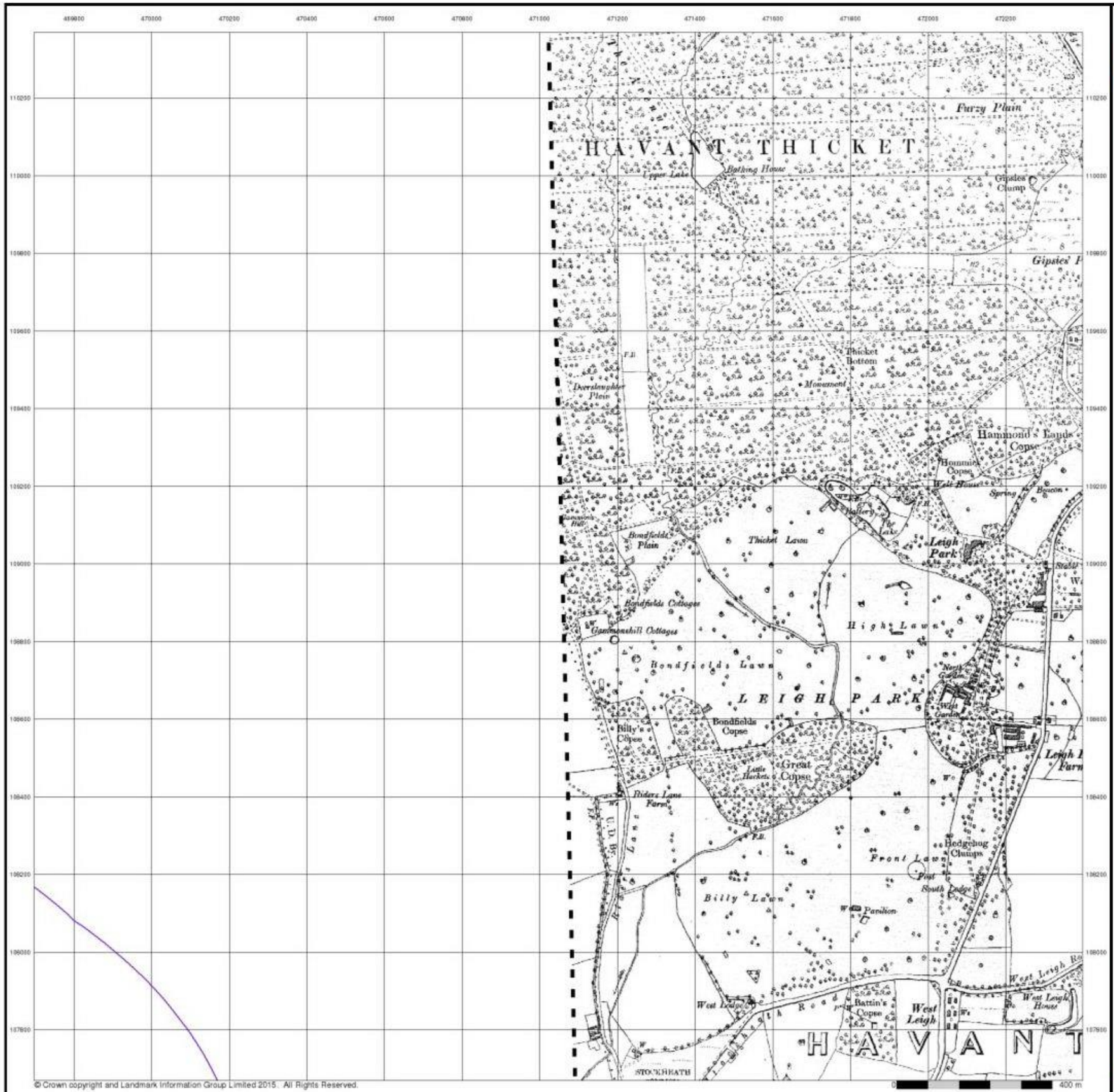
Order Details

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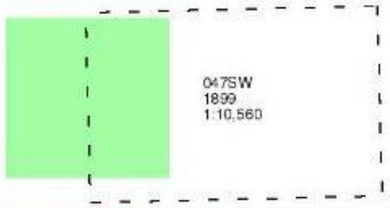
Sussex

Published 1899

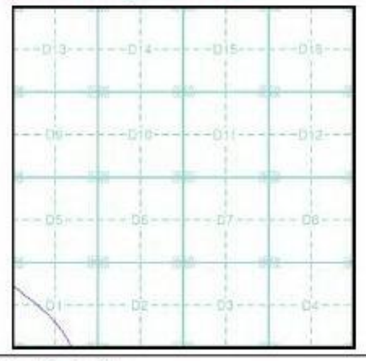
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice D

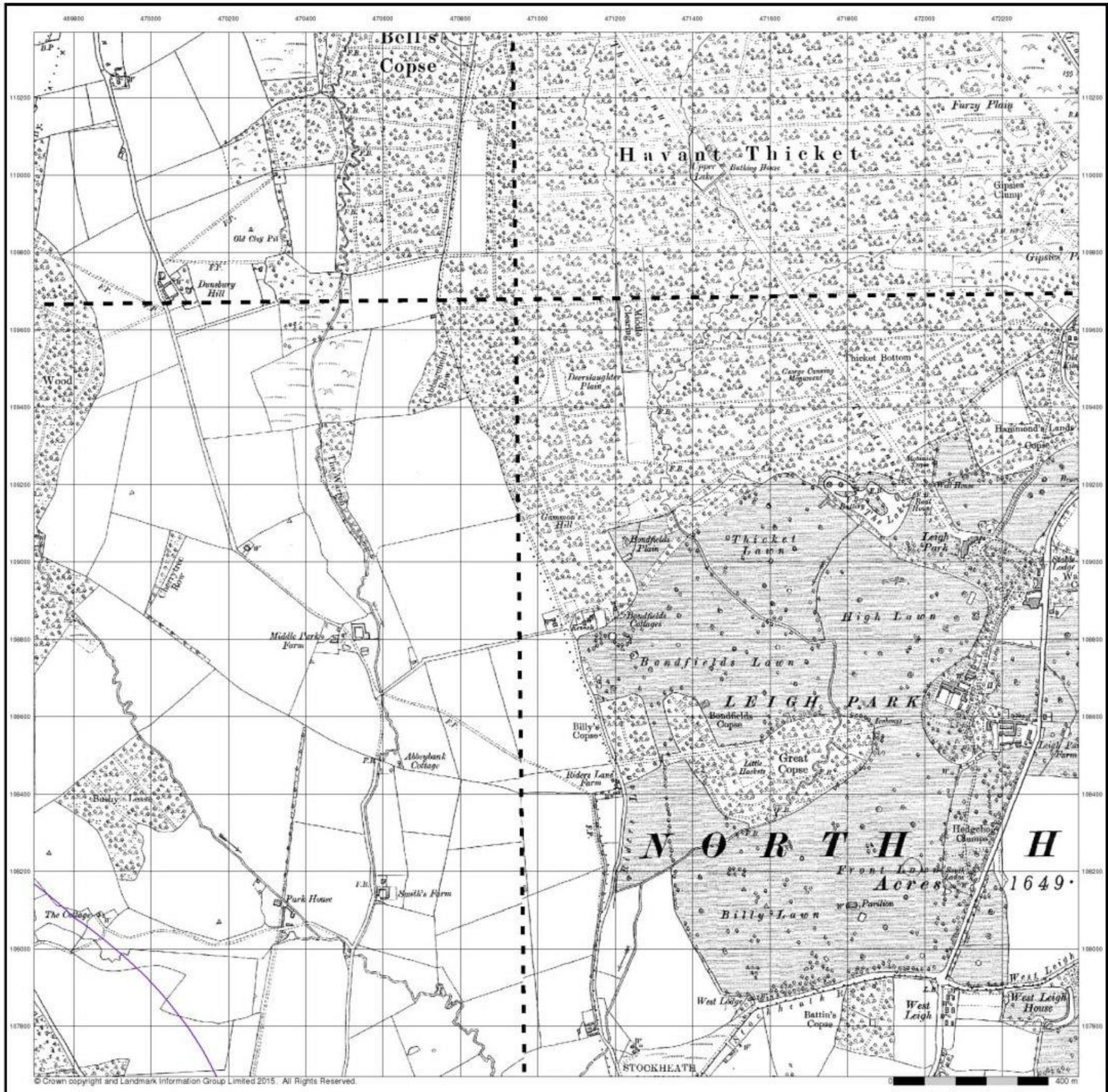


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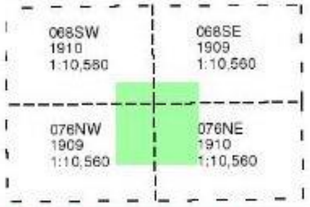
Hampshire & Isle Of Wight

Published 1909 - 1910

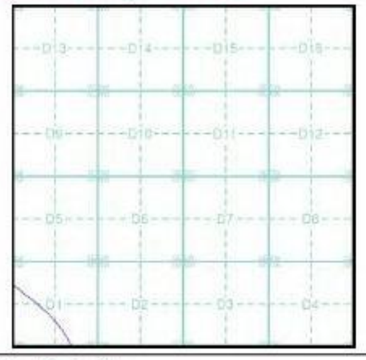
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice D



Order Details

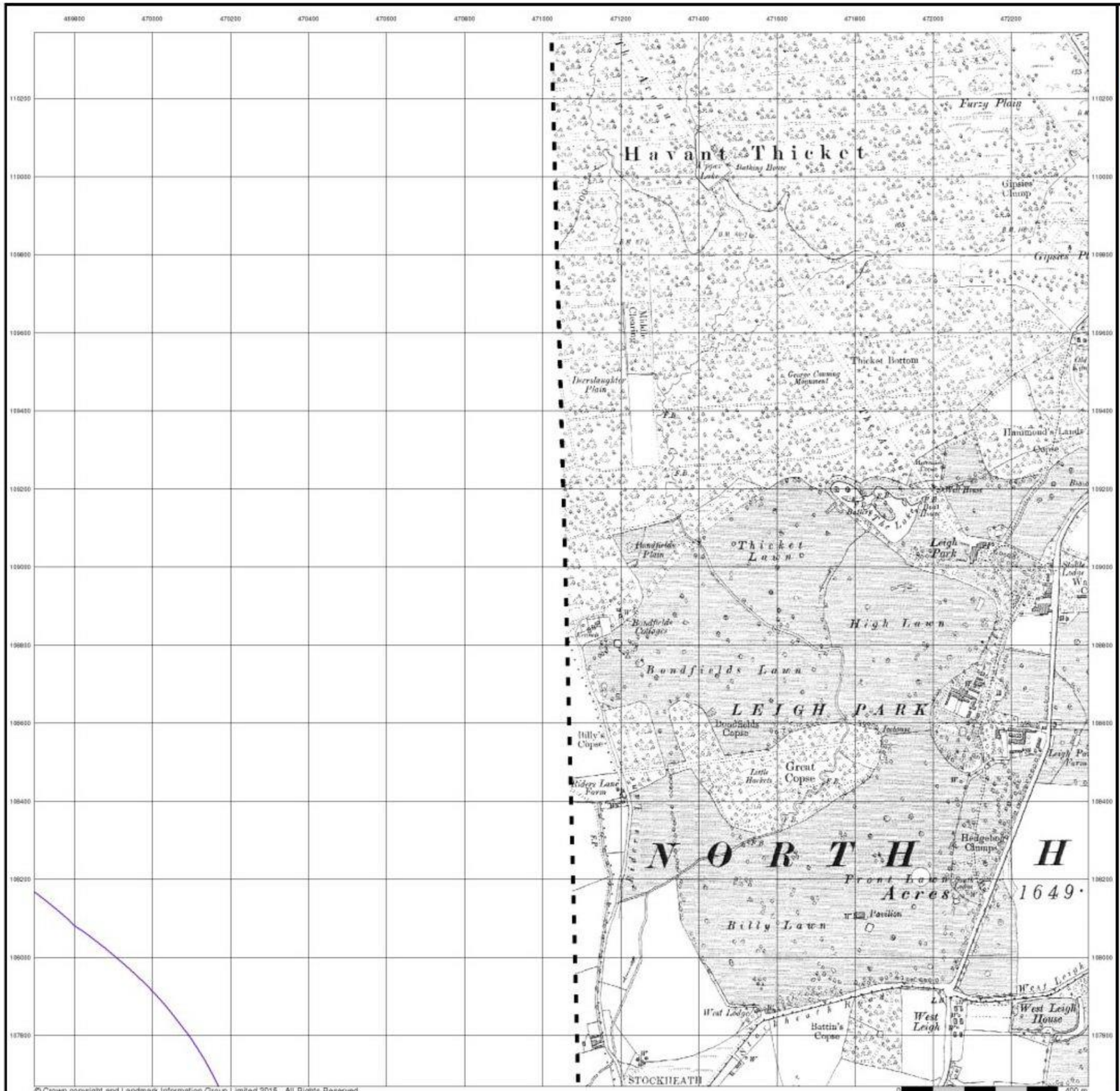
Order Number:	92122794_1_1
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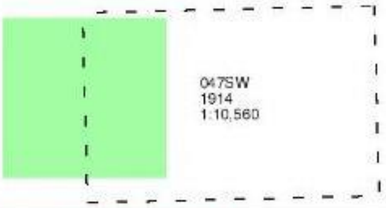
Sussex

Published 1914

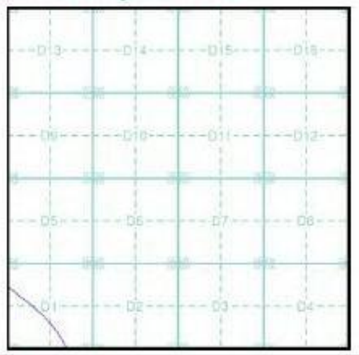
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice D

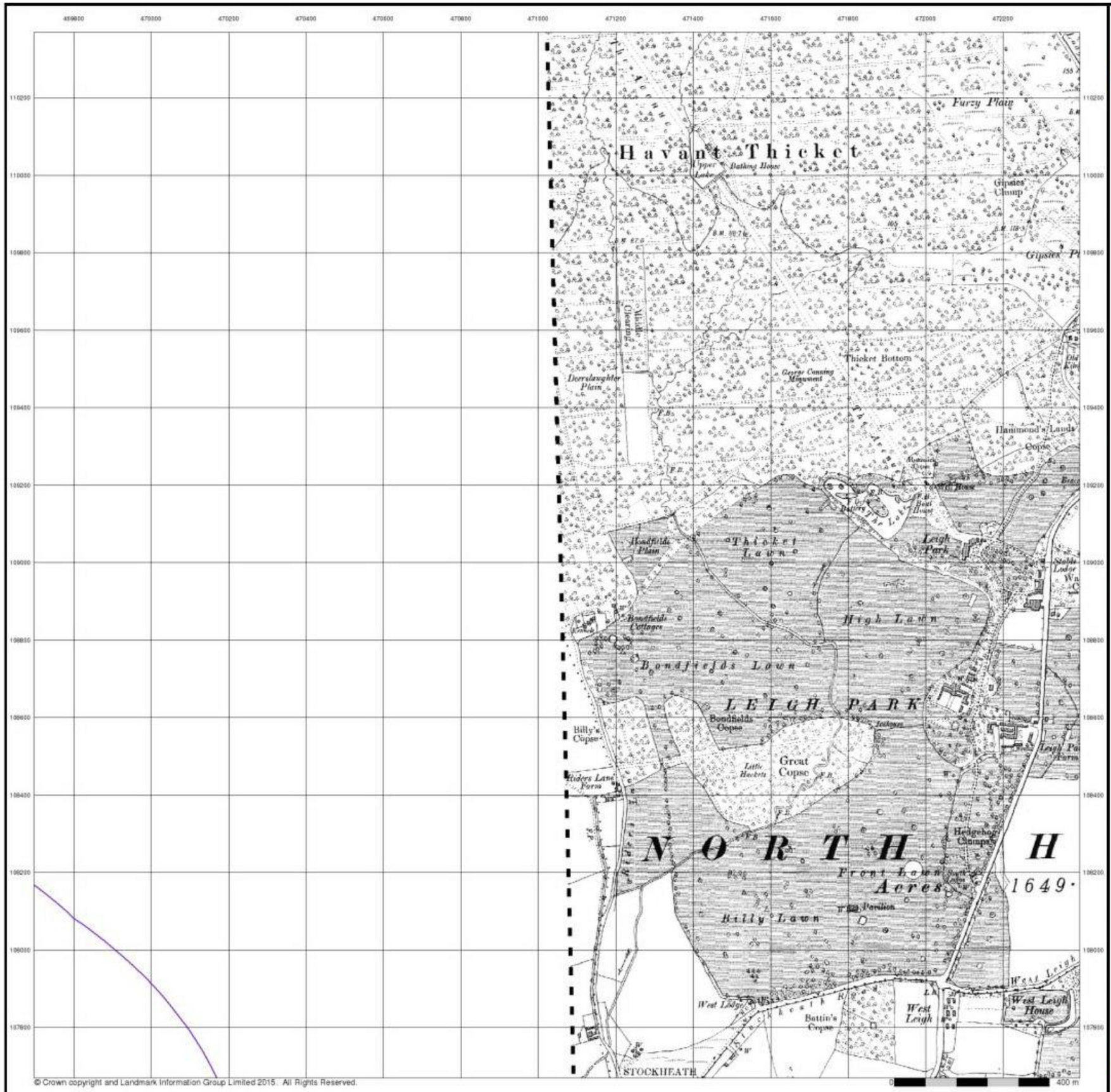


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Slice:	D
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Search Buffer (m):	1000

Site Details

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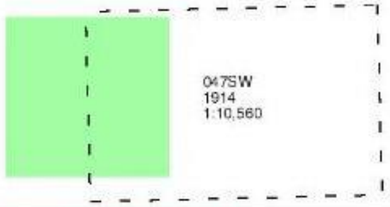
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Published 1914

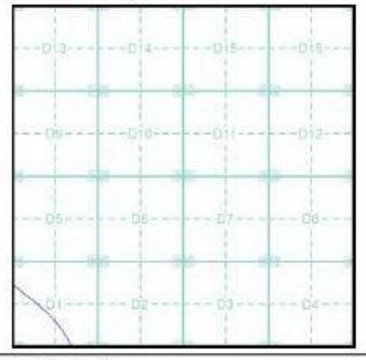
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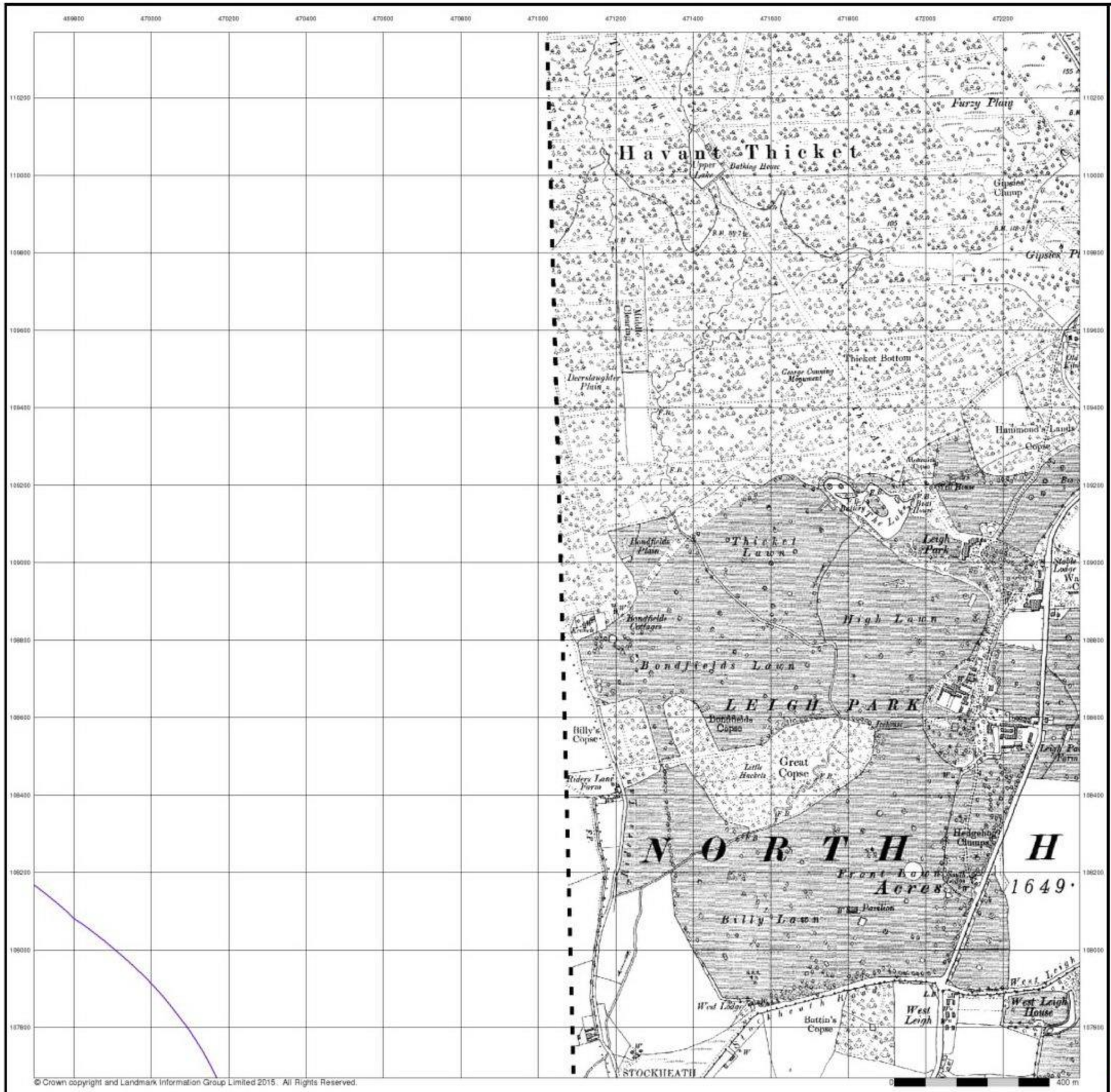
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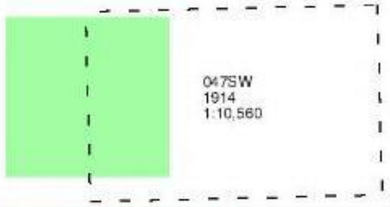
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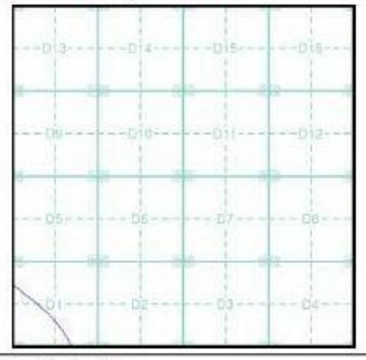
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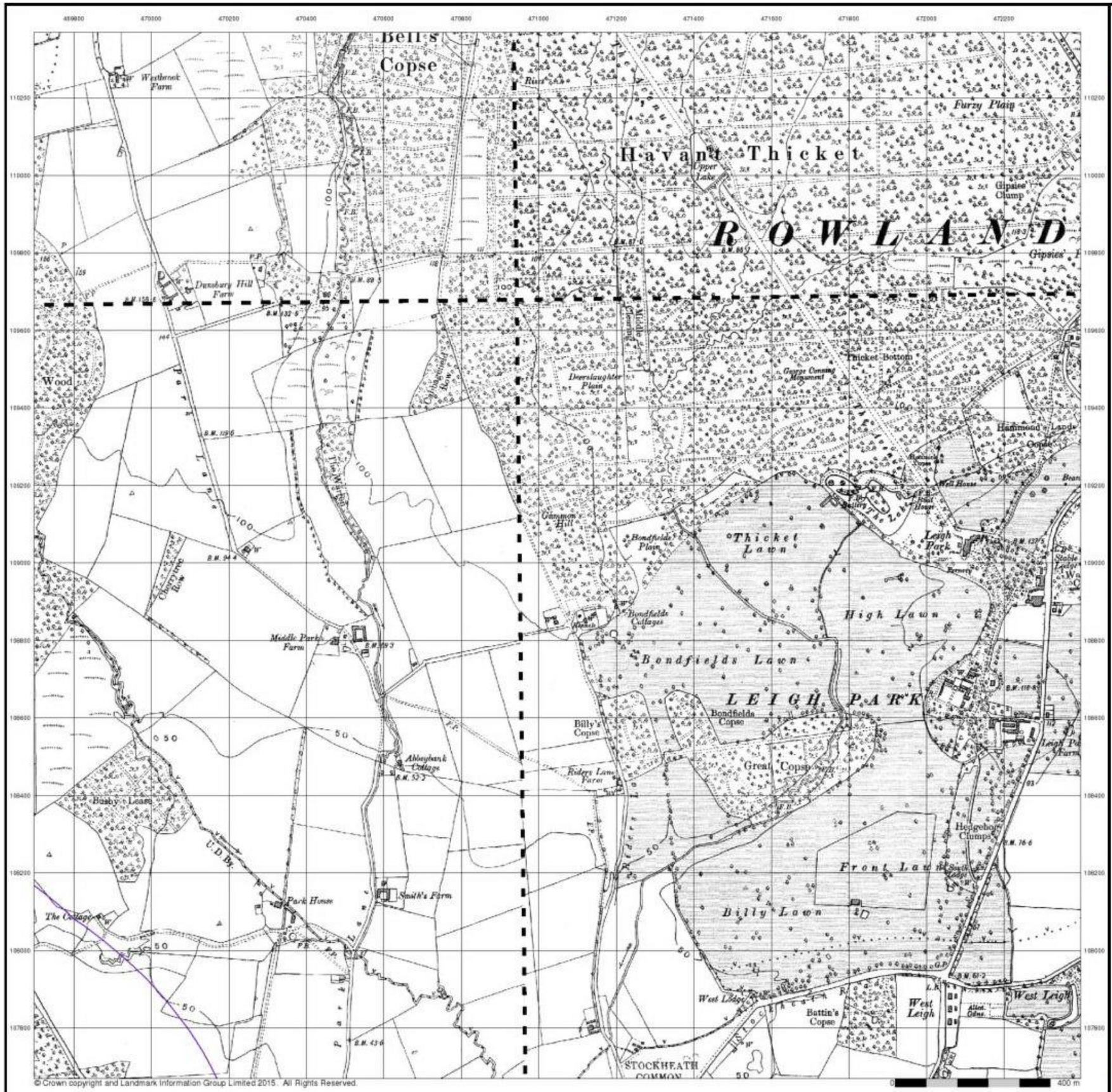
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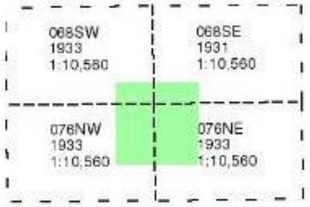
Hampshire & Isle Of Wight

Published 1931 - 1933

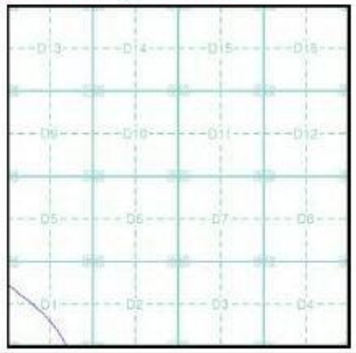
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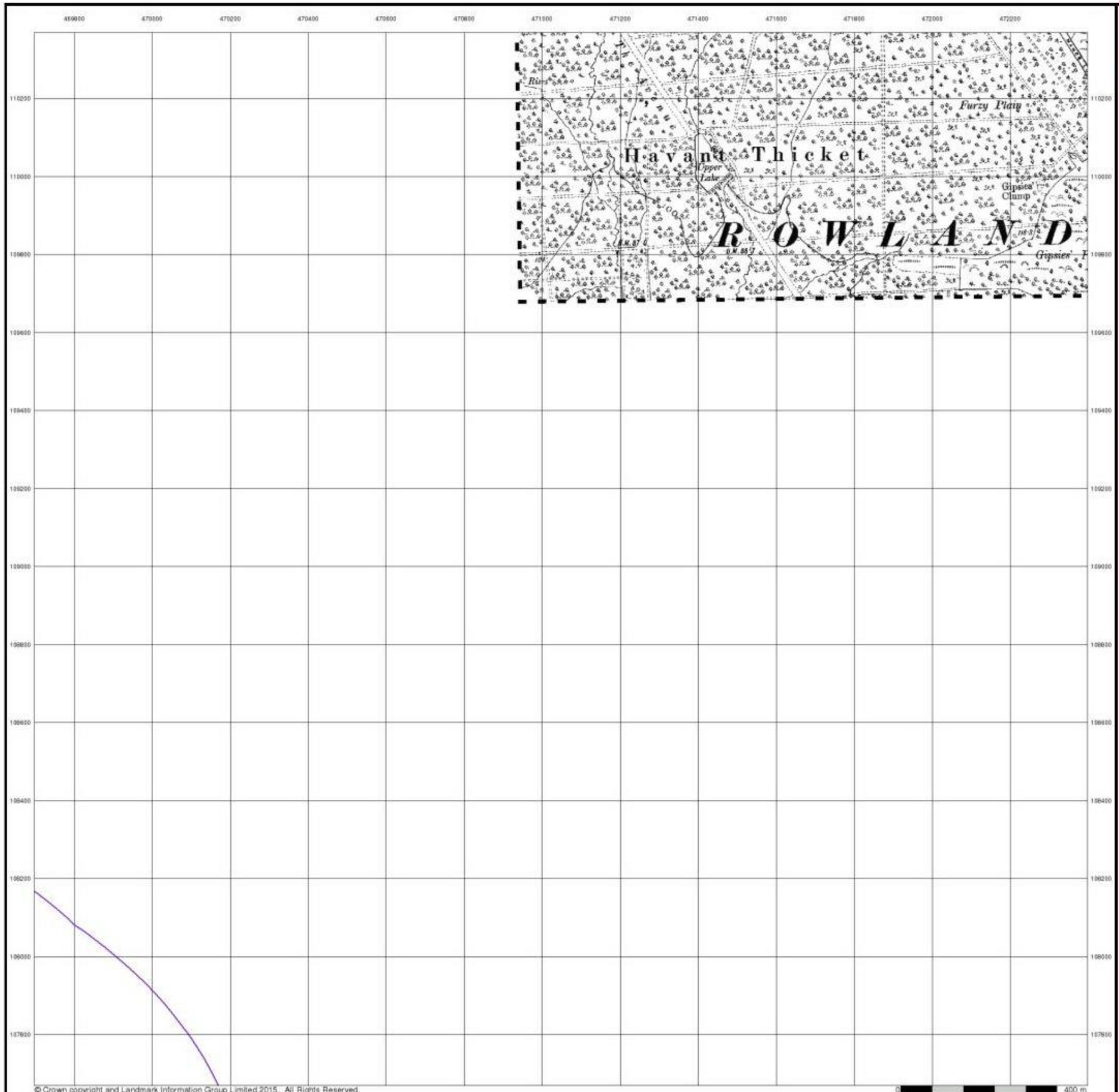
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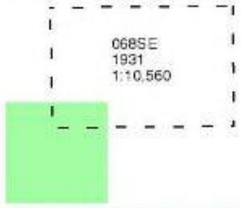
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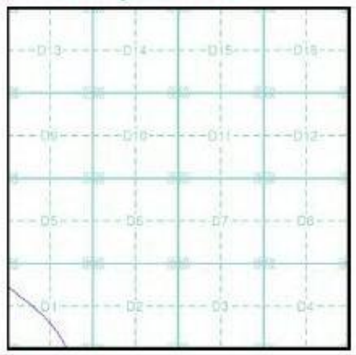
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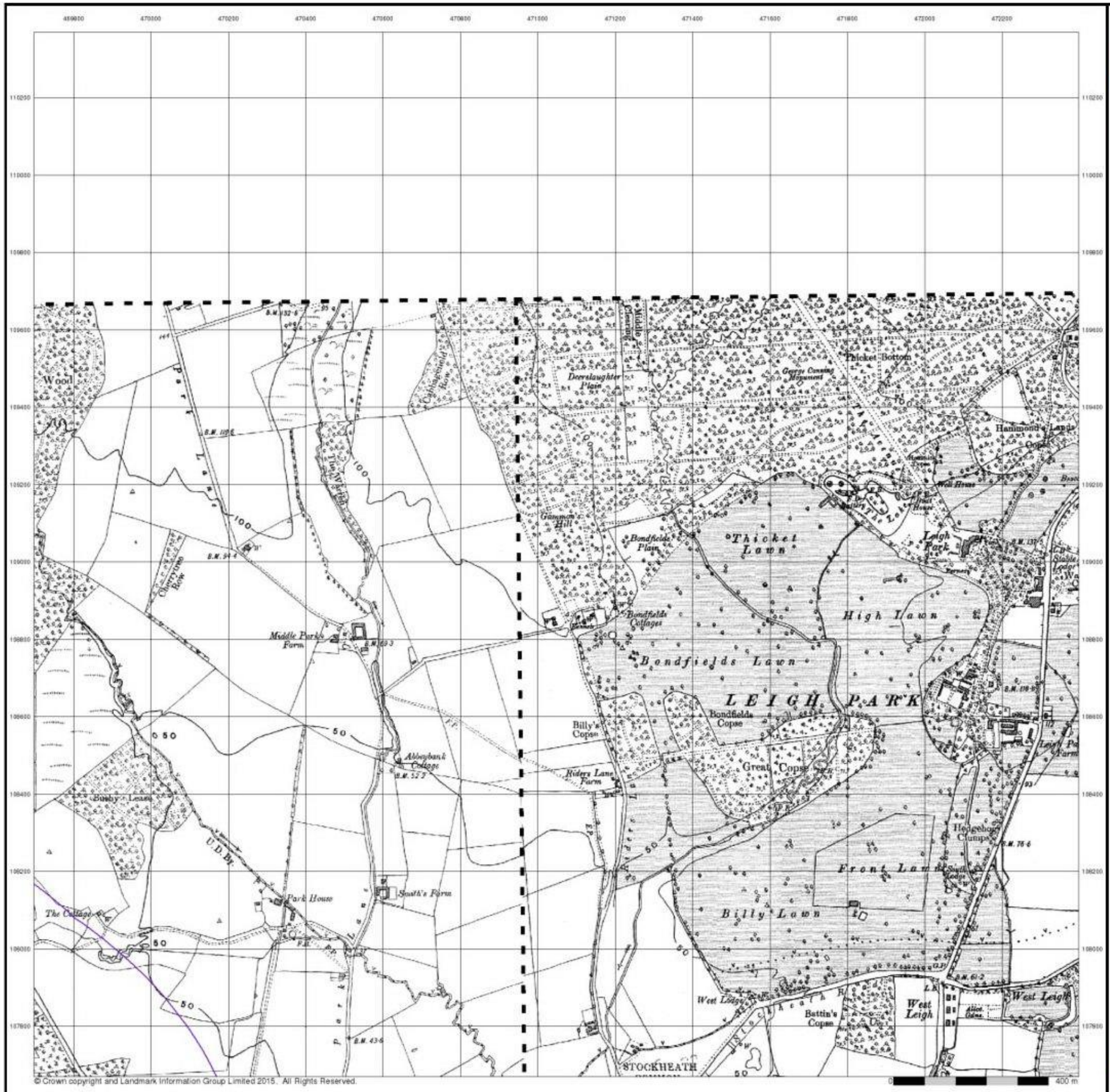
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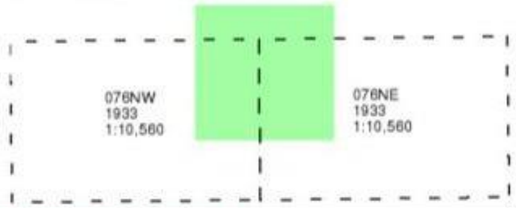
Hampshire & Isle Of Wight

Published 1933

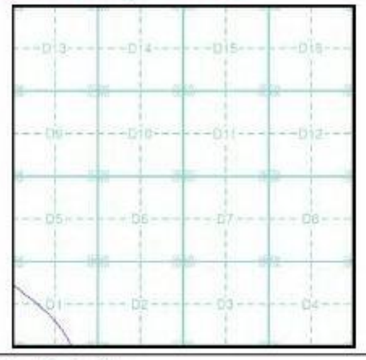
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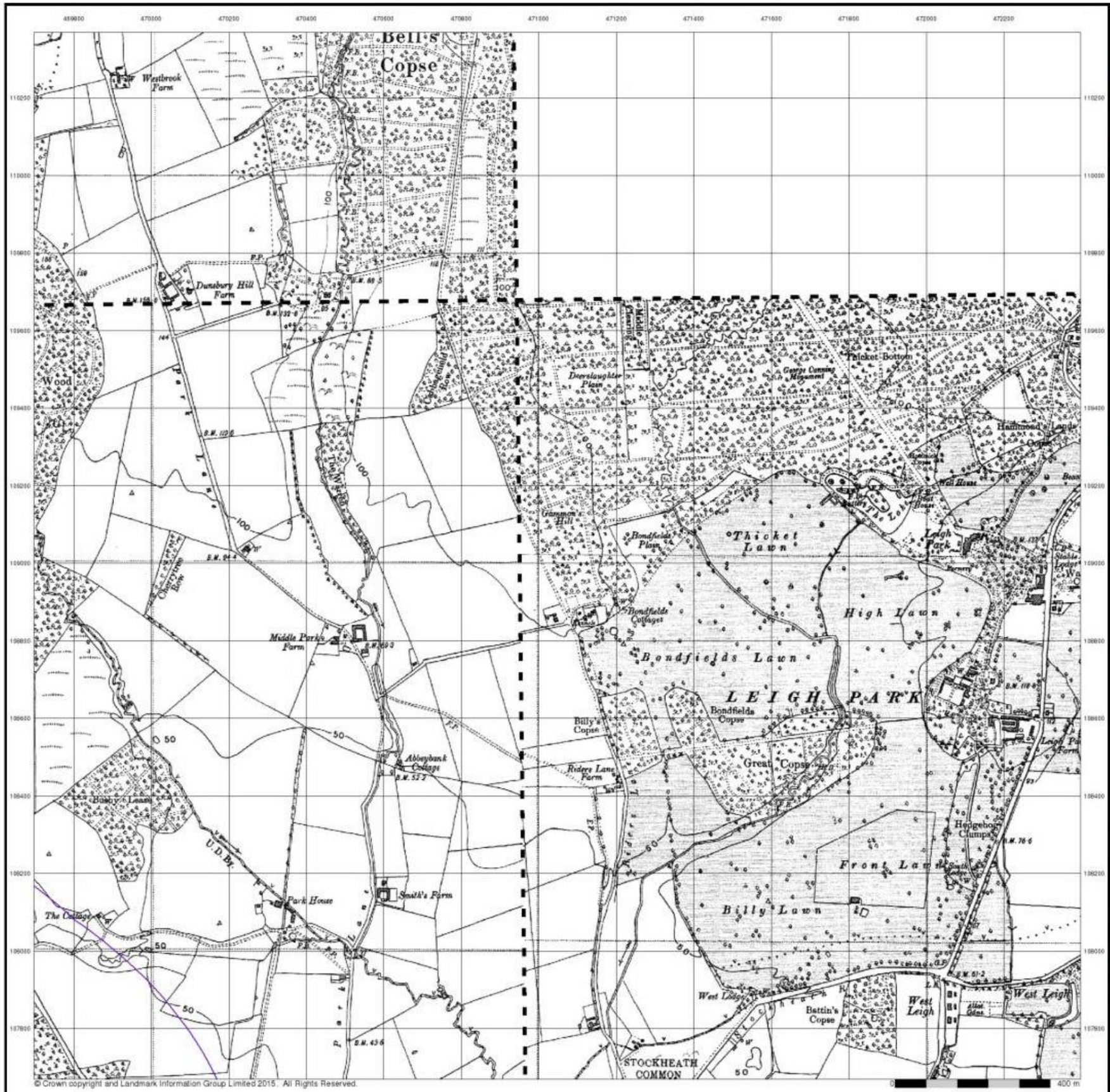
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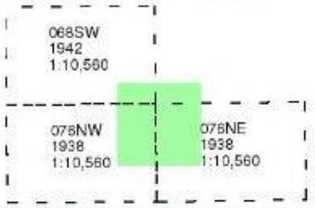
Hampshire & Isle Of Wight

Published 1938 - 1942

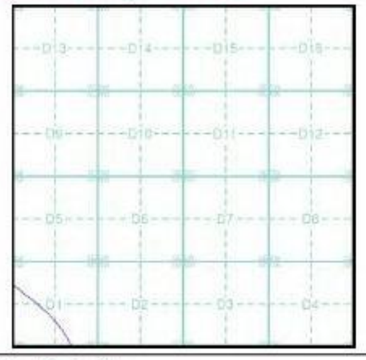
Source map scale - 1:10,560

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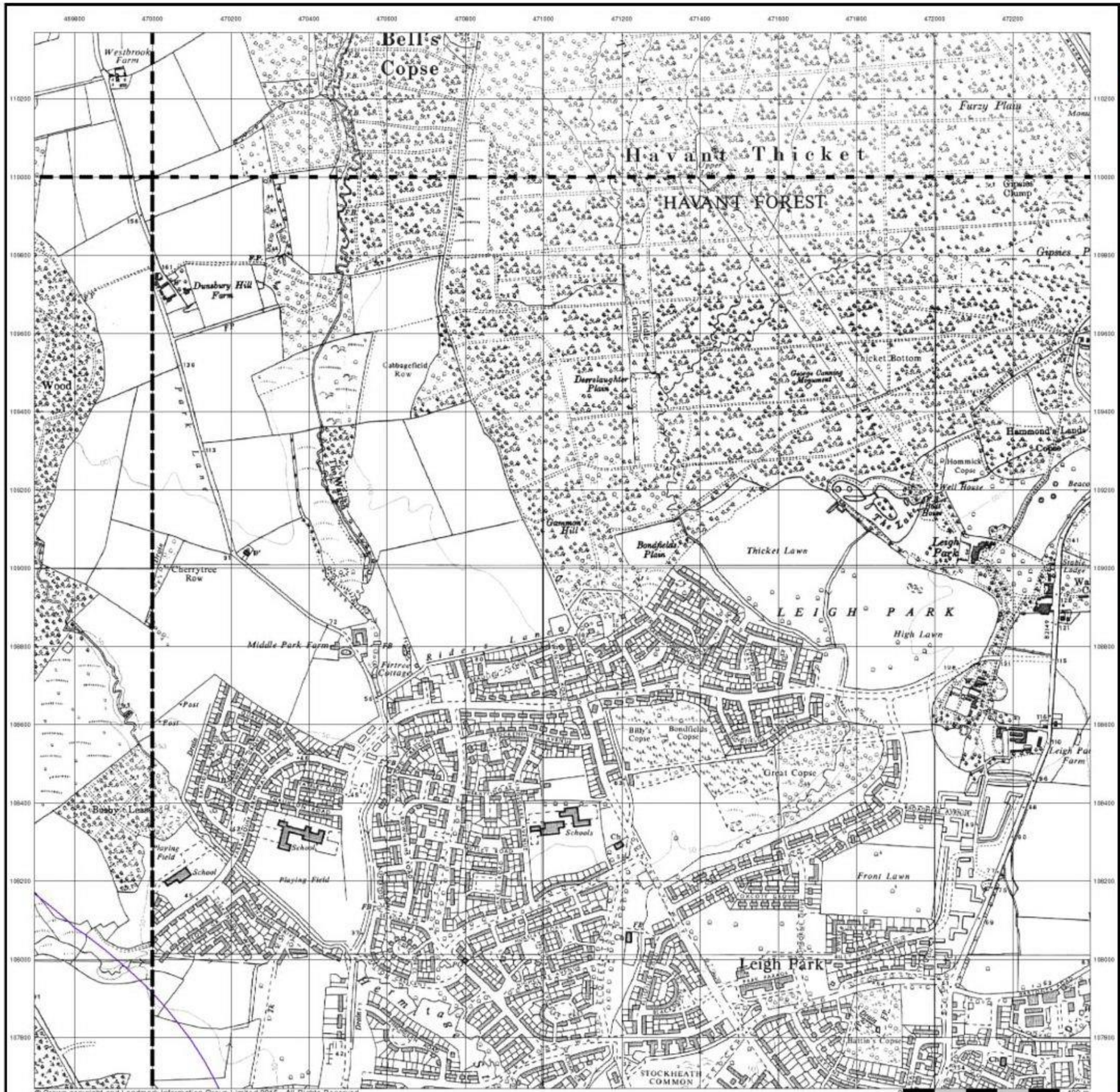
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Ordnance Survey Plan

Published 1962 - 1963

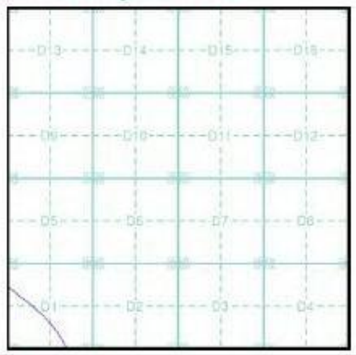
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Map Name(s) and Date(s)

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SU60NE 1963 1:10,560	SU70NW 1963 1:10,560

Historical Map - Slice D

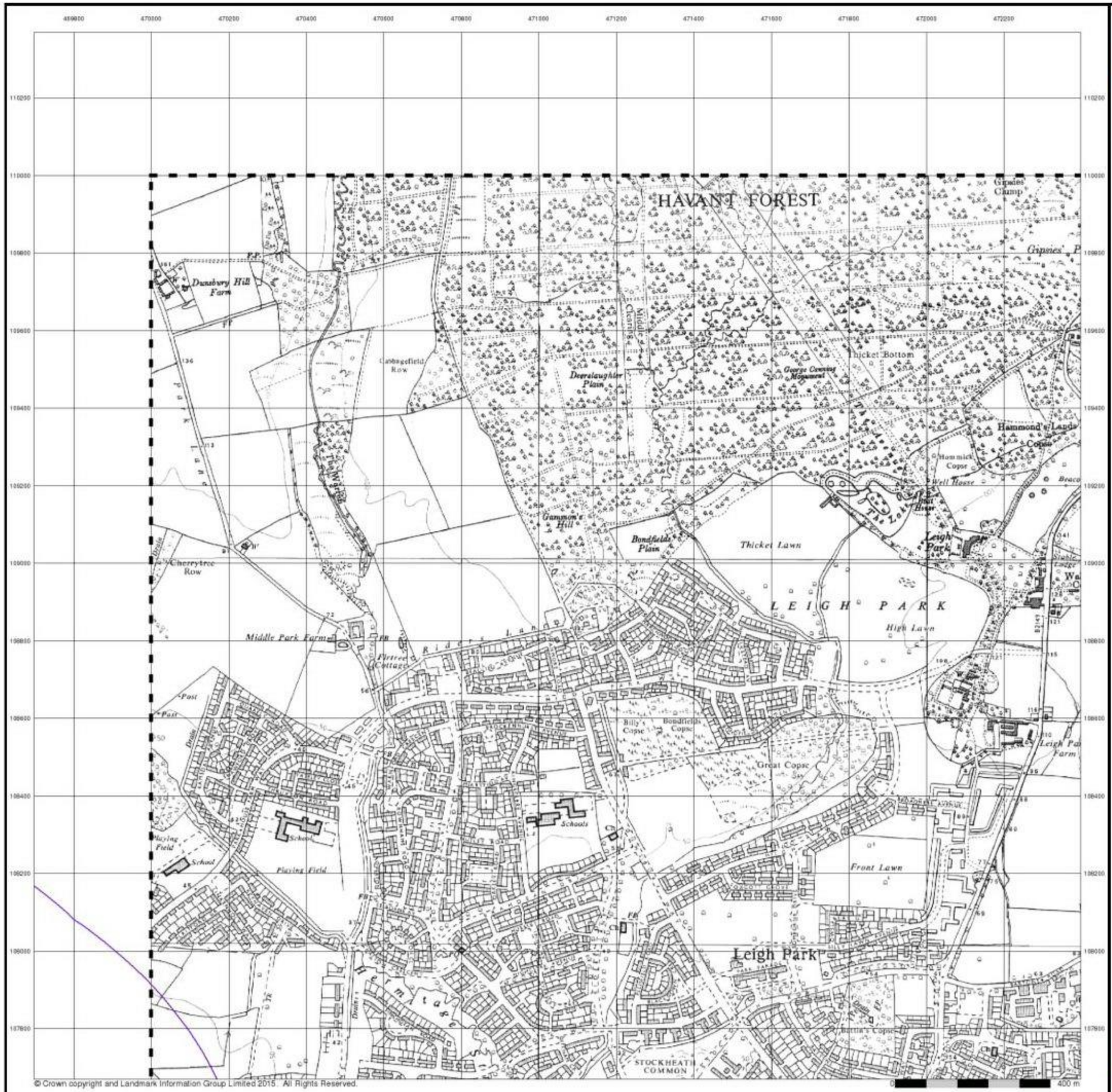


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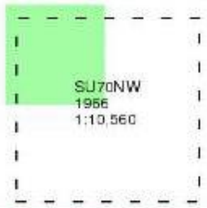
Ordnance Survey Plan

Published 1966

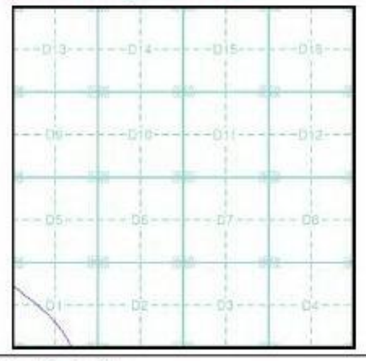
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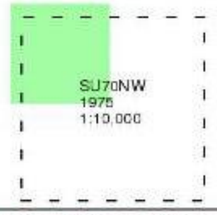
Ordnance Survey Plan

Published 1975

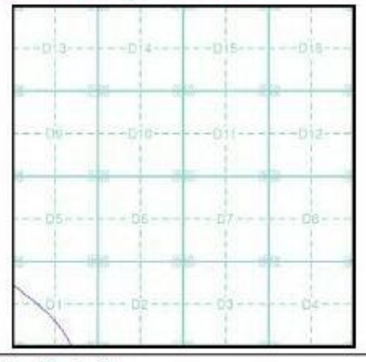
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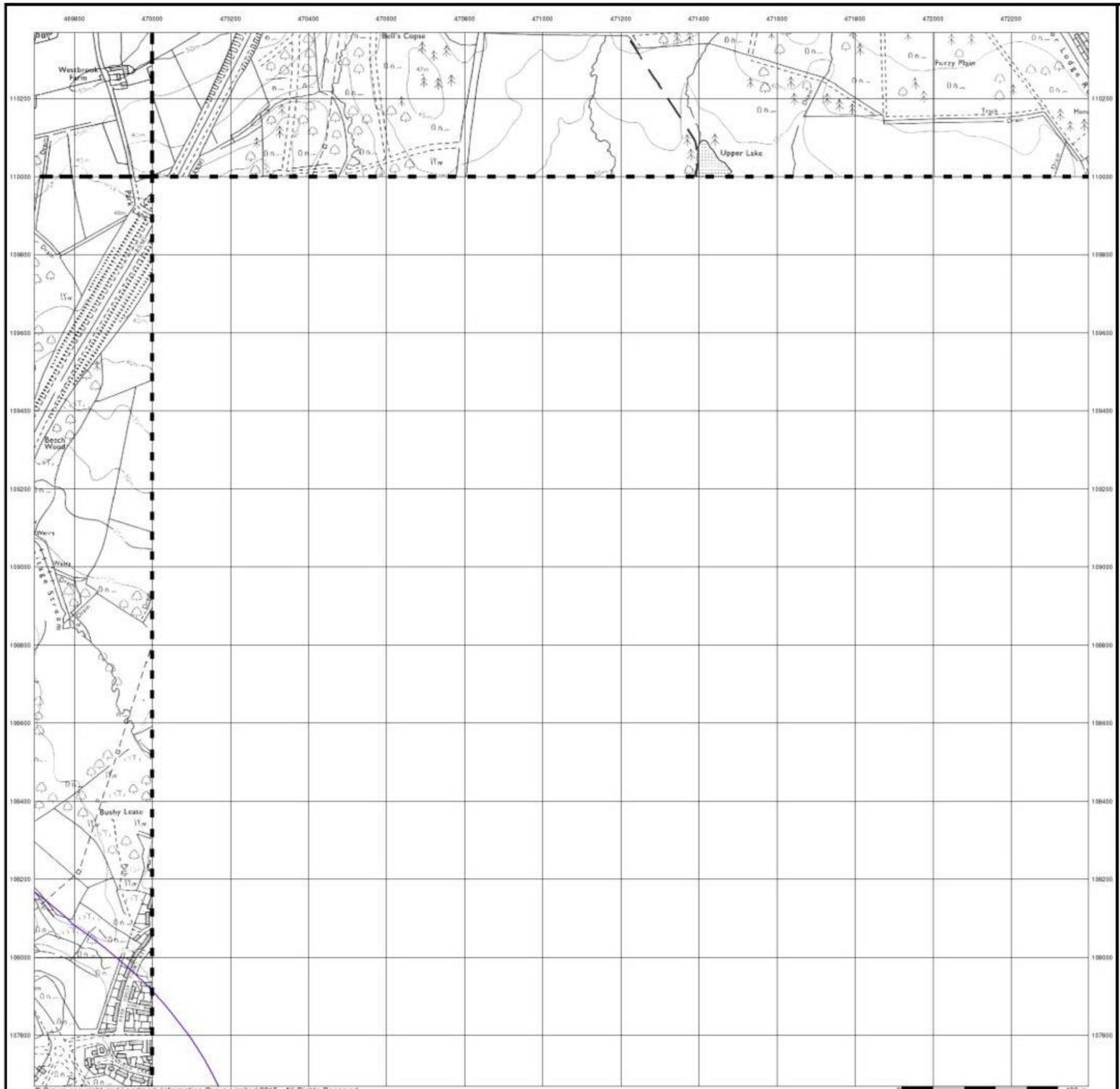
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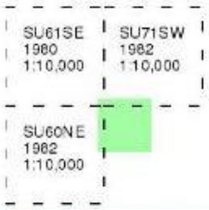
Ordnance Survey Plan

Published 1980 - 1982

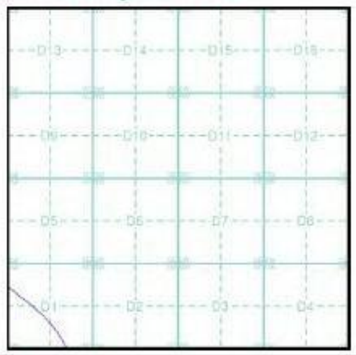
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Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



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Ordnance Survey Plan

Published 1991 - 1992

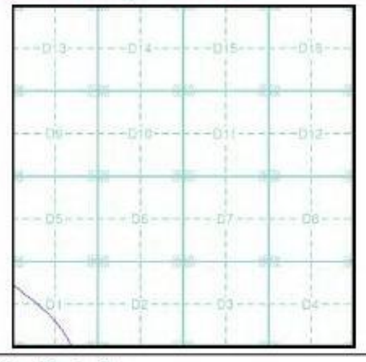
Source map scale - 1:10,000

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)

SU61SE 1992 1:10,000	SU71SW 1992 1:10,000
SU60NE 1991 1:10,000	SU70NW 1992 1:10,000

Historical Map - Slice D



Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	469870, 107850
Slice:	D
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

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



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10k Raster Mapping

Published 2000

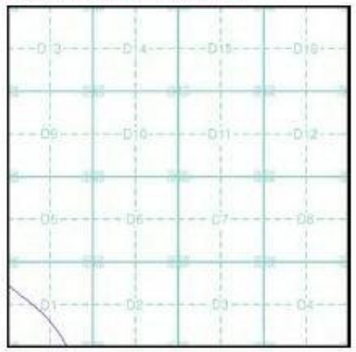
Source map scale - 1:10,000

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

Map Name(s) and Date(s)

SU51SE 2000 1:10,000	SU71SW 2000 1:10,000
SU50NE 2000 1:10,000	SU70NW 2000 1:10,000

Historical Map - Slice D

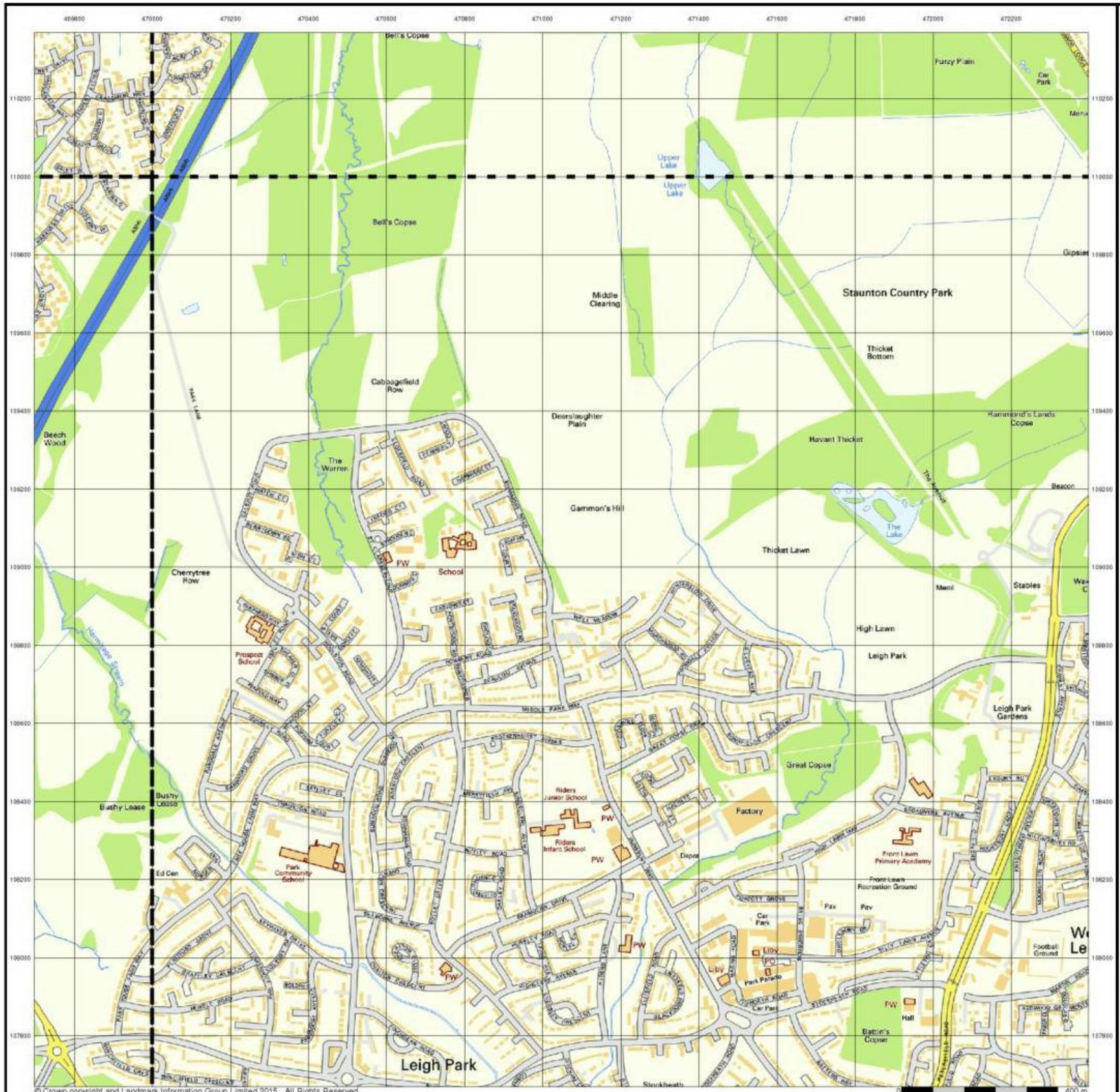


Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	469870, 107850
Slice:	D
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



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Street View

Published 2016

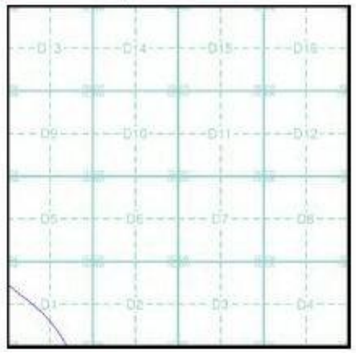
Source map scale - 1:10,000

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

Map Name(s) and Date(s)

SU61SE 2016 1:10,000	SU71SW 2016 1:10,000
SU60NE 2016 1:10,000	SU70NW 2016 1:10,000

Street View Map - Slice D



Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	469870, 107850
Slice:	D
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

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Envirocheck® Report:

Datasheet

Order Details:

Order Number:
92122794_1_1

Customer Reference:
28720

National Grid Reference:
469870, 107850

Slice:
D

Site Area (Ha):
26.37

Search Buffer (m):
1000

Site Details:

Land off College Road
Purbrook
WATERLOOVILLE
Hampshire
PO7 8AA

Client Details:

Mr R Speight
RSK Environment Ltd
Unit 18
Basepoint Abbey Enterprise Centre
Premier Way
Romsey
Hampshire
SO51 9AQ

Contents

Report Section	Page Number
Summary	-
Agency & Hydrological	1
Waste	3
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Introduction

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

In 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.

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Radon Potential dataset Copyright Notice

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Report Version v50.0

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents					
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls					
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 1				Yes
Pollution Incidents to Controlled Waters					
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality					
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions					
Water Industry Act Referrals					
Groundwater Vulnerability	pg 2	Yes	n/a	n/a	n/a
Drift Deposits			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 2	Yes	n/a	n/a	n/a
Superficial Aquifer Designations			n/a	n/a	n/a
Source Protection Zones	pg 2	1			
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
Detailed River Network Lines					n/a
Detailed River Network Offline Drainage					n/a

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Summary

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

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Industrial Land Use					
Contemporary Trade Directory Entries	pg 5				1
Fuel Station Entries	pg 5				1
Gas Pipelines					
Underground Electrical Cables					
Sensitive Land Use					
Ancient Woodland	pg 6		5	1	3
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	pg 6	1			
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SW)	0	1	469250 107450
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SW)	74	1	469550 107350
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SW)	93	1	469200 107500
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(W)	129	1	469250 107600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SW)	176	1	469600 107250
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(W)	193	1	469150 107600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(W)	197	1	469200 107600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SW)	200	1	469350 107600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	238	1	469350 107550
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(W)	243	1	469150 107650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(W)	246	1	469250 107650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	(S)	261	1	469750 107200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(W)	280	1	469450 107700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	308	1	469400 107600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	319	1	469600 107500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	341	1	469450 107650
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(W)	343	1	469100 107750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	356	1	469600 107600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(S)	365	1	469700 107200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	D1SW (NW)	406	1	469871 107846
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	427	1	469650 107550
	Nearest Surface Water Feature	D1NW (NW)	895	-	469712 108053

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Groundwater Vulnerability Soil Classification: Not classified Map Sheet: Sheet 52 Southern Hampshire Scale: 1:100,000	D1SW (NW)	0	2	469871 107846
	Groundwater Vulnerability Soil Classification: Soils of Low Leaching Potential - Soils in which pollutants are unlikely to penetrate the soil layer because water movement is largely horizontal or they have large ability to attenuate diffuse pollutants. Lateral flow from these soils contribute to groundwater recharge elsewhere in the catchment Map Sheet: Sheet 52 Southern Hampshire Scale: 1:100,000	(SW)	0	2	469559 107562
	Drift Deposits None				
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - A	(SW)	0	1	469257 107442
	Bedrock Aquifer Designations Aquifer Designation: Unproductive Strata	D1SW (NW)	0	1	469871 107846
	Superficial Aquifer Designations No Data Available				
1	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone Ic (Inner Protection Zone): Travel time of 50 days or less to the groundwater source - subsurface activity only.	D1SW (NW)	0	2	469871 107846
	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				
	Detailed River Network Lines None				
	Detailed River Network Offline Drainage None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Local Authority Landfill Coverage Name: Havant Borough Council - Has supplied landfill data		0	3	469871 107846
	Local Authority Landfill Coverage Name: Hampshire County Council - Had landfill data but passed it to the relevant environment agency		0	4	469871 107846

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Thames Group	D1SW (NW)	0	1	469871 107846
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	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	D1SW (NW)	0	1	469871 107846
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	D1SW (NW)	0	1	469871 107846
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	D1SW (NW)	0	1	469871 107846
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	D1SW (NW)	0	1	469871 107846
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	D1SW (NW)	0	1	469871 107846
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	D1SW (NW)	0	1	469871 107846
	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	D1SW (NW)	0	1	469871 107846
	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	D1SW (NW)	0	1	469871 107846

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
2	**Contemporary Trade Directory Entries** Name: Asda Petrol Location: Larchwood Avenue, Havant, Hampshire, PO9 3QW Classification: Petrol Filling Stations **Status: Active** Positional Accuracy: Manually positioned to the address or location	D1SW (SW)	648	-	469712 107702
3	**Fuel Station Entries** Name: Asda Havant Location: Willowdene Close, Bedhampton, Havant, Hampshire, PO9 3QP Brand: ASDA Premises Type: Hypermarket **Status: Open** Positional Accuracy: Manually positioned to the address or location	D1SW (SW)	648	-	469712 107702

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
4	**Ancient Woodland** Name: Not Supplied Reference: 1487521 Area(m²): 49712.64 Type: Ancient and Semi-Natural Woodland	(W)	6	5	469218 107579
5	**Ancient Woodland** Name: Not Supplied Reference: 1488333 Area(m²): 15356.02 Type: Ancient and Semi-Natural Woodland	(SW)	72	5	469414 107354
6	**Ancient Woodland** Name: Not Supplied Reference: 1489282 Area(m²): 32441.88 Type: Plantation on Ancient Woodland	(SW)	110	5	469583 107203
7	**Ancient Woodland** Name: Not Supplied Reference: 1487374 Area(m²): 20019.65 Type: Plantation on Ancient Woodland	(W)	182	5	469112 107621
8	**Ancient Woodland** Name: Not Supplied Reference: 1489389 Area(m²): 11336.1 Type: Ancient and Semi-Natural Woodland	(SW)	241	5	469639 107359
9	**Ancient Woodland** Name: Not Supplied Reference: 1489383 Area(m²): 68501.86 Type: Ancient and Semi-Natural Woodland	(W)	334	5	469182 108072
10	**Ancient Woodland** Name: Not Supplied Reference: 1488854 Area(m²): 4580.05 Type: Plantation on Ancient Woodland	(W)	581	5	469128 108004
11	**Ancient Woodland** Name: Not Supplied Reference: 1489661 Area(m²): 4918.42 Type: Plantation on Ancient Woodland	(NW)	911	5	469570 108165
12	**Ancient Woodland** Name: Not Supplied Reference: 1488487 Area(m²): 6374.51 Type: Ancient and Semi-Natural Woodland	(NW)	988	5	469602 108216
13	**Nitrate Vulnerable Zones** Name: Not Supplied Description: Eutrophic Water Source: Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	D1SW (NW)	0	6	469871 107846

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Data Currency

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
East Hampshire District Council - Environmental Health Department	January 2015	Annual Rolling Update
Havant Borough Council - Environmental Health Department	January 2015	Annual Rolling Update
Chichester District Council - Environmental Health Department	July 2013	Annual Rolling Update
Discharge Consents		
Environment Agency - Southern Region	April 2016	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Southern Region	March 2013	As notified
Integrated Pollution Controls		
Environment Agency - Southern Region	October 2008	Not Applicable
Integrated Pollution Prevention And Control		
Environment Agency - Southern Region	April 2016	Quarterly
Local Authority Integrated Pollution Prevention And Control		
East Hampshire District Council - Environmental Health Department	December 2014	Annual Rolling Update
Havant Borough Council - Environmental Health Department	December 2015	Annual Rolling Update
Chichester District Council - Environmental Health Department	October 2014	Annual Rolling Update
Local Authority Pollution Prevention and Controls		
East Hampshire District Council - Environmental Health Department	December 2014	Annual Rolling Update
Havant Borough Council - Environmental Health Department	December 2015	Annual Rolling Update
Chichester District Council - Environmental Health Department	October 2014	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
East Hampshire District Council - Environmental Health Department	December 2014	Annual Rolling Update
Havant Borough Council - Environmental Health Department	December 2015	Annual Rolling Update
Chichester District Council - Environmental Health Department	October 2014	Annual Rolling Update
Nearest Surface Water Feature		
Ordnance Survey	July 2012	Quarterly
Pollution Incidents to Controlled Waters		
Environment Agency - Southern Region	December 1999	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - Southern Region	March 2013	As notified
Prosecutions Relating to Controlled Waters		
Environment Agency - Southern Region	March 2013	As notified
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 - Southern Region - Hampshire and Isle of Wight Area Office	April 2016	Quarterly
Environment Agency - Southern Region - Solent and South Downs	April 2016	Quarterly
Environment Agency - Southern Region - Sussex Area	April 2016	Quarterly
Water Abstractions		
Environment Agency - Southern Region	April 2016	Quarterly
Water Industry Act Referrals		
Environment Agency - Southern Region	April 2016	Quarterly
Groundwater Vulnerability		
Environment Agency - Head Office	April 2015	Not Applicable
Drift Deposits		
Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations		
British Geological Survey - National Geoscience Information Service	August 2015	As notified

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Data Currency

Agency & Hydrological	Version	Update Cycle
Superficial Aquifer Designations British Geological Survey - National Geoscience Information Service	August 2015	As notified
Source Protection Zones Environment Agency - Head Office	April 2016	Quarterly
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	February 2016	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	February 2016	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	February 2016	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	February 2016	Quarterly
Flood Defences Environment Agency - Head Office	February 2016	Quarterly
Detailed River Network Lines Environment Agency - Head Office	March 2012	Annually
Detailed River Network Offline Drainage Environment Agency - Head Office	March 2012	Annually
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	Annually

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Data Currency

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Southern Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - Southern Region - Hampshire and Isle of Wight Area Office	May 2016	Quarterly
Environment Agency - Southern Region - Solent and South Downs	May 2016	Quarterly
Environment Agency - Southern Region - Sussex Area	May 2016	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - Southern Region - Hampshire and Isle of Wight Area Office	April 2016	Quarterly
Environment Agency - Southern Region - Solent and South Downs	April 2016	Quarterly
Environment Agency - Southern Region - Sussex Area	April 2016	Quarterly
Local Authority Landfill Coverage		
Chichester District Council - Environmental Health Department	May 2000	Not Applicable
East Hampshire District Council	May 2000	Not Applicable
Hampshire County Council - Minerals and Waste Planning	May 2000	Not Applicable
Havant Borough Council - Environmental Health Department	May 2000	Not Applicable
West Sussex County Council - Environment & Development	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Chichester District Council - Environmental Health Department	May 2000	Not Applicable
East Hampshire District Council	May 2000	Not Applicable
Hampshire County Council - Minerals and Waste Planning	May 2000	Not Applicable
Havant Borough Council - Environmental Health Department	May 2000	Not Applicable
West Sussex County Council - Environment & Development	May 2000	Not Applicable
Registered Landfill Sites		
Environment Agency - Southern Region - Hampshire Area	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - Southern Region - Hampshire Area	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - Southern Region - Hampshire Area	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable
Hazardous Substances	**Version**	**Update Cycle**
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	February 2016	Bi-Annually
Explosive Sites		
Health and Safety Executive	February 2016	Bi-Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
Chichester District Council - Planning Department	February 2016	Annual Rolling Update
East Hampshire District Council	February 2016	Annual Rolling Update
Hampshire County Council - Minerals and Waste Planning	February 2016	Annual Rolling Update
Havant Borough Council - Commercial Team	February 2016	Annual Rolling Update
West Sussex County Council - Environment & Development	October 2006	Annual Rolling Update
Planning Hazardous Substance Consents		
Chichester District Council - Planning Department	February 2016	Annual Rolling Update
East Hampshire District Council	February 2016	Annual Rolling Update
Hampshire County Council - Minerals and Waste Planning	February 2016	Annual Rolling Update
Havant Borough Council - Commercial Team	February 2016	Annual Rolling Update
West Sussex County Council - Environment & Development	October 2006	Annual Rolling Update

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Data Currency

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	May 2016	Bi-Annually
Brine Compensation Area Cheshire Brine Subsidence Compensation Board	August 2011	Not Applicable
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	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	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	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	June 2016	Quarterly
Fuel Station Entries Catalist Ltd - Experian	July 2016	Quarterly
Gas Pipelines National Grid	July 2014	Quarterly
Underground Electrical Cables National Grid	January 2016	Bi-Annually

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Data Currency

Sensitive Land Use	Version	Update Cycle
Ancient Woodland Natural England	June 2015	Bi-Annually
Areas of Outstanding Natural Beauty Natural England	April 2016	Bi-Annually
Environmentally Sensitive Areas Natural England	April 2016	Annually
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Natural England	April 2016	Bi-Annually
Marine Nature Reserves Natural England	April 2016	Bi-Annually
National Nature Reserves Natural England	April 2016	Bi-Annually
National Parks Natural England	March 2016	Bi-Annually
Nitrate Sensitive Areas Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	April 2016	Not Applicable
Nitrate Vulnerable Zones Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	October 2015	Annually
Ramsar Sites Natural England	April 2016	Bi-Annually
Sites of Special Scientific Interest Natural England	April 2016	Bi-Annually
Special Areas of Conservation Natural England	April 2016	Bi-Annually
Special Protection Areas Natural England	April 2016	Bi-Annually
World Heritage Sites English Heritage - National Monument Record Centre	September 2015	Bi-Annually

Data Suppliers

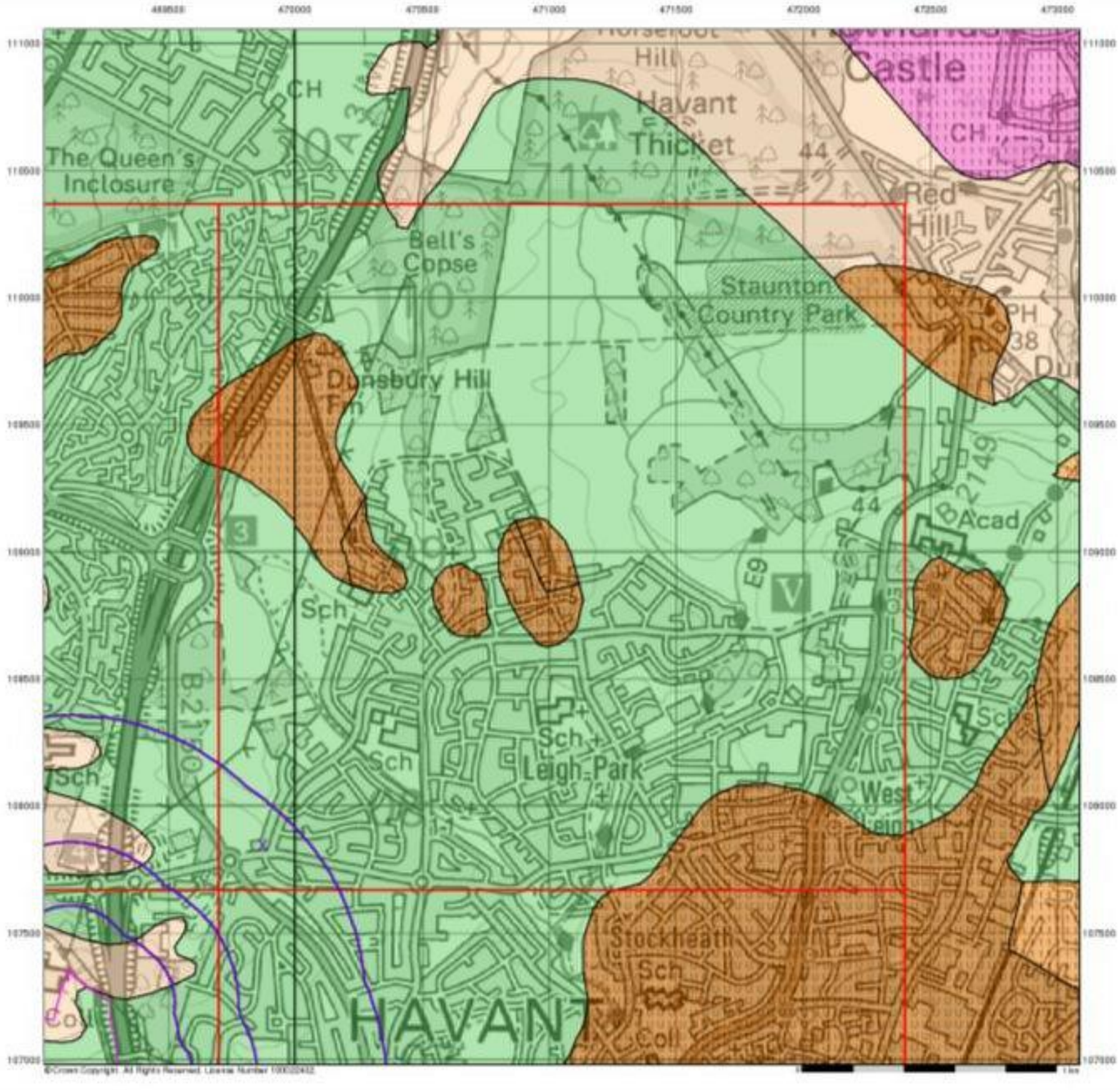
A selection of organisations who provide data within this report

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

Useful Contacts

Contact	Name and Address	Contact Details
1	**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
2	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	**Havant Borough Council - Environmental Health Department** Public Service PLaza, Civic Centre Road, Havant, Hampshire, PO9 2AX	Telephone: 023 9244 6677 Email: env.services@havant.gov.uk Website: www.havant.gov.uk
4	**Hampshire County Council - Minerals and Waste Planning** Room 130, Ashburton Court West, The Castle, Winchester, Hampshire, SO23 8UD	Telephone: 01962 841841 Fax: 01962 847055 Website: www.hants.gov.uk
5	**Natural England** County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
6	**Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)** Government Buildings, Otley Road, Lawnswood, Leeds, West Yorkshire, LS16 5QT	Telephone: 0113 2613333 Fax: 0113 230 0879
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

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



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Groundwater Vulnerability

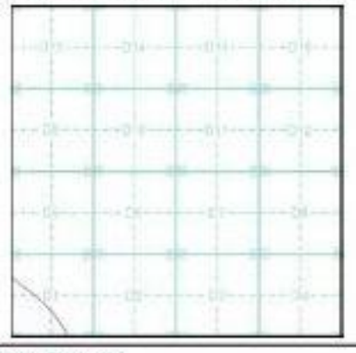
General

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

Agency and Hydrological

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 D



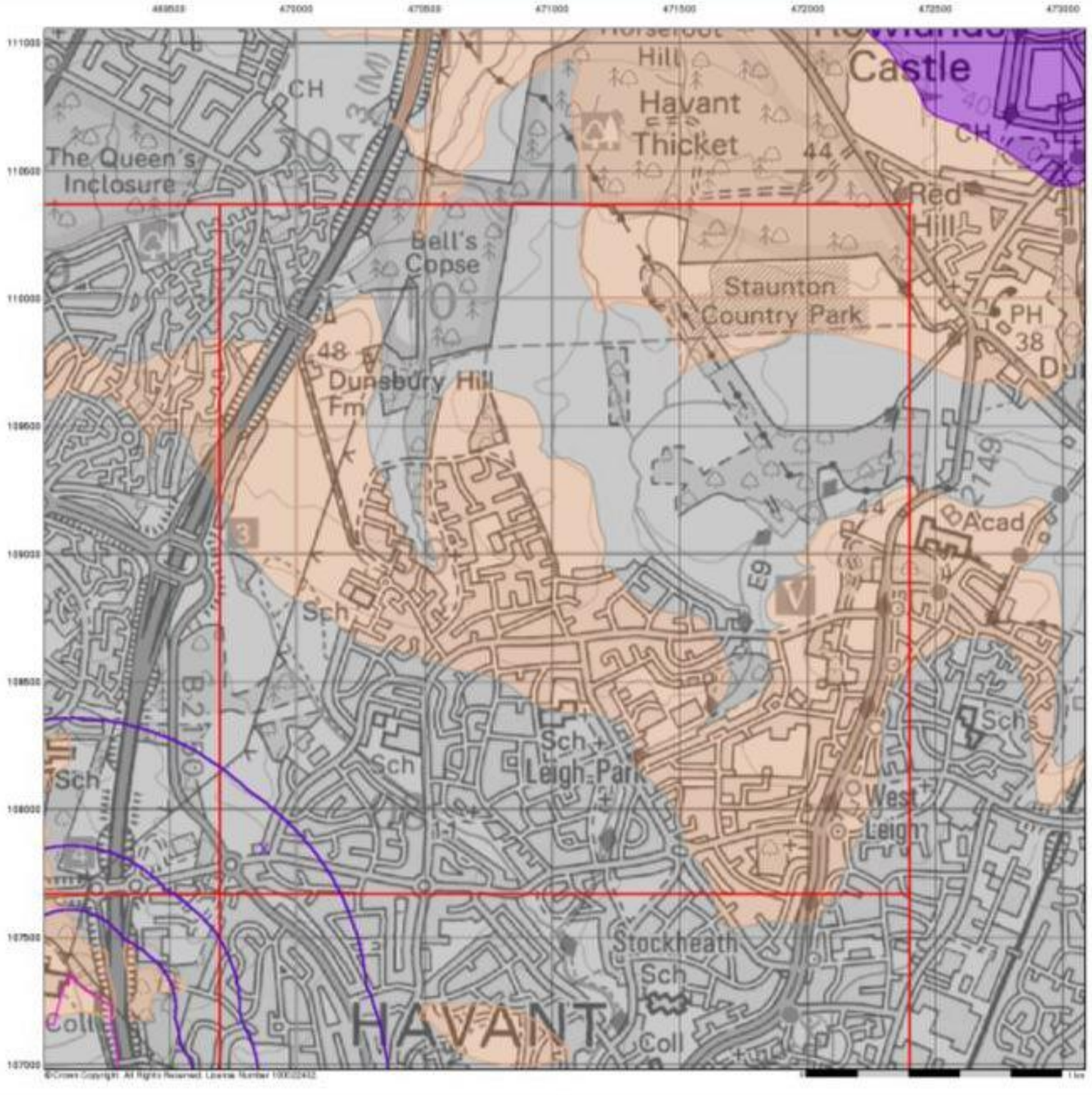
Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	469870, 107850
Slice:	D
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

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



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Bedrock Aquifer Designation

General

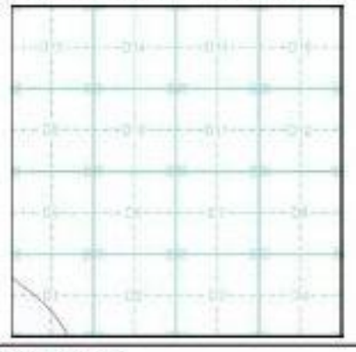
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice D

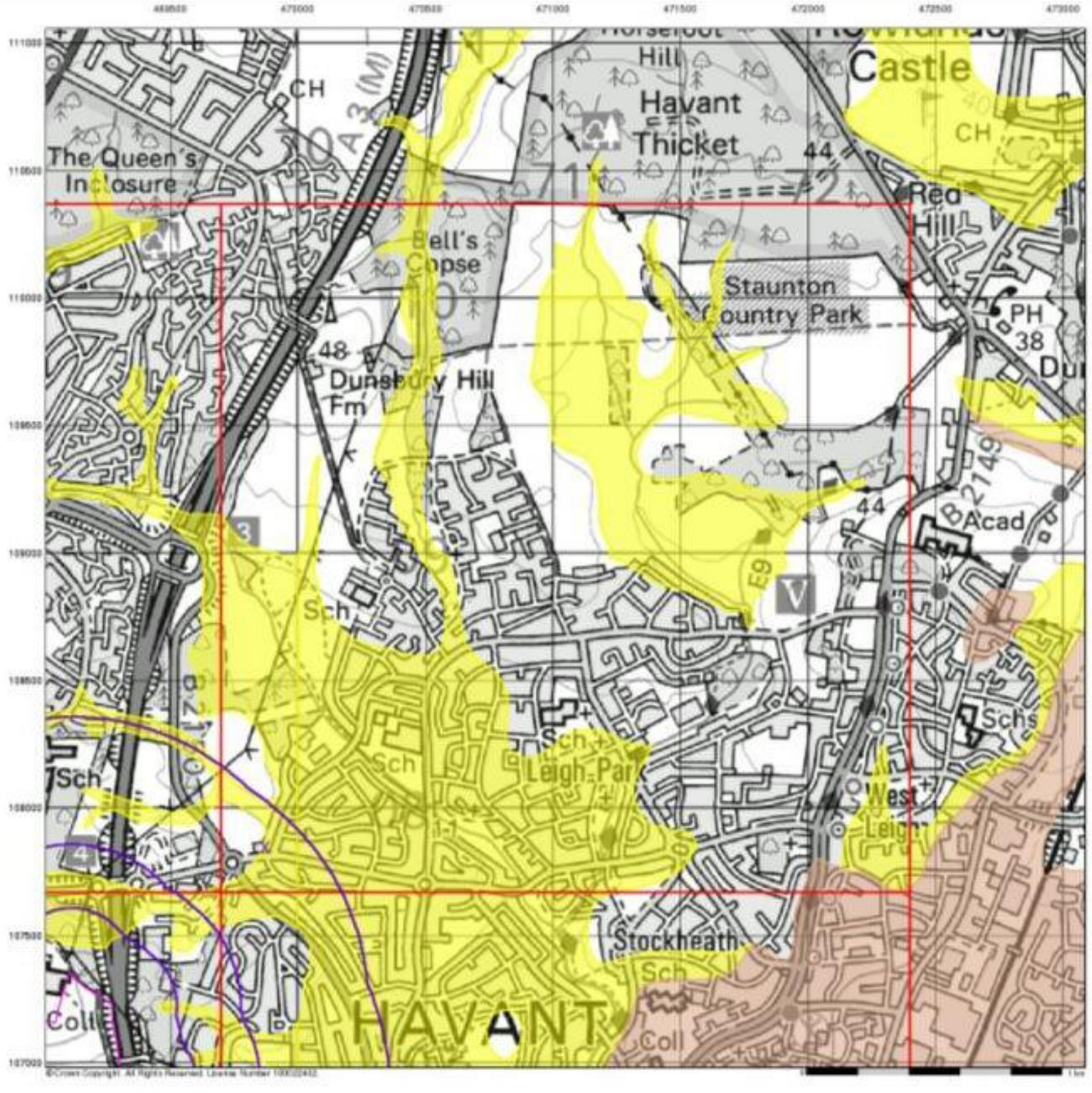


Order Details

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Slice:	D
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

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Superficial Aquifer Designation

General

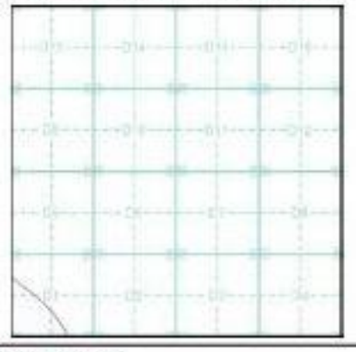
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice D

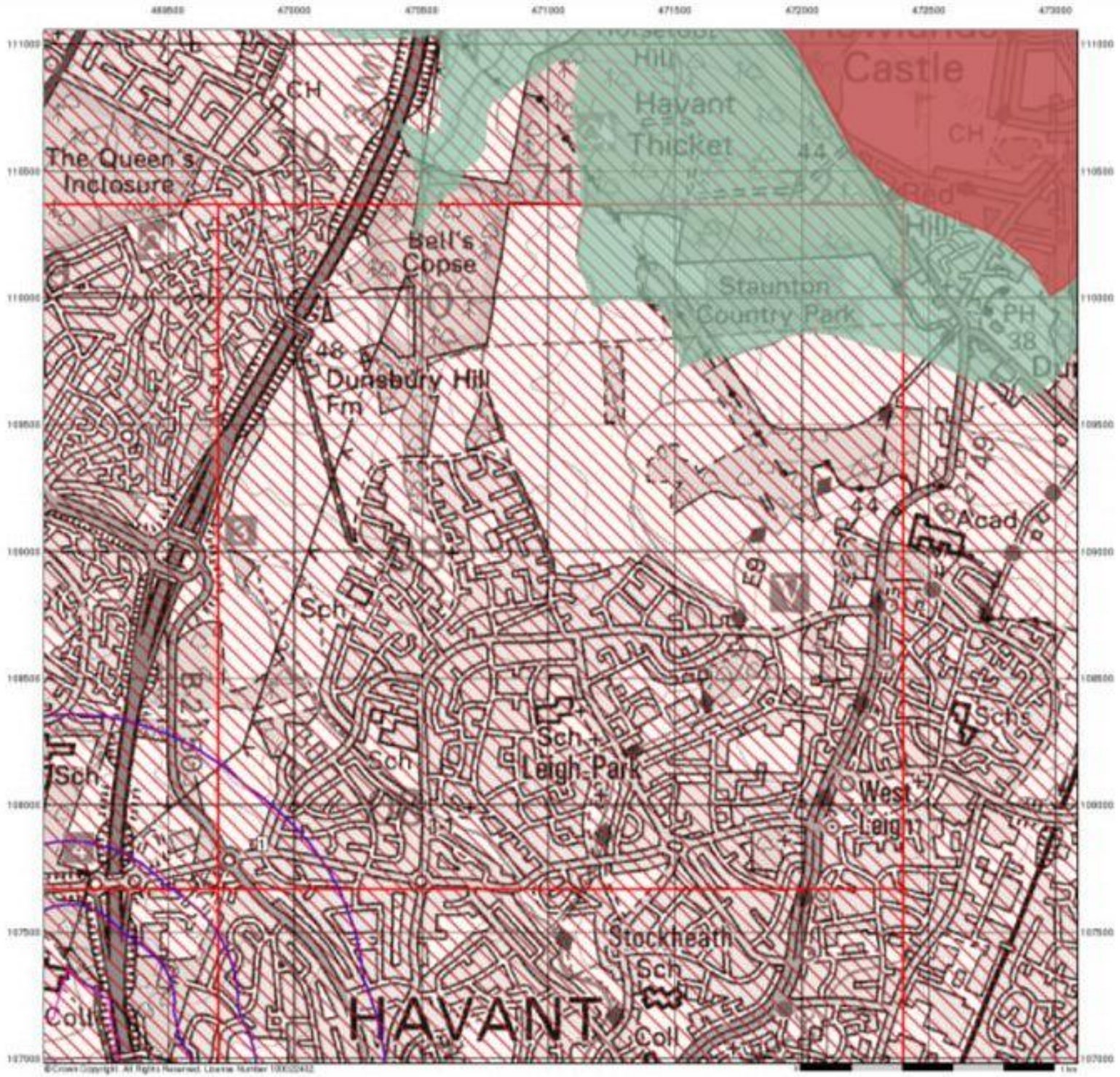


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Source Protection Zones

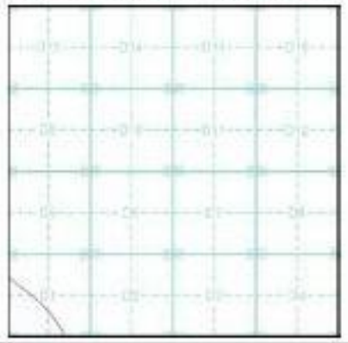
General

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

Agency and Hydrological

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

Site Sensitivity Context Map - Slice D



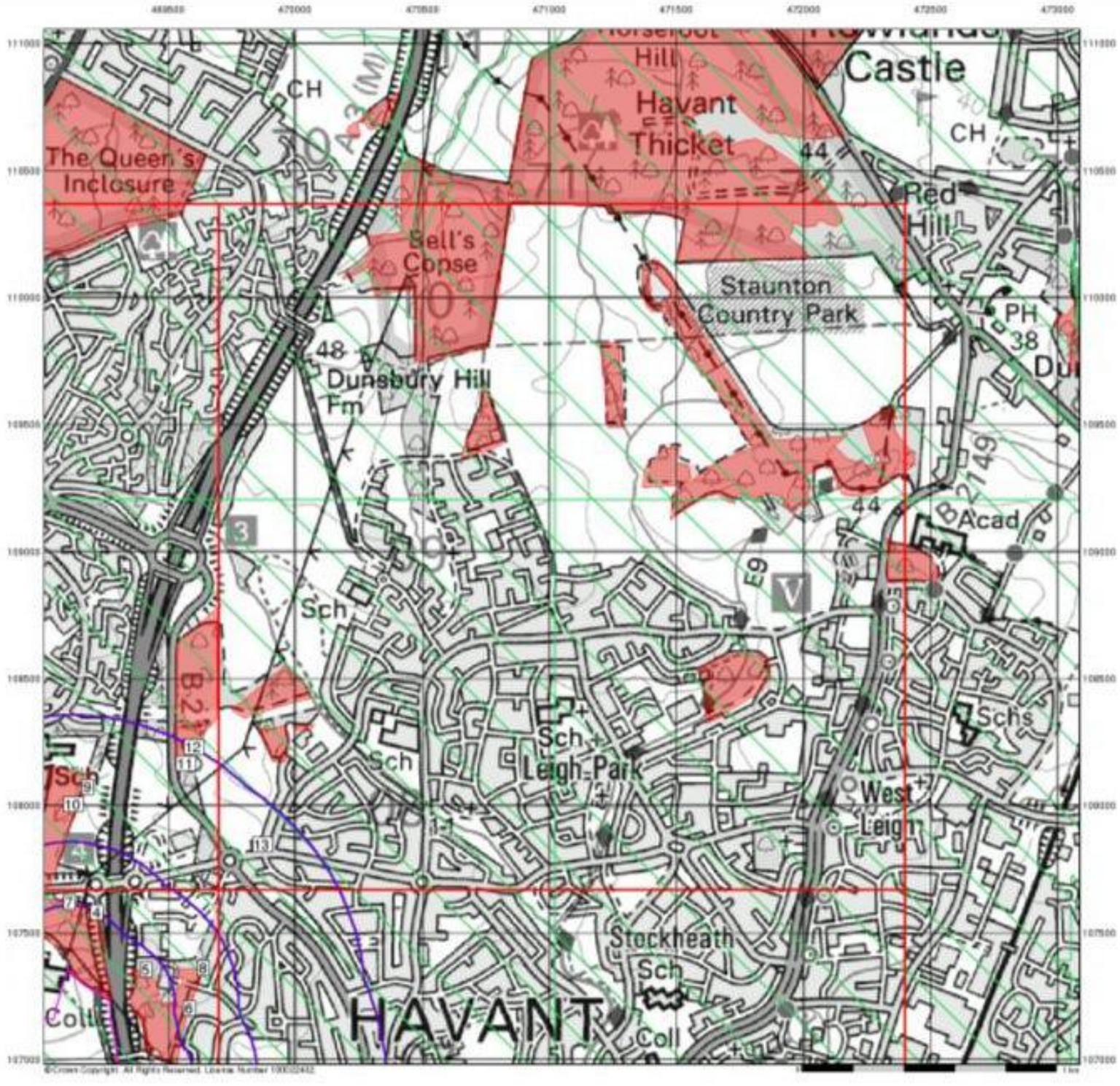
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Sensitive Land Uses

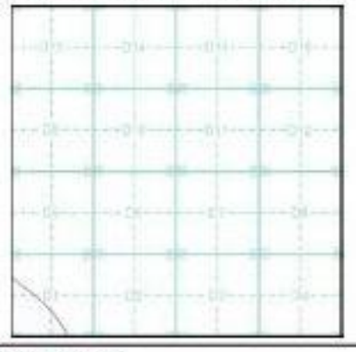
General

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

Sensitive Land Uses

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

Site Sensitivity Context Map - Slice D

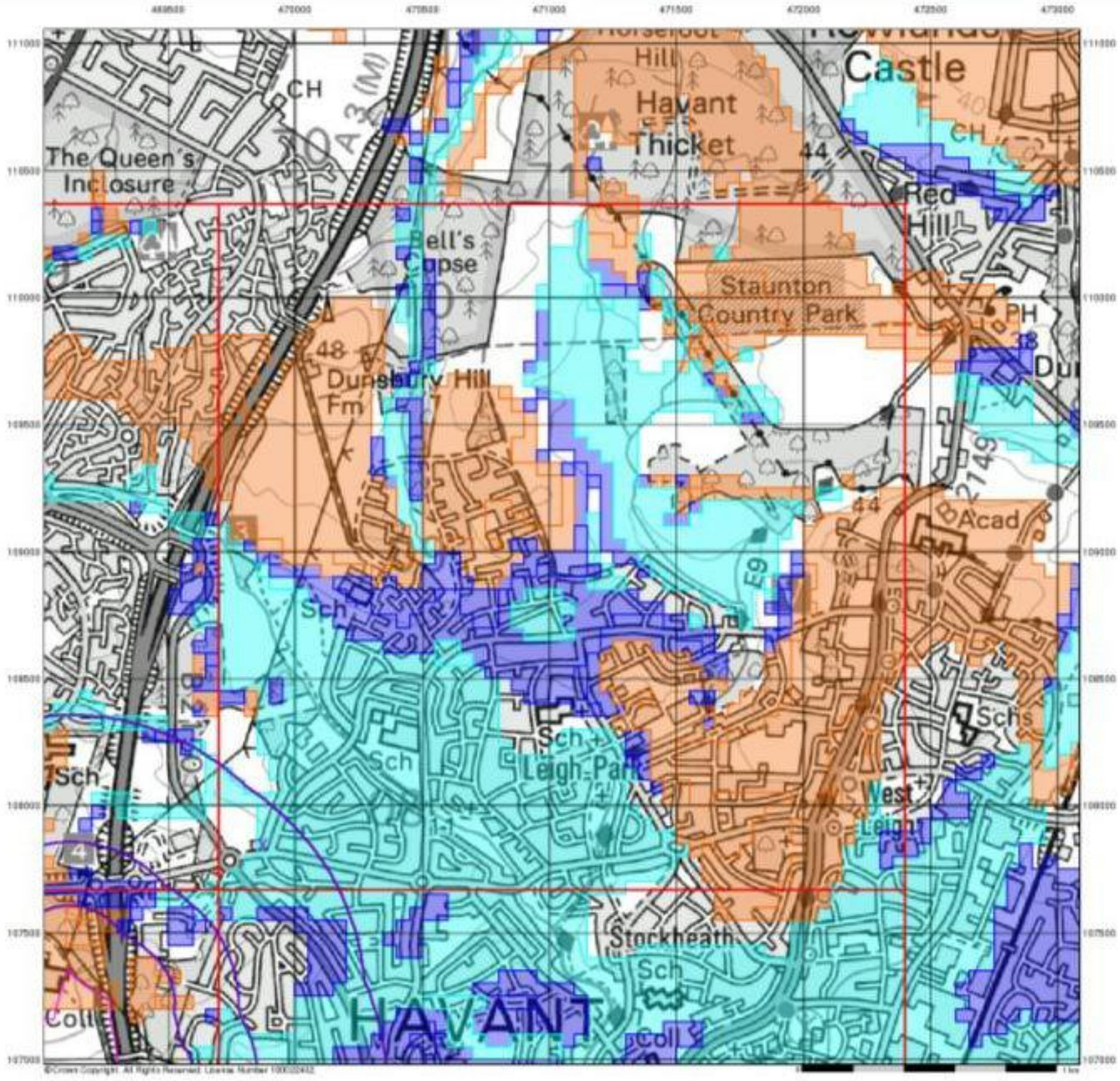


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Site Details

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BGS Flood GFS Data

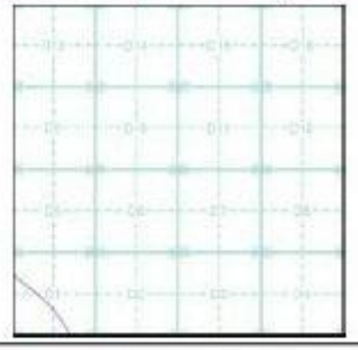
General

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

Agency and Hydrological (Flood)

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

Site Sensitivity Context Map - Slice D



Order Details

Order Number:	92122794_1_1
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Geology 1:10,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	MGR	Made Ground (Undivided)	Artificial Deposit	Holocene - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	SUPNM	Superficial Theme Not Mapped [For Digital Map Use Only]	Unknown/Unclassified Entry	Not Supplied - Not Supplied
	HEAD	Head	Clay, Silt, Sand and Gravel	Quaternary - Ryazanian
	RTDU	River Terrace Deposits (Undifferentiated)	Sand, Silt and Clay	Quaternary - Ryazanian

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	LC	London Clay Formation	Clay, Silt and Sand	Eocene - Eocene
	BOSA	Bognor Sand Member	Sand	Eocene - Eocene
	BOSA	Bognor Sand Member	Clay, Silt and Sand	Eocene - Eocene
	LC	London Clay Formation	Sand	Eocene - Eocene
	LMBE	Lambeth Group	Clay, Silt and Sand	Paleocene - Paleocene
	LMBE	Lambeth Group	Clay	Paleocene - Paleocene

Envirocheck® Geology

Geology 1:10,000 Maps

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

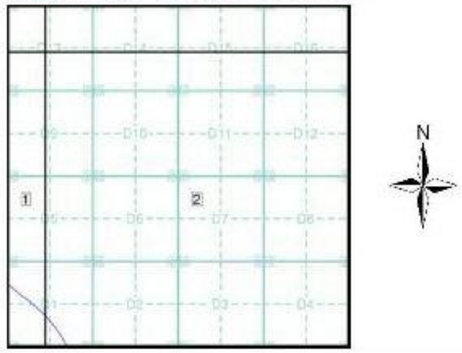
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page.

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

Geology 1:10,000 Maps Coverage

Map ID:		**Map ID:**	
Map Name:	SU61SE	**Map Name:**	SU71SW
Map Date:	1996	**Map Date:**	1984
Bedrock Geology:	Available	**Bedrock Geology:**	Available
Superficial Geology:	Available	**Superficial Geology:**	Available
Artificial Geology:	Available	**Artificial Geology:**	Available
Faults:	Not Available	**Faults:**	Not Supplied
Landslip:	Not Available	**Landslip:**	Available
Rock Segments:	Not Available	**Rock Segments:**	Not Supplied
Map ID:	2	**Map ID:**	1
Map Name:	SU70NW	**Map Name:**	SU60NE
Map Date:	1984	**Map Date:**	1984
Bedrock Geology:	Available	**Bedrock Geology:**	Available
Superficial Geology:	Available	**Superficial Geology:**	Available
Artificial Geology:	Available	**Artificial Geology:**	Available
Faults:	Not Supplied	**Faults:**	Not Supplied
Landslip:	Not Available	**Landslip:**	Not Available
Rock Segments:	Not Supplied	**Rock Segments:**	Not Supplied

Geology 1:10,000 Maps - Slice D

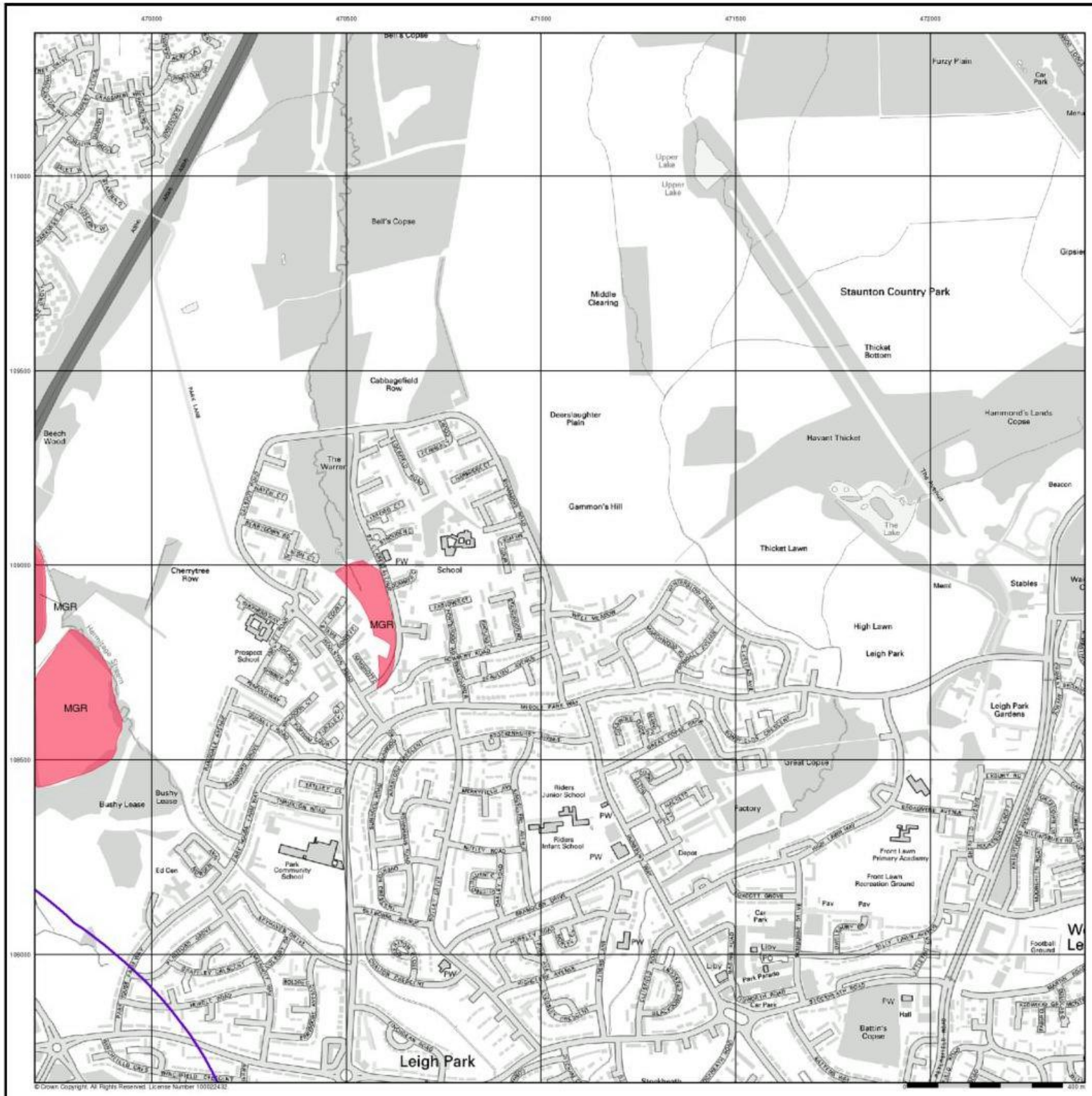


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Site Details

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Artificial Ground and Landslip

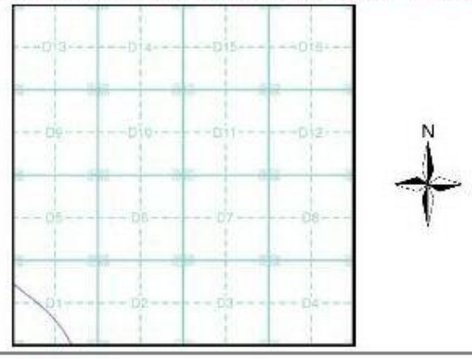
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions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

Artificial ground includes:

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

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

Artificial Ground and Landslip Map - Slice D



Order Details

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Customer Ref:	28720
National Grid Reference:	469870, 107850
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Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



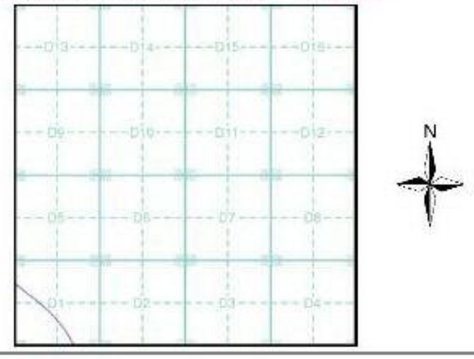
Superficial Geology

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

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

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

Superficial Geology Map - Slice D

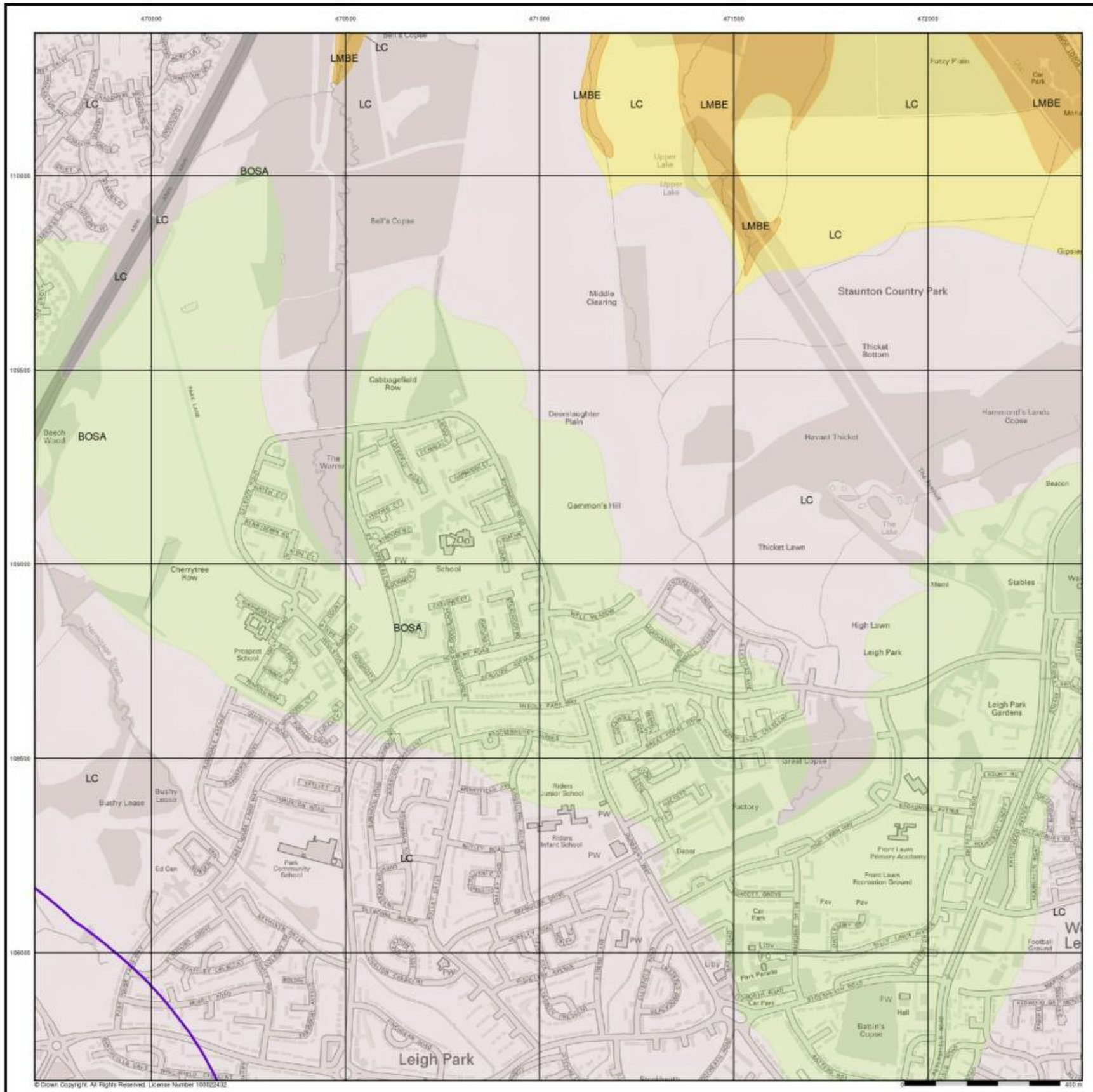


Order Details

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Slice:	D
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

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Bedrock and Faults

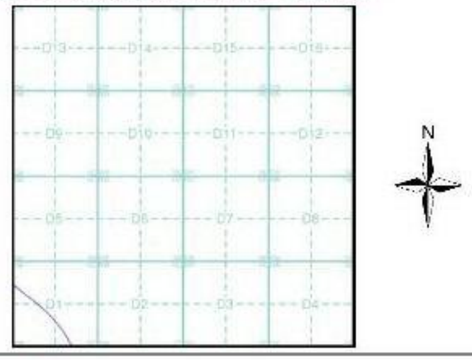
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

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

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

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

Bedrock and Faults Map - Slice D



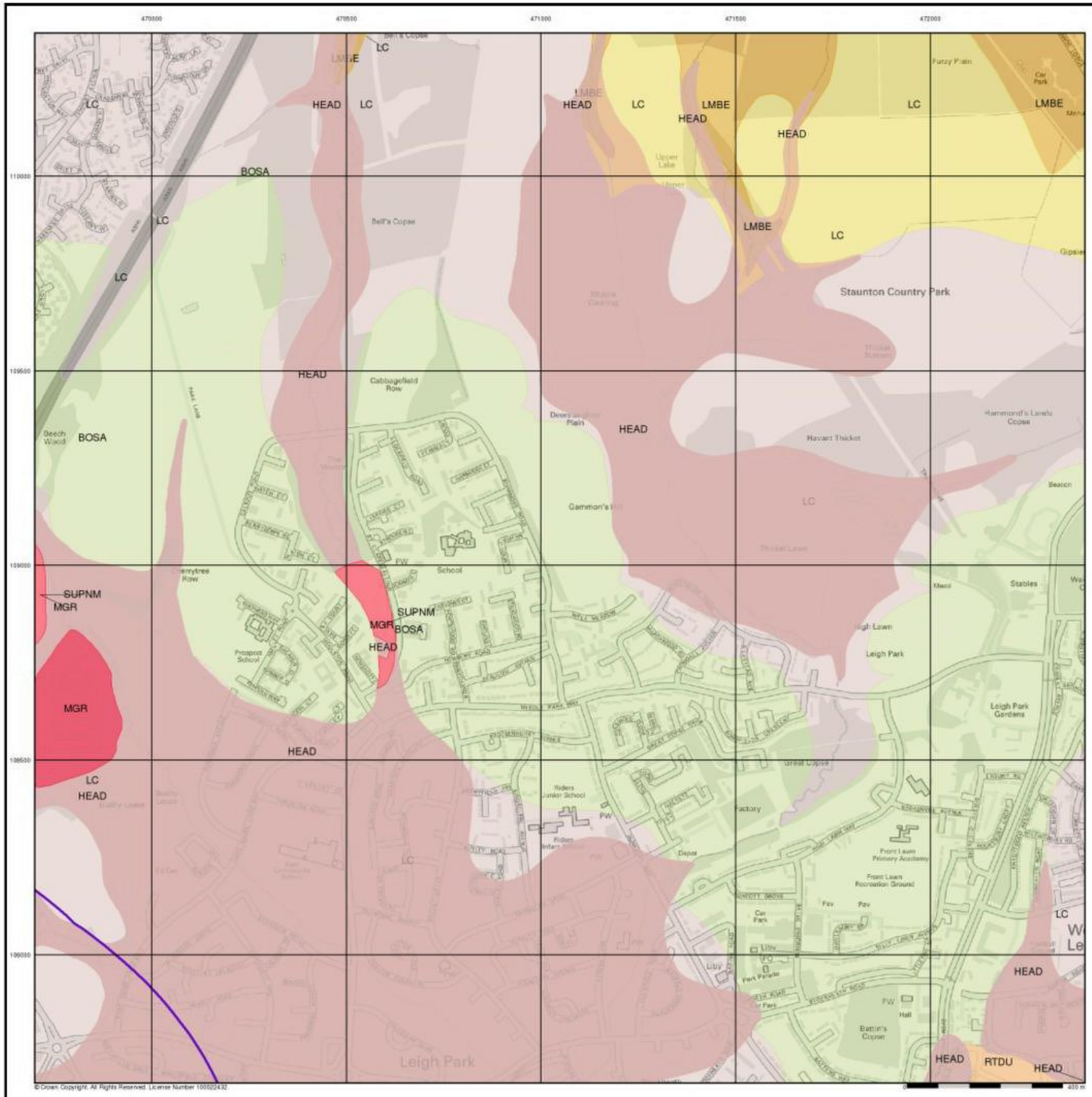
Order Details

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Envirocheck® Geology

Combined Surface Geology

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

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

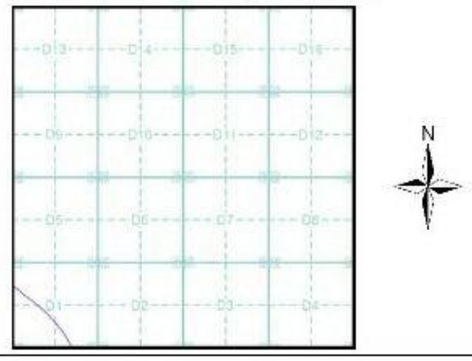
Additional Information

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

Contact

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

Combined Geology Map - Slice D



Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	469870, 107850
Slice:	D
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



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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

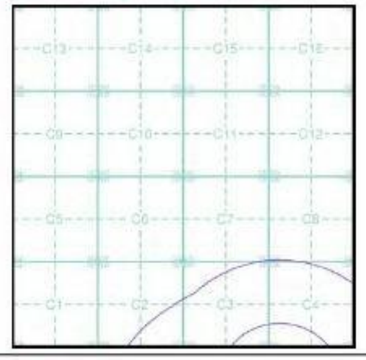
Waste

- 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 (Pass Buffered to 100m)
- Registered Landfill Site (Pass 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 C



Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468960, 107960
Slice:	C
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

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



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Industrial Land Use Map

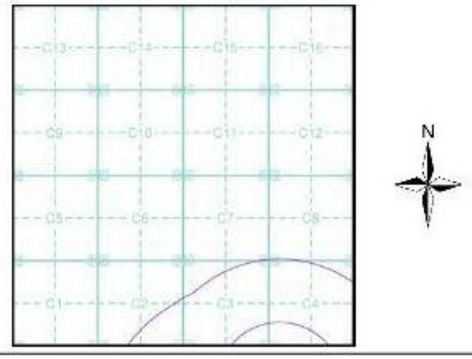
General

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

Industrial Land Use

Contemporary Trade Directory Entry
Fuel Station Entry
Gas Pipeline
Underground Electrical Cables

Industrial Land Use Map - Slice C



Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468960, 107960
Slice:	C
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Search Buffer (m):	1000

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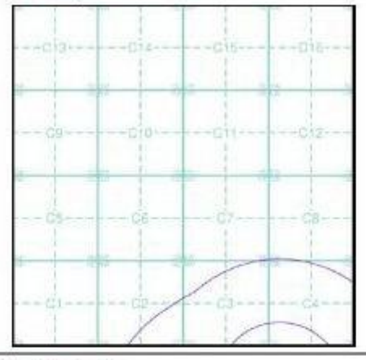
General

- 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 C



Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468960, 107960
Slice:	C
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



General

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

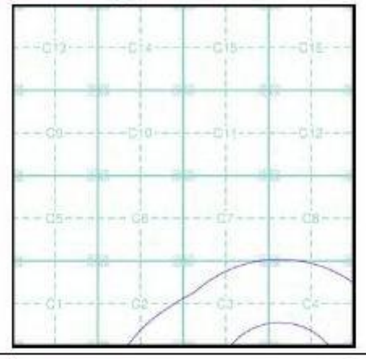
Agency and Hydrological (Boreholes)

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

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

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

Borehole Map - Slice C



Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468960, 107960
Slice:	C
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



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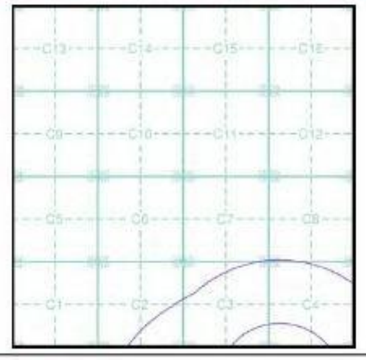
General

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

Detailed River Network Data

- Primary River
- Secondary River
- Tertiary River
- Canal
- Canal Tunnel
- Undefined River
- Lake/Reservoir
- Offline Drainage Feature
- Extended Culvert (greater than 50m)
- Underground River (inferred)
- Underground River (local knowledge)
- Downstream of High Water Mark
- Downstream of Seaward Extension
- Not assigned River feature

EA/NRW Detailed River Network Map - Slice C



Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468960, 107960
Slice:	C
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

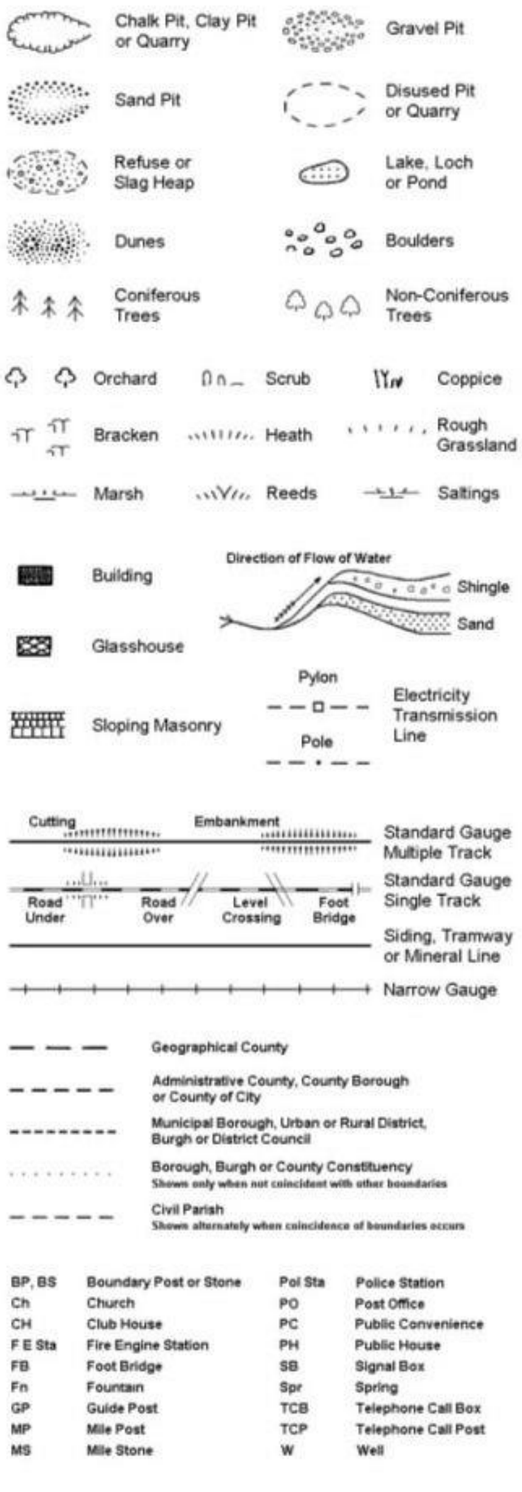
Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

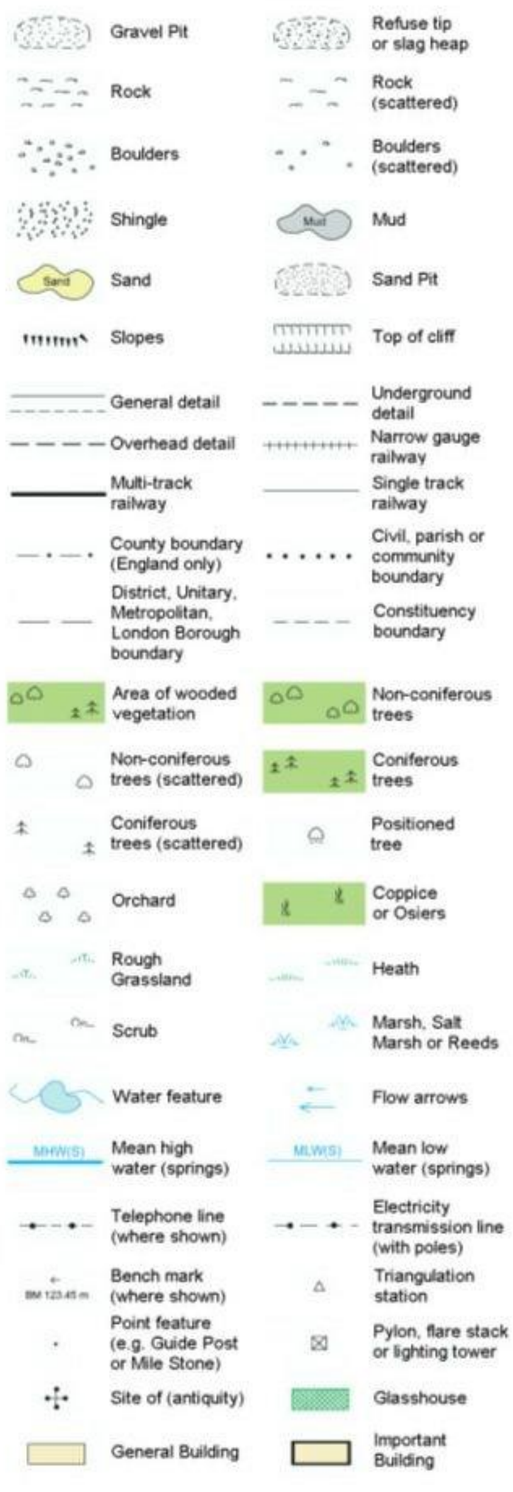


Ordnance Survey Plan 1:10,000



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

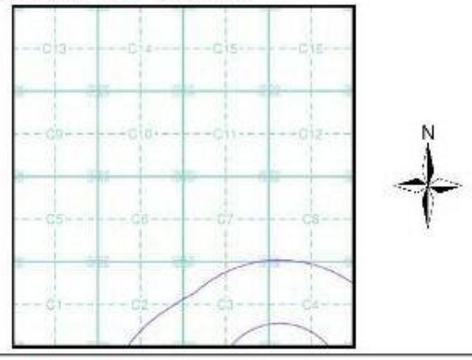


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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Hampshire & Isle Of Wight	1:10,560	1870	2
Hampshire & Isle Of Wight	1:10,560	1897 - 1898	3
Hampshire & Isle Of Wight	1:10,560	1909 - 1910	4
Hampshire & Isle Of Wight	1:10,560	1933	5
Hampshire & Isle Of Wight	1:10,560	1933	6
Hampshire & Isle Of Wight	1:10,560	1938 - 1942	7
Ordnance Survey Plan	1:10,000	1962 - 1963	8
Ordnance Survey Plan	1:10,000	1980 - 1982	9
Ordnance Survey Plan	1:10,000	1991 - 1992	10
10K Raster Mapping	1:10,000	2000	11
Street View	1:10,000	2016	12

Historical Map - Slice C



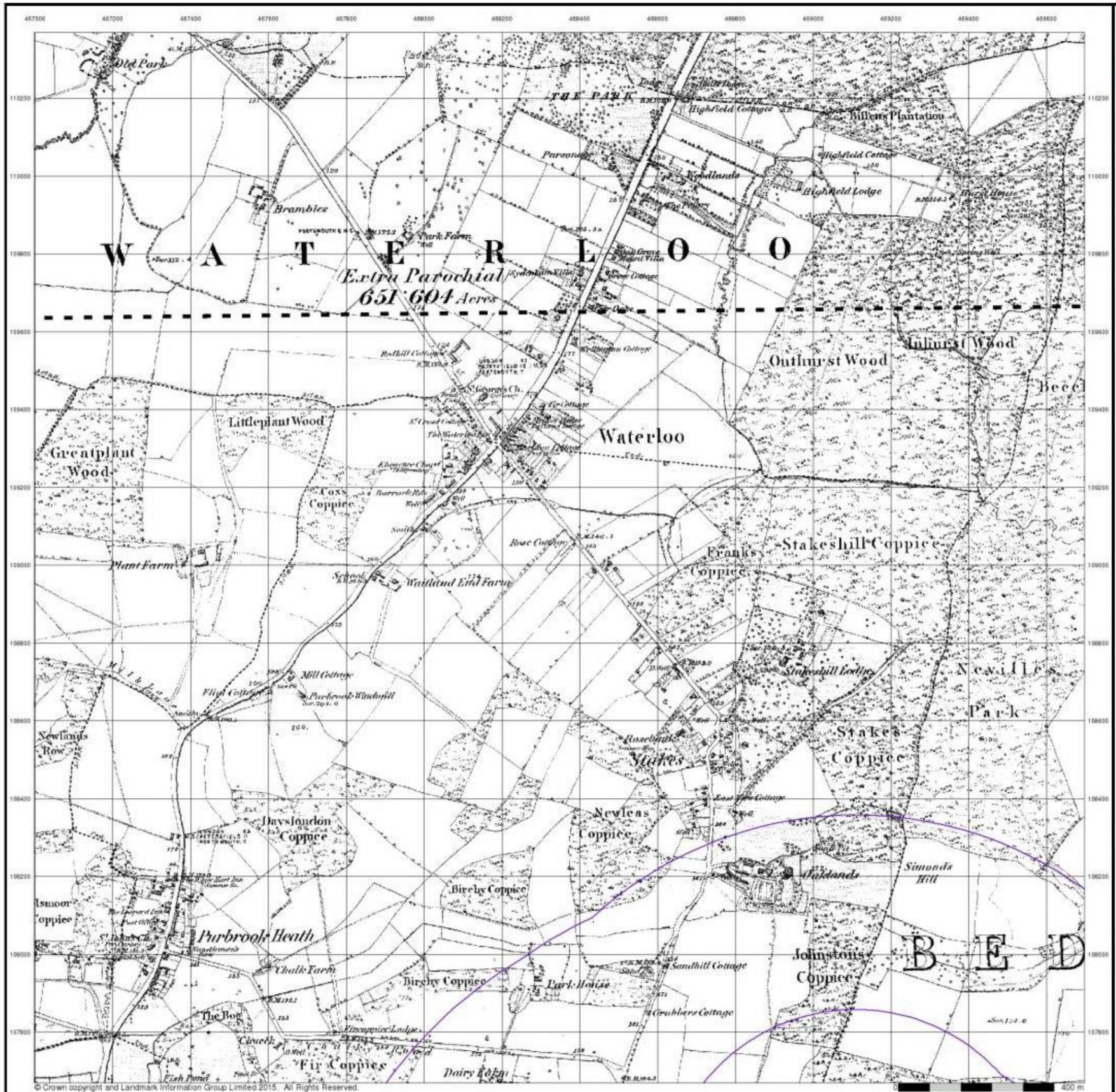
Order Details

Order Number: 92122794_1_1
Customer Ref: 28720
National Grid Reference: 468960, 107960
Slice: C
Site Area (Ha): 26.37
Search Buffer (m): 1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

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Hampshire & Isle Of Wight

Published 1870

Source map scale - 1:10,560

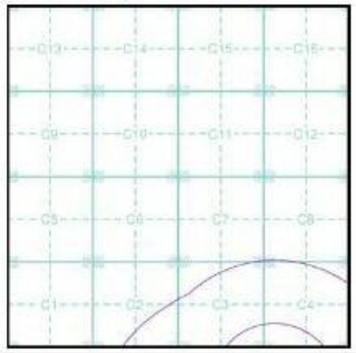
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some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

06800
1870
1:10,560

07600
1870
1:10,560

Historical Map - Slice C



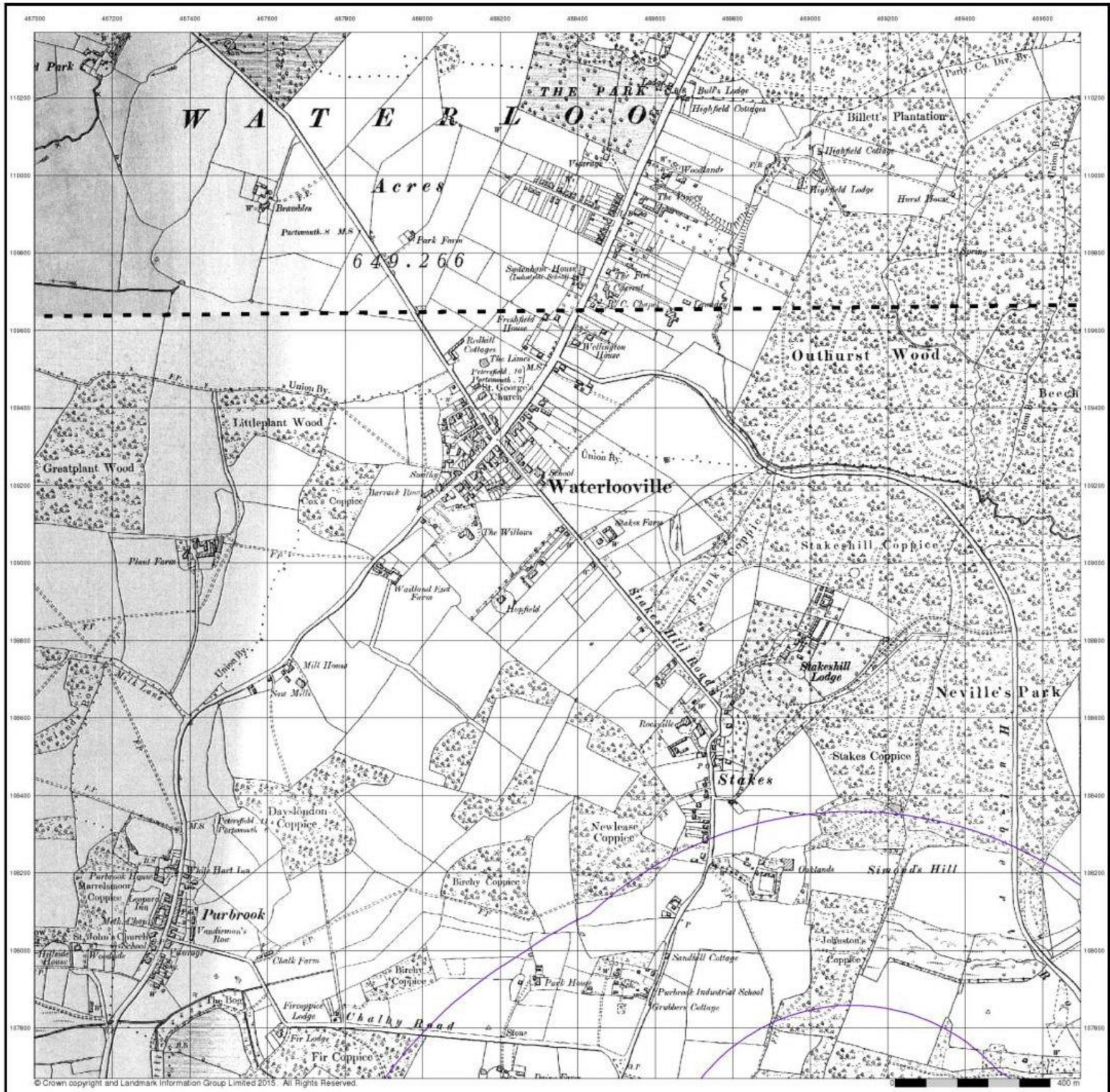
Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468960, 107960
Slice:	C
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

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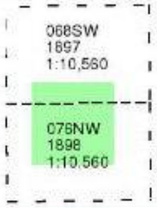
Hampshire & Isle Of Wight

Published 1897 - 1898

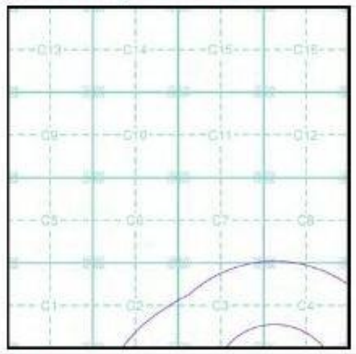
Source map scale - 1:10,560

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 C



Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468960, 107960
Slice:	C
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



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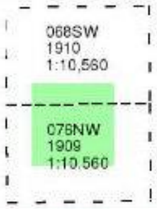
Hampshire & Isle Of Wight

Published 1909 - 1910

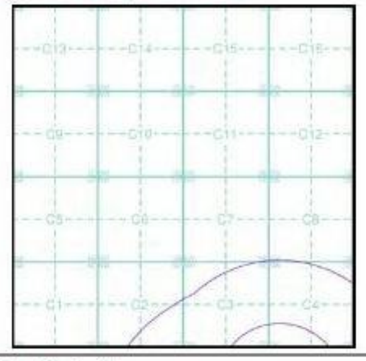
Source map scale - 1:10,560

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 C

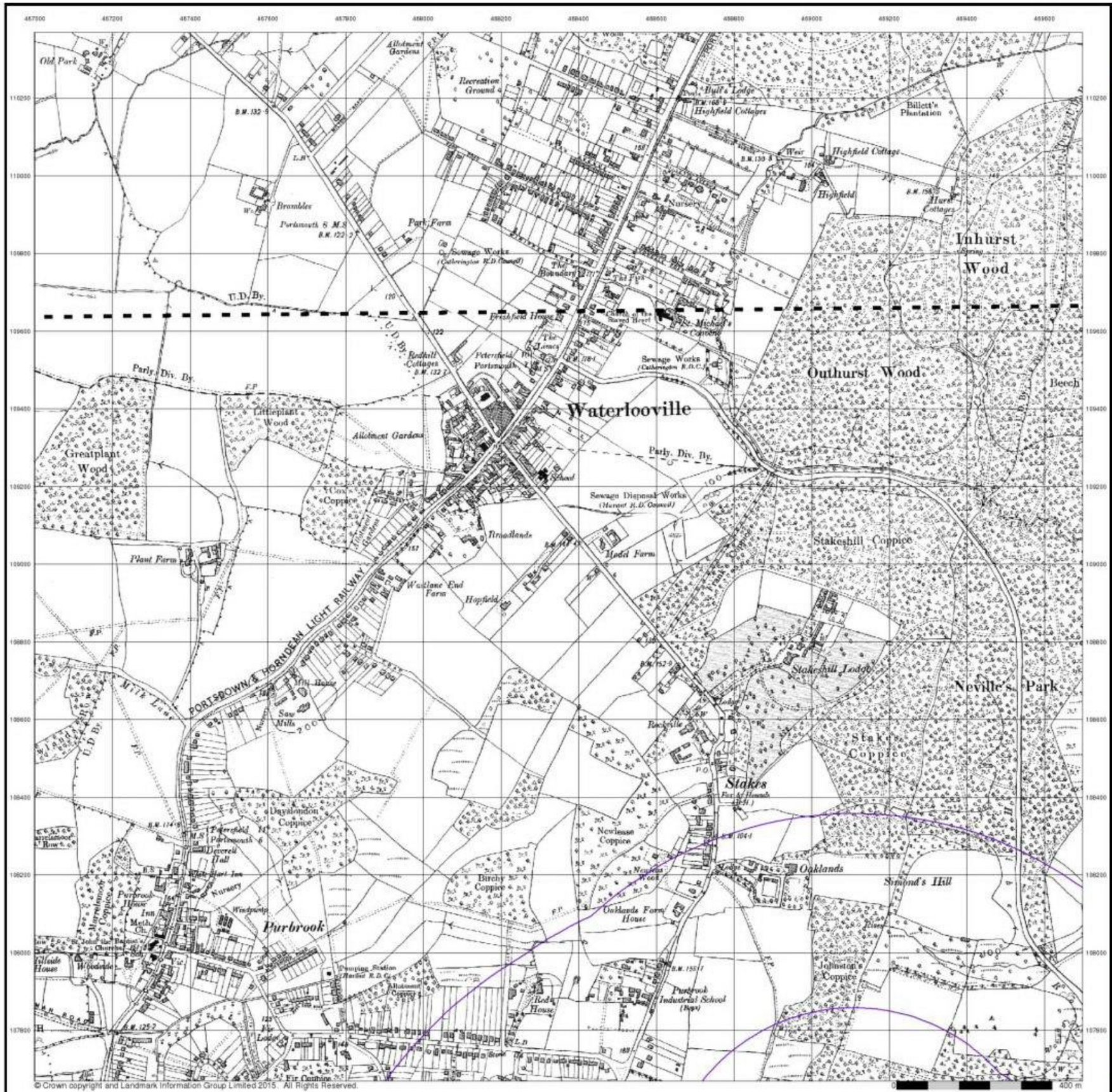


Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468960, 107960
Slice:	C
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

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Hampshire & Isle Of Wight

Published 1933

Source map scale - 1:10,560

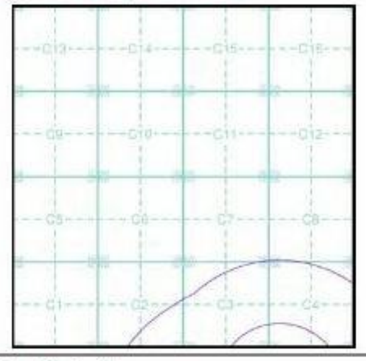
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Map Name(s) and Date(s)

068SW
1933
1:10,560

078NW
1933
1:10,560

Historical Map - Slice C



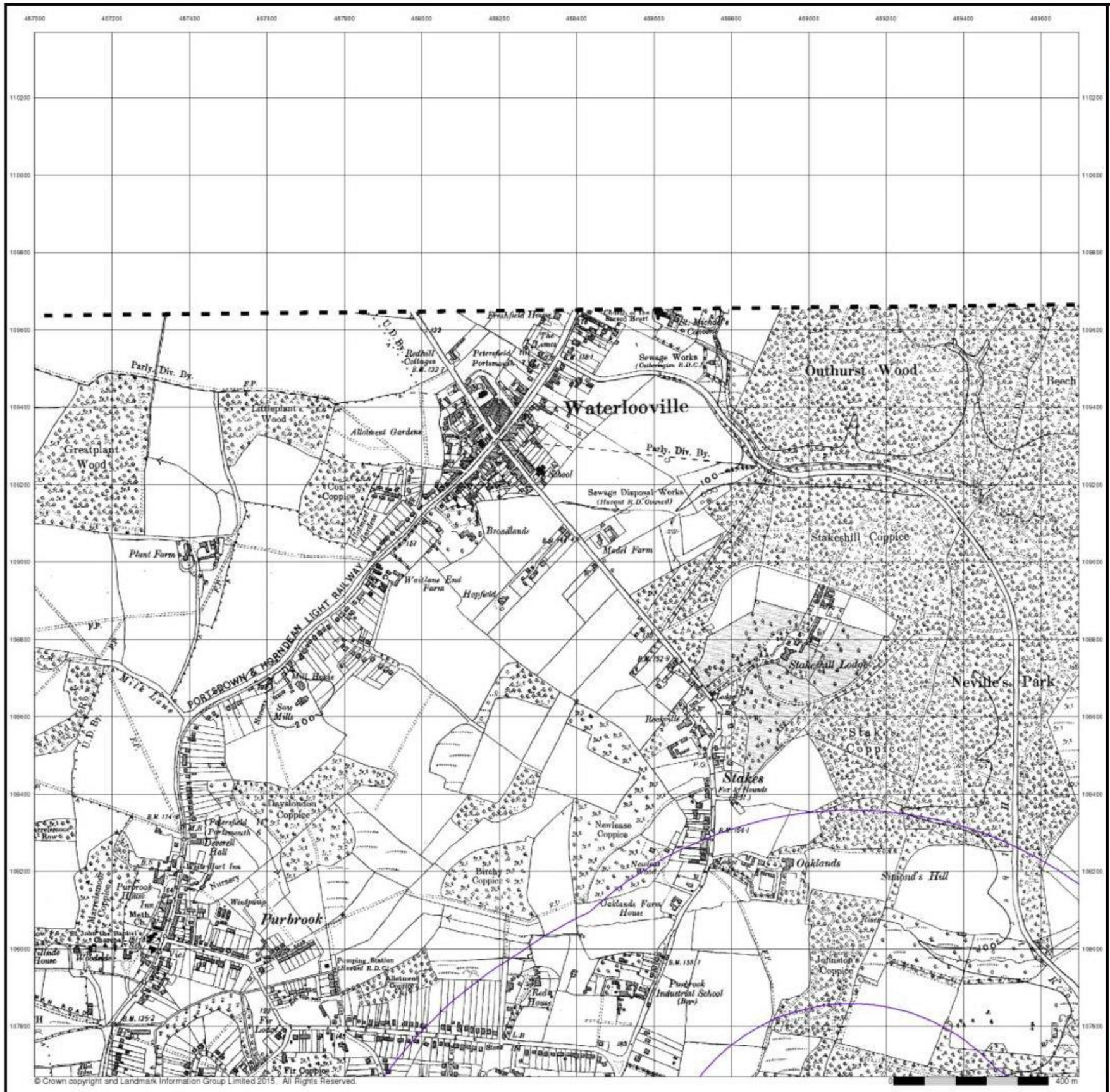
Order Details

Order Number:	92122794_1_1
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Slice:	C
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

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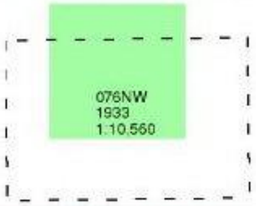
Hampshire & Isle Of Wight

Published 1933

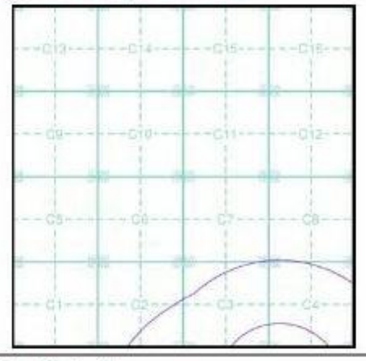
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice C

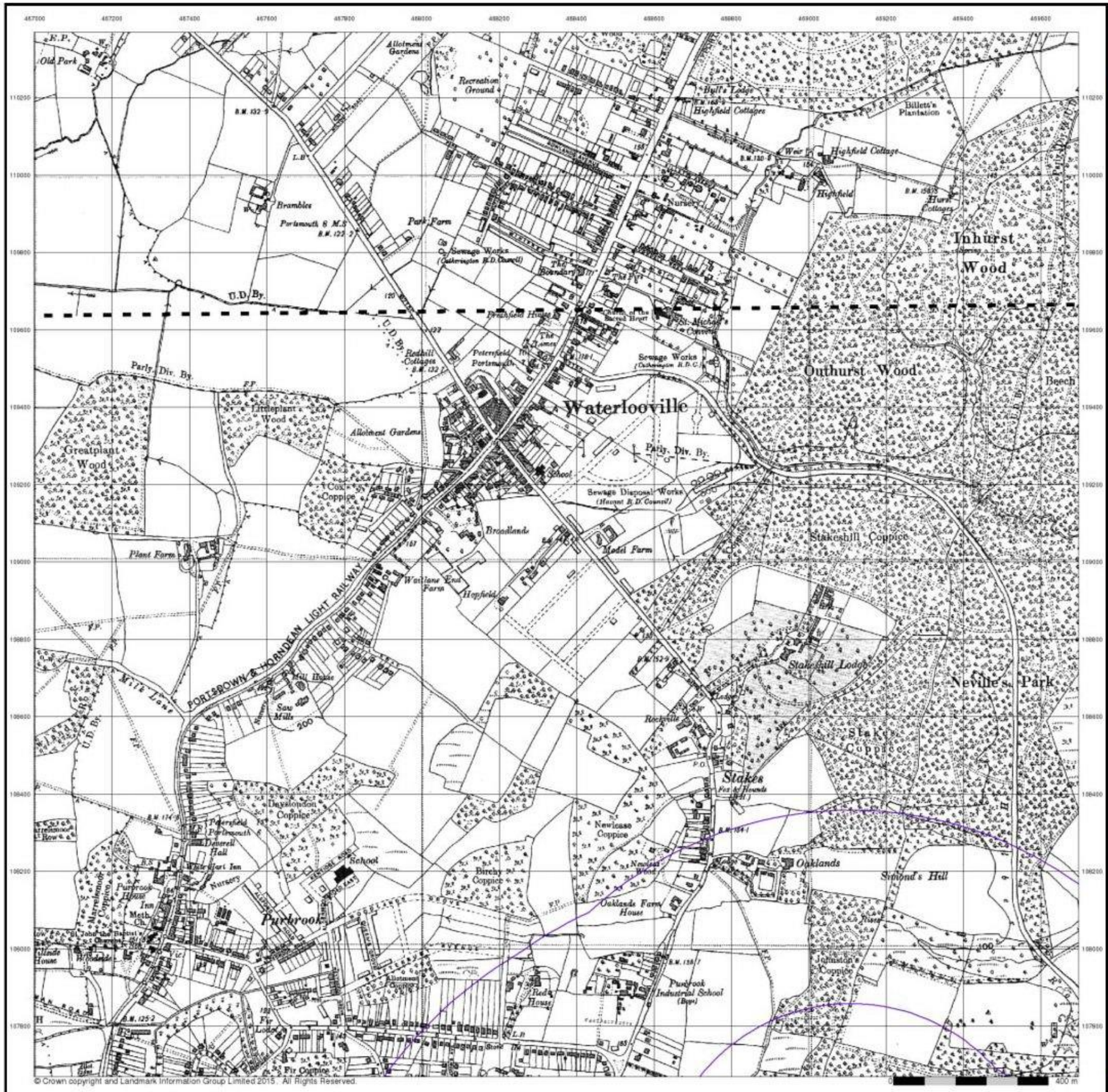


Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
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Slice:	C
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Search Buffer (m):	1000

Site Details

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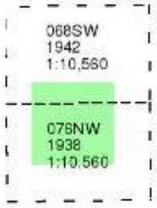
Hampshire & Isle Of Wight

Published 1938 - 1942

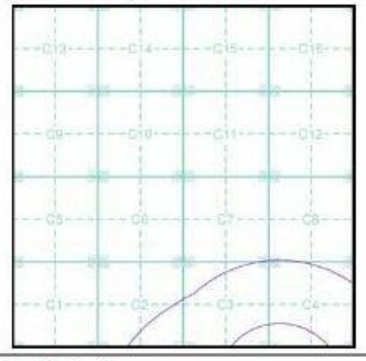
Source map scale - 1:10,560

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 C



Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468960, 107960
Slice:	C
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

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Ordnance Survey Plan

Published 1962 - 1963

Source map scale - 1:10,000

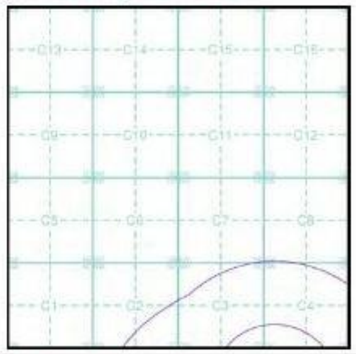
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some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

Map Name(s) and Date(s)

SU61SE
1962
1:10,560

SU60NE
1963
1:10,560

Historical Map - Slice C



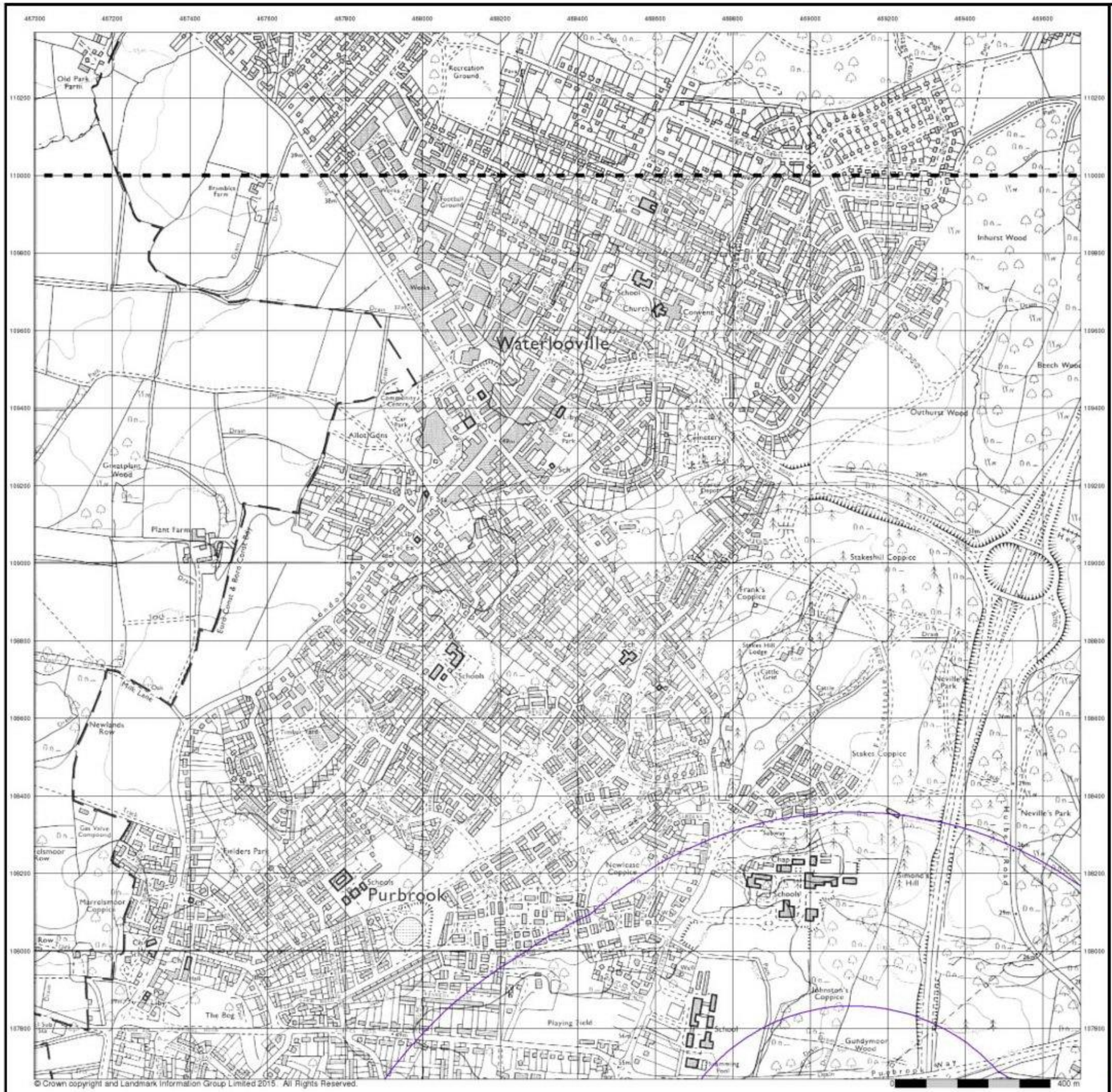
Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468960, 107960
Slice:	C
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

Landmark Information Group
Tel: 0844 844 9952
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Ordnance Survey Plan

Published 1980 - 1982

Source map scale - 1:10,000

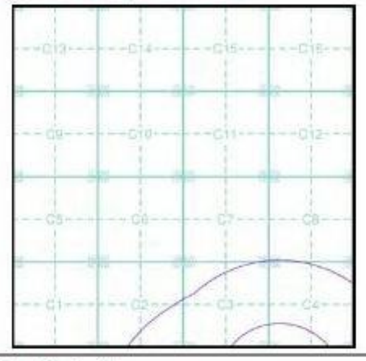
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some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

Map Name(s) and Date(s)

SU61SE
1980
1:10,000

SU60NE
1982
1:10,000

Historical Map - Slice C



Order Details

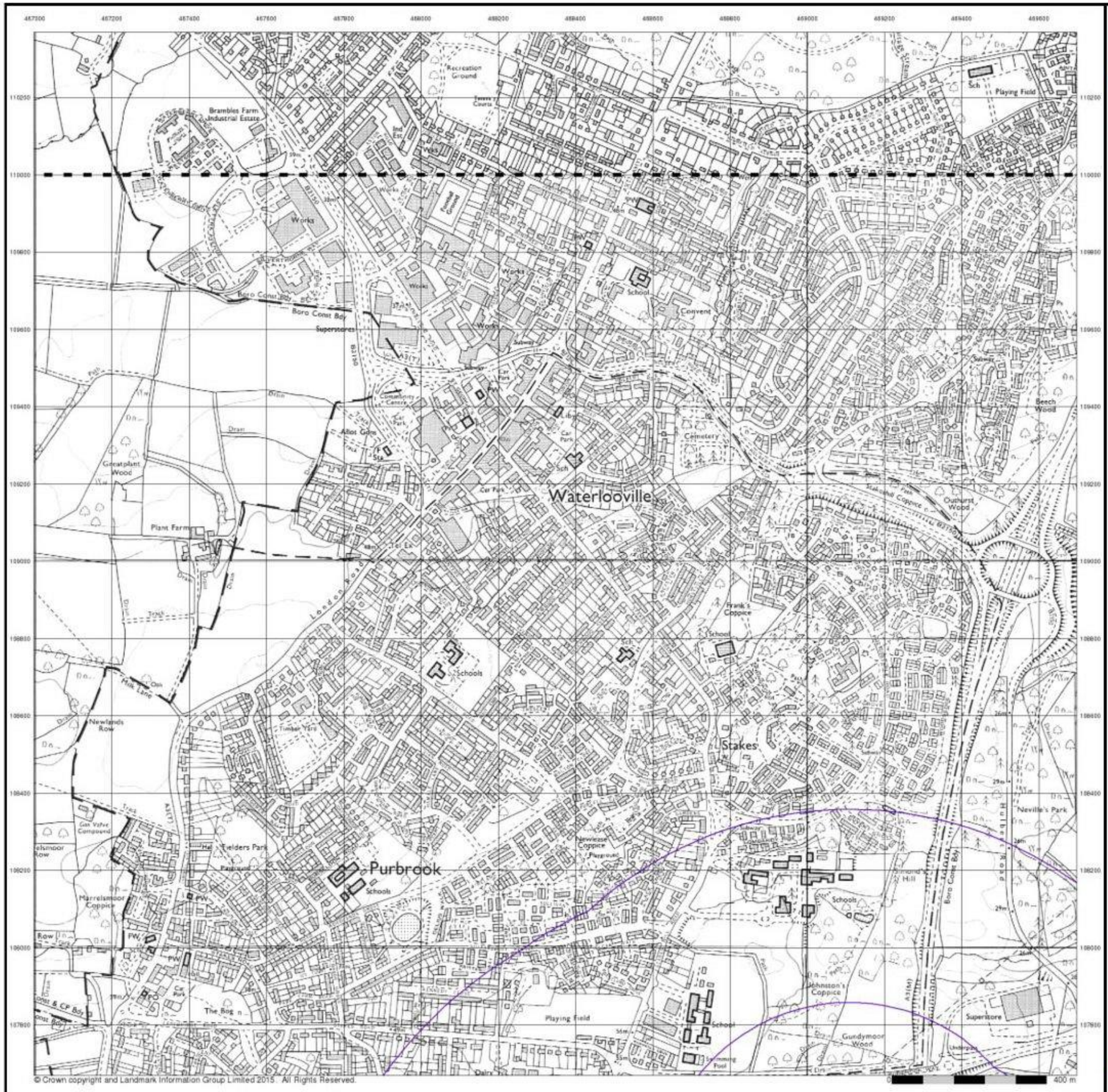
Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468960, 107960
Slice:	C
Site Area (Ha):	26.37
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Ordnance Survey Plan

Published 1991 - 1992

Source map scale - 1:10,000

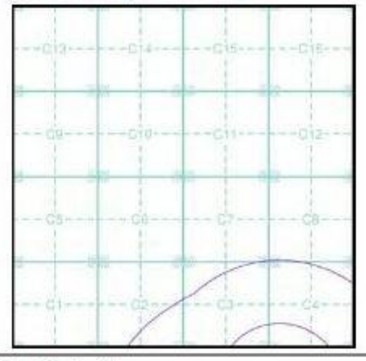
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some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

SU61SE
1992
1:10,000

SU60NE
1991
1:10,000

Historical Map - Slice C

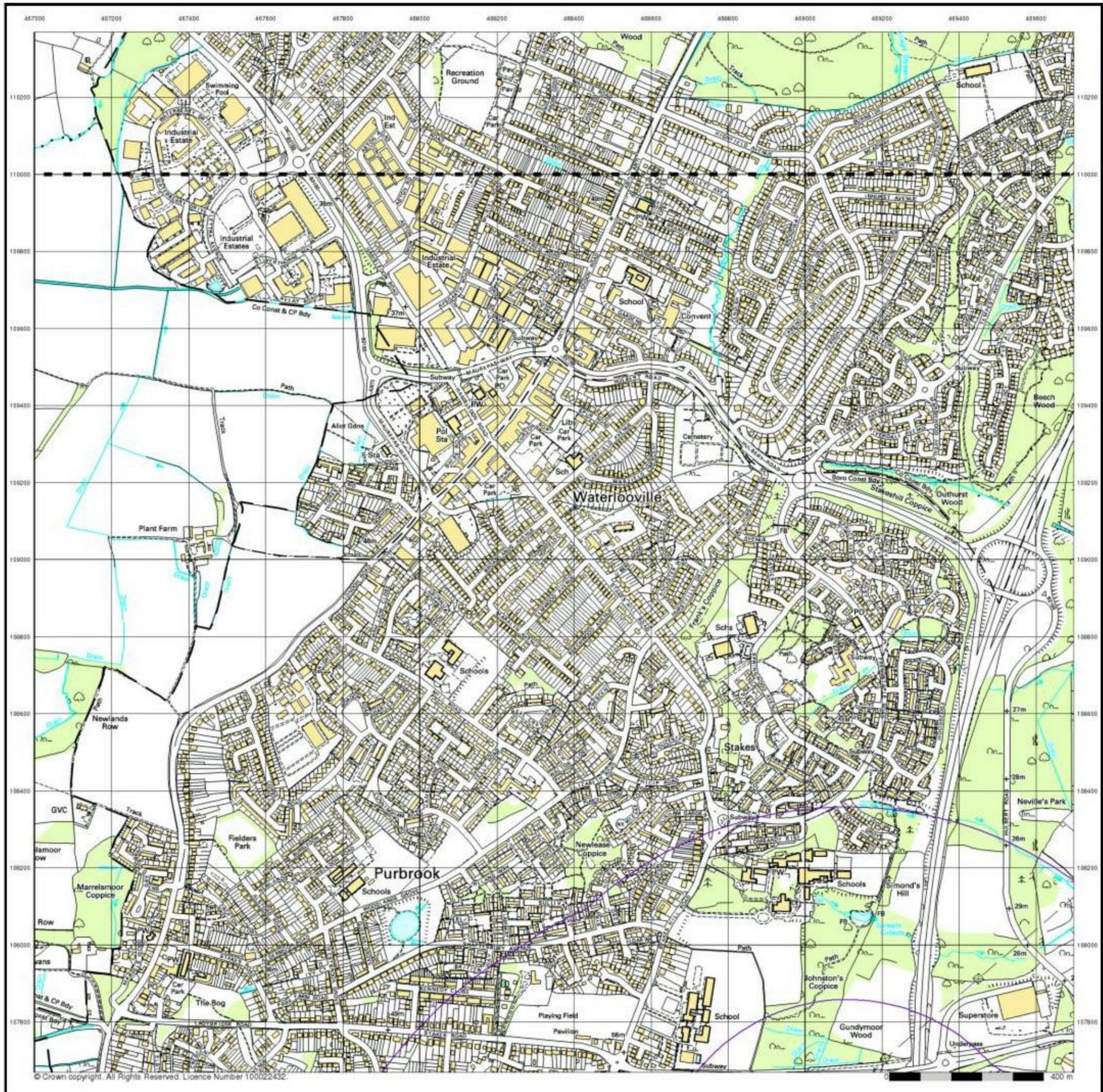


Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468960, 107960
Slice:	C
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



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10k Raster Mapping

Published 2000

Source map scale - 1:10,000

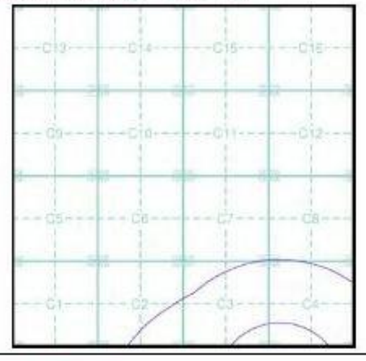
The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks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

Map Name(s) and Date(s)

SU61SE
2000
1:10,000

SU60NE
2000
1:10,000

Historical Map - Slice C



Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468960, 107960
Slice:	C
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

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Street View

Published 2016

Source map scale - 1:10,000

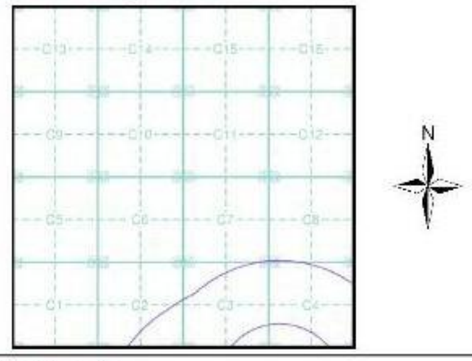
Street View is a street-level map for the whole of Great Britain produced by the Ordnance Survey. These maps are provided at a nominal scale of 1:10,000

Map Name(s) and Date(s)

SU61SE
2016
1:10,000

SU60NE
2016
1:10,000

Street View Map - Slice C



Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468960, 107960
Slice:	C
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

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Envirocheck® Report:

Datasheet

Order Details:

Order Number:
92122794_1_1

Customer Reference:
28720

National Grid Reference:
468960, 107960

Slice:
C

Site Area (Ha):
26.37

Search Buffer (m):
1000

Site Details:

Land off College Road
Purbrook
WATERLOOVILLE
Hampshire
PO7 8AA

Client Details:

Mr R Speight
RSK Environment Ltd
Unit 18
Basepoint Abbey Enterprise Centre
Premier Way
Romsey
Hampshire
SO51 9AQ

Contents

Report Section	Page Number
Summary	-
Agency & Hydrological	1
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Hazardous Substances	-
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Introduction

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

In 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.

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Peter Brett Associates Copyright Notice

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Radon Potential dataset Copyright Notice

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Report Version v50.0

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 2				2
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls					
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 2			Yes	
Pollution Incidents to Controlled Waters	pg 2				1
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality					
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions					
Water Industry Act Referrals					
Groundwater Vulnerability	pg 2	Yes	n/a	n/a	n/a
Drift Deposits			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 3	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 3	Yes	n/a	n/a	n/a
Source Protection Zones	pg 3	1			
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
Detailed River Network Lines	pg 3			Yes	n/a
Detailed River Network Offline Drainage					n/a

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites					
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Landfill Coverage	pg 5	2	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Registered Landfill Sites					
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					
Geological					
BGS 1:625,000 Solid Geology	pg 6	Yes	n/a	n/a	n/a
BGS Recorded Mineral Sites					
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					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 6	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 6	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 6	Yes		n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 6	Yes		n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Industrial Land Use					
Contemporary Trade Directory Entries	pg 7				7
Fuel Station Entries					
Gas Pipelines					
Underground Electrical Cables					
Sensitive Land Use					
Ancient Woodland	pg 8		5	2	3
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	pg 8	1			
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	C3SE (SE)	0	1	468956 107958
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	(S)	0	1	468950 107000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(S)	0	1	468800 107100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(S)	0	1	468900 107050
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SE)	74	1	469350 107400
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(S)	93	1	468956 107650
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SE)	129	1	469200 107600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SE)	176	1	469450 107250
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(S)	193	1	469100 107600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SE)	197	1	469150 107600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SE)	200	1	469250 107600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SE)	238	1	469300 107550
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SE)	243	1	469100 107650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SE)	246	1	469150 107650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	(SE)	261	1	469700 107200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	C4SW (SE)	280	1	469100 107750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SE)	308	1	469350 107600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	C3SE (S)	313	1	468956 107700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SE)	319	1	469500 107500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SE)	341	1	469350 107650
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	C3SE (S)	343	1	469000 107750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SE)	356	1	469500 107600

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(S)	356	1	468850 107650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Properly Situated Below Ground Level	(SE)	365	1	469650 107200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	C4SW (E)	406	1	469200 108000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Properly Situated Below Ground Level	(SE)	427	1	469600 107550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	C3SW (W)	445	1	468400 108000
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SW)	472	1	468250 107250
1	**Discharge Consents** Operator: B & Q Plc Property Type: Wholesale Distribution Household Goods Location: Site At Purbrook Way, Hubert Rd, Havant, Hampshire Authority: Environment Agency, Southern Region Catchment Area: Not Supplied Reference: N01079 Permit Version: 2 Effective Date: 28th September 2000 Issued Date: 28th September 2000 Revocation Date: Not Supplied Discharge Type: Trade Effluent Discharge-Site Drainage Discharge Environment: Freshwater Stream/River Receiving Water: Freshwater River **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 10m	C4SE (E)	738	2	469550 107950
1	**Discharge Consents** Operator: B & Q Plc Property Type: Wholesale Distribution Household Goods Location: Site At Purbrook Way, Hubert Rd, Havant, Hampshire Authority: Environment Agency, Southern Region Catchment Area: Not Given Reference: N01079 Permit Version: 1 Effective Date: 15th November 1984 Issued Date: 15th November 1984 Revocation Date: 28th September 2000 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: Freshwater River **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 100m	C4SE (E)	738	2	469550 107950
	Nearest Surface Water Feature	C4SW (S)	335	-	469034 107688
2	**Pollution Incidents to Controlled Waters** Property Type: Industrial: Other Location: B & Q, Purbrook Way, HAVANT Authority: Environment Agency, Southern Region Pollutant: Chemicals - Alkali Note: Spillage Of Ammonia Like Substance; Industrial: Other Incident Date: 23rd August 1994 Incident Reference: 1437 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Industrial Chemicals Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	C4SE (E)	590	2	469500 107800
	Groundwater Vulnerability Soil Classification: Not classified Map Sheet: Sheet 52 Southern Hampshire Scale: 1:100,000	C3NE (N)	0	2	469000 108066

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Groundwater Vulnerability Soil Classification: Soils of Low Leaching Potential - Soils in which pollutants are unlikely to penetrate the soil layer because water movement is largely horizontal or they have large ability to attenuate diffuse pollutants. Lateral flow from these soils contribute to groundwater recharge elsewhere in the catchment Map Sheet: Sheet 52 Southern Hampshire Scale: 1:100,000	C3SE (SE)	0	2	468956 107958
	Drift Deposits None				
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - A	C3SE (SE)	0	1	468956 107958
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - A	(S)	0	1	468956 106959
	Bedrock Aquifer Designations Aquifer Designation: Unproductive Strata	C3SE (E)	0	1	468984 107966
	Bedrock Aquifer Designations Aquifer Designation: Unproductive Strata	(S)	0	1	468956 106935
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	(S)	0	1	468767 107090
3	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone Ic (Inner Protection Zone): Travel time of 50 days or less to the groundwater source - subsurface activity only.	C3SE (SE)	0	2	468956 107958
	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				
4	**Detailed River Network Lines** River Type: Extended Culvert (greater than 50m) River Name: Not Supplied Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Below Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	C4SW (S)	293	2	469034 107688
5	**Detailed River Network Lines** River Type: Tertiary River River Name: Drain Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	C4SW (S)	335	2	469034 107688

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	**Detailed River Network Lines** River Type: Tertiary River River Name: Drain Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	C3SE (S)	340	2	468992 107686
7	**Detailed River Network Lines** River Type: Tertiary River River Name: Drain Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	C4SW (SE)	340	2	469056 107743
8	**Detailed River Network Lines** River Type: Tertiary River River Name: Drain Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	C4SW (S)	354	2	469033 107747
9	**Detailed River Network Lines** River Type: Extended Culvert (greater than 50m) River Name: Not Supplied Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Below Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	C4SW (SE)	377	2	469176 107765
10	**Detailed River Network Lines** River Type: Tertiary River River Name: Drain Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	C3SE (S)	390	2	468900 107782
	Detailed River Network Offline Drainage None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Local Authority Landfill Coverage Name: Havant Borough Council - Has supplied landfill data		0	3	468956 107958
	Local Authority Landfill Coverage Name: Hampshire County Council - Had landfill data but passed it to the relevant environment agency		0	4	468956 107958

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Bracklesham Group And Barton Group (Undifferentiated)	C3SE (SE)	0	1	468956 107958
	BGS 1:625,000 Solid Geology Description: Thames Group	C4SW (E)	0	1	469057 107919
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	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	C3SE (SE)	0	1	468956 107958
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	C3SE (SE)	0	1	468956 107958
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	C3SE (SE)	0	1	468956 107958
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	C3SE (SE)	0	1	468956 107958
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	C3SE (SE)	0	1	468956 107958
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	C3SE (E)	0	1	468984 107966
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	C3SE (SE)	0	1	468956 107958
	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	C3SE (SE)	0	1	468956 107958
	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	C3SE (SE)	0	1	468956 107958

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
11	**Contemporary Trade Directory Entries** Name: Printer Graphics Ltd Location: Unit 6, 6, Larchwood Avenue, Havant, Hampshire, PO9 3BE Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	C4SE (SE)	534	-	469555 107684
11	**Contemporary Trade Directory Entries** Name: Printer Graphics Ltd Location: Unit 6, 6, Larchwood Avenue, Havant, PO9 3BE Classification: Printers **Status: Active** Positional Accuracy: Automatically positioned to the address	C4SE (SE)	539	-	469556 107690
11	**Contemporary Trade Directory Entries** Name: Mitchell & James Caravans Ltd Location: Unit 4, 6, Larchwood Avenue, HAVANT, Hampshire, PO9 3BE Classification: Caravans - Servicing & Repairs **Status: Active** Positional Accuracy: Automatically positioned to the address	C4SE (SE)	546	-	469581 107680
11	**Contemporary Trade Directory Entries** Name: C & S M O T Testing Ltd Location: Unit 5, 6, Larchwood Avenue, Havant, PO9 3BE Classification: Mot Testing Centres **Status: Active** Positional Accuracy: Automatically positioned to the address	C4SE (SE)	546	-	469569 107690
11	**Contemporary Trade Directory Entries** Name: Window Maker Location: Unit 1, 6, Larchwood Avenue, Havant, Hampshire, PO9 3BE Classification: Window Frame Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	C4SE (SE)	569	-	469621 107677
12	**Contemporary Trade Directory Entries** Name: Alliance (Uk) Cleaning Services Location: 108, Stakes Road, Waterlooville, Hampshire, PO7 5PW Classification: Cleaning Services - Commercial **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	C2SE (W)	776	-	468267 107727
13	**Contemporary Trade Directory Entries** Name: U S Filtrations & Separations Location: 56, Kennedy Close, Waterlooville, Hampshire, PO7 5NZ Classification: Filter Manufacturers & Suppliers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	C2SE (W)	959	-	468132 107853

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
14	**Ancient Woodland** Name: Not Supplied Reference: 1487521 Area(m²): 49712.64 Type: Ancient and Semi-Natural Woodland	(SE)	6	5	469112 107621
15	**Ancient Woodland** Name: Not Supplied Reference: 1488333 Area(m²): 15356.02 Type: Ancient and Semi-Natural Woodland	(SE)	72	5	469354 107353
16	**Ancient Woodland** Name: Not Supplied Reference: 1489282 Area(m²): 32441.88 Type: Plantation on Ancient Woodland	(SE)	110	5	469408 107228
17	**Ancient Woodland** Name: Not Supplied Reference: 1487374 Area(m²): 20019.65 Type: Plantation on Ancient Woodland	(S)	182	5	468979 107641
18	**Ancient Woodland** Name: Not Supplied Reference: 1489389 Area(m²): 11336.1 Type: Ancient and Semi-Natural Woodland	(SE)	241	5	469536 107357
19	**Ancient Woodland** Name: Not Supplied Reference: 1487795 Area(m²): 11747.05 Type: Ancient and Semi-Natural Woodland	(S)	254	5	468911 107634
20	**Ancient Woodland** Name: Not Supplied Reference: 1489383 Area(m²): 68501.86 Type: Ancient and Semi-Natural Woodland	C3SE (E)	334	5	468990 107959
21	**Ancient Woodland** Name: Not Supplied Reference: 1488854 Area(m²): 4580.05 Type: Plantation on Ancient Woodland	C4SW (E)	581	5	469050 107953
22	**Ancient Woodland** Name: Not Supplied Reference: 1489661 Area(m²): 4918.42 Type: Plantation on Ancient Woodland	C4NE (E)	911	5	469529 108171
23	**Ancient Woodland** Name: Not Supplied Reference: 1488487 Area(m²): 6374.51 Type: Ancient and Semi-Natural Woodland	C4NE (NE)	988	5	469529 108266
24	**Nitrate Vulnerable Zones** Name: Not Supplied Description: Eutrophic Water Source: Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	C3SE (SE)	0	6	468956 107958

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Data Currency

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
East Hampshire District Council - Environmental Health Department	January 2015	Annual Rolling Update
Havant Borough Council - Environmental Health Department	January 2015	Annual Rolling Update
Winchester City Council - Environmental Health Department	September 2014	Annual Rolling Update
Discharge Consents		
Environment Agency - Southern Region	April 2016	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Southern Region	March 2013	As notified
Integrated Pollution Controls		
Environment Agency - Southern Region	October 2008	Not Applicable
Integrated Pollution Prevention And Control		
Environment Agency - Southern Region	April 2016	Quarterly
Local Authority Integrated Pollution Prevention And Control		
East Hampshire District Council - Environmental Health Department	December 2014	Annual Rolling Update
Winchester City Council - Environmental Health Department	December 2014	Annual Rolling Update
Havant Borough Council - Environmental Health Department	December 2015	Annual Rolling Update
Local Authority Pollution Prevention and Controls		
East Hampshire District Council - Environmental Health Department	December 2014	Annual Rolling Update
Winchester City Council - Environmental Health Department	December 2014	Annual Rolling Update
Havant Borough Council - Environmental Health Department	December 2015	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
East Hampshire District Council - Environmental Health Department	December 2014	Annual Rolling Update
Winchester City Council - Environmental Health Department	December 2014	Annual Rolling Update
Havant Borough Council - Environmental Health Department	December 2015	Annual Rolling Update
Nearest Surface Water Feature		
Ordnance Survey	July 2012	Quarterly
Pollution Incidents to Controlled Waters		
Environment Agency - Southern Region	December 1999	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - Southern Region	March 2013	As notified
Prosecutions Relating to Controlled Waters		
Environment Agency - Southern Region	March 2013	As notified
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 - Southern Region - Hampshire and Isle of Wight Area Office	April 2016	Quarterly
Environment Agency - Southern Region - Solent and South Downs	April 2016	Quarterly
Water Abstractions		
Environment Agency - Southern Region	April 2016	Quarterly
Water Industry Act Referrals		
Environment Agency - Southern Region	April 2016	Quarterly
Groundwater Vulnerability		
Environment Agency - Head Office	April 2015	Not Applicable
Drift Deposits		
Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations		
British Geological Survey - National Geoscience Information Service	August 2015	As notified

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Data Currency

Agency & Hydrological	Version	Update Cycle
Superficial Aquifer Designations		
British Geological Survey - National Geoscience Information Service	August 2015	As notified
Source Protection Zones		
Environment Agency - Head Office	April 2016	Quarterly
Extreme Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	February 2016	Quarterly
Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	February 2016	Quarterly
Areas Benefiting from Flood Defences		
Environment Agency - Head Office	February 2016	Quarterly
Flood Water Storage Areas		
Environment Agency - Head Office	February 2016	Quarterly
Flood Defences		
Environment Agency - Head Office	February 2016	Quarterly
Detailed River Network Lines		
Environment Agency - Head Office	March 2012	Annually
Detailed River Network Offline Drainage		
Environment Agency - Head Office	March 2012	Annually
BGS Groundwater Flooding Susceptibility		
British Geological Survey - National Geoscience Information Service	May 2013	Annually
Waste	**Version**	**Update Cycle**
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Southern Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - Southern Region - Hampshire and Isle of Wight Area Office	May 2016	Quarterly
Environment Agency - Southern Region - Solent and South Downs	May 2016	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - Southern Region - Hampshire and Isle of Wight Area Office	April 2016	Quarterly
Environment Agency - Southern Region - Solent and South Downs	April 2016	Quarterly
Local Authority Landfill Coverage		
East Hampshire District Council	May 2000	Not Applicable
Hampshire County Council - Minerals and Waste Planning	May 2000	Not Applicable
Havant Borough Council - Environmental Health Department	May 2000	Not Applicable
Winchester City Council - Environmental Health Department	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
East Hampshire District Council	May 2000	Not Applicable
Hampshire County Council - Minerals and Waste Planning	May 2000	Not Applicable
Havant Borough Council - Environmental Health Department	May 2000	Not Applicable
Winchester City Council - Environmental Health Department	May 2000	Not Applicable
Registered Landfill Sites		
Environment Agency - Southern Region - Hampshire Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - Southern Region - Hampshire Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - Southern Region - Hampshire Area	March 2003	Not Applicable

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Data Currency

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	February 2016	Bi-Annually
Explosive Sites		
Health and Safety Executive	February 2016	Bi-Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
East Hampshire District Council	February 2016	Annual Rolling Update
Hampshire County Council - Minerals and Waste Planning	February 2016	Annual Rolling Update
Havant Borough Council - Commercial Team	February 2016	Annual Rolling Update
Winchester City Council - Planning Department	October 2015	Annual Rolling Update
Planning Hazardous Substance Consents		
East Hampshire District Council	February 2016	Annual Rolling Update
Hampshire County Council - Minerals and Waste Planning	February 2016	Annual Rolling Update
Havant Borough Council - Commercial Team	February 2016	Annual Rolling Update
Winchester City Council - Planning Department	October 2015	Annual Rolling Update

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology		
British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Recorded Mineral Sites		
British Geological Survey - National Geoscience Information Service	May 2016	Bi-Annually
Brine Compensation Area		
Cheshire Brine Subsidence Compensation Board	August 2011	Not Applicable
Coal Mining Affected Areas		
The Coal Authority - Property Searches	March 2014	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	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Compressible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Ground Dissolution Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Landslide Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Running Sand Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	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

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Data Currency

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	June 2016	Quarterly
Fuel Station Entries Catalist Ltd - Experian	July 2016	Quarterly
Gas Pipelines National Grid	July 2014	Quarterly
Underground Electrical Cables National Grid	January 2016	Bi-Annually
Sensitive Land Use	**Version**	**Update Cycle**
Ancient Woodland Natural England	June 2015	Bi-Annually
Areas of Outstanding Natural Beauty Natural England	April 2016	Bi-Annually
Environmentally Sensitive Areas Natural England	April 2016	Annually
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Natural England	April 2016	Bi-Annually
Marine Nature Reserves Natural England	April 2016	Bi-Annually
National Nature Reserves Natural England	April 2016	Bi-Annually
National Parks Natural England	March 2016	Bi-Annually
Nitrate Sensitive Areas Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	April 2016	Not Applicable
Nitrate Vulnerable Zones Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	October 2015	Annually
Ramsar Sites Natural England	April 2016	Bi-Annually
Sites of Special Scientific Interest Natural England	April 2016	Bi-Annually
Special Areas of Conservation Natural England	April 2016	Bi-Annually
Special Protection Areas Natural England	April 2016	Bi-Annually
World Heritage Sites English Heritage - National Monument Record Centre	September 2015	Bi-Annually

Data Suppliers

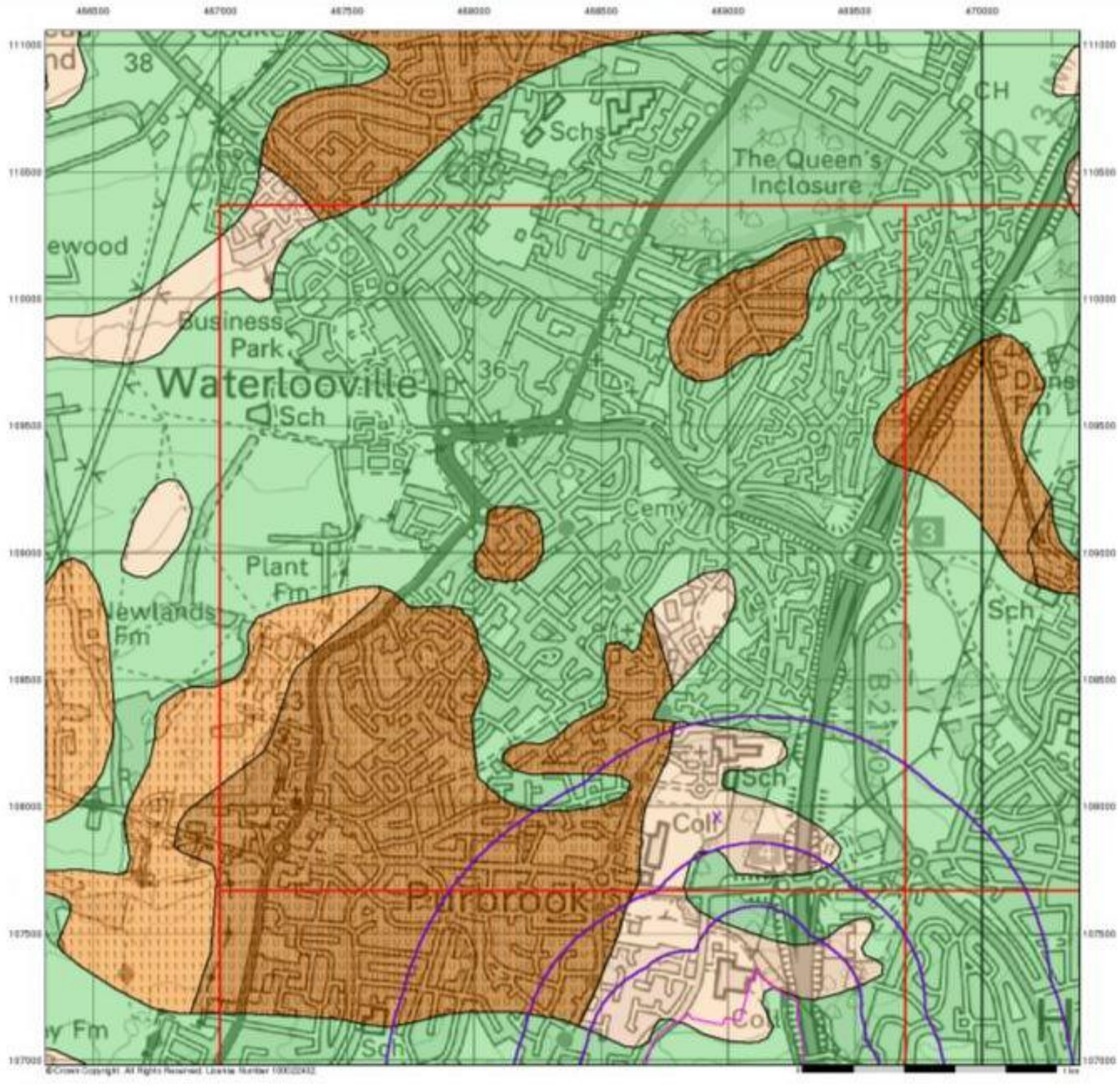
A selection of organisations who provide data within this report

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

Useful Contacts

Contact	Name and Address	Contact Details
1	**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
2	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	**Havant Borough Council - Environmental Health Department** Public Service PLaza, Civic Centre Road, Havant, Hampshire, PO9 2AX	Telephone: 023 9244 6677 Email: env.services@havant.gov.uk Website: www.havant.gov.uk
4	**Hampshire County Council - Minerals and Waste Planning** Room 130, Ashburton Court West, The Castle, Winchester, Hampshire, SO23 8UD	Telephone: 01962 841841 Fax: 01962 847055 Website: www.hants.gov.uk
5	**Natural England** County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
6	**Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)** Government Buildings, Otley Road, Lawnswood, Leeds, West Yorkshire, LS16 5QT	Telephone: 0113 2613333 Fax: 0113 230 0879
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

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



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Groundwater Vulnerability

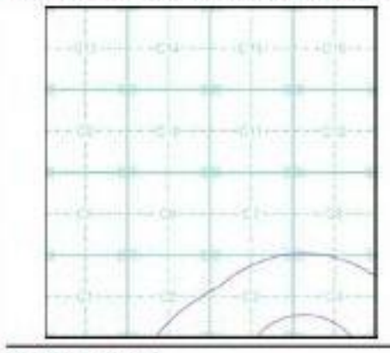
General

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

Agency and Hydrological

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 C



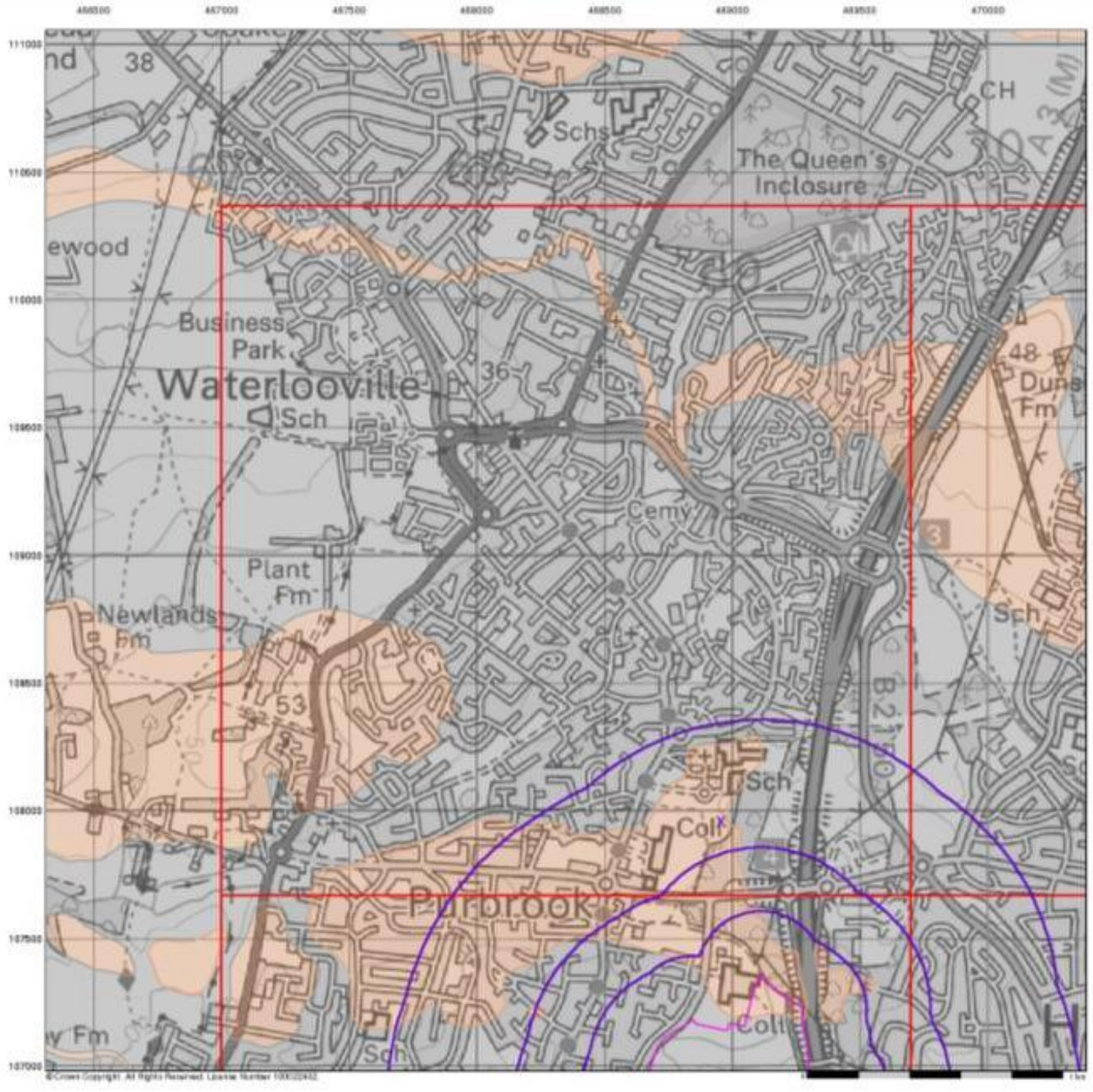
Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468960, 107960
Slice:	C
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

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



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Bedrock Aquifer Designation

General

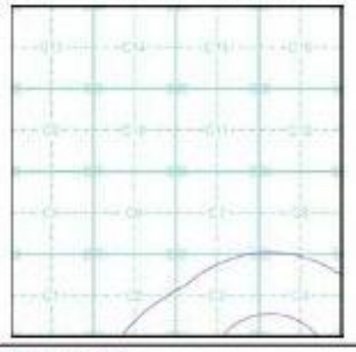
Specified Site | Specified Buffer(s) | Bearing Reference Point
Slice | Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice C

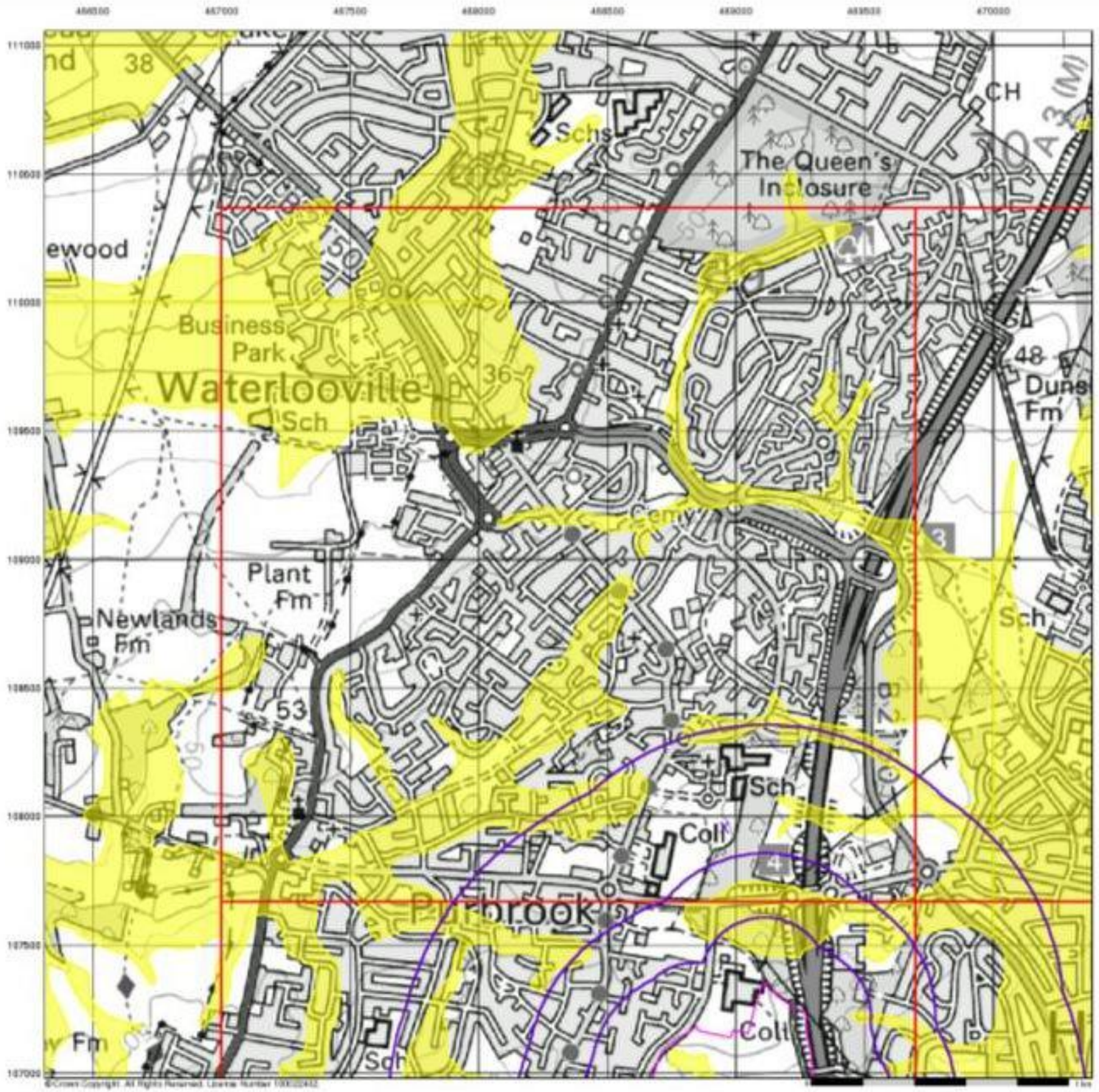


Order Details

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Customer Ref:	28720
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Slice:	C
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



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Superficial Aquifer Designation

General

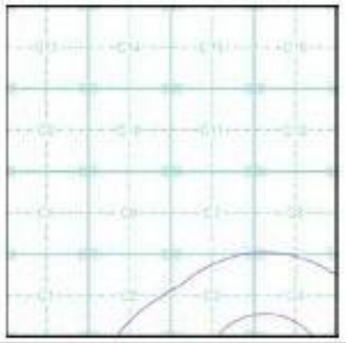
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice C

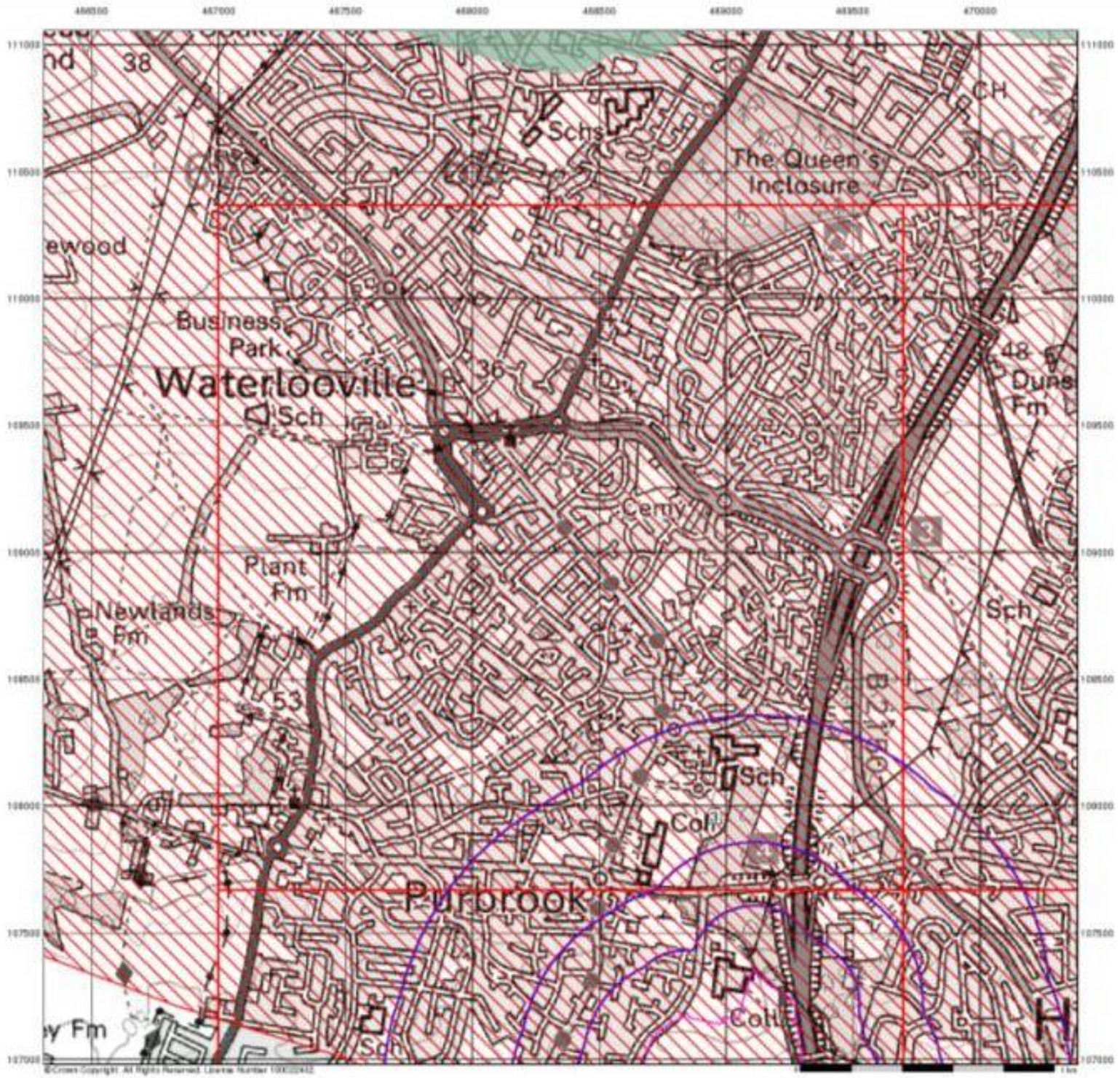


Order Details

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Slice:	C
Site Area (Ha):	26.37
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Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



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Source Protection Zones

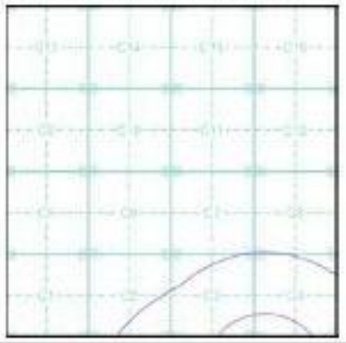
General

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

Agency and Hydrological

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

Site Sensitivity Context Map - Slice C



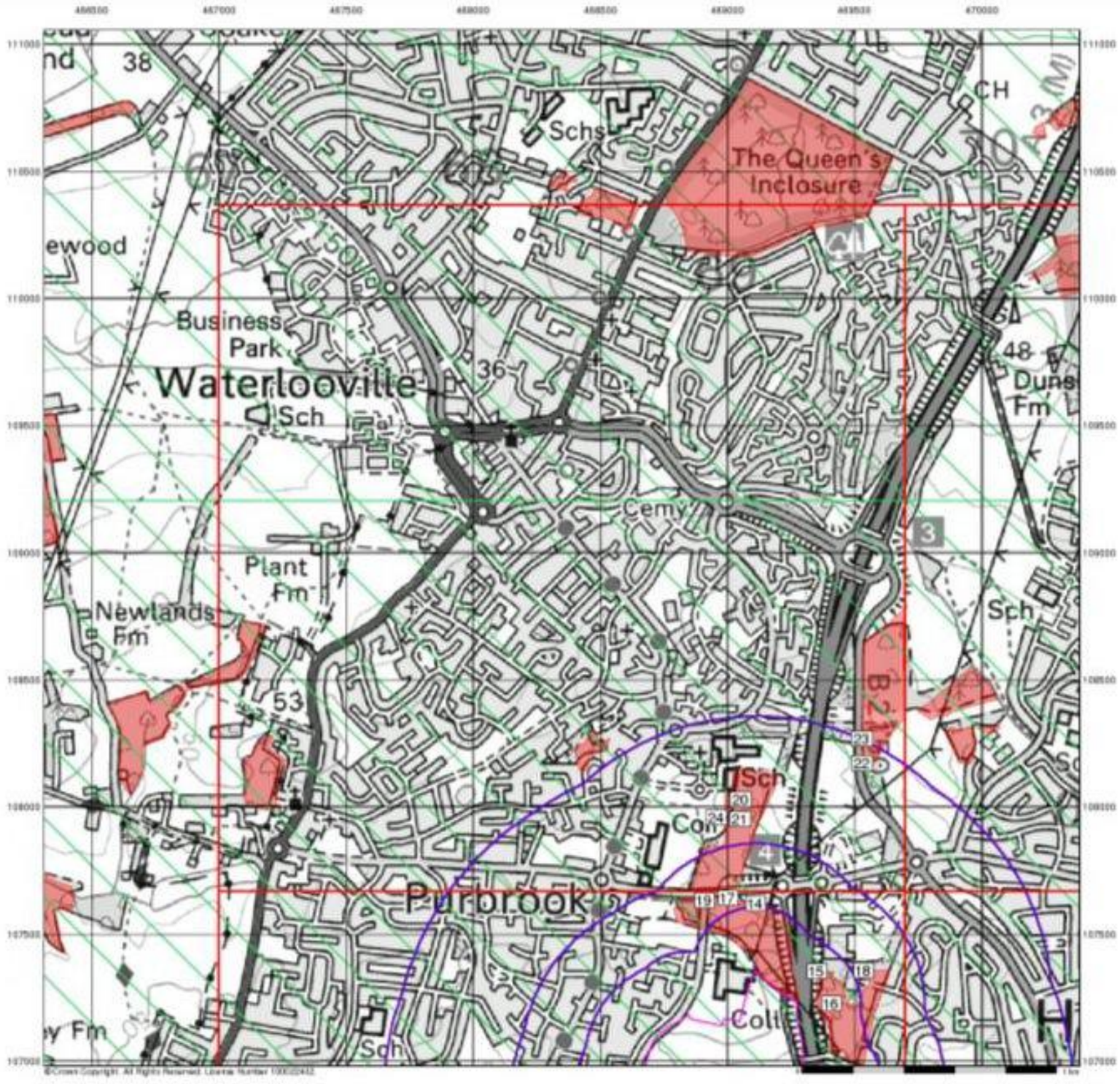
Order Details

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Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

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



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Sensitive Land Uses

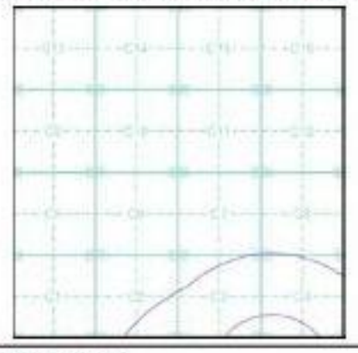
General

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

Sensitive Land Uses

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

Site Sensitivity Context Map - Slice C

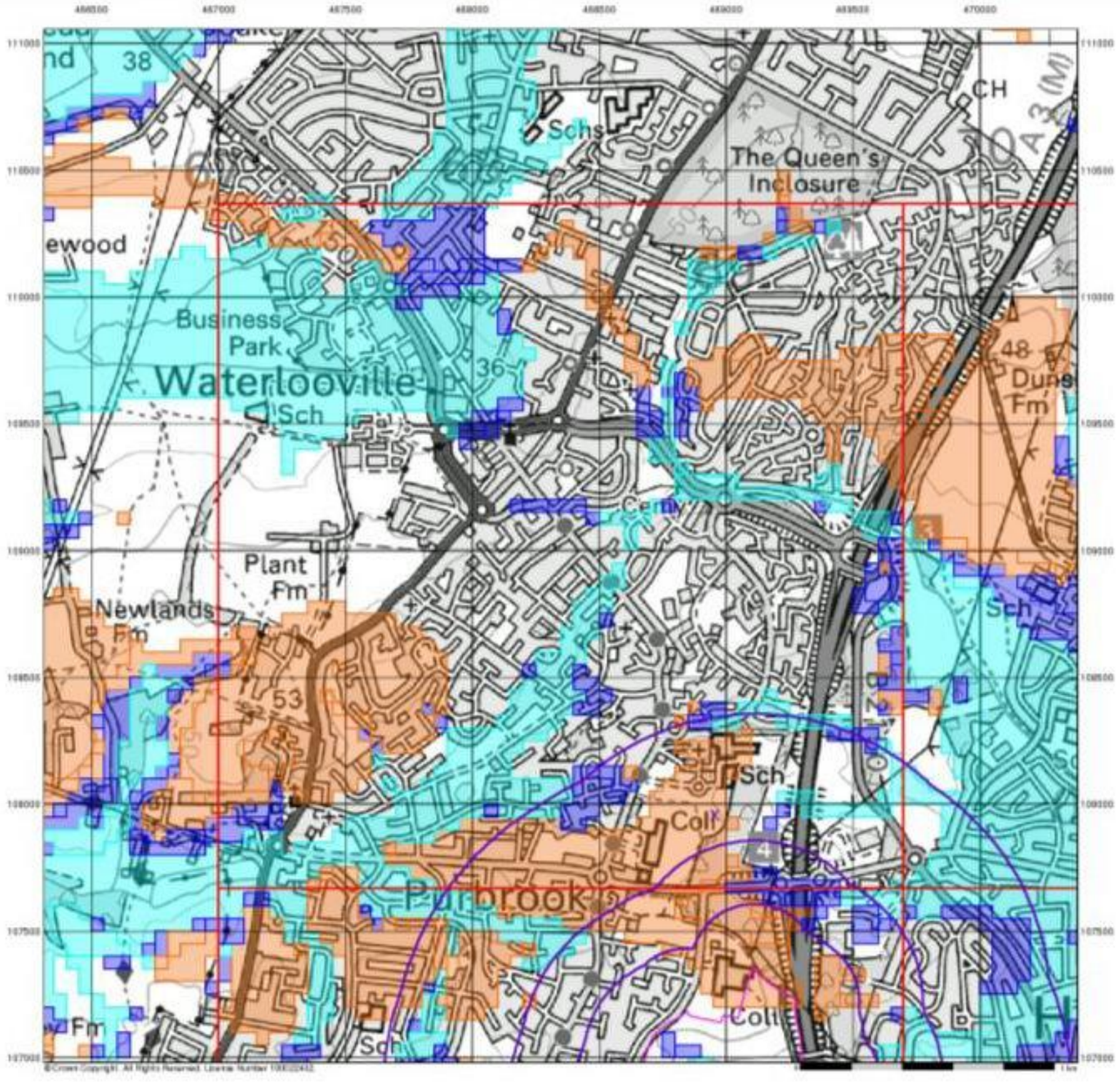


Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468960, 107960
Slice:	C
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



Envirocheck®

BGS Flood GFS Data

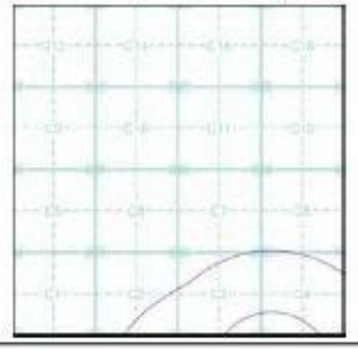
General

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

Agency and Hydrological (Flood)

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

Site Sensitivity Context Map - Slice C



Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468960, 107960
Slice:	C
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

Geology 1:10,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	MGR	Made Ground (Undivided)	Artificial Deposit	Holocene - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	SUPNM	Superficial Theme Not Mapped [For Digital Map Use Only]	Unknown/Unclassified Entry	Not Supplied - Not Supplied
	HEAD	Head	Clay, Silt, Sand and Gravel	Quaternary - Ryazanian
	HEAD	Head	Diamicton	Quaternary - Ryazanian

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	WTT	Wittering Formation	Sand, Silt and Clay	Lutetian - Ypresian
	WTT	Wittering Formation	Sand	Lutetian - Ypresian
	LC	London Clay Formation	Clay, Silt and Sand	Eocene - Eocene
	BOSA	Bognor Sand Member	Sand	Eocene - Eocene
	BOSA	Bognor Sand Member	Clay, Silt and Sand	Eocene - Eocene
	WHI	Whitecliff Sand Member	Sand	Palaeogene - Palaeogene

Envirocheck Geology

Geology 1:10,000 Maps

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

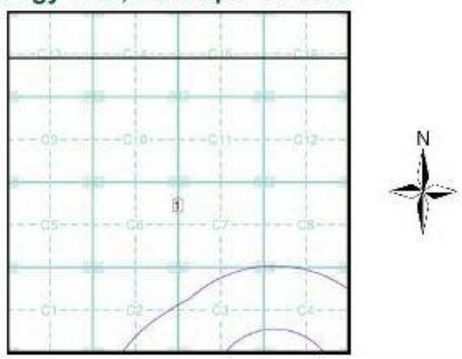
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page.

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

Geology 1:10,000 Maps Coverage

Map ID:		**Map ID:**	1
Map Name:	SU61SE	**Map Name:**	SU60NE
Map Date:	1996	**Map Date:**	1984
Bedrock Geology:	Available	**Bedrock Geology:**	Available
Superficial Geology:	Available	**Superficial Geology:**	Available
Artificial Geology:	Available	**Artificial Geology:**	Available
Faults:	Not Available	**Faults:**	Not Supplied
Landslip:	Not Available	**Landslip:**	Not Available
Rock Segments:	Not Available	**Rock Segments:**	Not Supplied

Geology 1:10,000 Maps - Slice C



Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468960, 107960
Slice:	C
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



Envirocheck® Geology

Artificial Ground and Landslip

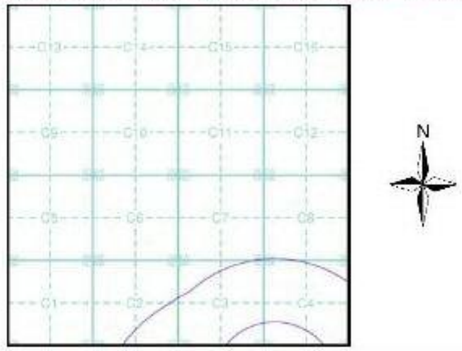
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions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

Artificial ground includes:

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

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

Artificial Ground and Landslip Map - Slice C

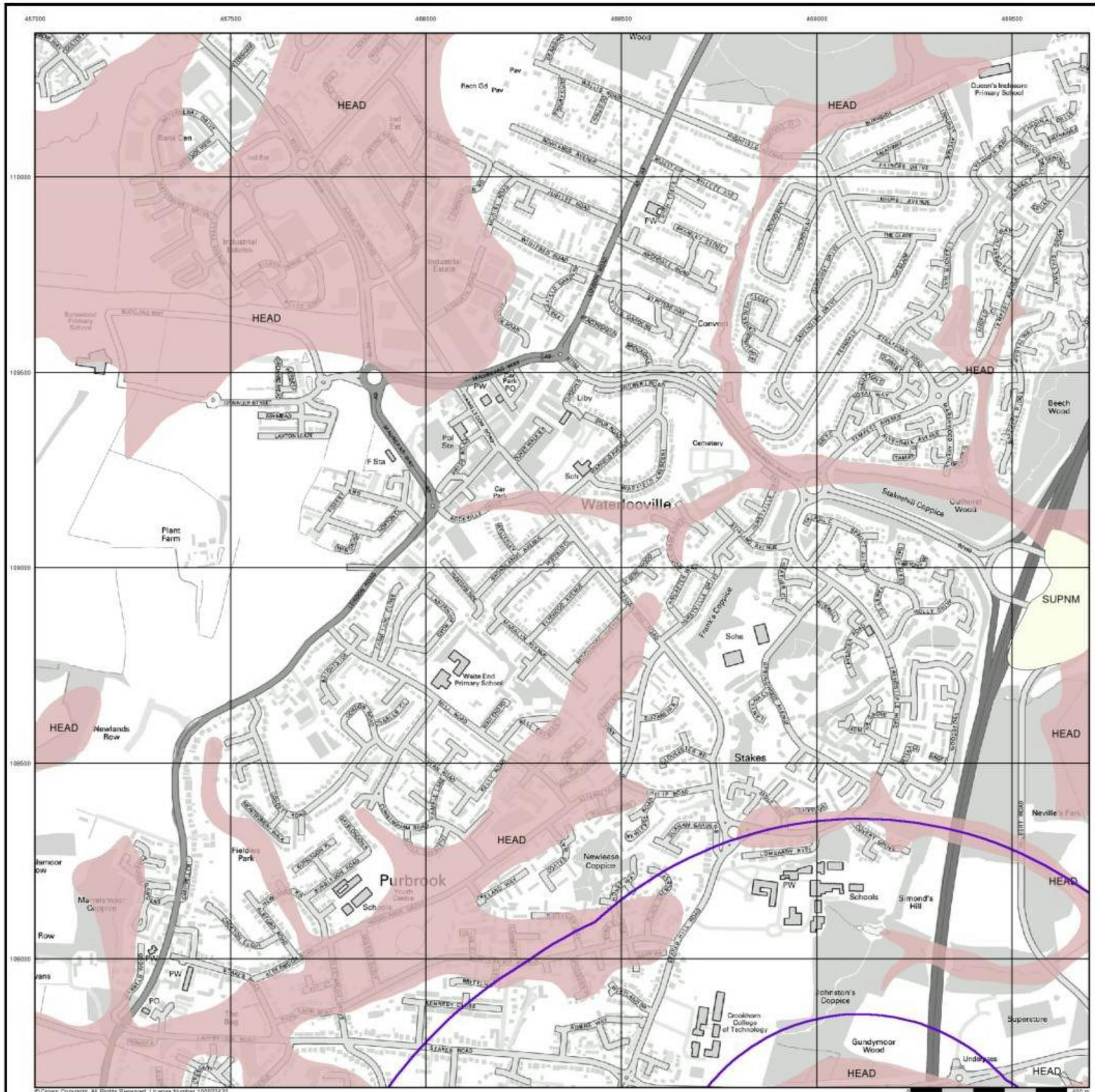


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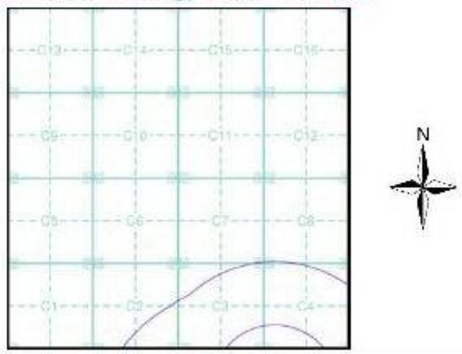
Superficial Geology

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

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

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

Superficial Geology Map - Slice C



Order Details

Order Number:	92122794_1_1
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Slice:	C
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Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



Envirocheck® Geology

Bedrock and Faults

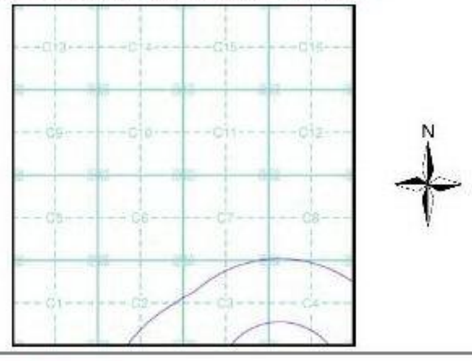
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

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

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

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

Bedrock and Faults Map - Slice C

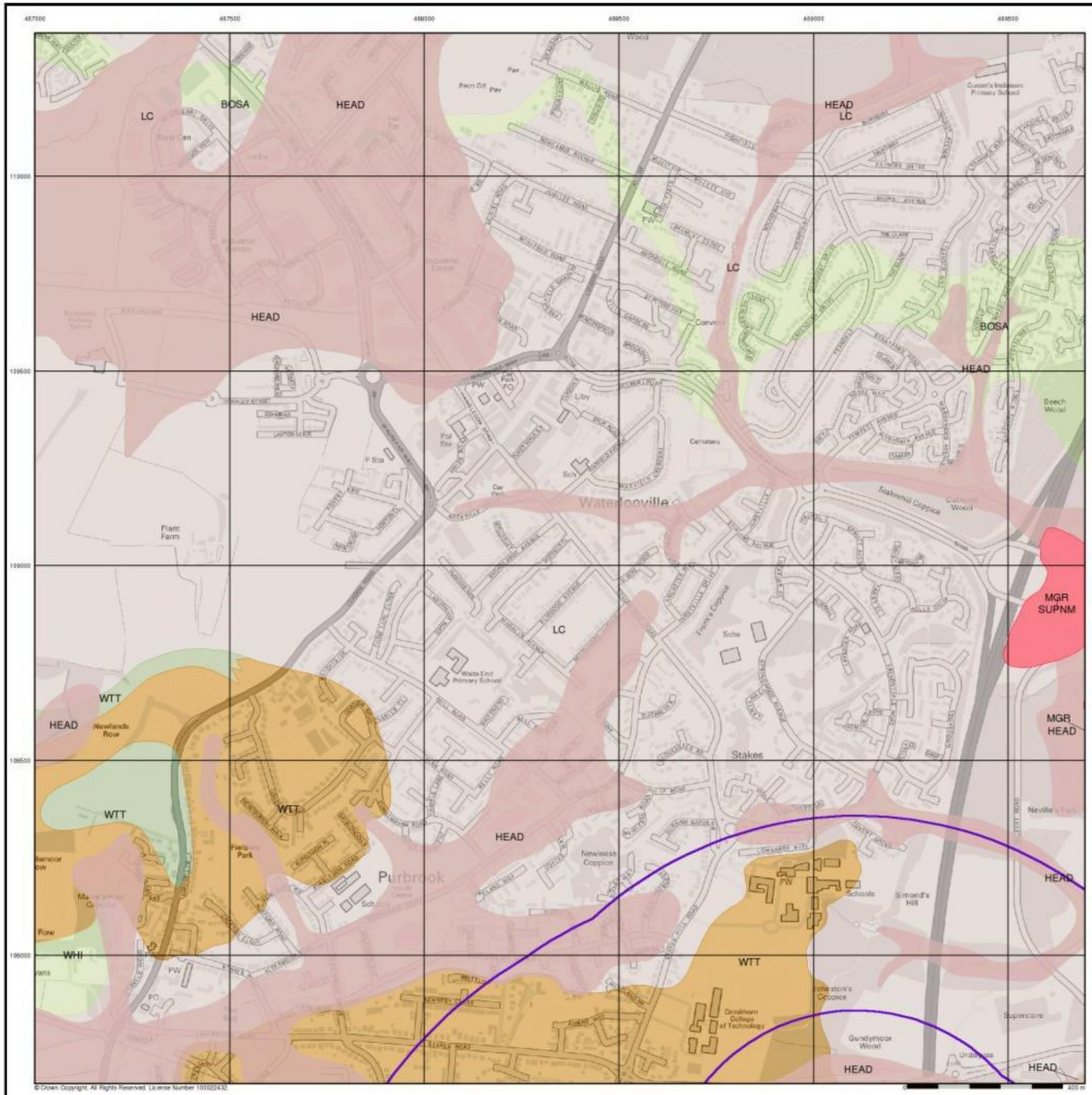


Order Details

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Envirocheck Geology

Combined Surface Geology

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

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

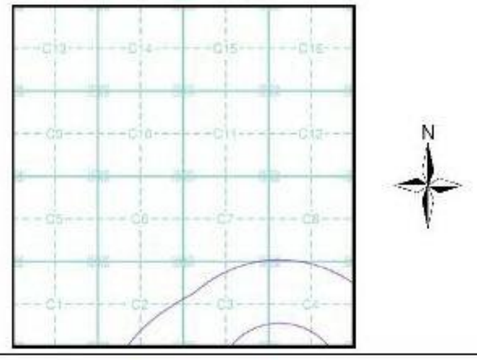
Additional Information

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

Contact

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

Combined Geology Map - Slice C

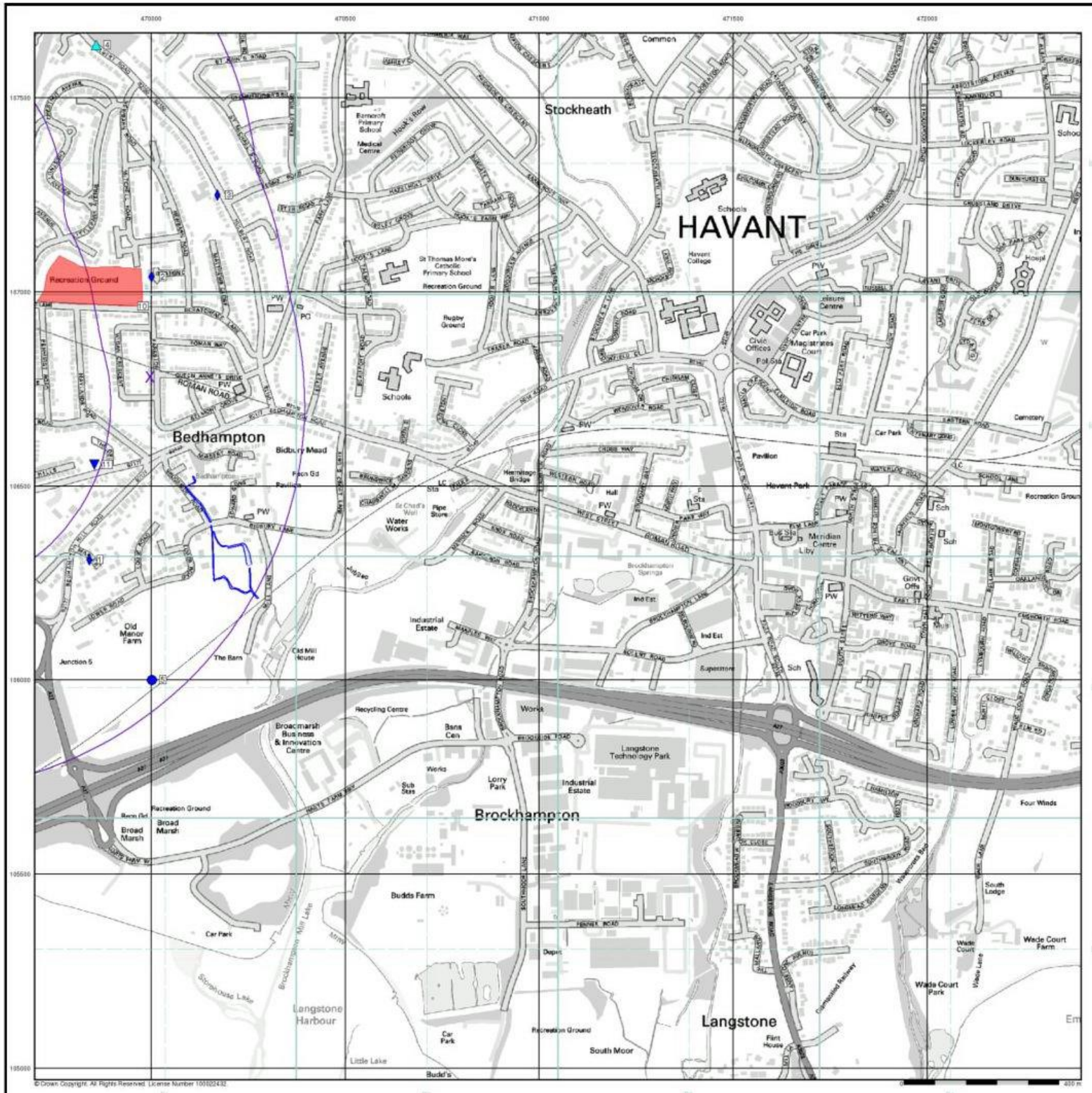


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Slice:	C
Site Area (Ha):	26.37
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Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



Envirocheck®

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

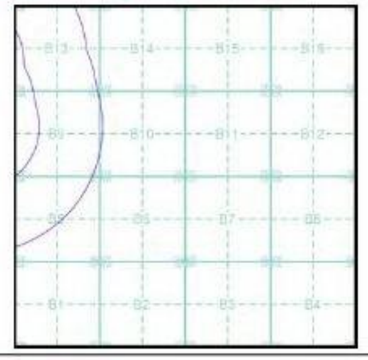
Waste

- 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 B



Order Details

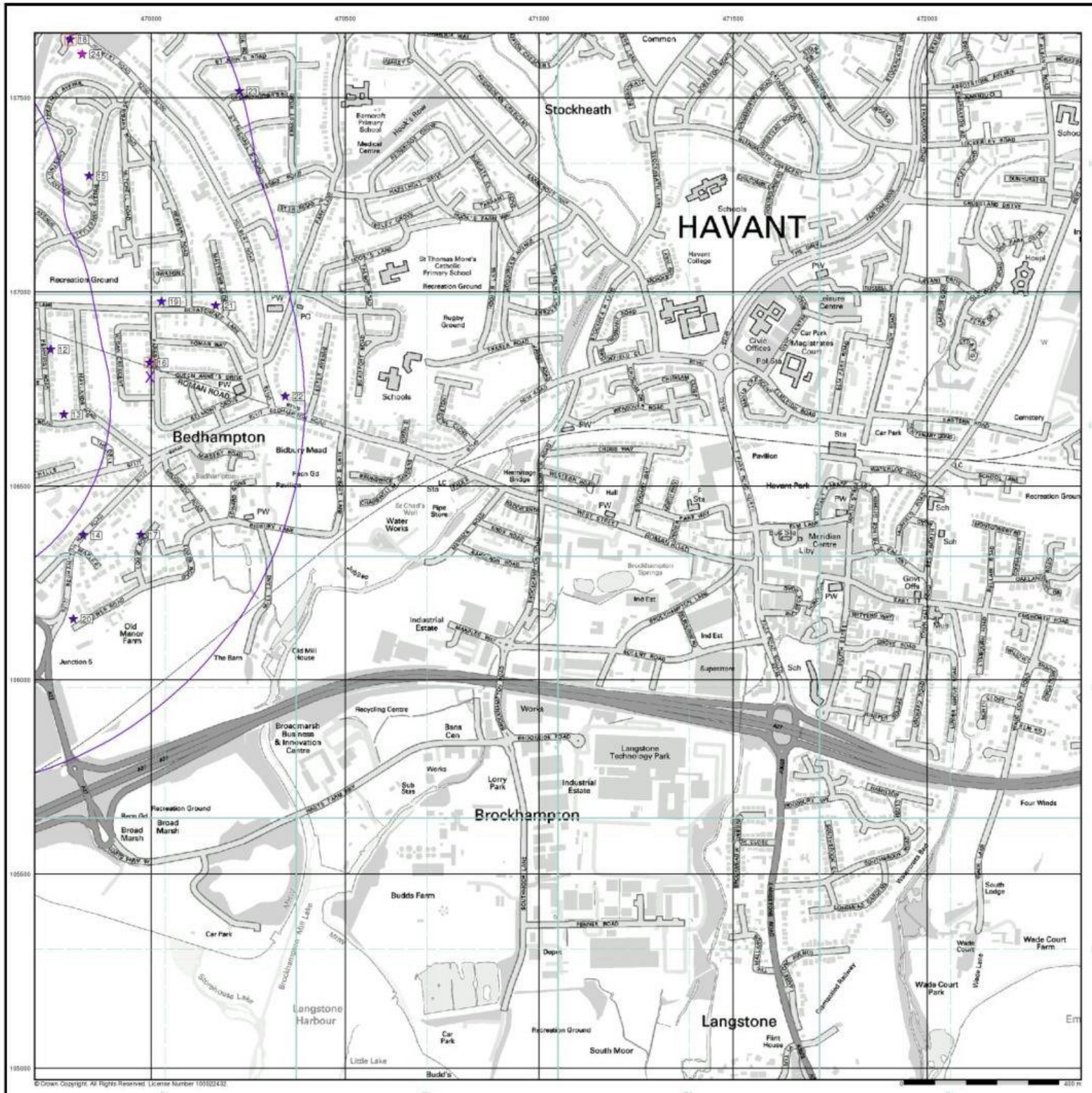
Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	470000, 106780
Slice:	B
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

Landmark Information Group

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



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Industrial Land Use Map

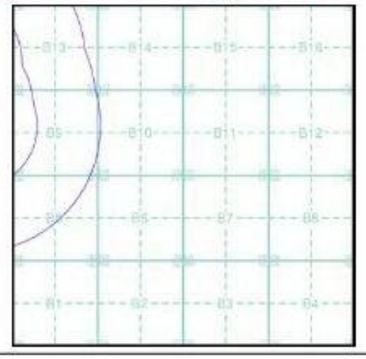
General

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

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- Gas Pipeline
- Underground Electrical Cables

Industrial Land Use Map - Slice B



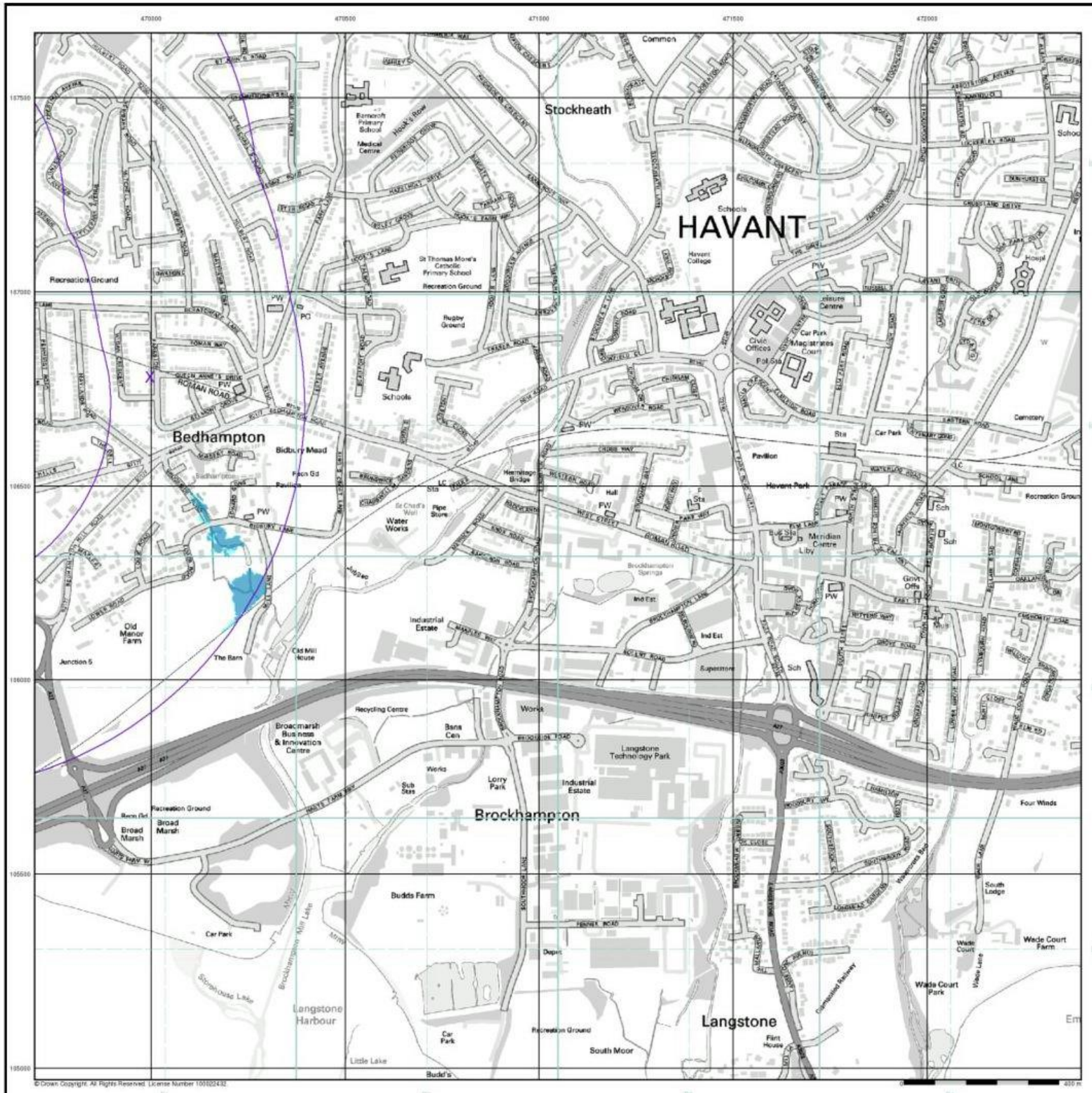
Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	470000, 106780
Slice:	B
Site Area (Ha):	26.37
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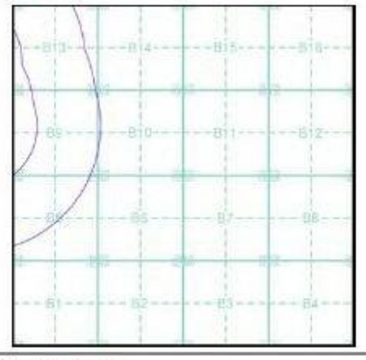
General

- 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 B



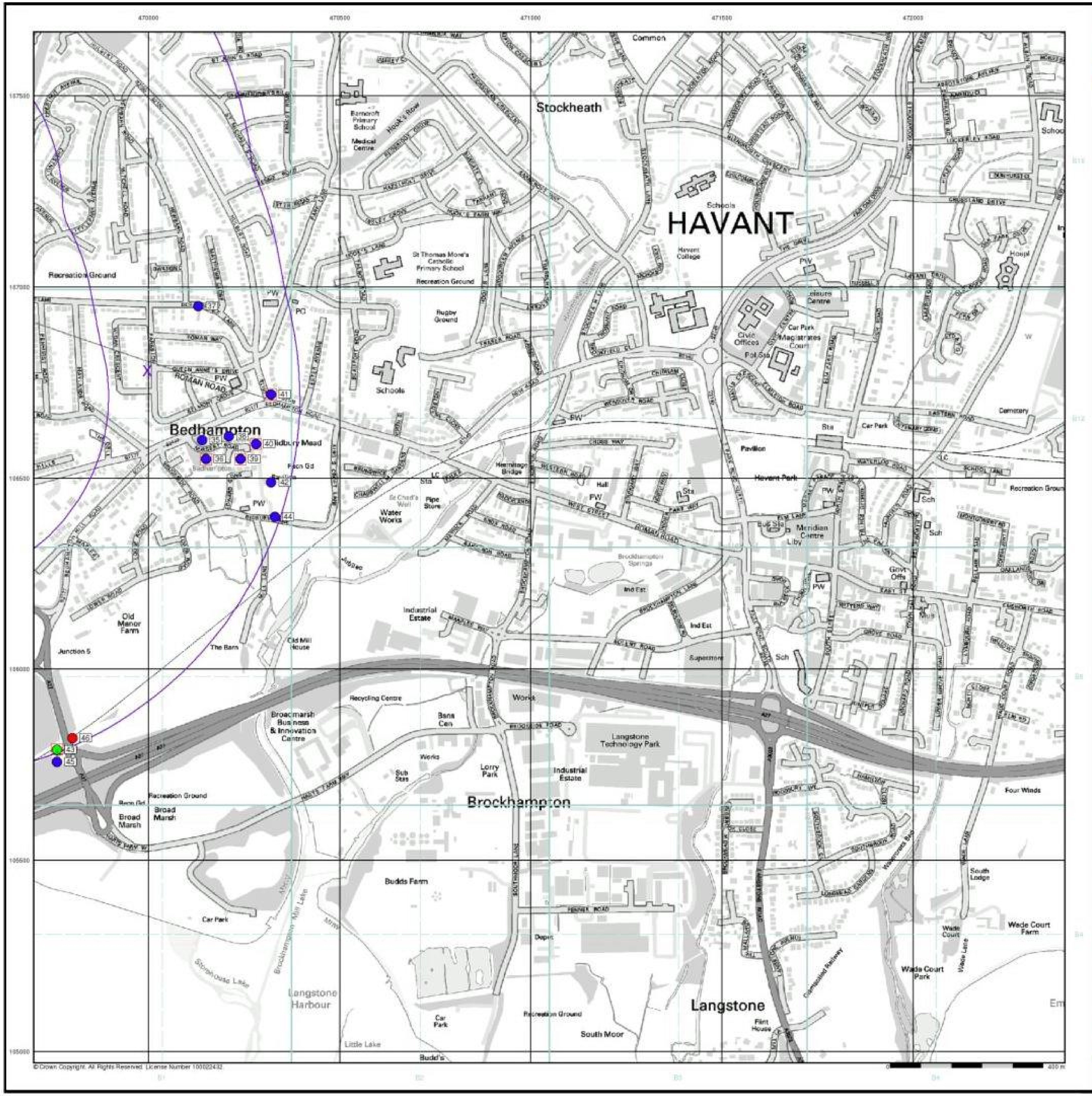
Order Details

Order Number:	92122794_1_1
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General

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

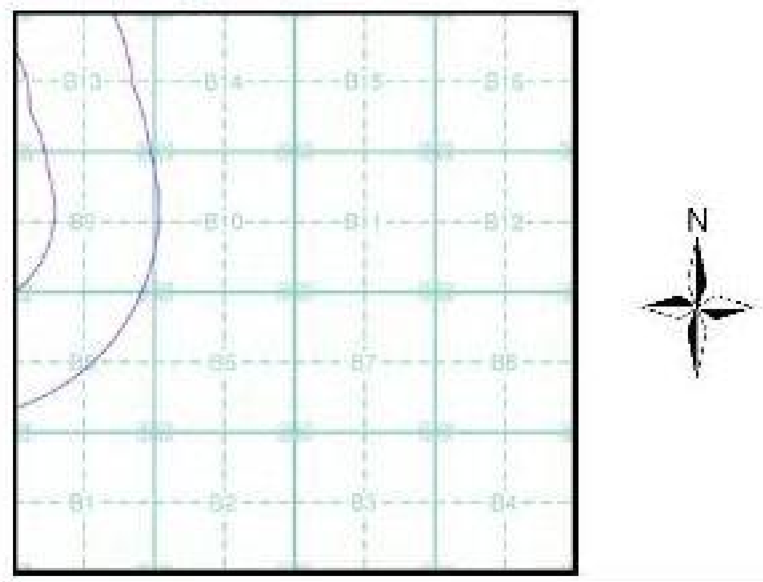
Agency and Hydrological (Boreholes)

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

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

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

Borehole Map - Slice B



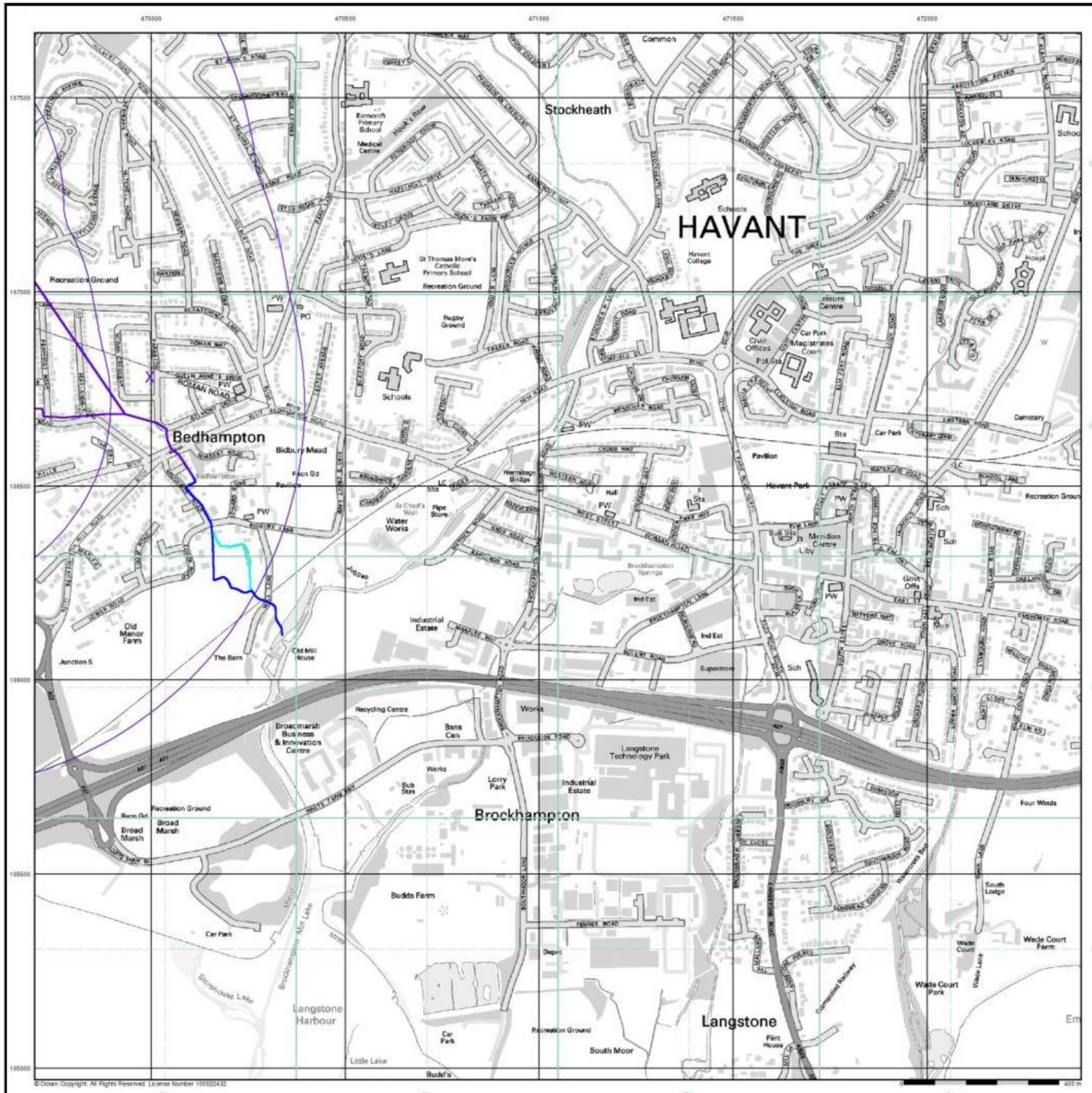
Order Details

Order Number: 92122794_1_1
Customer Ref: 28720
National Grid Reference: 470000, 106780
Slice: B
Site Area (Ha): 26.37
Search Buffer (m): 1000

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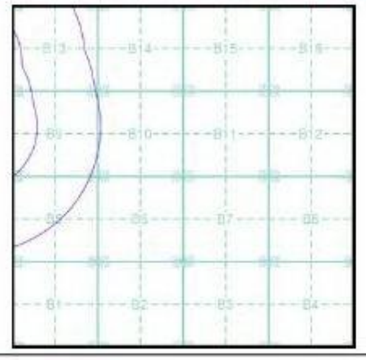
General

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

Detailed River Network Data

- Primary River
- Secondary River
- Tertiary River
- Canal
- Canal Tunnel
- Undefined River
- Lake/Reservoir
- Offline Drainage Feature
- Extended Culvert (greater than 50m)
- Underground River (inferred)
- Underground River (local knowledge)
- Downstream of High Water Mark
- Downstream of Seaward Extension
- Not assigned River feature

EA/NRW Detailed River Network Map - Slice B



Order Details

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Slice:	B
Site Area (Ha):	26.37
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Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

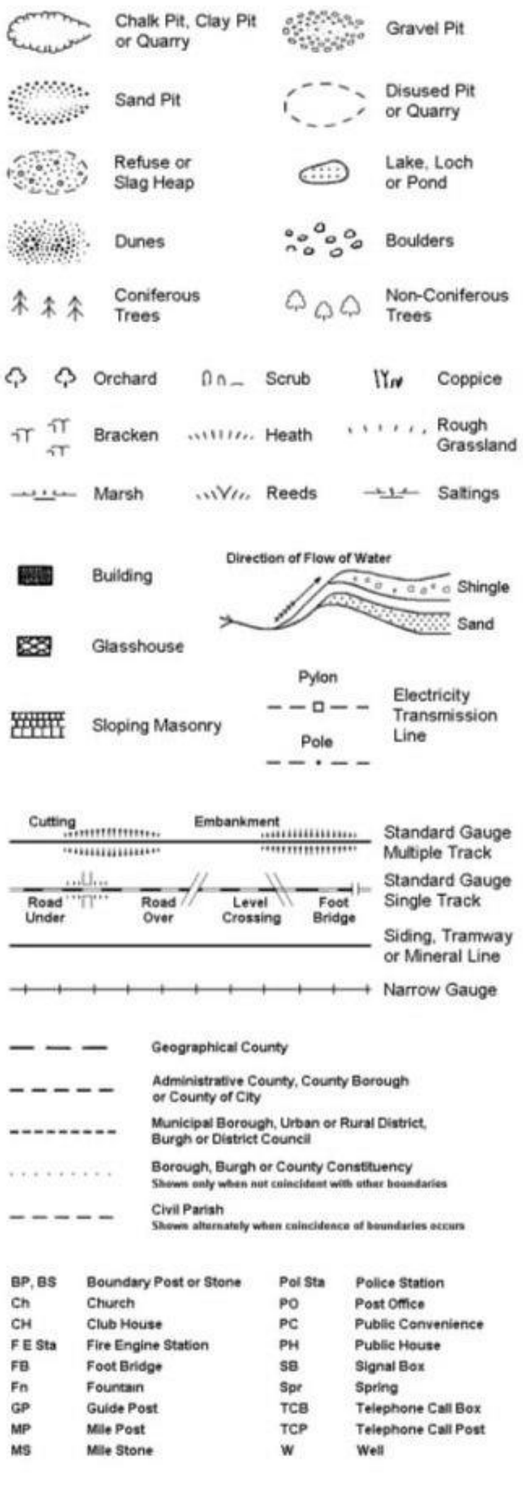
Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

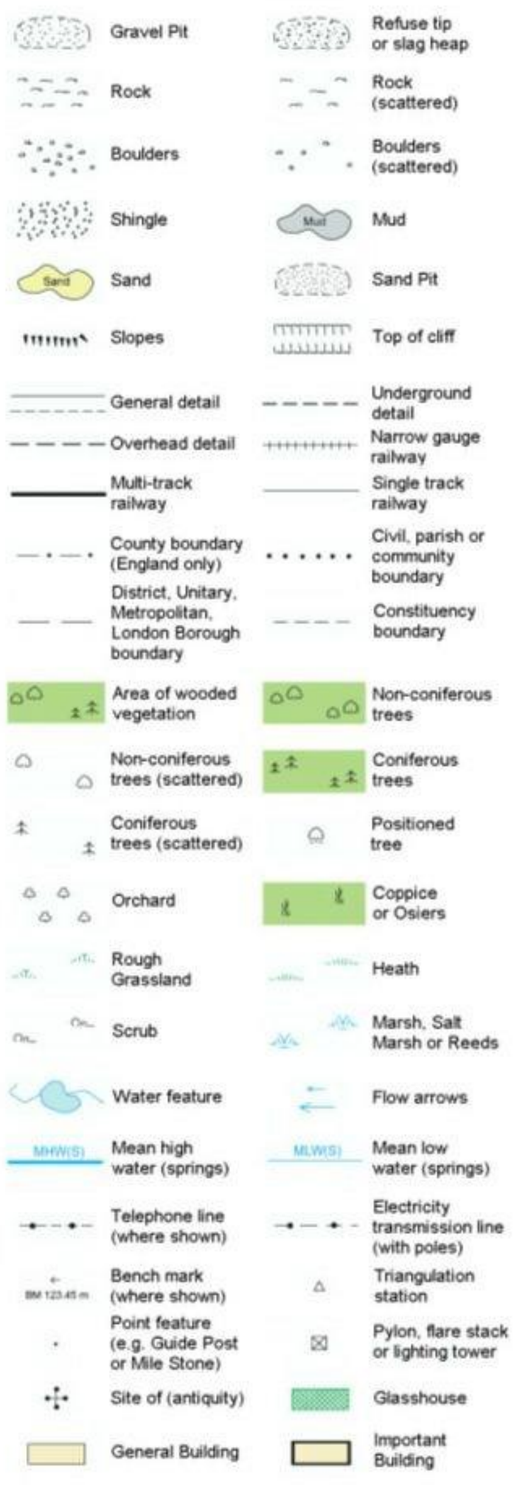


Ordnance Survey Plan 1:10,000



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

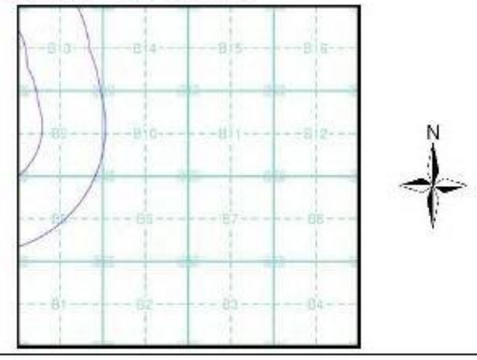


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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Hampshire & Isle Of Wight	1:10,560	1870	2
Sussex	1:10,560	1879 - 1880	3
Hampshire & Isle Of Wight	1:10,560	1898	4
Sussex	1:10,560	1899	5
Hampshire & Isle Of Wight	1:10,560	1909 - 1910	6
Sussex	1:10,560	1914	7
Sussex	1:10,560	1914	8
Sussex	1:10,560	1914	9
Hampshire & Isle Of Wight	1:10,560	1932	10
Sussex	1:10,560	1932	11
Sussex	1:10,560	1932	12
Hampshire & Isle Of Wight	1:10,560	1932	13
Sussex	1:10,560	1932	14
Hampshire & Isle Of Wight	1:10,560	1933	15
Hampshire & Isle Of Wight	1:10,560	1933	16
Hampshire & Isle Of Wight	1:10,560	1938 - 1942	17
Ordnance Survey Plan	1:10,000	1962 - 1963	18
Ordnance Survey Plan	1:10,000	1966	19
Ordnance Survey Plan	1:10,000	1972 - 1975	20
Ordnance Survey Plan	1:10,000	1982	21
Ordnance Survey Plan	1:10,000	1990 - 1992	22
10K Raster Mapping	1:10,000	2000	23
Street View	1:10,000	2016	24

Historical Map - Slice B



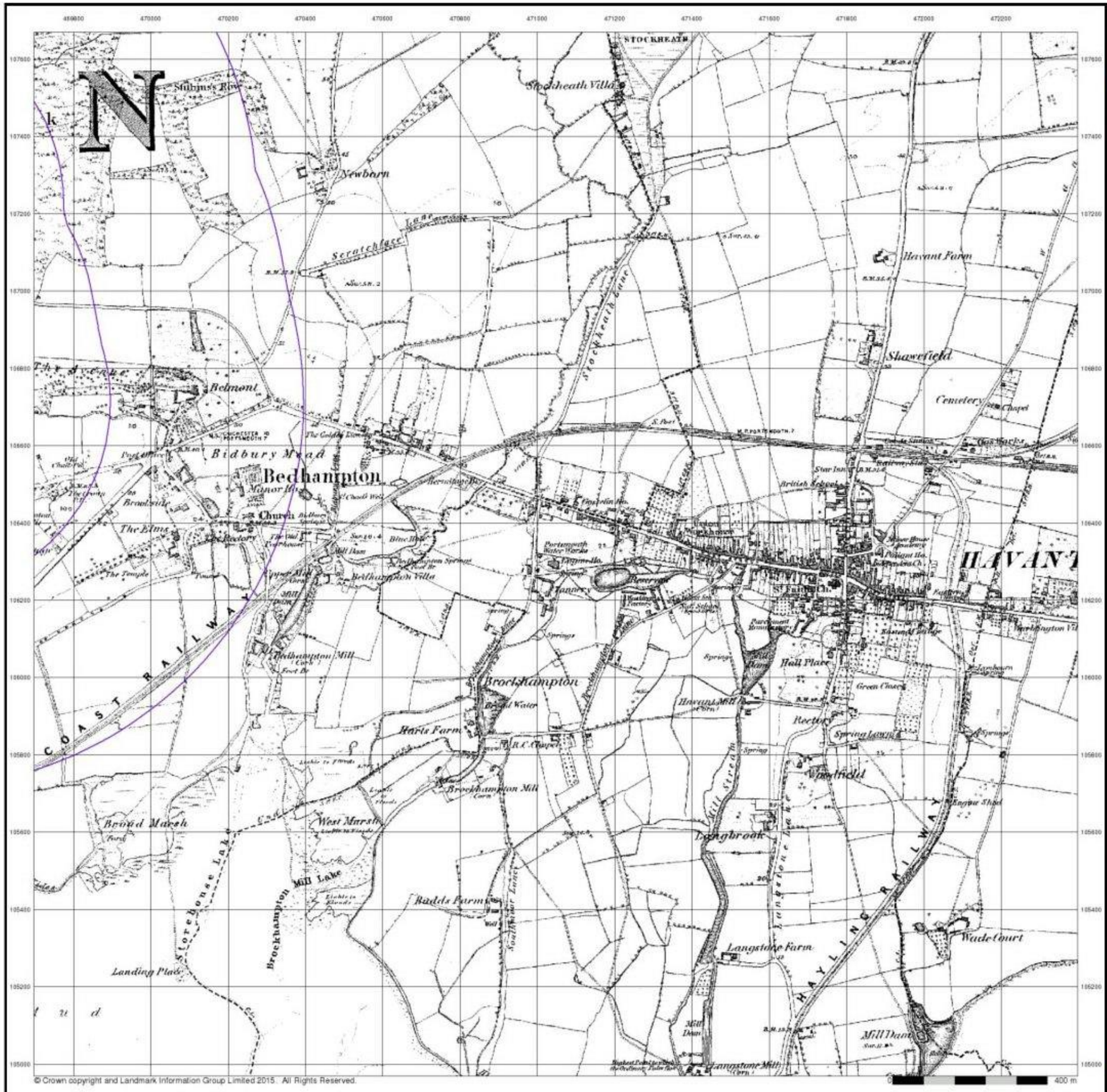
Order Details

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Envirocheck

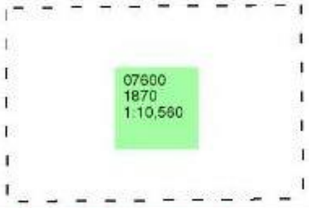
Hampshire & Isle Of Wight

Published 1870

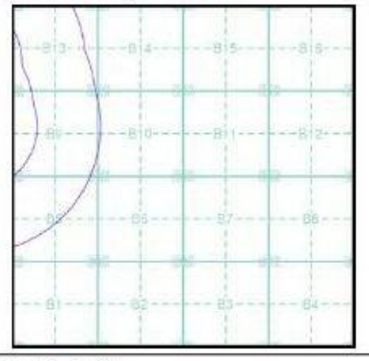
Source map scale - 1:10,560

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 B



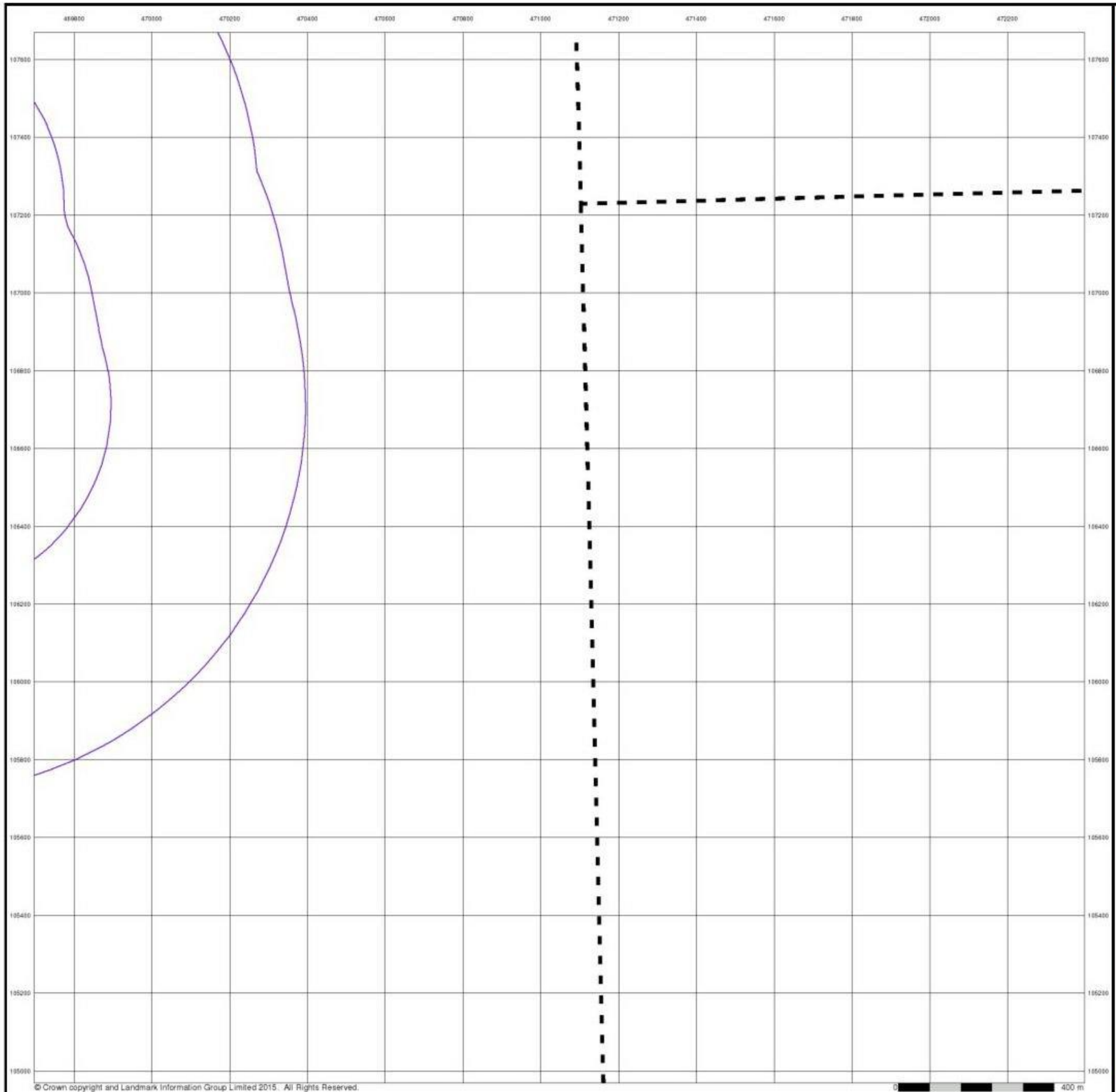
Order Details

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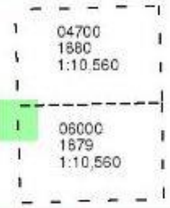
Sussex

Published 1879 - 1880

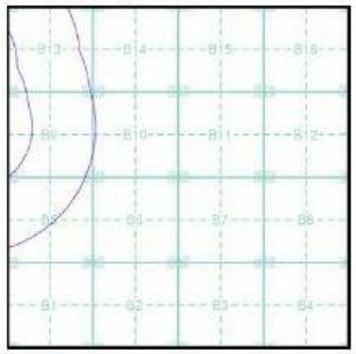
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice B



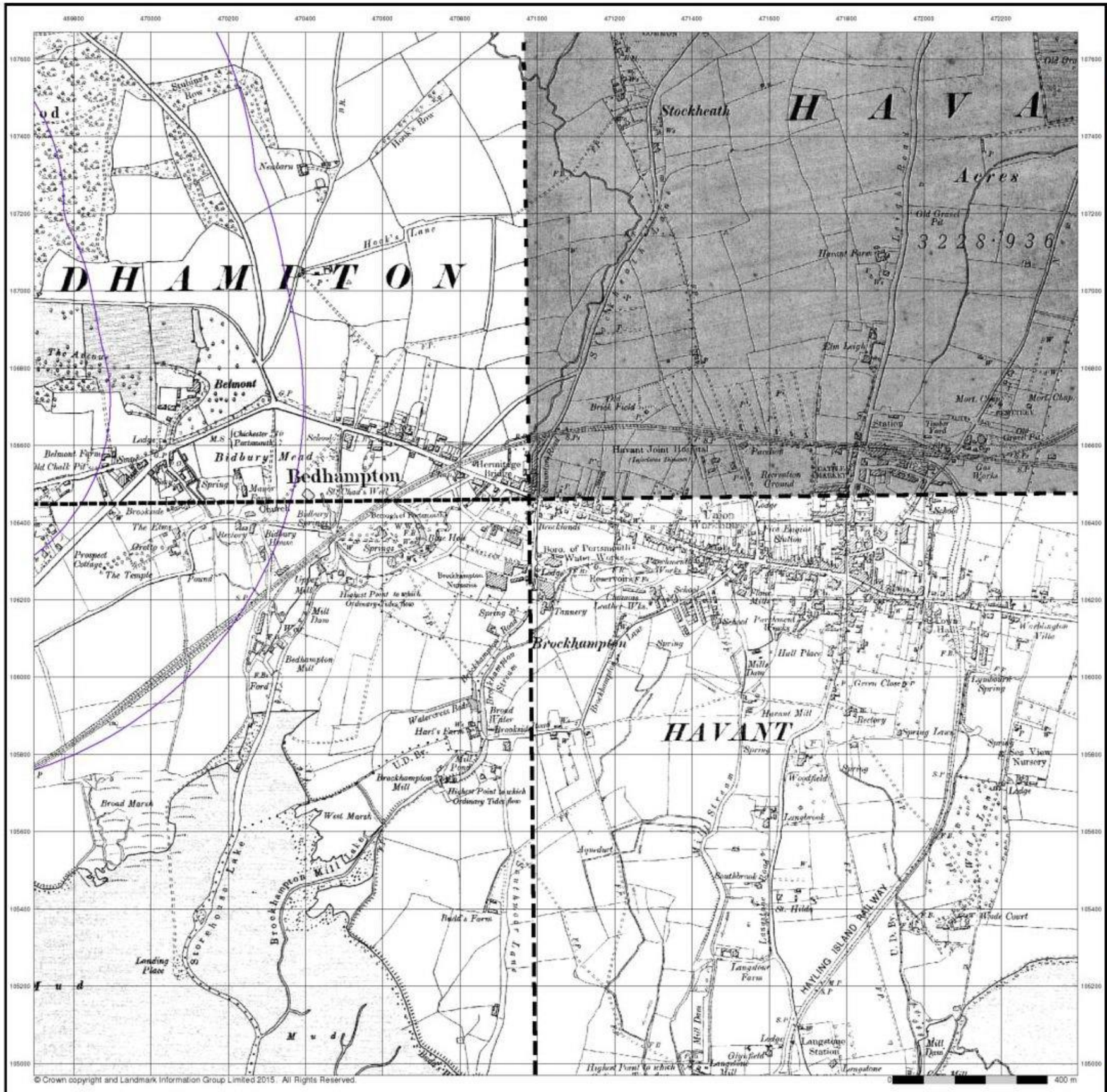
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Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

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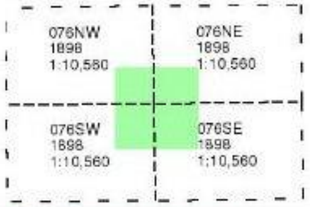
Hampshire & Isle Of Wight

Published 1898

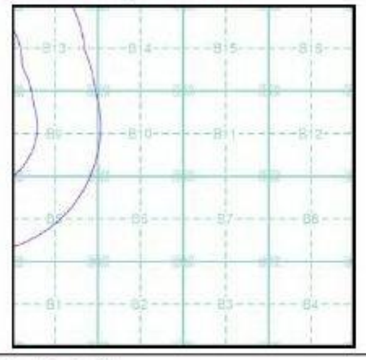
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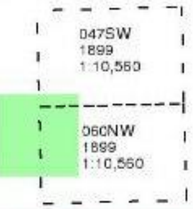
Sussex

Published 1899

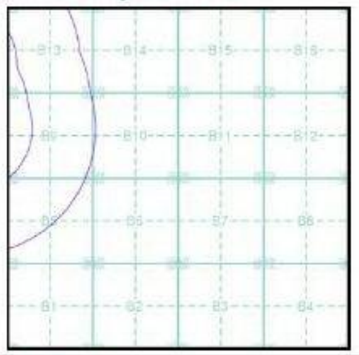
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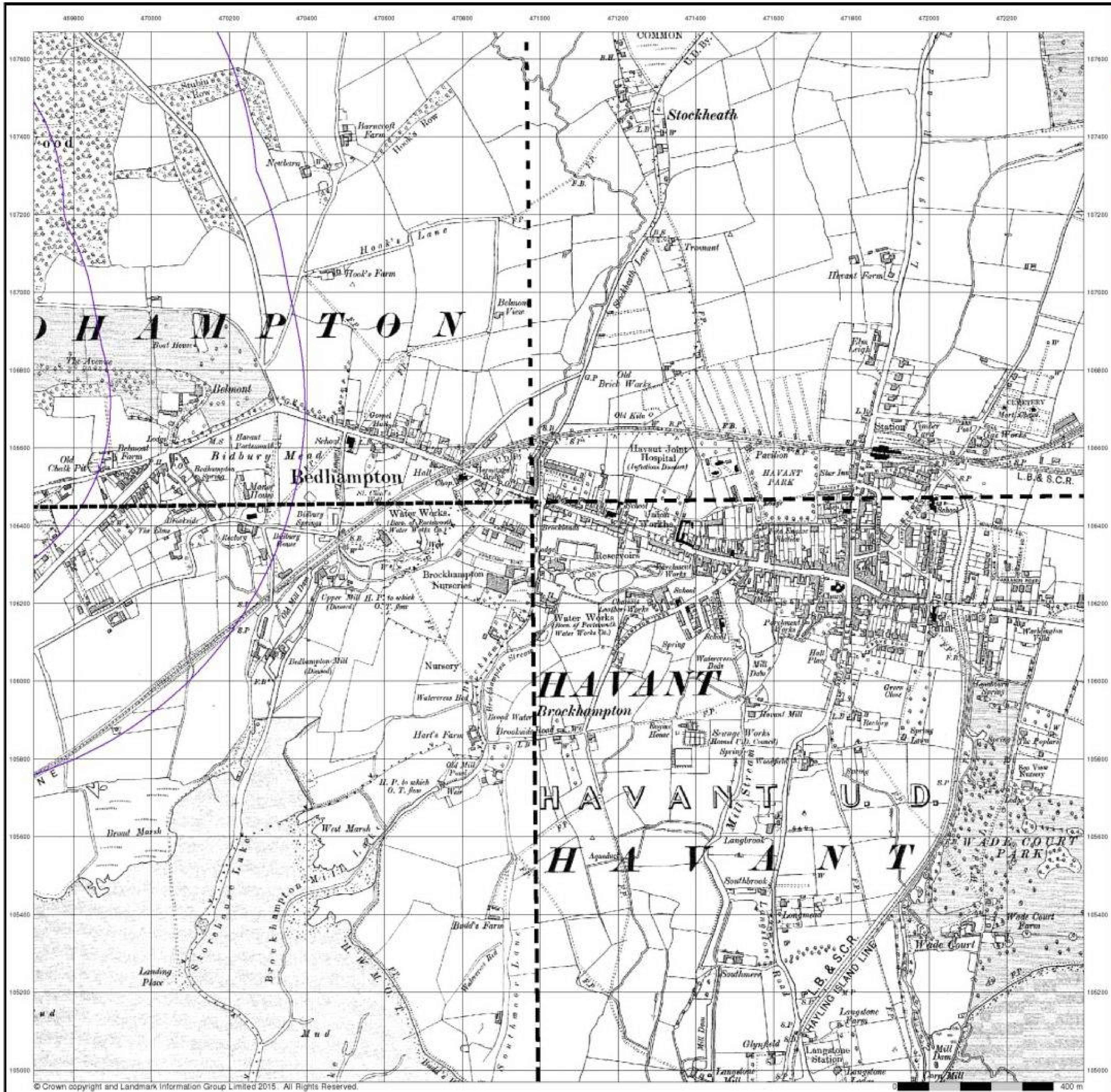
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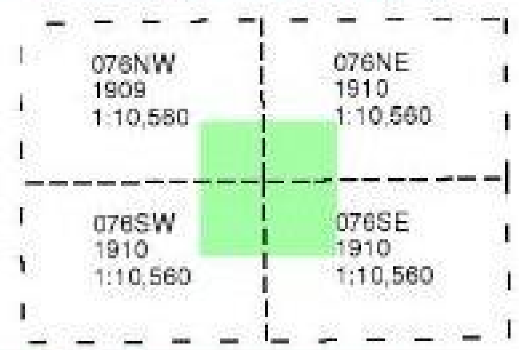
Hampshire & Isle Of Wight

Published 1909 - 1910

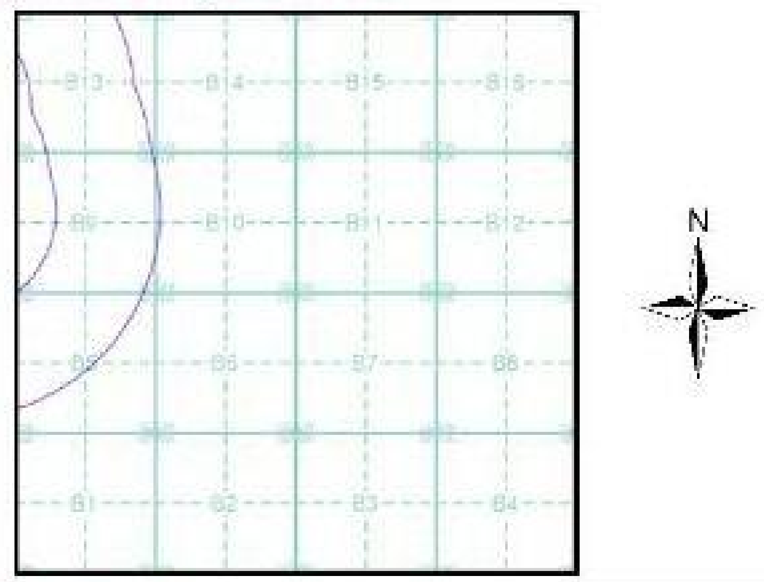
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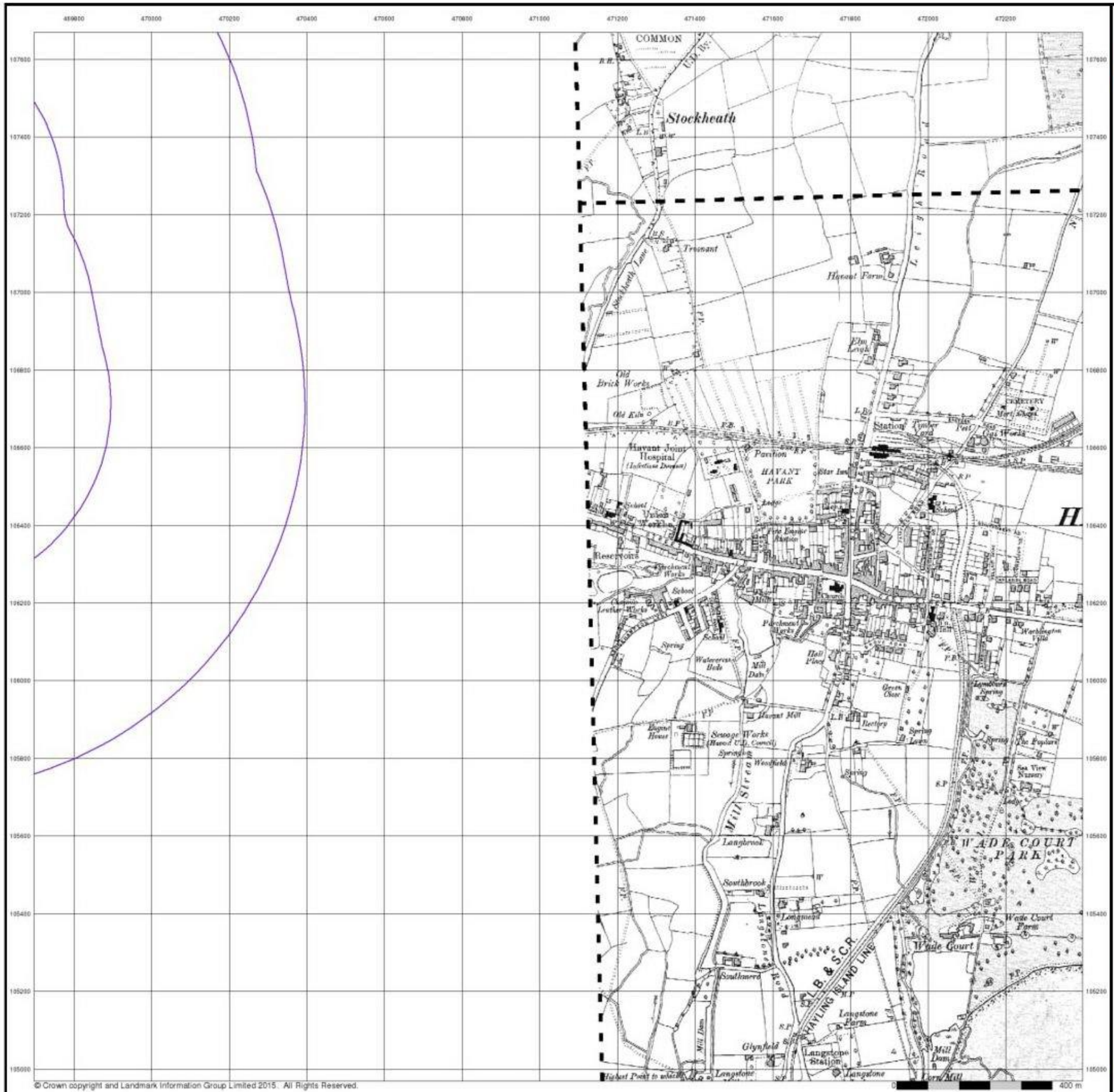
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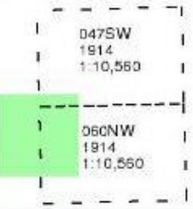
Sussex

Published 1914

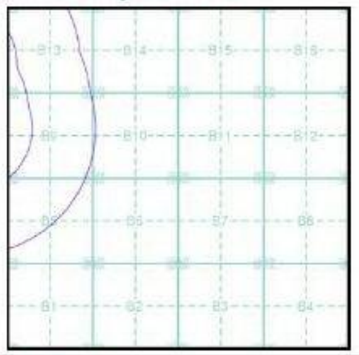
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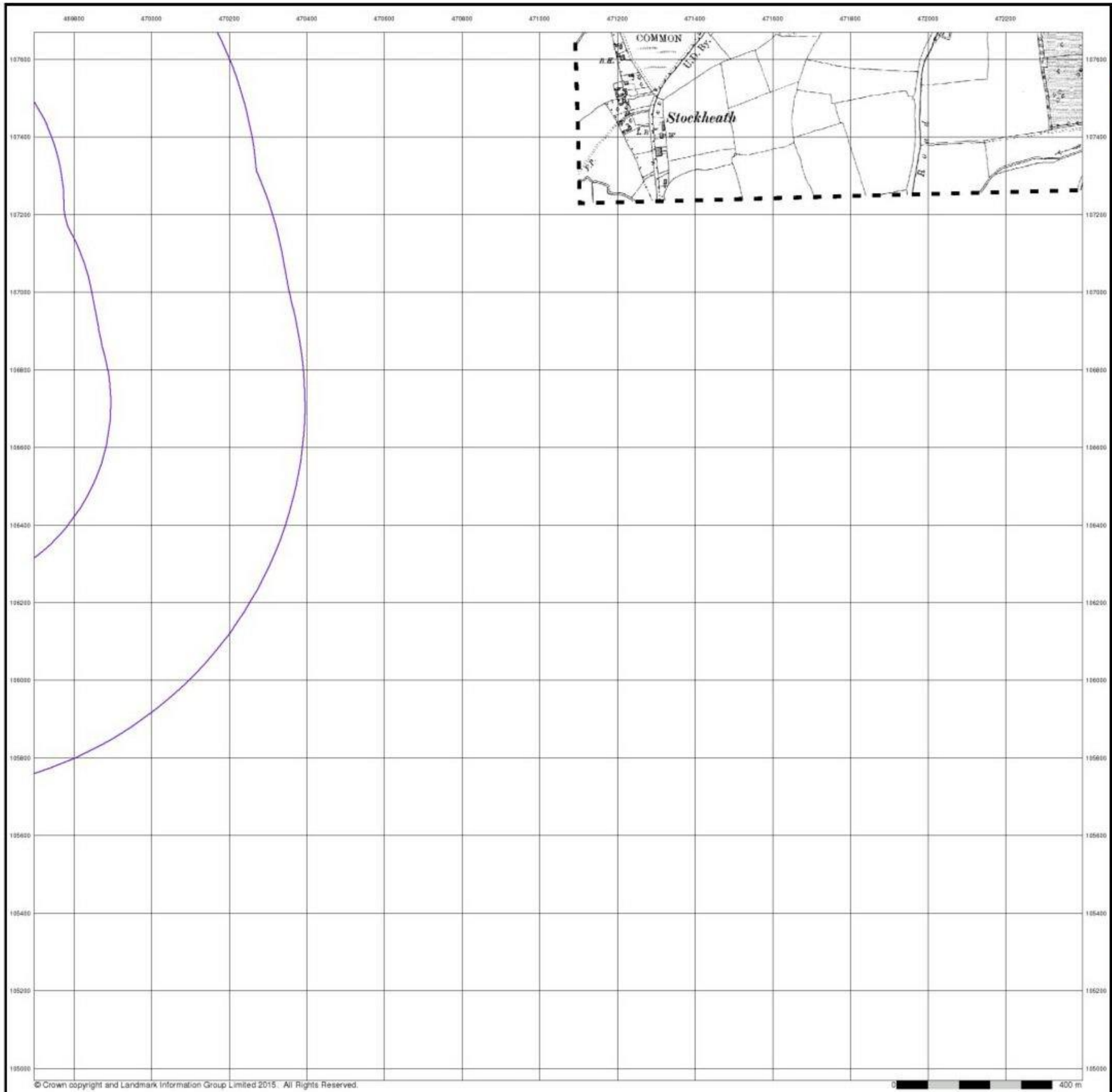
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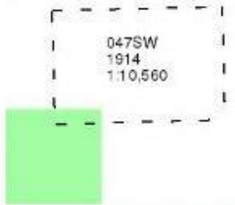
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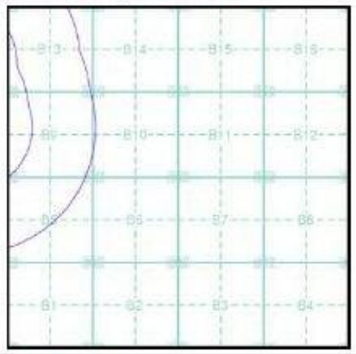
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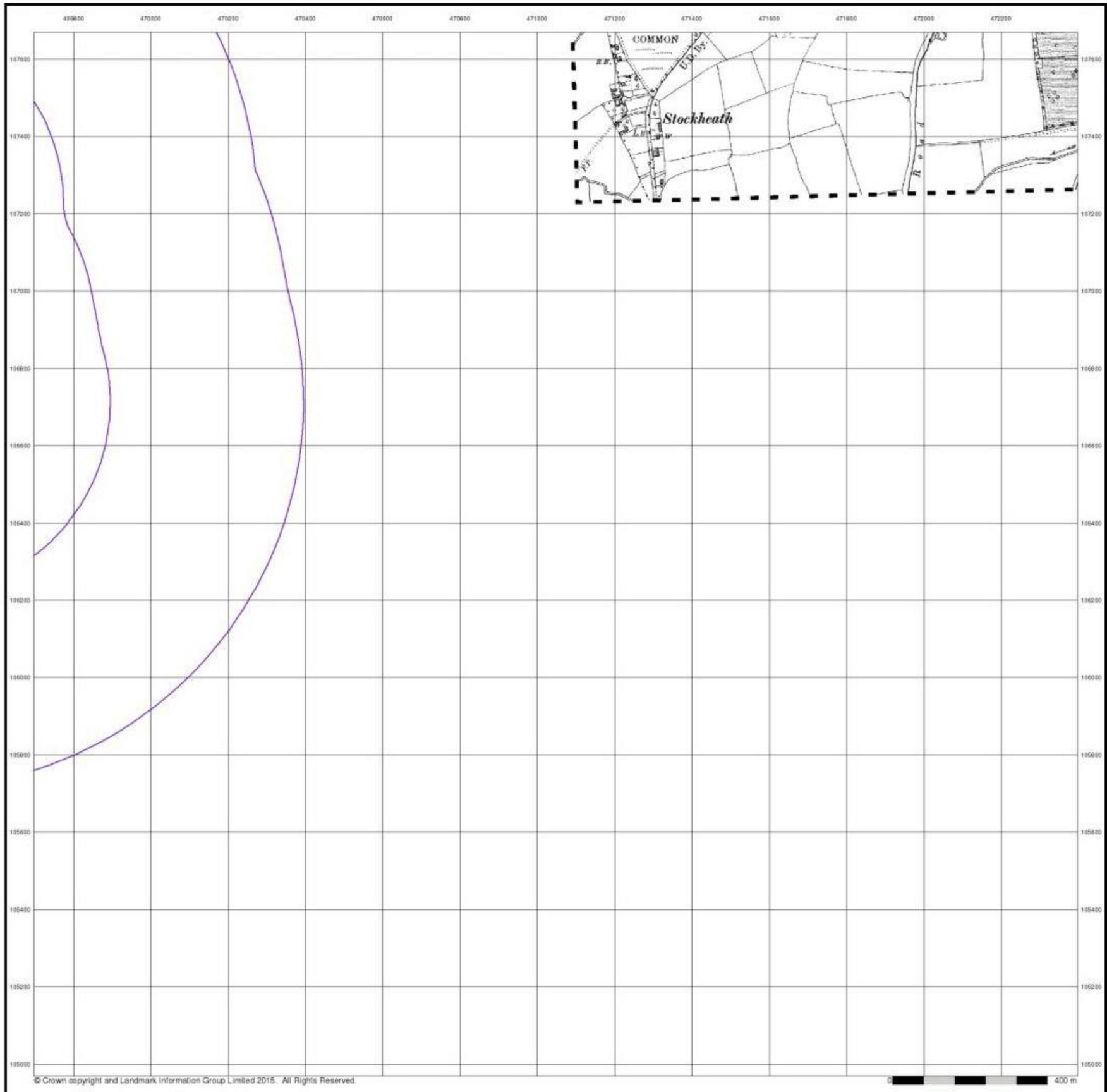
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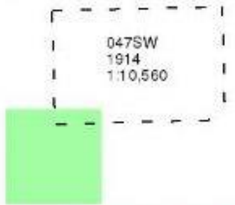
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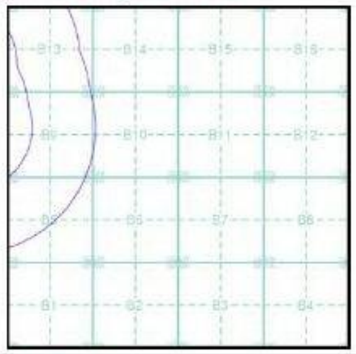
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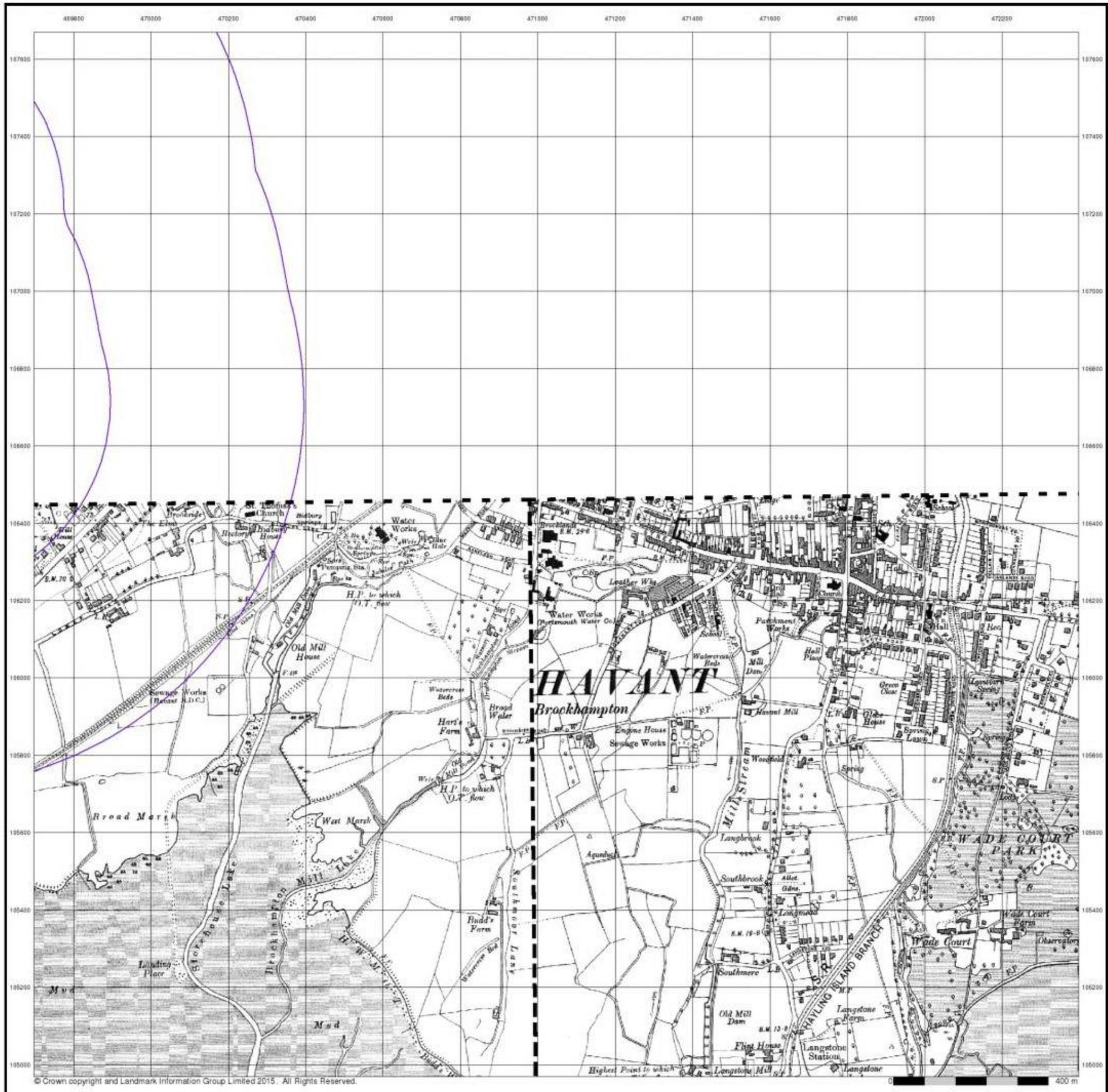
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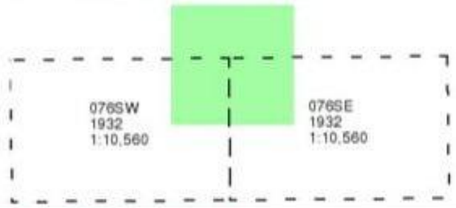
Hampshire & Isle Of Wight

Published 1932

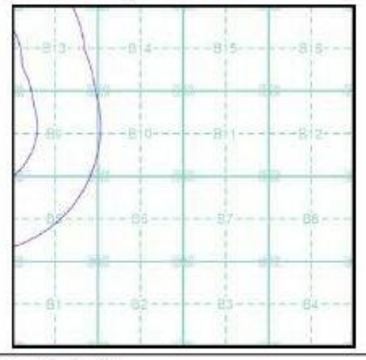
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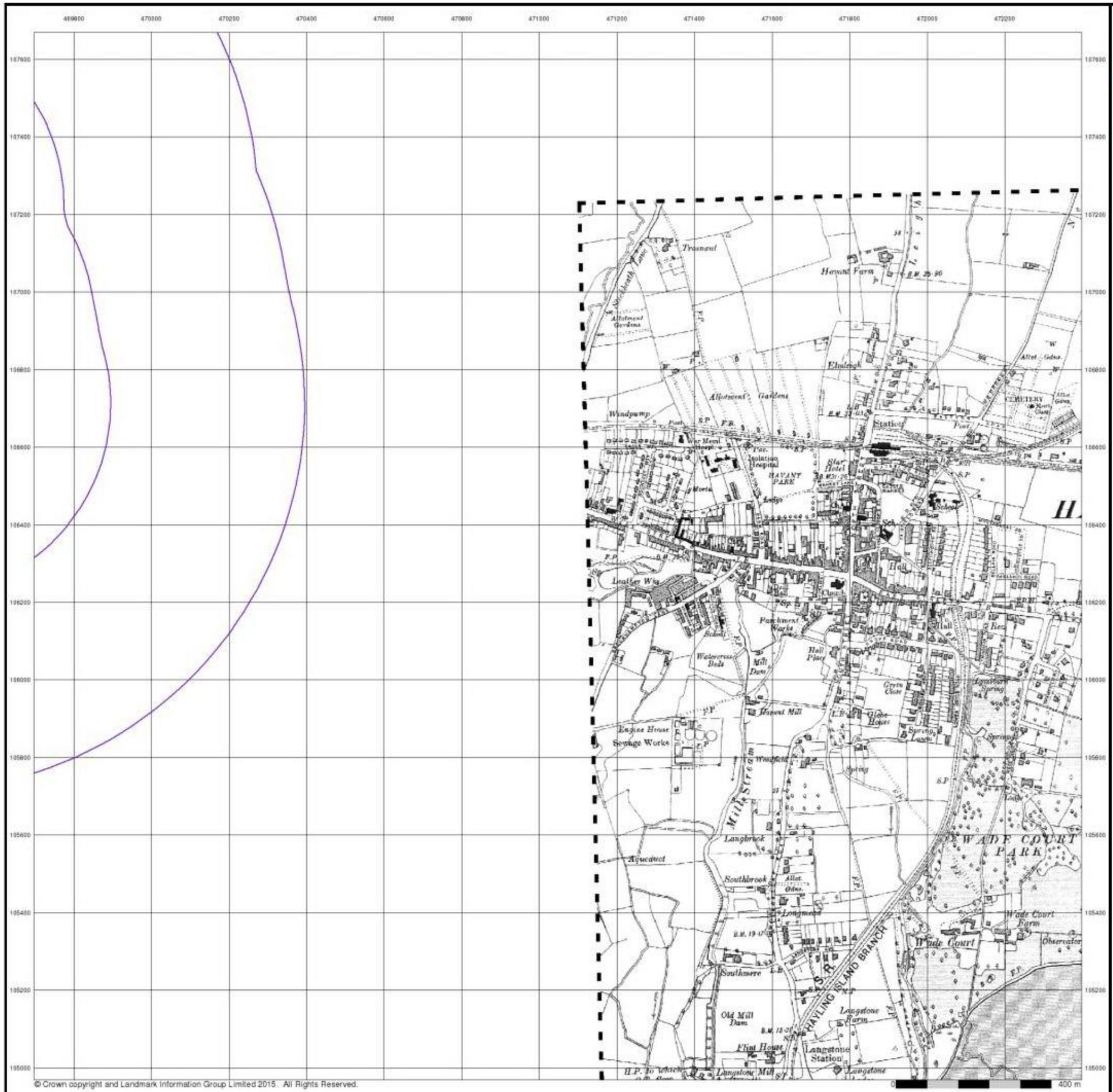
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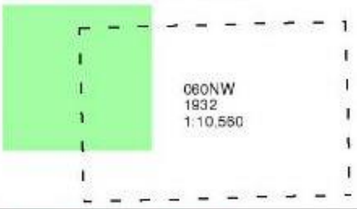
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Published 1932

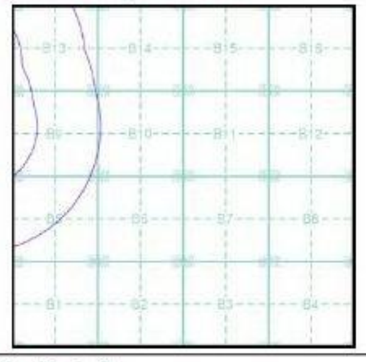
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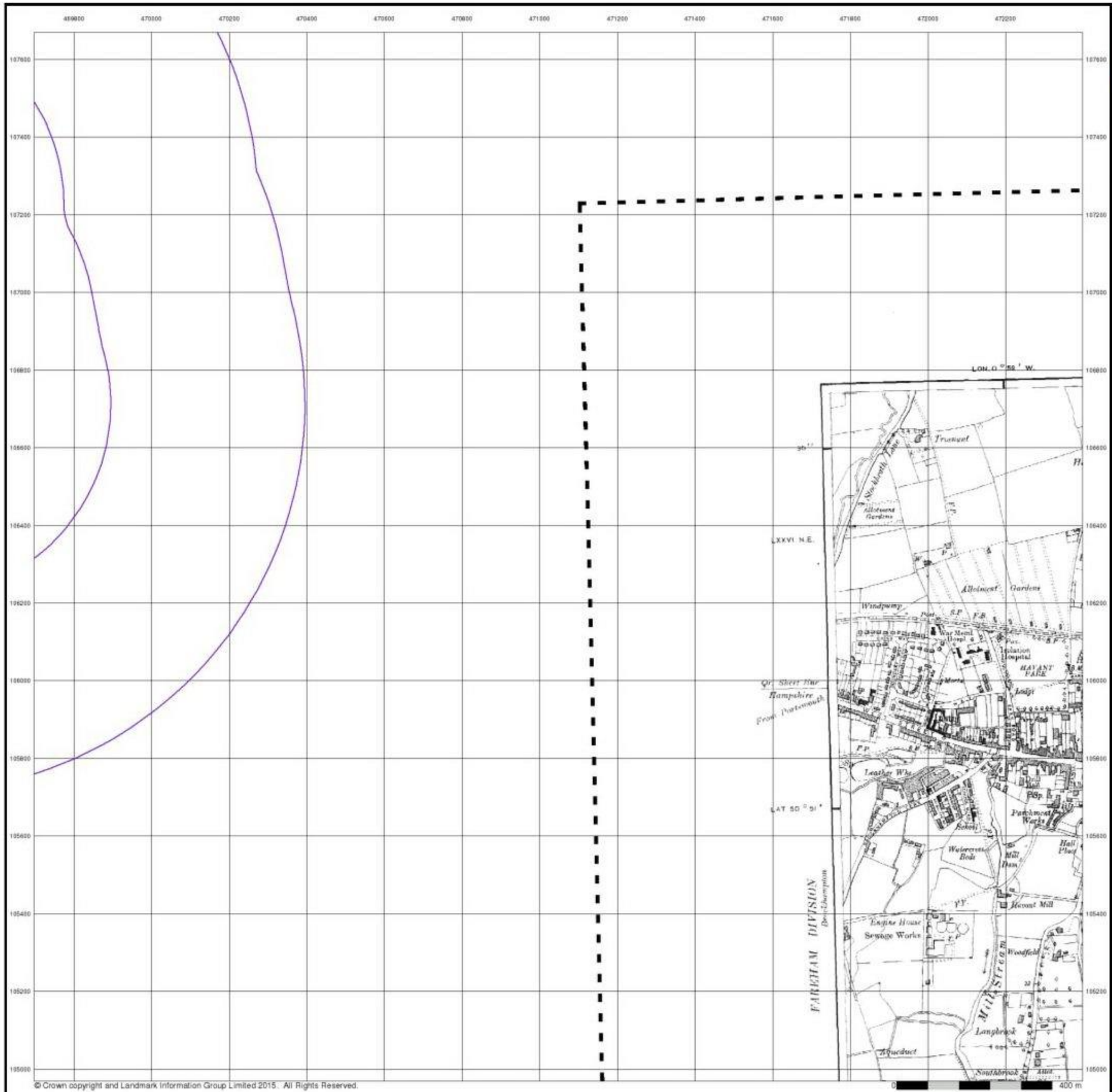


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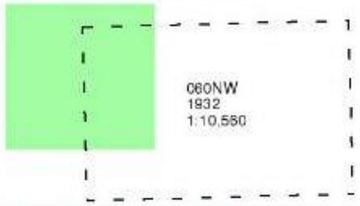
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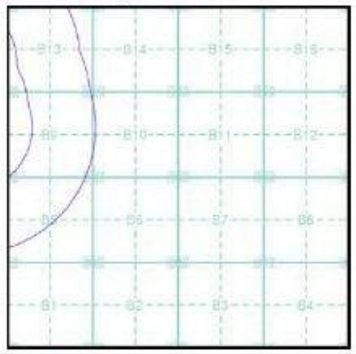
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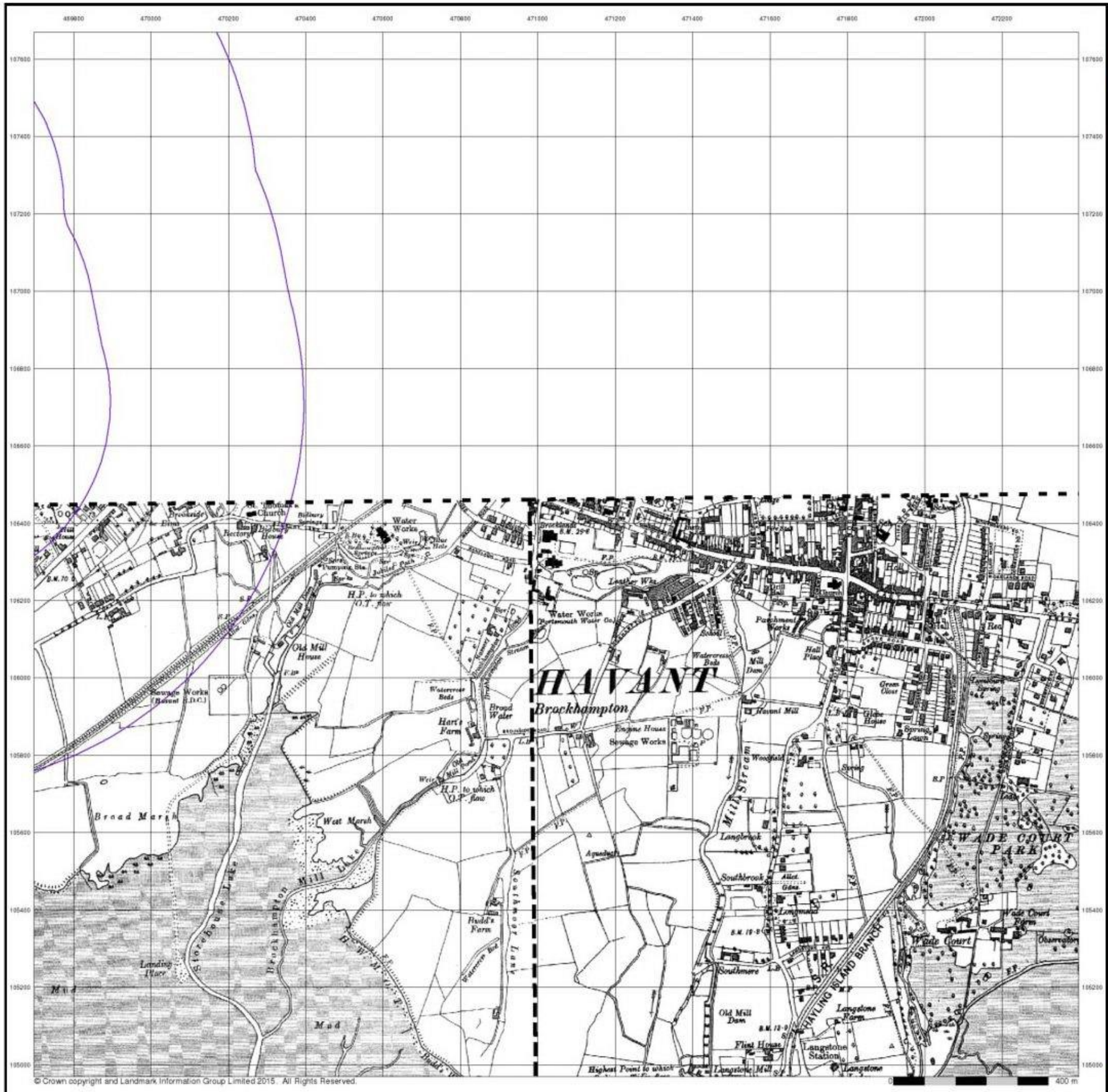
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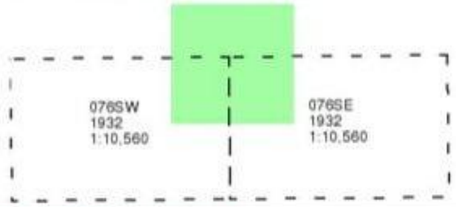
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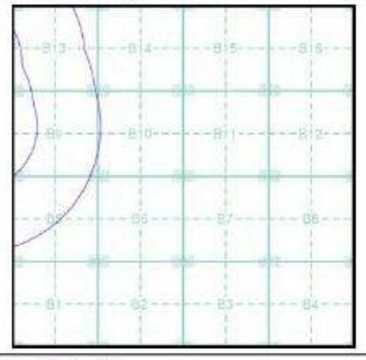
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps.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



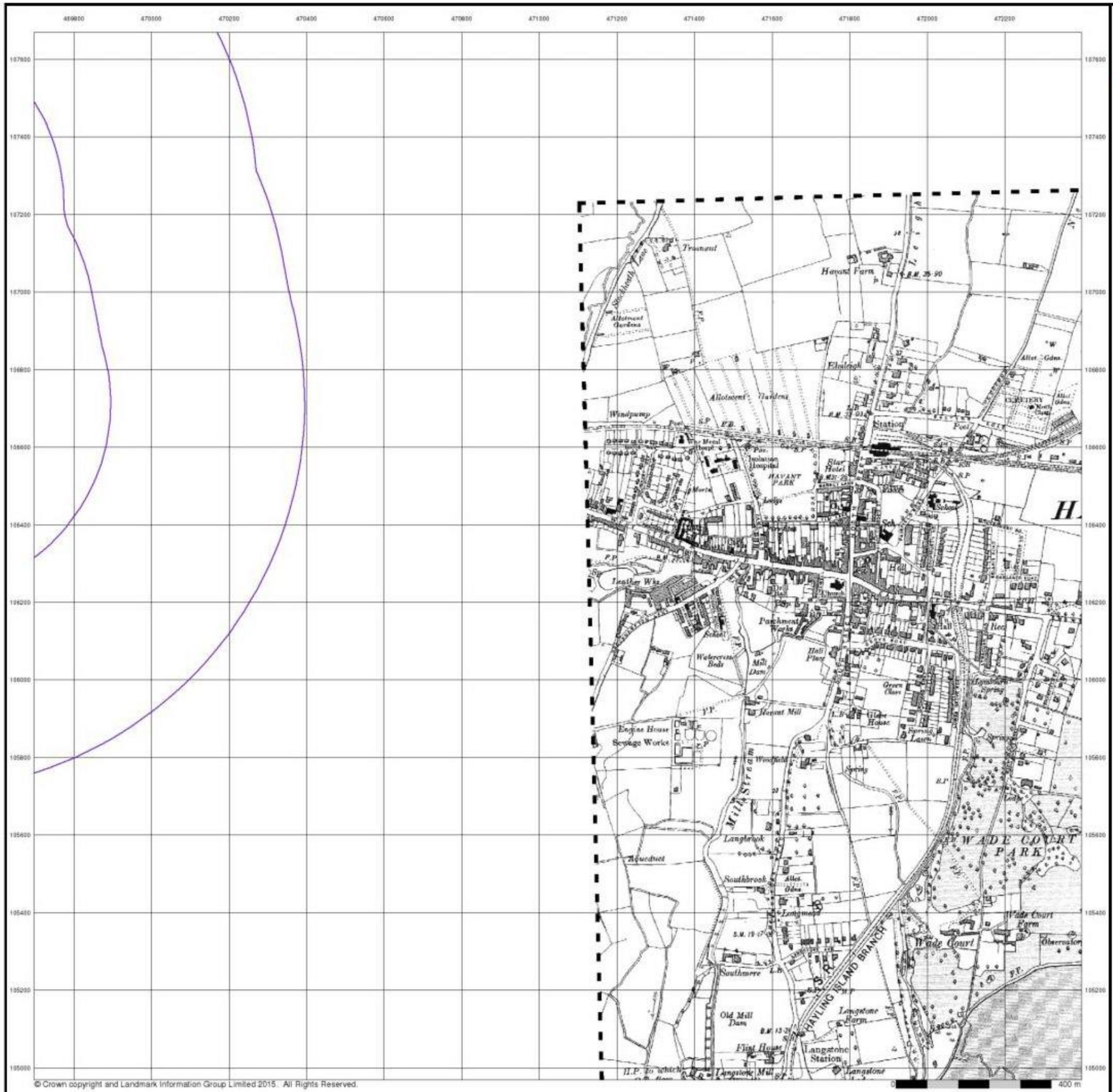
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Slice:	B
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

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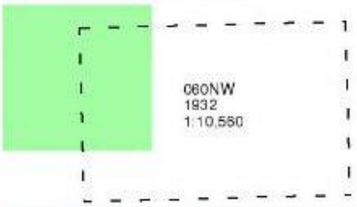
Sussex

Published 1932

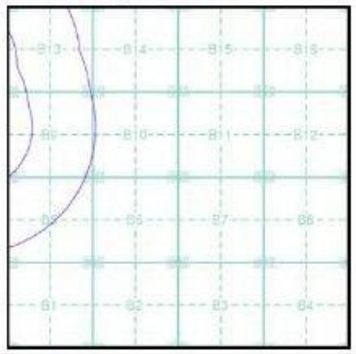
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Historical Map - Slice B



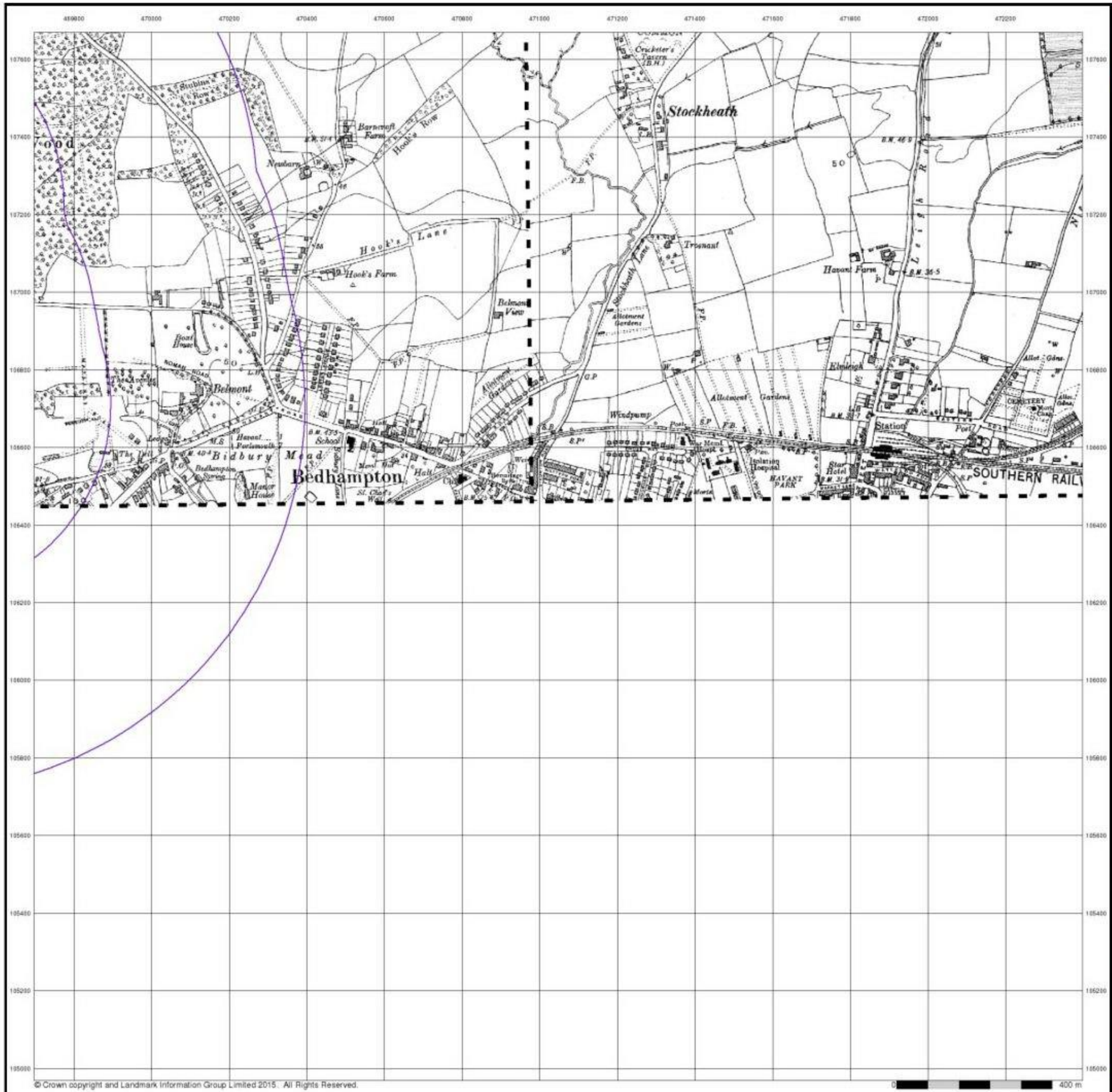
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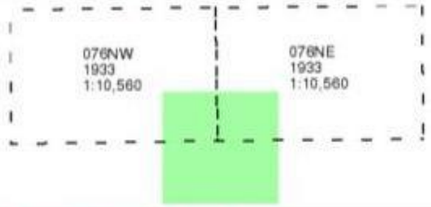
Hampshire & Isle Of Wight

Published 1933

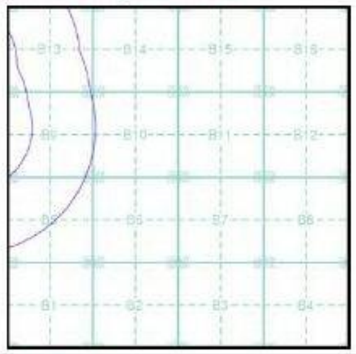
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Map Name(s) and Date(s)



Historical Map - Slice B



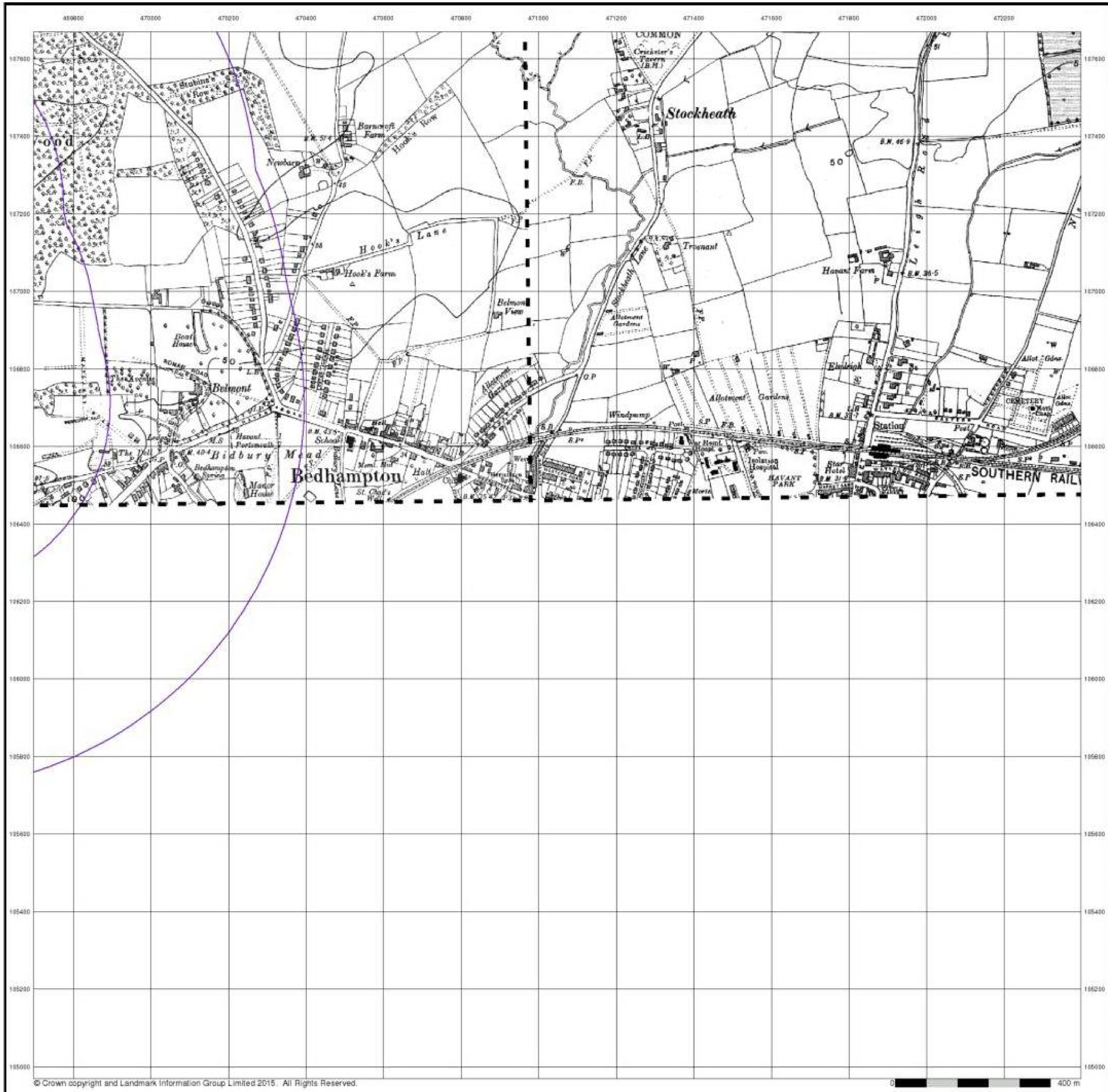
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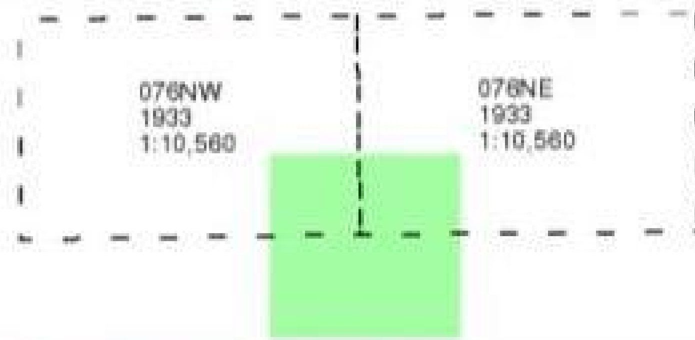
Hampshire & Isle Of Wight

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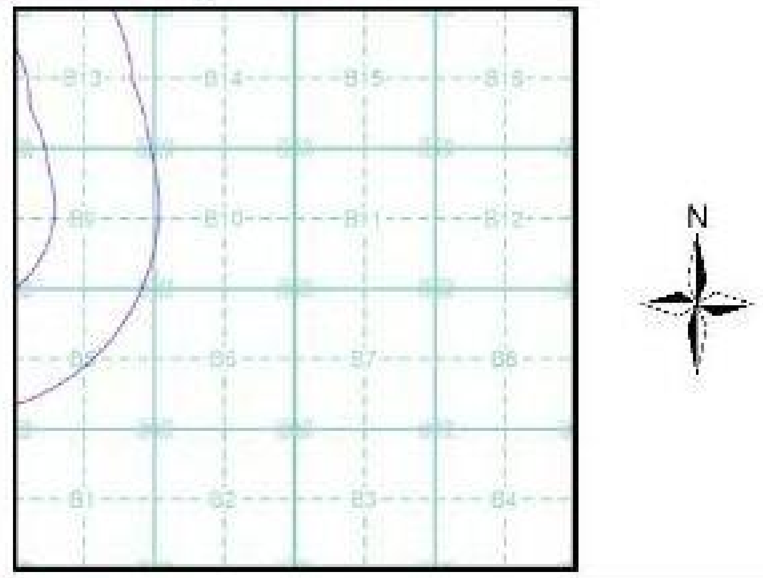
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice B



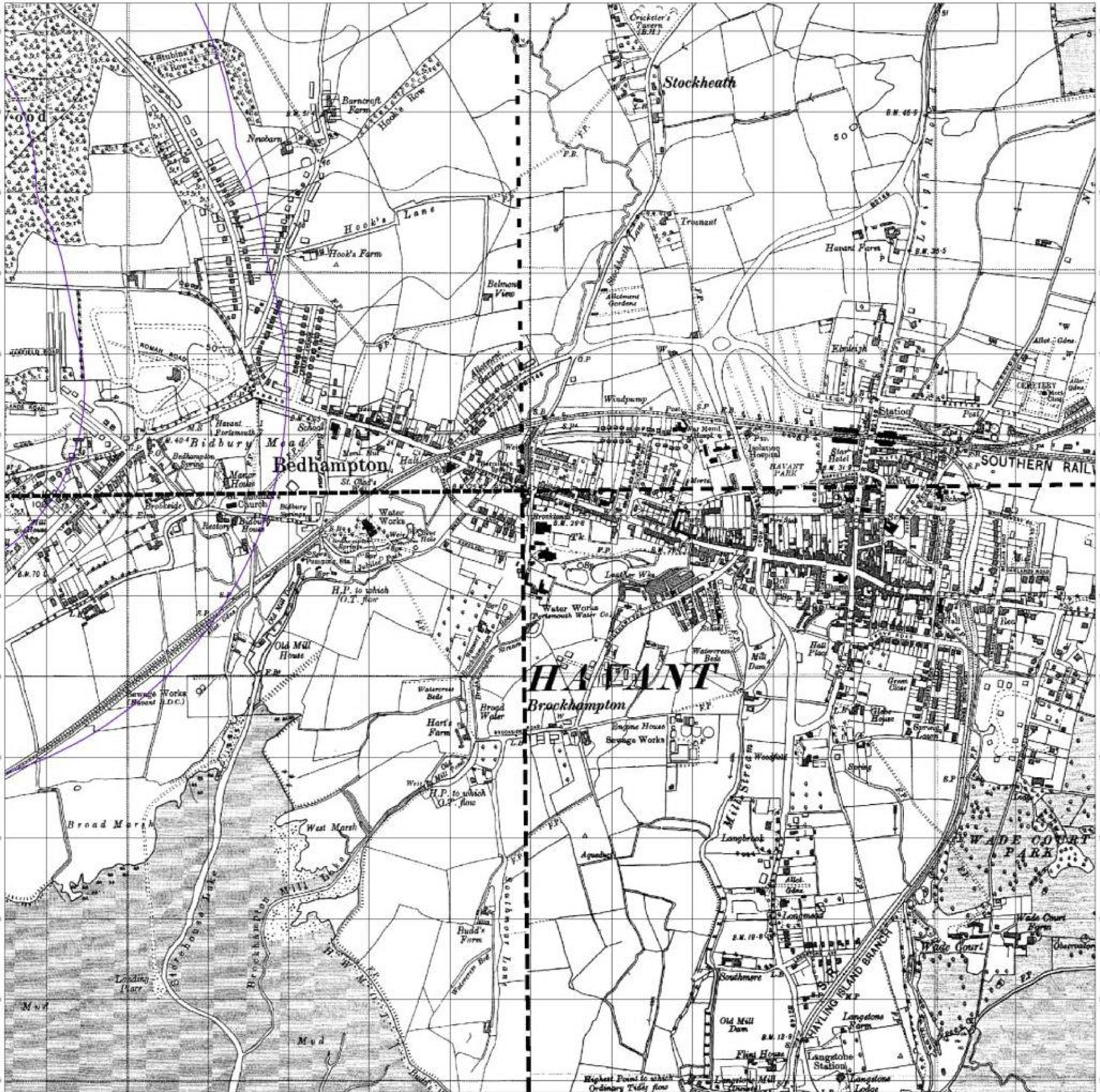
Order Details

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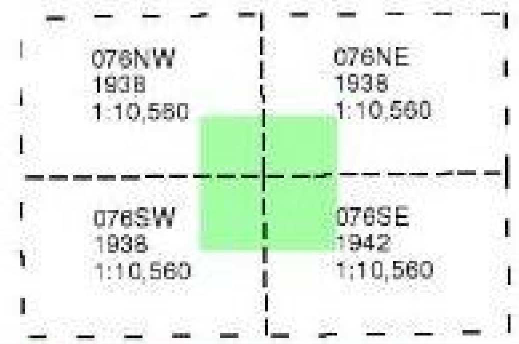
Hampshire & Isle Of Wight

Published 1938 - 1942

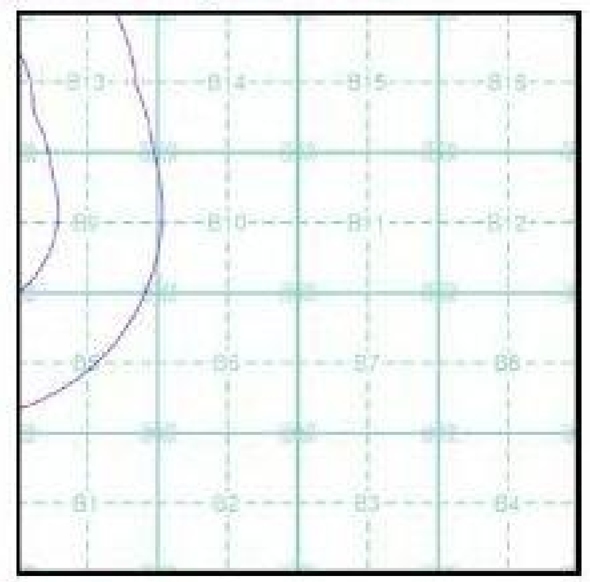
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice B



N

Order Details

Order Number:	92122794_1_1
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Slice:	B
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Ordnance Survey Plan

Published 1962 - 1963

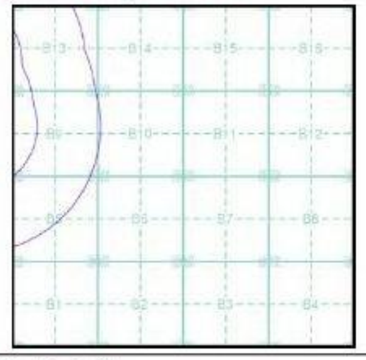
Source map scale - 1:10,000

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

Map Name(s) and Date(s)

SU60NE 1963 1:10,560	SU70NW 1963 1:10,560
SU60SE 1963 1:10,560	SU70SW 1962 1:10,560

Historical Map - Slice B



Order Details

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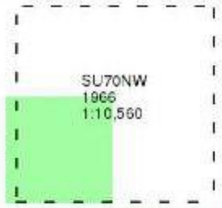
Ordnance Survey Plan

Published 1966

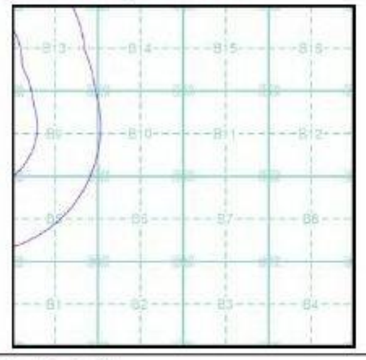
Source map scale - 1:10,000

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 B

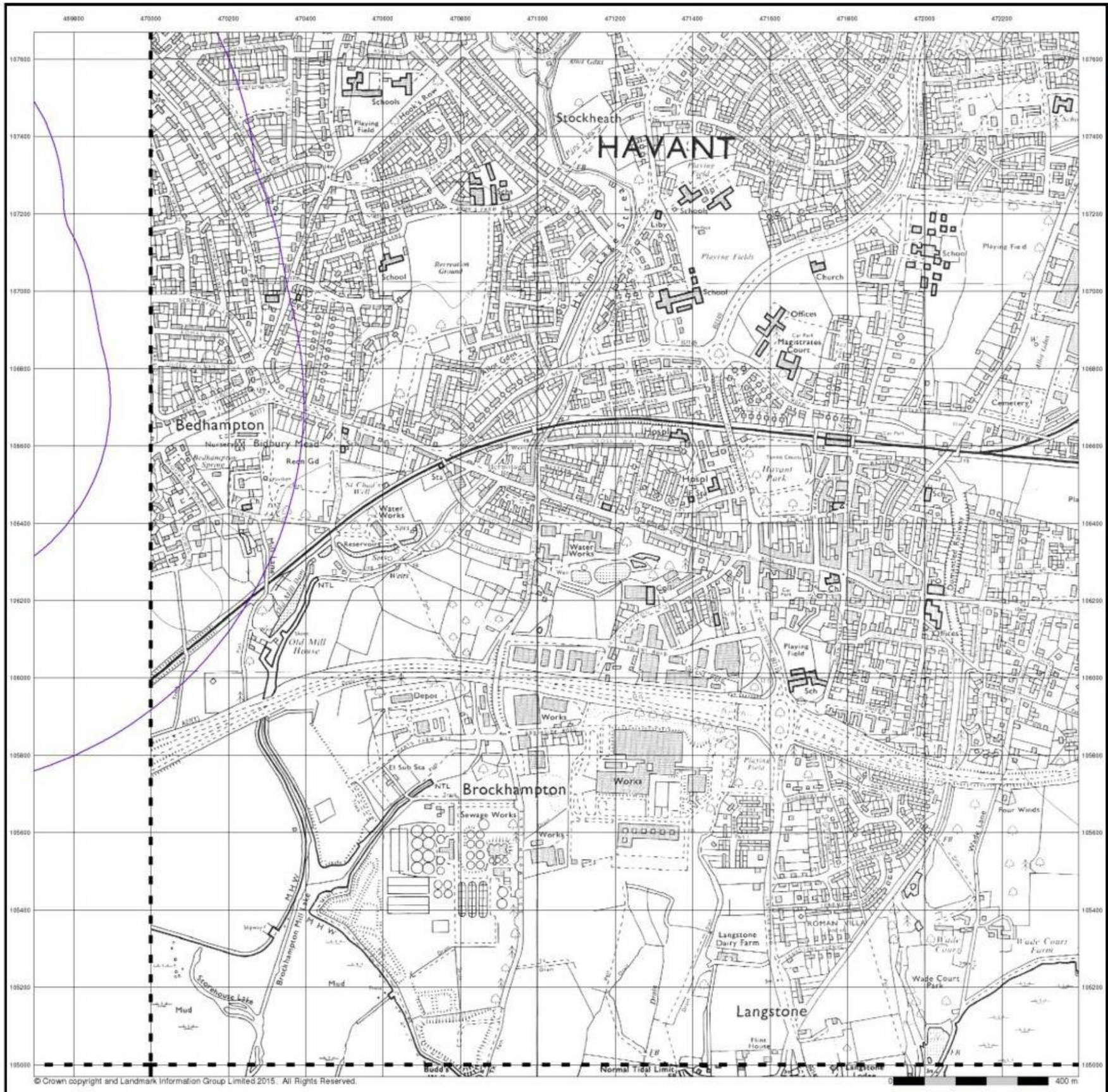


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Site Details

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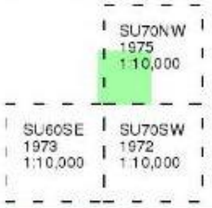
Ordnance Survey Plan

Published 1972 - 1975

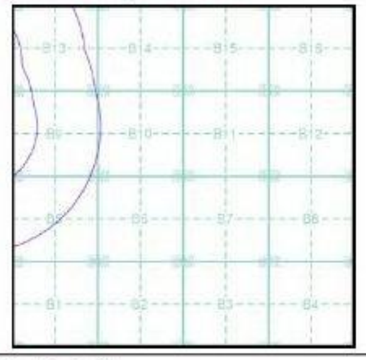
Source map scale - 1:10,000

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Map Name(s) and Date(s)



Historical Map - Slice B



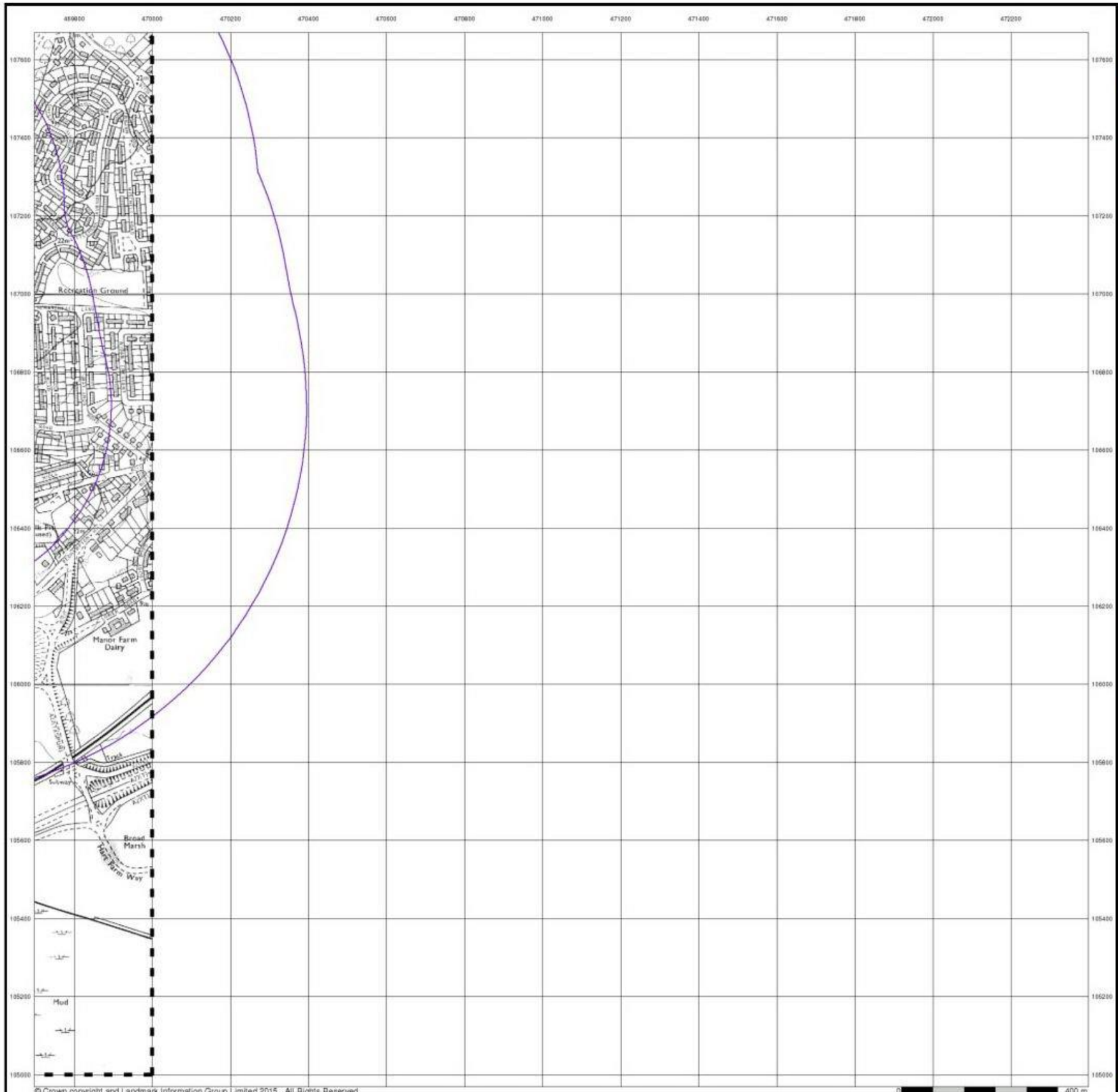
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Ordnance Survey Plan

Published 1982

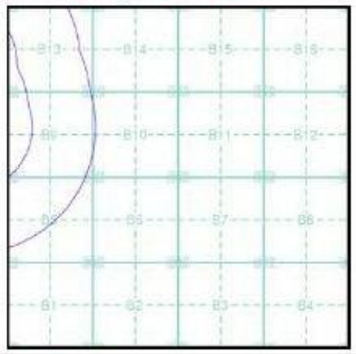
Source map scale - 1:10,000

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Map Name(s) and Date(s)



Historical Map - Slice B



Order Details

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Ordnance Survey Plan

Published 1990 - 1992

Source map scale - 1:10,000

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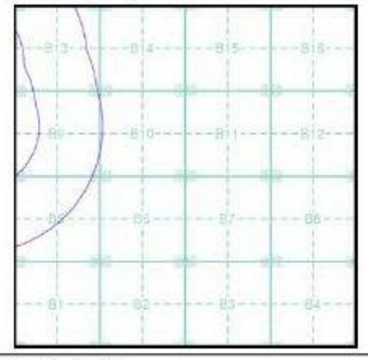
Map Name(s) and Date(s)

SU60NE 1991 1:10,000

SU70NW 1992 1:10,000

SU60SE 1990 1:10,000

Historical Map - Slice B



Order Details

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10k Raster Mapping

Published 2000

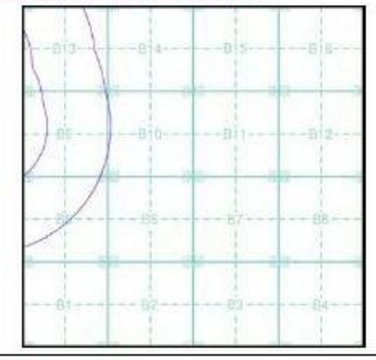
Source map scale - 1:10,000

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

Map Name(s) and Date(s)

SU60NE 2000 1:10,000	SU70NW 2000 1:10,000
SU60SE 2000 1:10,000	SU70SW 2000 1:10,000

Historical Map - Slice B



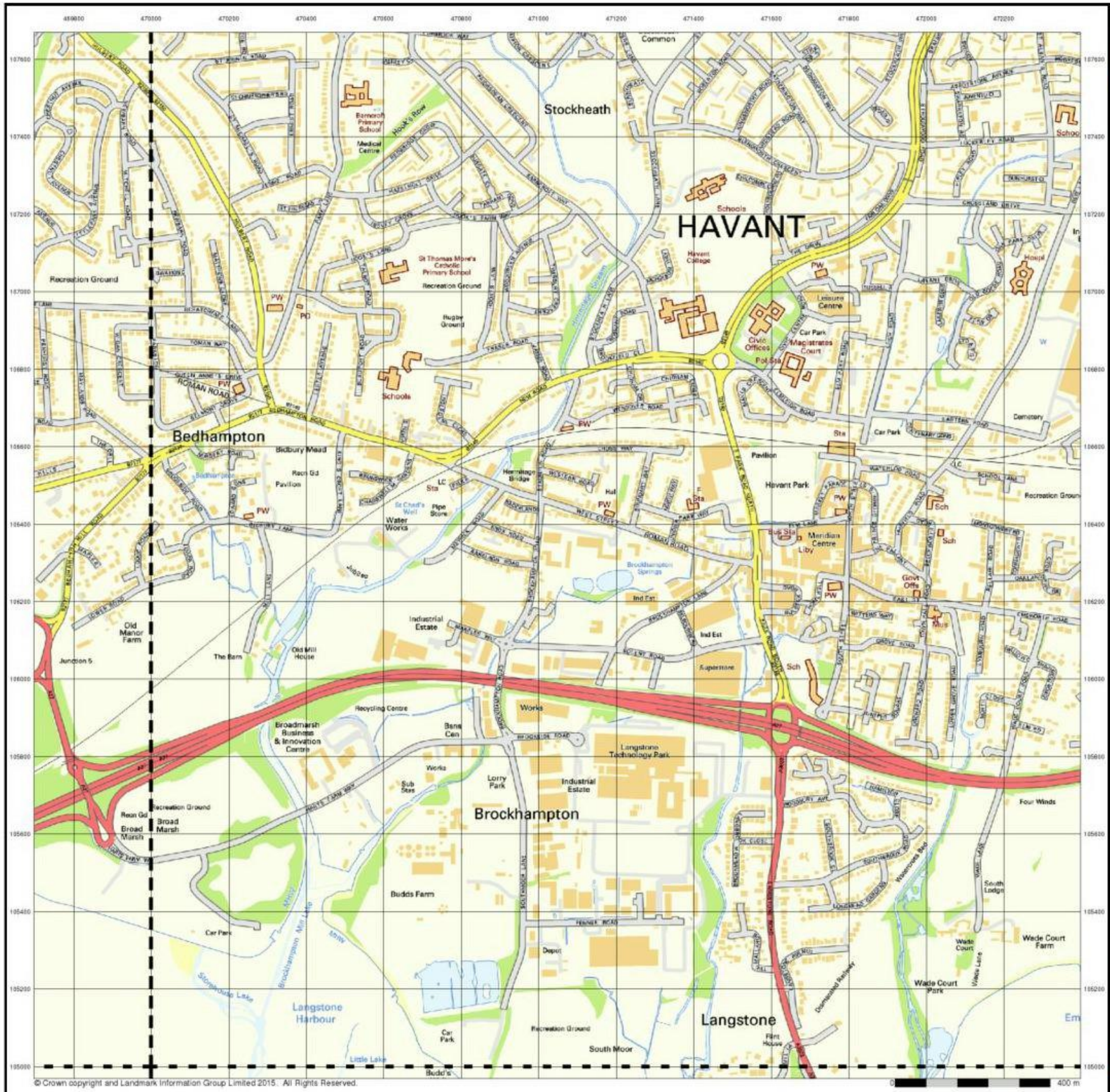
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Street View

Published 2016

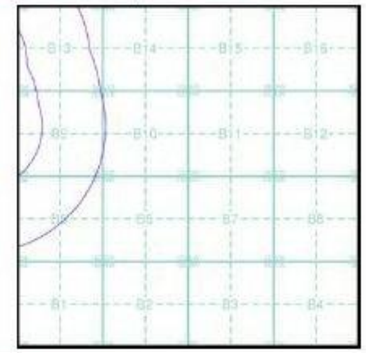
Source map scale - 1:10,000

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

Map Name(s) and Date(s)

SJ60NE 2016 1:10,000	SU70NW 2016 1:10,000
SJ60SE 2016 1:10,000	SU70SW 2016 1:10,000

Street View Map - Slice B



Order Details

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Datasheet

Order Details:

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92122794_1_1

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470000, 106780

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B

Site Area (Ha):
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Site Details:

Land off College Road
Purbrook
WATERLOOVILLE
Hampshire
PO7 8AA

Client Details:

Mr R Speight
RSK Environment Ltd
Unit 18
Basepoint Abbey Enterprise Centre
Premier Way
Romsey
Hampshire
SO51 9AQ

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Introduction

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

In 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.

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Radon Potential dataset Copyright Notice

Information supplied from a joint dataset compiled by The British Geological Survey and Public Health England.

Report Version v50.0

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 3				3
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 4				1
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 4				Yes
Pollution Incidents to Controlled Waters	pg 4				1
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality					
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions	pg 4				(*9)
Water Industry Act Referrals					
Groundwater Vulnerability	pg 6	Yes	n/a	n/a	n/a
Drift Deposits			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 6	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 7	Yes	n/a	n/a	n/a
Source Protection Zones	pg 7	2			
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
Detailed River Network Lines	pg 7		Yes	Yes	n/a
Detailed River Network Offline Drainage					n/a

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites	pg 8			1	
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Landfill Coverage	pg 8	2	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Registered Landfill Sites					
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					
Geological					
BGS 1:625,000 Solid Geology	pg 9	Yes	n/a	n/a	n/a
BGS Recorded Mineral Sites	pg 9			1	
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 9			2	
Non Coal Mining Areas of Great Britain	pg 9	Yes		n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 9	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 9	Yes	Yes	n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 10	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 10	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 10	Yes		n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Industrial Land Use					
Contemporary Trade Directory Entries	pg 11			2	12
Fuel Station Entries	pg 12				1
Gas Pipelines					
Underground Electrical Cables					
Sensitive Land Use					
Ancient Woodland	pg 13		5	1	3
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	pg 13	1			
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(NW)	0	1	469300 107200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(W)	0	1	469150 106850
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(W)	0	1	469050 106900
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(W)	0	1	469100 106900
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(W)	0	1	469400 106900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(W)	0	1	469100 106750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	B9NW (S)	0	1	469997 106700
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SW)	0	1	469450 106550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(W)	0	1	469400 106782
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(W)	0	1	469100 106700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(W)	0	1	469200 106700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(W)	5	1	469450 106750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(W)	15	1	469450 106782
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(W)	27	1	469200 106650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	B9SW (SW)	61	1	469850 106600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(W)	64	1	469300 106650
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(NW)	74	1	469550 107300
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(NW)	93	1	469200 107450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(W)	111	1	469400 106600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(W)	113	1	469450 106600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(W)	117	1	469250 106600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(NW)	129	1	469250 107450

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(NW)	176	1	469600 107200
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(NW)	193	1	469150 107550
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(NW)	197	1	469200 107550
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(NW)	200	1	469300 107500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	220	1	469500 106500
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SW)	225	1	469600 106550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NW)	238	1	469350 107500
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(NW)	243	1	469150 107600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NW)	246	1	469250 107600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	B9NW (N)	261	1	469997 106950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	262	1	469650 106550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B9SW (SW)	262	1	469850 106650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	263	1	469600 106500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NW)	280	1	469450 107650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	295	1	469650 106500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B9SW (SW)	302	1	469750 106550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NW)	308	1	469400 107550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NW)	319	1	469600 107450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NW)	341	1	469450 107600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(NW)	343	1	469100 107700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NW)	356	1	469600 107500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B13SW (NW)	365	1	469700 107150

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SW)	367	1	469500 106350
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	B13NW (N)	406	1	469850 107550
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SW)	411	1	469450 106300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	417	1	469500 106300
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SW)	424	1	469250 106250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NW)	427	1	469650 107500
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SW)	433	1	469050 106200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	441	1	469100 106200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	449	1	469350 106250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	453	1	469250 106200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	461	1	469450 106250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	483	1	469050 106150
1	**Discharge Consents** Operator: Southern Water Services Ltd (H) Property Type: Sewerage Network - Sewers - Water Company Location: Bedhampton Hill, Bedhampton Hampshire Authority: Environment Agency, Southern Region Catchment Area: Not Given Reference: A00315 Permit Version: 1 Effective Date: 1st April 1991 Issued Date: 1st April 1991 Revocation Date: 6th March 1996 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Saline Estuary Receiving Water: Saline Estuary **Status: Post National Rivers Authority Legislation where issue date > 31/08/1989** Positional Accuracy: Located by supplier to within 10m	B5NW (S)	600	2	469840 106310
2	**Discharge Consents** Operator: Dr F A Stowell Property Type: Undefined Or Other Location: Hulbert Road, Bedhampton Hampshire Authority: Environment Agency, Southern Region Catchment Area: Not Given Reference: H01000 Permit Version: 1 Effective Date: 13th April 1962 Issued Date: 13th April 1962 Revocation Date: 31st March 1997 Discharge Type: Non Water Company (Private) Sewage Discharge Environment: Freshwater Stream/River Receiving Water: Freshwater River **Status: Lapsed (under Environment Act 1995, Schedule 23)** Positional Accuracy: Located by supplier to within 10m	B13SW (N)	659	2	470000 107040

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	**Discharge Consents** Operator: Havant & Waterloo U.D.C. Property Type: Water Treatment Works Location: Bedhampton Storm Water Overflows, Storm Water Overflows, Bedhampton, Hampshire Authority: Environment Agency, Southern Region Catchment Area: Not Given Reference: H01485 Permit Version: 1 Effective Date: 12th October 1962 Issued Date: 12th October 1962 Revocation Date: 31st March 1997 Discharge Type: Unknown Discharge Environment: Freshwater Stream/River Receiving Water: Freshwater River **Status: Lapsed (under Environment Act 1995, Schedule 23)** Positional Accuracy: Located by supplier to within 100m	B13SE (N)	883	2	470170 107250
4	**Local Authority Pollution Prevention and Controls** Name: Little Park Service Station Location: Hulbert Road, BEDHAMPTON, Hampshire, PO9 Authority: Havant Borough Council, Environmental Health Department Permit Reference: 23 Dated: Not Supplied Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station **Status: Authorisation has varied** Positional Accuracy: Manually positioned to the road within the address or location	B13NW (N)	712	3	469858 107632
	Nearest Surface Water Feature	B9SE (S)	725	-	470089 106498
5	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Foul Sewer Location: West Street Bridge, Opposite Seward Rover Garage, BEDHAMPTON Authority: Environment Agency, Southern Region Pollutant: Crude Sewage Note: Sewage In Stream Incident Date: 26th March 1997 Incident Reference: 797160 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Plc Sewage Other Incident Severity: Category 1 - Major Incident Positional Accuracy: Located by supplier to within 100m	B5NW (S)	935	2	470001 106001
	Water Abstractions Operator: Portsmouth Water Ltd Licence Number: 11/42/36.2/1 Permit Version: 101 Location: Havant Ps Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: See Licence Map Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 11th June 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	B6NW (SE)	1172	2	470480 106270
	Water Abstractions Operator: Portsmouth Water Ltd Licence Number: 11/42/36.2/1 Permit Version: 102 Location: Havant Ps Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: See Licence Map Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 9th June 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	B6NW (SE)	1172	2	470480 106270

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Portsmouth Water Co Licence Number: 11/42/36.2/1 Permit Version: 100 Location: Havant Ps Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: See Licence Map Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 26th September 1977 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	B6NW (SE)	1172	2	470480 106270
	Water Abstractions Operator: Portsmouth Water Ltd Licence Number: 11/42/36.2/1 Permit Version: 101 Location: Bedhampton Ps Spring No 1 Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: See Licence Map Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 11th June 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	B10SW (SE)	1233	2	470580 106370
	Water Abstractions Operator: Portsmouth Water Ltd Licence Number: 11/42/36.2/1 Permit Version: 102 Location: Bedhampton Ps Spring No 1 Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: See Licence Map Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 9th June 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	B10SW (SE)	1233	2	470580 106370
	Water Abstractions Operator: Portsmouth Water Co Licence Number: 11/42/36.2/1 Permit Version: 100 Location: Bedhampton Ps Spring No 1 Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 164565 Yearly Rate (m3): 42732400 Details: See Licence Map Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 26th September 1977 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	B10SW (SE)	1233	2	470580 106370

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Portsmouth Water Ltd Licence Number: 11/42/36.2/1 Permit Version: 101 Location: Bedhampton Ps Spring No 2 Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: See Licence Map Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 11th June 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	B10SE (E)	1661	2	471020 106370
	Water Abstractions Operator: Portsmouth Water Ltd Licence Number: 11/42/36.2/1 Permit Version: 102 Location: Bedhampton Ps Spring No 2 Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: See Licence Map Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 9th June 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	B10SE (E)	1661	2	471020 106370
	Water Abstractions Operator: Portsmouth Water Co Licence Number: 11/42/36.2/1 Permit Version: 100 Location: Bedhampton Ps Spring No 2 Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: See Licence Map Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 26th September 1977 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	B10SE (E)	1661	2	471020 106370
	Groundwater Vulnerability Soil Classification: Not classified Map Sheet: Sheet 52 Southern Hampshire Scale: 1:100,000	B9NW (N)	0	2	469997 106812
	Groundwater Vulnerability Soil Classification: Soils of Low Leaching Potential - Soils in which pollutants are unlikely to penetrate the soil layer because water movement is largely horizontal or they have large ability to attenuate diffuse pollutants. Lateral flow from these soils contribute to groundwater recharge elsewhere in the catchment Map Sheet: Sheet 52 Southern Hampshire Scale: 1:100,000	(W)	0	2	469463 106804
	Groundwater Vulnerability Soil Classification: Soils of Low Leaching Potential - Soils in which pollutants are unlikely to penetrate the soil layer because water movement is largely horizontal or they have large ability to attenuate diffuse pollutants. Lateral flow from these soils contribute to groundwater recharge elsewhere in the catchment Map Sheet: Sheet 52 Southern Hampshire Scale: 1:100,000	(NW)	0	2	469606 107336
	Drift Deposits None				
	Bedrock Aquifer Designations Aquifer Designation: Principal Aquifer	B9SW (SW)	0	1	469866 106570

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - A	B9NW (S)	0	1	469958 106670
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - A	(NW)	0	1	469282 107183
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - A	B9NW (N)	0	1	469997 106897
	Bedrock Aquifer Designations Aquifer Designation: Unproductive Strata	B9NW (N)	0	1	469997 106919
	Bedrock Aquifer Designations Aquifer Designation: Unproductive Strata	B9NW (SW)	0	1	469997 106782
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	B9NW (S)	0	1	469968 106706
6	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone Ic (Inner Protection Zone): Travel time of 50 days or less to the groundwater source - subsurface activity only.	B9NW (SW)	0	2	469997 106782
7	**Source Protection Zones** Name: Bedhampton & Havant Springs Source: Environment Agency, Head Office Reference: Su049 Type: Zone I (Inner Protection Zone): Travel time of 50 days or less to the groundwater source.	B9SW (SW)	0	2	469901 106604
	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				
8	**Detailed River Network Lines** River Type: Extended Culvert (greater than 50m) River Name: Not Supplied Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Below Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Bedhampton Brook Water Course Reference: S535	B9NW (SW)	184	2	469932 106685
9	**Detailed River Network Lines** River Type: Extended Culvert (greater than 50m) River Name: Not Supplied Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Below Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	B9NW (SW)	303	2	469908 106721
	Detailed River Network Offline Drainage None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
10	**Historical Landfill Sites** Licence Holder: Gleeson Civil Engineering Limited Location: Bedhampton, Hampshire Name: Scratchface Lane Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD20966 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Inert Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: Not Supplied Other Ref: FHA16, 13/4	B9NW (N)	357	2	469978 106964
	Local Authority Landfill Coverage Name: Havant Borough Council - Has supplied landfill data		0	3	469997 106782
	Local Authority Landfill Coverage Name: Hampshire County Council - Had landfill data but passed it to the relevant environment agency		0	4	469997 106782

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Thames Group	B9NW (SW)	0	1	469997 106782
	BGS 1:625,000 Solid Geology Description: Lambeth Group	B9NW (S)	0	1	469997 106746
11	**BGS Recorded Mineral Sites** Site Name: Belmont Farm Chalk Pit Location: , Bedhampton, Havant, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 163091 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Cretaceous Geology: Portsdown Chalk Formation Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	B9SW (SW)	483	1	469853 106560
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Natural Cavities Easting: 469700 Northing: 106500 Distance: 372 Quadrant Reference: B9 Quadrant Reference: SW Bearing Ref: SW Cavity Type: Solution Pipe Solid Geology Detail: Chalk Group Superficial Geology Detail: No Details	B9SW (SW)	372	5	469700 106500
	Natural Cavities Easting: 469800 Northing: 106550 Distance: 436 Quadrant Reference: B9 Quadrant Reference: SW Bearing Ref: SW Cavity Type: Solution Pipe x 3 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: Head	B9SW (SW)	436	5	469800 106550
	Non Coal Mining Areas of Great Britain Risk: Rare Source: British Geological Survey, National Geoscience Information Service	B9NW (S)	0	1	469958 106670
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B9NW (SW)	0	1	469997 106782
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B9NW (SW)	0	1	469997 106782
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	B9SW (SW)	0	1	469751 106609
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B9NW (SW)	0	1	469997 106782
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	B9SW (SW)	0	1	469908 106584
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B9SW (SW)	26	1	469745 106514
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B9SW (SW)	150	1	469817 106475
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B9SW (SW)	234	1	469747 106576

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B9NW (SW)	0	1	469997 106782
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B9SW (SW)	25	1	469866 106570
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	B9NW (N)	0	1	469997 106897
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B9NW (S)	0	1	469968 106706
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B9NW (SW)	0	1	469997 106782
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B9NW (N)	0	1	469997 106919
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B9SW (SW)	25	1	469866 106570
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B9NW (N)	180	1	470000 106959
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B9SW (SW)	0	1	469751 106609
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B9NW (N)	0	1	469997 106897
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	B9NW (N)	0	1	469997 106919
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	B9NW (SW)	0	1	469997 106782
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	B9NW (S)	0	1	469958 106670
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B9SW (SW)	25	1	469866 106570
	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	B9NW (SW)	0	1	469997 106782
	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	B9NW (SW)	0	1	469997 106782

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
12	**Contemporary Trade Directory Entries** Name: Budgens Vehical Movements Location: 42, Penhurst Road, Havant, Hampshire, PO9 3NX Classification: Breakdown and Recovery **Status: Inactive** Positional Accuracy: Automatically positioned to the address	B9NW (W)	369	-	469741 106851
13	**Contemporary Trade Directory Entries** Name: Warrior Animal Feeds Ltd Location: 2, Brooklands Road, Havant, Hampshire, PO9 3NS Classification: Pet Foods & Animal Feeds **Status: Inactive** Positional Accuracy: Automatically positioned to the address	B9NW (SW)	381	-	469775 106684
14	**Contemporary Trade Directory Entries** Name: Pure Chic Interiors Location: Bedhampton Hill, Havant, Hampshire, PO9 3JW Classification: Furniture - Repairing & Restoring **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	B9SW (SW)	547	-	469824 106373
15	**Contemporary Trade Directory Entries** Name: Hmd Domestics Location: 28, Littlepark Avenue, Havant, Hampshire, PO9 3QY Classification: Domestic Appliances - Servicing, Repairs & Parts **Status: Inactive** Positional Accuracy: Automatically positioned to the address	B13SW (N)	570	-	469839 107299
16	**Contemporary Trade Directory Entries** Name: J W Blunden Location: 14, Park Side, Havant, Hampshire, PO9 3PL Classification: Coal & Smokeless Fuel Merchants & Distributors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	B9NW (N)	610	-	469996 106818
16	**Contemporary Trade Directory Entries** Name: Spx Location: 13, Park Side, Havant, Hampshire, PO9 3PJ Classification: Air Compressors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	B9NW (NE)	646	-	470028 106841
17	**Contemporary Trade Directory Entries** Name: Microsport Ski Simulators Ltd Location: 21, Lodge Road, Havant, Hampshire, PO9 3LL Classification: Sports Equipment Manufacturers & Distributors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	B9SW (S)	670	-	469973 106375
18	**Contemporary Trade Directory Entries** Name: Sparshatts Of Havant Location: Hulbert Road, Havant, Hampshire, PO9 3RH Classification: Car Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	B13NW (N)	670	-	469791 107650
18	**Contemporary Trade Directory Entries** Name: Victory Vauxhall Location: Hulbert Road, Havant, Hampshire, PO9 3RH Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	B13NW (N)	674	-	469822 107617
19	**Contemporary Trade Directory Entries** Name: Wilson Flyer Location: 26, Scratchface Lane, Havant, Hampshire, PO9 3NG Classification: Boatbuilders & Repairers **Status: Active** Positional Accuracy: Automatically positioned to the address	B9NW (N)	673	-	470027 106974
20	**Contemporary Trade Directory Entries** Name: Diverse Cleaning Location: 76, Lower Road, Havant, Hampshire, PO9 3LJ Classification: Commercial Cleaning Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	B5NW (S)	687	-	469799 106157
21	**Contemporary Trade Directory Entries** Name: Ian Golds Tackle Developments Ltd Location: 4, Scratchface Lane, Havant, Hampshire, PO9 3NG Classification: Fishing & Angling Equipment - Manufacturers & Distributors **Status: Active** Positional Accuracy: Automatically positioned to the address	B9NE (NE)	808	-	470167 106965

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
22	**Contemporary Trade Directory Entries** Name: J Price & Son Location: 108, Bedhampton Road, Havant, Hampshire, PO9 3EZ Classification: Road Haulage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	B9NE (E)	951	-	470346 106731
23	**Contemporary Trade Directory Entries** Name: Sue'S Ace Cleaning Team Ltd Location: 34, St. Christophers Road, Havant, Hampshire, PO9 3TP Classification: Commercial Cleaning Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	B13NE (N)	997	-	470227 107518
24	**Fuel Station Entries** Name: Victory Garage Location: Hulbert Road, Bedhampton, HAVANT, Hampshire, PO9 3RH Brand: Texaco Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Automatically positioned to the address	B13NW (N)	671	-	469822 107612

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
25	**Ancient Woodland** Name: Not Supplied Reference: 1487521 Area(m²): 49712.64 Type: Ancient and Semi-Natural Woodland	(NW)	6	6	469280 107239
26	**Ancient Woodland** Name: Not Supplied Reference: 1488333 Area(m²): 15356.02 Type: Ancient and Semi-Natural Woodland	(NW)	72	6	469399 107122
27	**Ancient Woodland** Name: Not Supplied Reference: 1489282 Area(m²): 32441.88 Type: Plantation on Ancient Woodland	(NW)	110	6	469534 106978
28	**Ancient Woodland** Name: Not Supplied Reference: 1487374 Area(m²): 20019.65 Type: Plantation on Ancient Woodland	(NW)	182	6	469111 107543
29	**Ancient Woodland** Name: Not Supplied Reference: 1489389 Area(m²): 11336.1 Type: Ancient and Semi-Natural Woodland	(NW)	241	6	469583 107203
30	**Ancient Woodland** Name: Not Supplied Reference: 1489383 Area(m²): 68501.86 Type: Ancient and Semi-Natural Woodland	(NW)	334	6	469033 107682
31	**Ancient Woodland** Name: Not Supplied Reference: 1488854 Area(m²): 4580.05 Type: Plantation on Ancient Woodland	(NW)	581	6	469103 107961
32	**Ancient Woodland** Name: Not Supplied Reference: 1489661 Area(m²): 4918.42 Type: Plantation on Ancient Woodland	(N)	911	6	469570 108165
33	**Ancient Woodland** Name: Not Supplied Reference: 1488487 Area(m²): 6374.51 Type: Ancient and Semi-Natural Woodland	(N)	988	6	469602 108216
34	**Nitrate Vulnerable Zones** Name: Not Supplied Description: Eutrophic Water Source: Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	B9NW (SW)	0	7	469997 106782

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Data Currency

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Havant Borough Council - Environmental Health Department	January 2015	Annual Rolling Update
Chichester District Council - Environmental Health Department	July 2013	Annual Rolling Update
Discharge Consents		
Environment Agency - Southern Region	April 2016	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Southern Region	March 2013	As notified
Integrated Pollution Controls		
Environment Agency - Southern Region	October 2008	Not Applicable
Integrated Pollution Prevention And Control		
Environment Agency - Southern Region	April 2016	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Havant Borough Council - Environmental Health Department	December 2015	Annual Rolling Update
Chichester District Council - Environmental Health Department	October 2014	Annual Rolling Update
Local Authority Pollution Prevention and Controls		
Havant Borough Council - Environmental Health Department	December 2015	Annual Rolling Update
Chichester District Council - Environmental Health Department	October 2014	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
Havant Borough Council - Environmental Health Department	December 2015	Annual Rolling Update
Chichester District Council - Environmental Health Department	October 2014	Annual Rolling Update
Nearest Surface Water Feature		
Ordnance Survey	July 2012	Quarterly
Pollution Incidents to Controlled Waters		
Environment Agency - Southern Region	December 1999	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - Southern Region	March 2013	As notified
Prosecutions Relating to Controlled Waters		
Environment Agency - Southern Region	March 2013	As notified
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 - Southern Region - Hampshire and Isle of Wight Area Office	April 2016	Quarterly
Environment Agency - Southern Region - Solent and South Downs	April 2016	Quarterly
Environment Agency - Southern Region - Sussex Area	April 2016	Quarterly
Water Abstractions		
Environment Agency - Southern Region	April 2016	Quarterly
Water Industry Act Referrals		
Environment Agency - Southern Region	April 2016	Quarterly
Groundwater Vulnerability		
Environment Agency - Head Office	April 2015	Not Applicable
Drift Deposits		
Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations		
British Geological Survey - National Geoscience Information Service	August 2015	As notified
Superficial Aquifer Designations		
British Geological Survey - National Geoscience Information Service	August 2015	As notified

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Data Currency

Agency & Hydrological	Version	Update Cycle
Source Protection Zones		
Environment Agency - Head Office	April 2016	Quarterly
Extreme Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	February 2016	Quarterly
Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	February 2016	Quarterly
Areas Benefiting from Flood Defences		
Environment Agency - Head Office	February 2016	Quarterly
Flood Water Storage Areas		
Environment Agency - Head Office	February 2016	Quarterly
Flood Defences		
Environment Agency - Head Office	February 2016	Quarterly
Detailed River Network Lines		
Environment Agency - Head Office	March 2012	Annually
Detailed River Network Offline Drainage		
Environment Agency - Head Office	March 2012	Annually
BGS Groundwater Flooding Susceptibility		
British Geological Survey - National Geoscience Information Service	May 2013	Annually
Waste	**Version**	**Update Cycle**
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites		
Environment Agency - Head Office	May 2016	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Southern Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - Southern Region - Hampshire and Isle of Wight Area Office	May 2016	Quarterly
Environment Agency - Southern Region - Solent and South Downs	May 2016	Quarterly
Environment Agency - Southern Region - Sussex Area	May 2016	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - Southern Region - Hampshire and Isle of Wight Area Office	April 2016	Quarterly
Environment Agency - Southern Region - Solent and South Downs	April 2016	Quarterly
Environment Agency - Southern Region - Sussex Area	April 2016	Quarterly
Local Authority Landfill Coverage		
Chichester District Council - Environmental Health Department	May 2000	Not Applicable
Hampshire County Council - Minerals and Waste Planning	May 2000	Not Applicable
Havant Borough Council - Environmental Health Department	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Chichester District Council - Environmental Health Department	May 2000	Not Applicable
Hampshire County Council - Minerals and Waste Planning	May 2000	Not Applicable
Havant Borough Council - Environmental Health Department	May 2000	Not Applicable
Registered Landfill Sites		
Environment Agency - Southern Region - Hampshire Area	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - Southern Region - Hampshire Area	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - Southern Region - Hampshire Area	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable

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Data Currency

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	February 2016	Bi-Annually
Explosive Sites		
Health and Safety Executive	February 2016	Bi-Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
Chichester District Council - Planning Department	February 2016	Annual Rolling Update
Hampshire County Council - Minerals and Waste Planning	February 2016	Annual Rolling Update
Havant Borough Council - Commercial Team	February 2016	Annual Rolling Update
Planning Hazardous Substance Consents		
Chichester District Council - Planning Department	February 2016	Annual Rolling Update
Hampshire County Council - Minerals and Waste Planning	February 2016	Annual Rolling Update
Havant Borough Council - Commercial Team	February 2016	Annual Rolling Update
Geological	**Version**	**Update Cycle**
BGS 1:625,000 Solid Geology		
British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Recorded Mineral Sites		
British Geological Survey - National Geoscience Information Service	May 2016	Bi-Annually
Brine Compensation Area		
Cheshire Brine Subsidence Compensation Board	August 2011	Not Applicable
Coal Mining Affected Areas		
The Coal Authority - Property Searches	March 2014	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	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Compressible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Ground Dissolution Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Landslide Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Running Sand Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	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

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Data Currency

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	June 2016	Quarterly
Fuel Station Entries Catalist Ltd - Experian	July 2016	Quarterly
Gas Pipelines National Grid	July 2014	Quarterly
Underground Electrical Cables National Grid	January 2016	Bi-Annually
Sensitive Land Use	**Version**	**Update Cycle**
Ancient Woodland Natural England	June 2015	Bi-Annually
Areas of Outstanding Natural Beauty Natural England	April 2016	Bi-Annually
Environmentally Sensitive Areas Natural England	April 2016	Annually
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Natural England	April 2016	Bi-Annually
Marine Nature Reserves Natural England	April 2016	Bi-Annually
National Nature Reserves Natural England	April 2016	Bi-Annually
National Parks Natural England	March 2016	Bi-Annually
Nitrate Sensitive Areas Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	April 2016	Not Applicable
Nitrate Vulnerable Zones Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	October 2015	Annually
Ramsar Sites Natural England	April 2016	Bi-Annually
Sites of Special Scientific Interest Natural England	April 2016	Bi-Annually
Special Areas of Conservation Natural England	April 2016	Bi-Annually
Special Protection Areas Natural England	April 2016	Bi-Annually
World Heritage Sites English Heritage - National Monument Record Centre	September 2015	Bi-Annually

Data Suppliers

A selection of organisations who provide data within this report

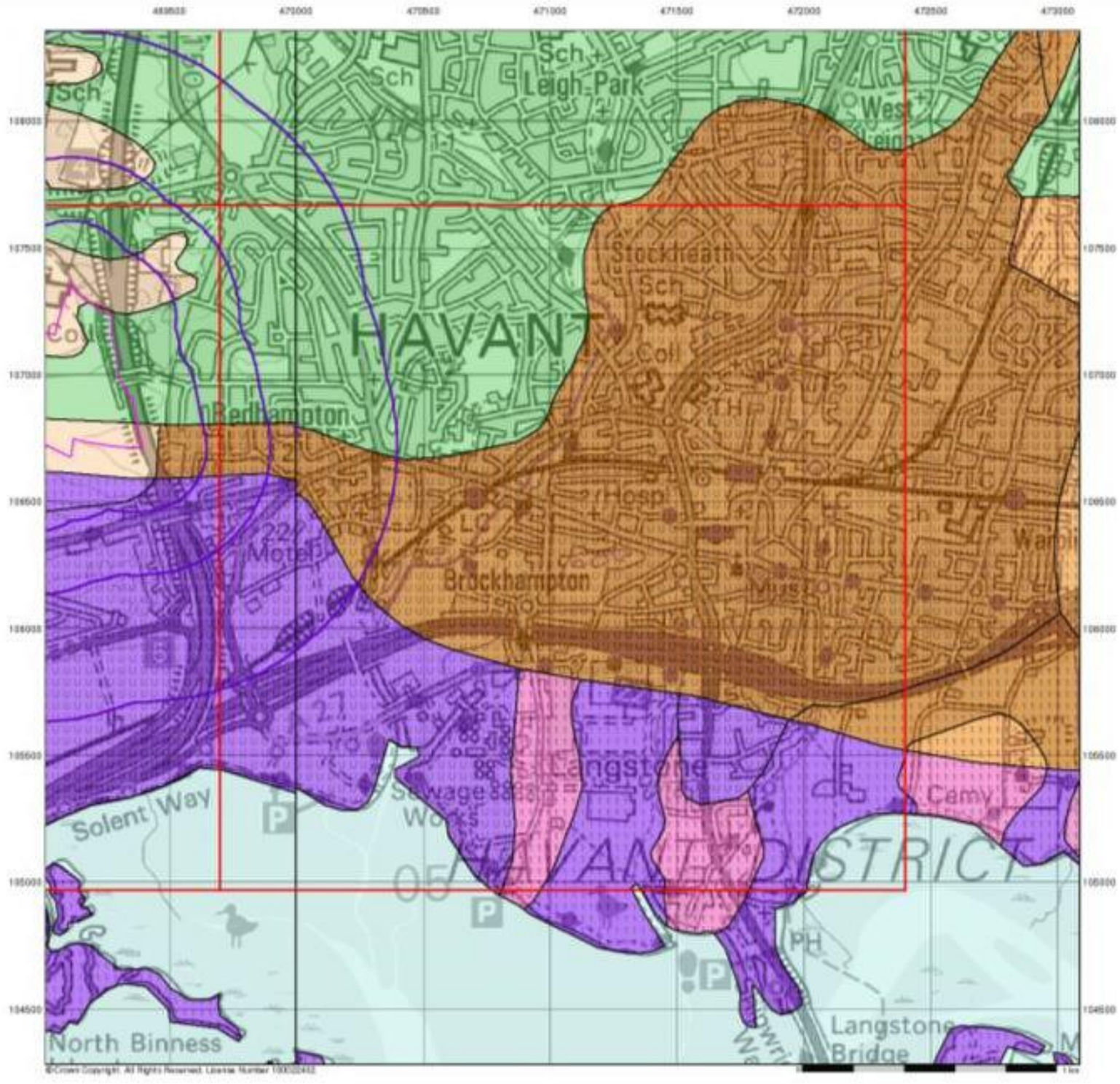
Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	
Centre for Ecology and Hydrology	
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Peter Brett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

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Useful Contacts

Contact	Name and Address	Contact Details
1	**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
2	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	**Havant Borough Council - Environmental Health Department** Public Service PLaza, Civic Centre Road, Havant, Hampshire, PO9 2AX	Telephone: 023 9244 6677 Email: env.services@havant.gov.uk Website: www.havant.gov.uk
4	**Hampshire County Council - Minerals and Waste Planning** Room 130, Ashburton Court West, The Castle, Winchester, Hampshire, SO23 8UD	Telephone: 01962 841841 Fax: 01962 847055 Website: www.hants.gov.uk
5	**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
6	**Natural England** County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
7	**Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)** Government Buildings, Otley Road, Lawnswood, Leeds, West Yorkshire, LS16 5QT	Telephone: 0113 2613333 Fax: 0113 230 0879
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

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



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Groundwater Vulnerability

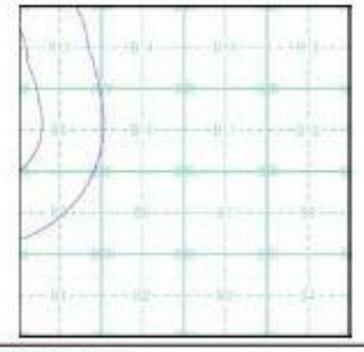
General

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

Agency and Hydrological

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 B

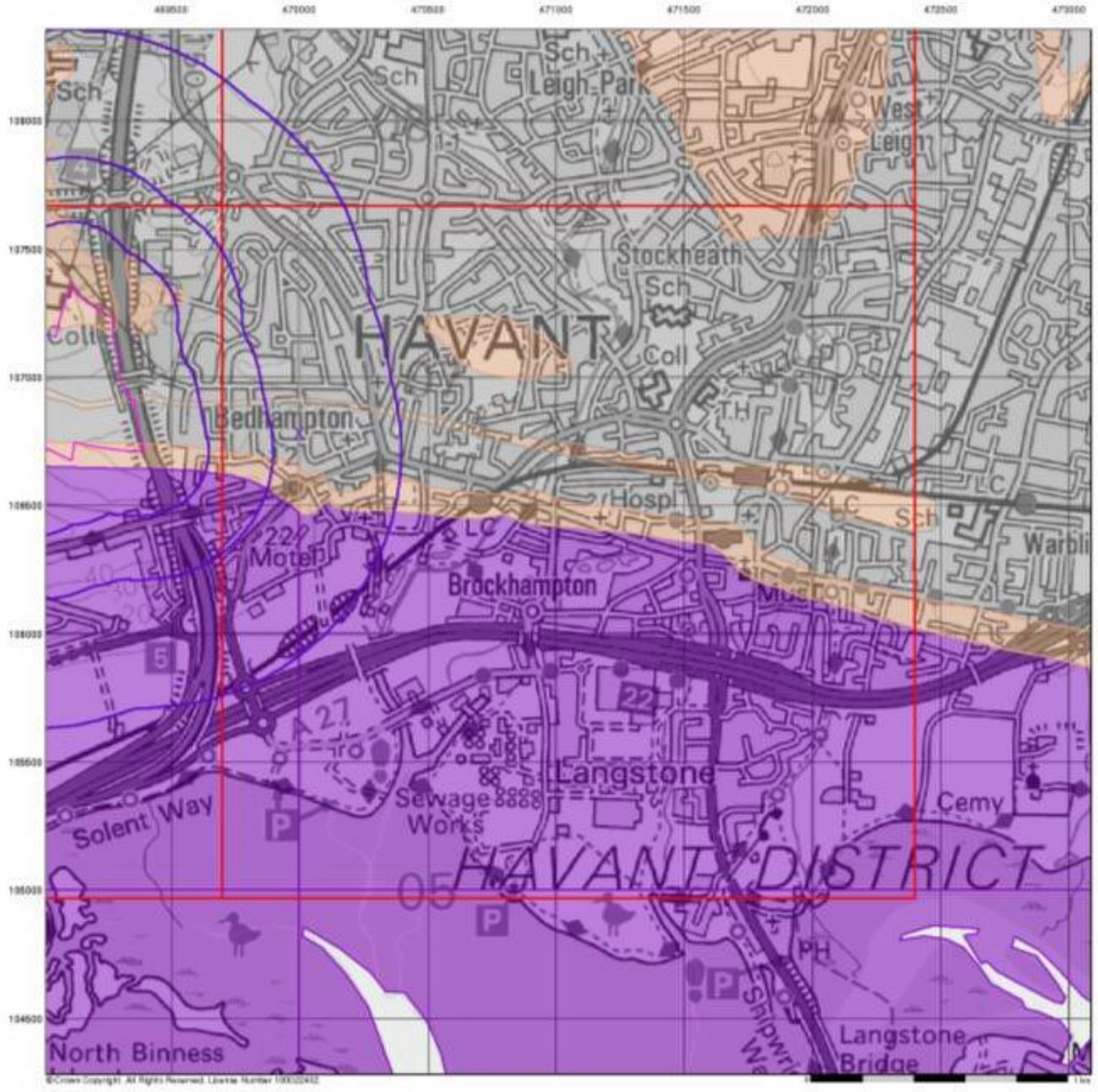


Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	470000, 106780
Slice:	B
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



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Bedrock Aquifer Designation

General

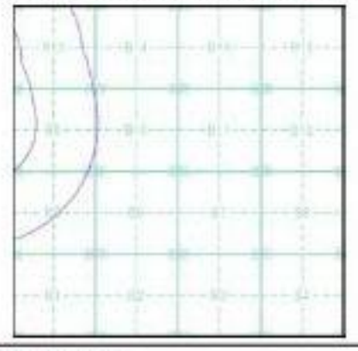
Specified Site | Specified Buffer(s) | Bearing Reference Point
Slice | Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice B

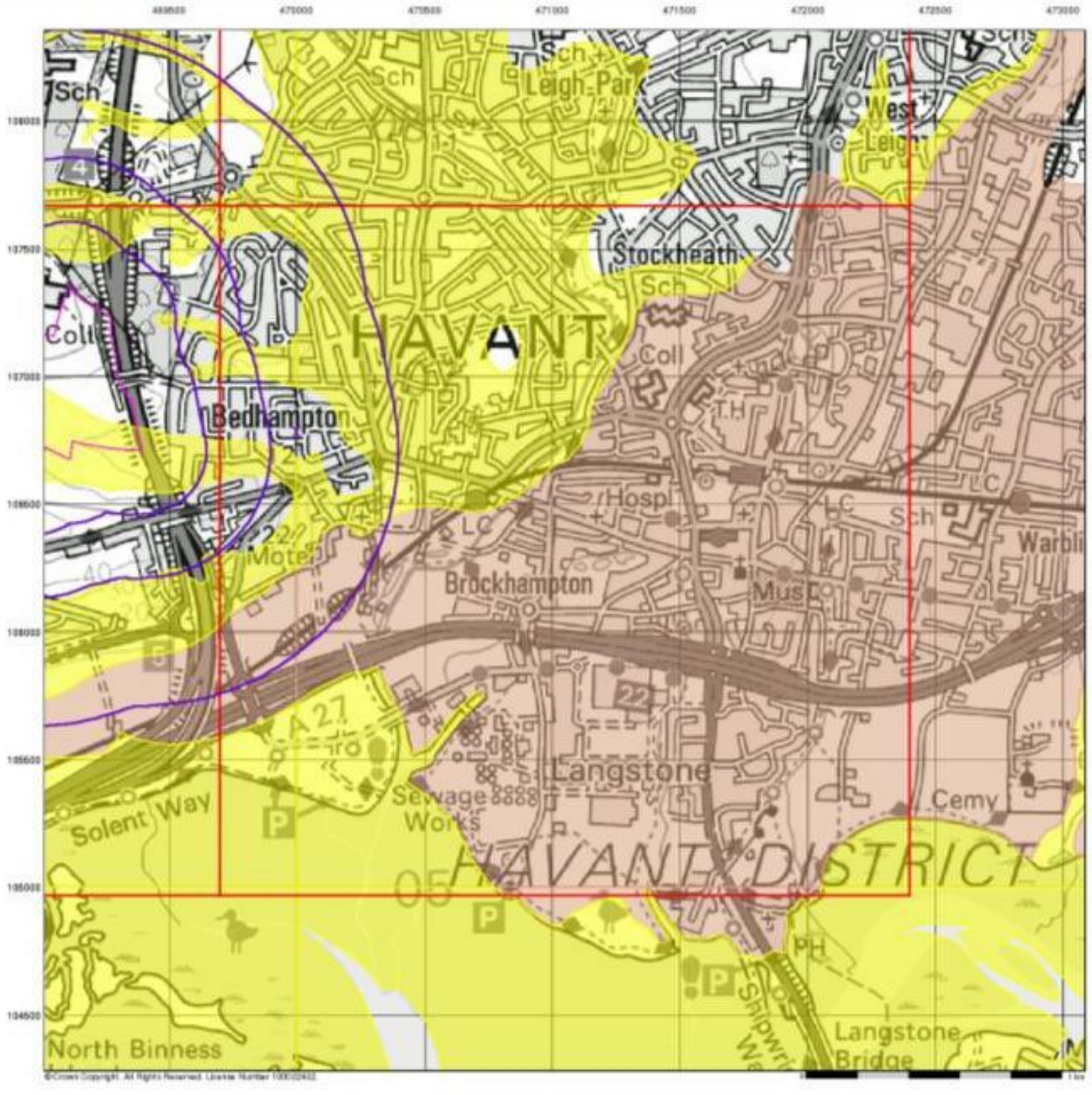


Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	470000, 106780
Slice:	B
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



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Superficial Aquifer Designation

General

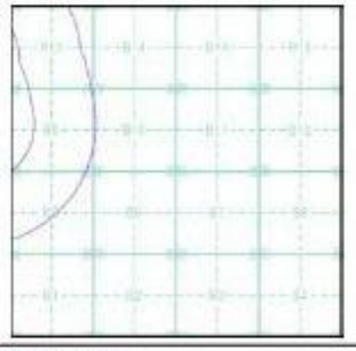
Specified Site | Specified Buffer(s) | Bearing Reference Point
Slice | Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice B

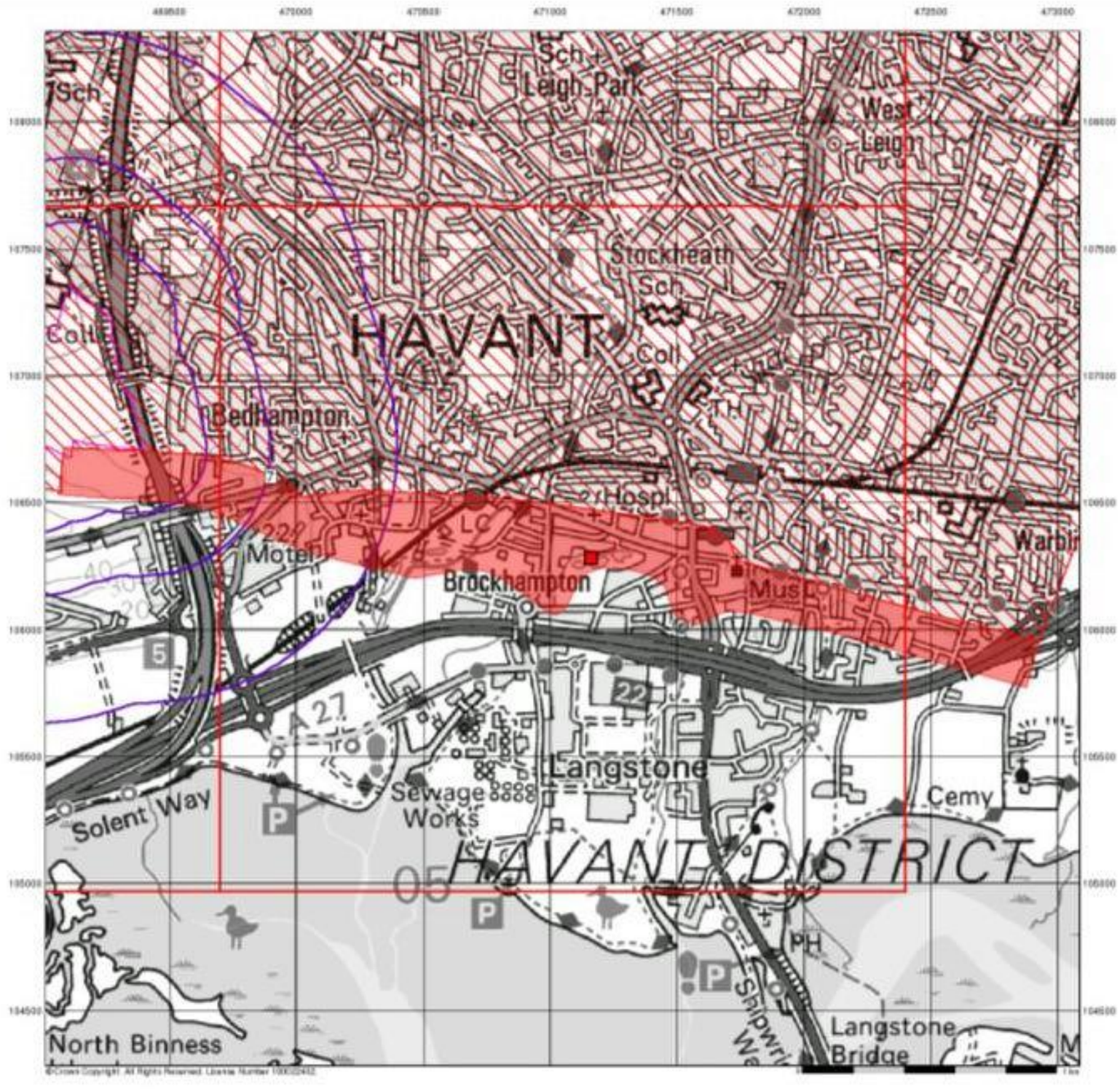


Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	470000, 136780
Slice:	B
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



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Source Protection Zones

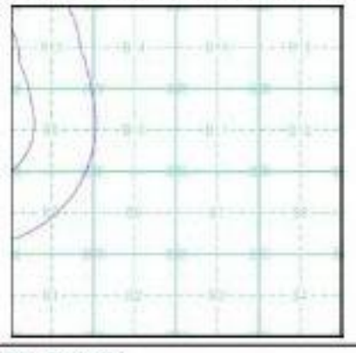
General

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

Agency and Hydrological

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

Site Sensitivity Context Map - Slice B

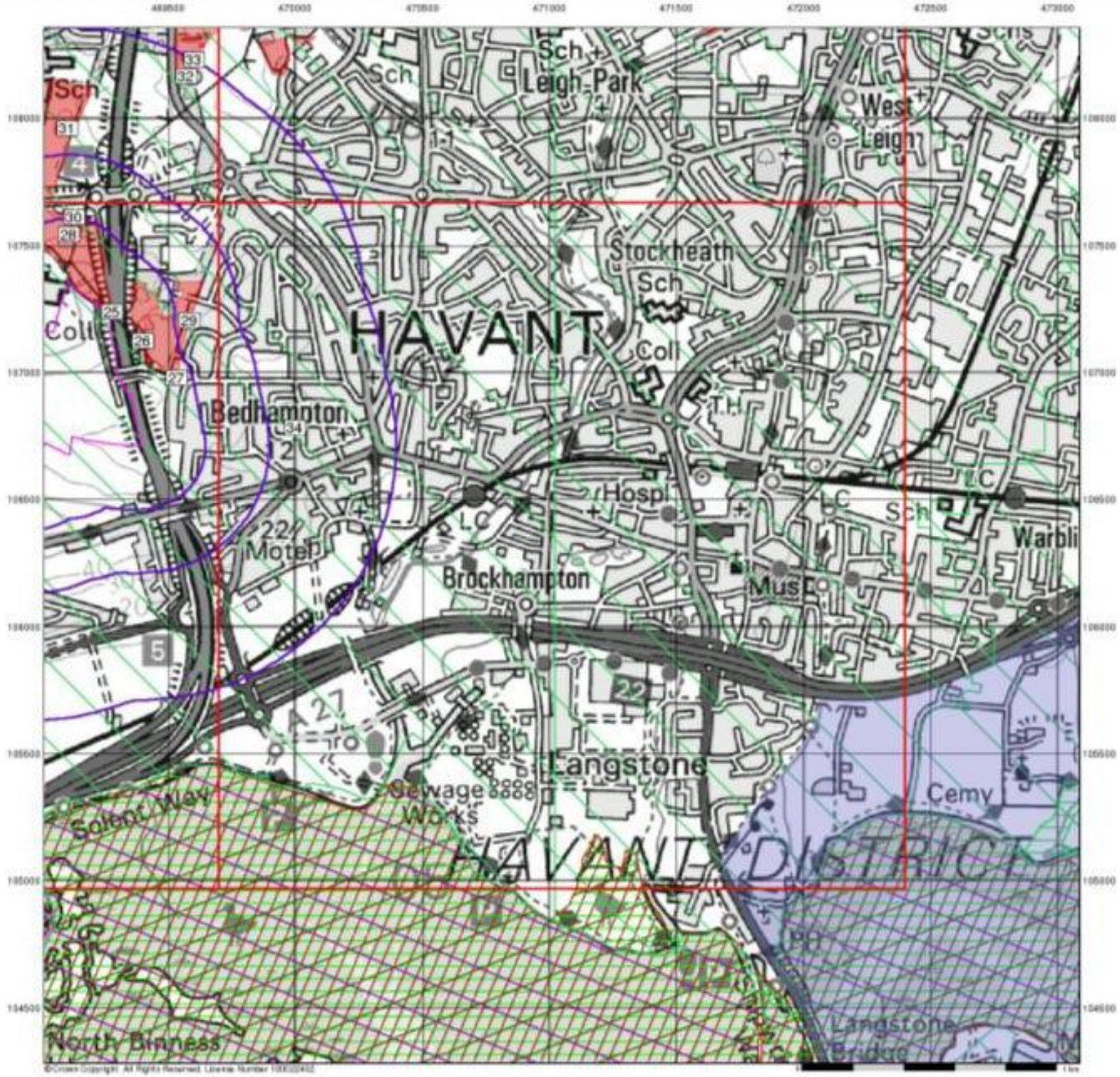


Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	470000, 106780
Slice:	B
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



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Sensitive Land Uses

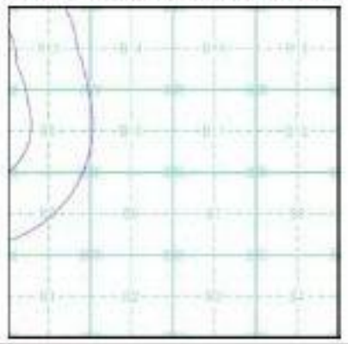
General

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

Sensitive Land Uses

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

Site Sensitivity Context Map - Slice B

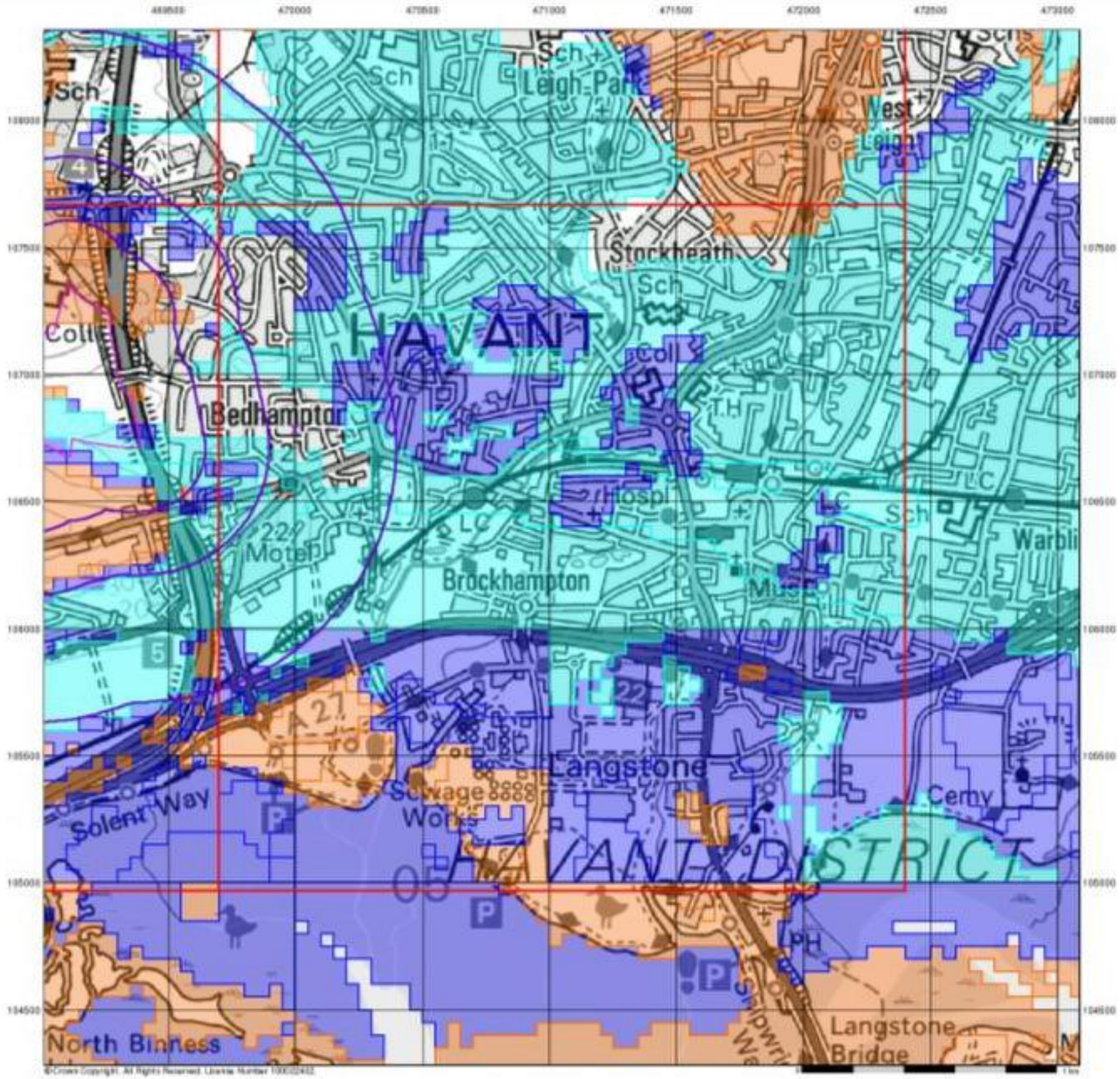


Order Details

Order Number:	92122794_1_1
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BGS Flood GFS Data

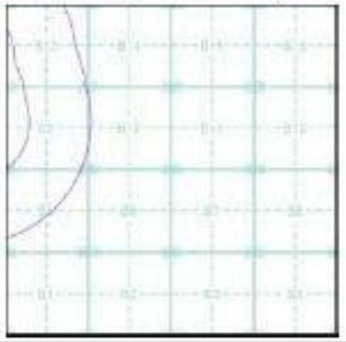
General

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

Agency and Hydrological (Flood)

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

Site Sensitivity Context Map - Slice B



Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	470000, 106780
Slice:	B
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

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

Geology 1:10,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	MGR	Made Ground (Undivided)	Artificial Deposit	Holocene - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	SUPNM	Superficial Theme Not Mapped [For Digital Map Use Only]	Unknown/Unclassified Entry	Not Supplied - Not Supplied
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Flandrian - Pleistocene
	HEAD	Head	Clay, Silt, Sand and Gravel	Quaternary - Ryazanian
	RTDU	River Terrace Deposits (Undifferentiated)	Sand, Silt and Clay	Quaternary - Ryazanian
	BTFU	Beach and Tidal Flat Deposits (Undifferentiated)	Clay, Silt, Sand and Gravel	Quaternary - Ryazanian
	SUPD	Superficial Deposits	Sediment	Quaternary - Ryazanian

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	BOSA	Bognor Sand Member	Sand	Eocene - Eocene
	LC	London Clay Formation	Clay, Silt and Sand	Eocene - Eocene
	LC	London Clay Formation	Sand	Eocene - Eocene
	LMBE	Lambeth Group	Clay	Paleocene - Paleocene
	PCK	Portsdown Chalk Formation	Chalk	Campanian - Campanian
	SPCH	Spetisbury Chalk Member	Chalk	Campanian - Campanian
	TACH	Tarrant Chalk Member	Chalk	Campanian - Campanian
	NCK	Newhaven Chalk Formation	Chalk	Campanian - Santonian
	LPCK	Lewes Nodular Chalk Formation, Seaford Chalk Formation, Newhaven Chalk Formation, Culver Chalk Formation and Portsdown Chalk Formation (Undifferentiated)	Chalk	Campanian - Turonian

Envirocheck® Geology

Geology 1:10,000 Maps

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

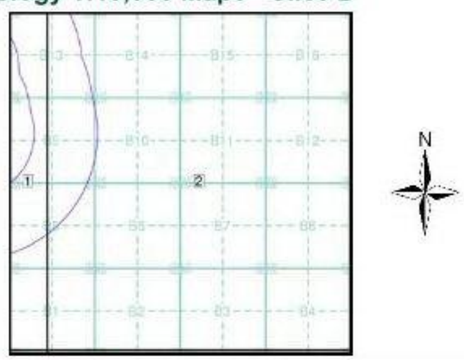
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page.

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

Geology 1:10,000 Maps Coverage

Map ID:		**Map ID:**	
Map Name:	SU60SE	**Map Name:**	SU70SW
Map Date:	1984	**Map Date:**	1984
Bedrock Geology:	Available	**Bedrock Geology:**	Available
Superficial Geology:	Available	**Superficial Geology:**	Available
Artificial Geology:	Available	**Artificial Geology:**	Available
Faults:	Not Supplied	**Faults:**	Not Supplied
Landslip:	Not Available	**Landslip:**	Not Available
Rock Segments:	Not Supplied	**Rock Segments:**	Not Supplied
Map ID:	2	**Map ID:**	1
Map Name:	SU70NW	**Map Name:**	SU60NE
Map Date:	1984	**Map Date:**	1984
Bedrock Geology:	Available	**Bedrock Geology:**	Available
Superficial Geology:	Available	**Superficial Geology:**	Available
Artificial Geology:	Available	**Artificial Geology:**	Available
Faults:	Not Supplied	**Faults:**	Not Supplied
Landslip:	Not Available	**Landslip:**	Not Available
Rock Segments:	Not Supplied	**Rock Segments:**	Not Supplied

Geology 1:10,000 Maps - Slice B

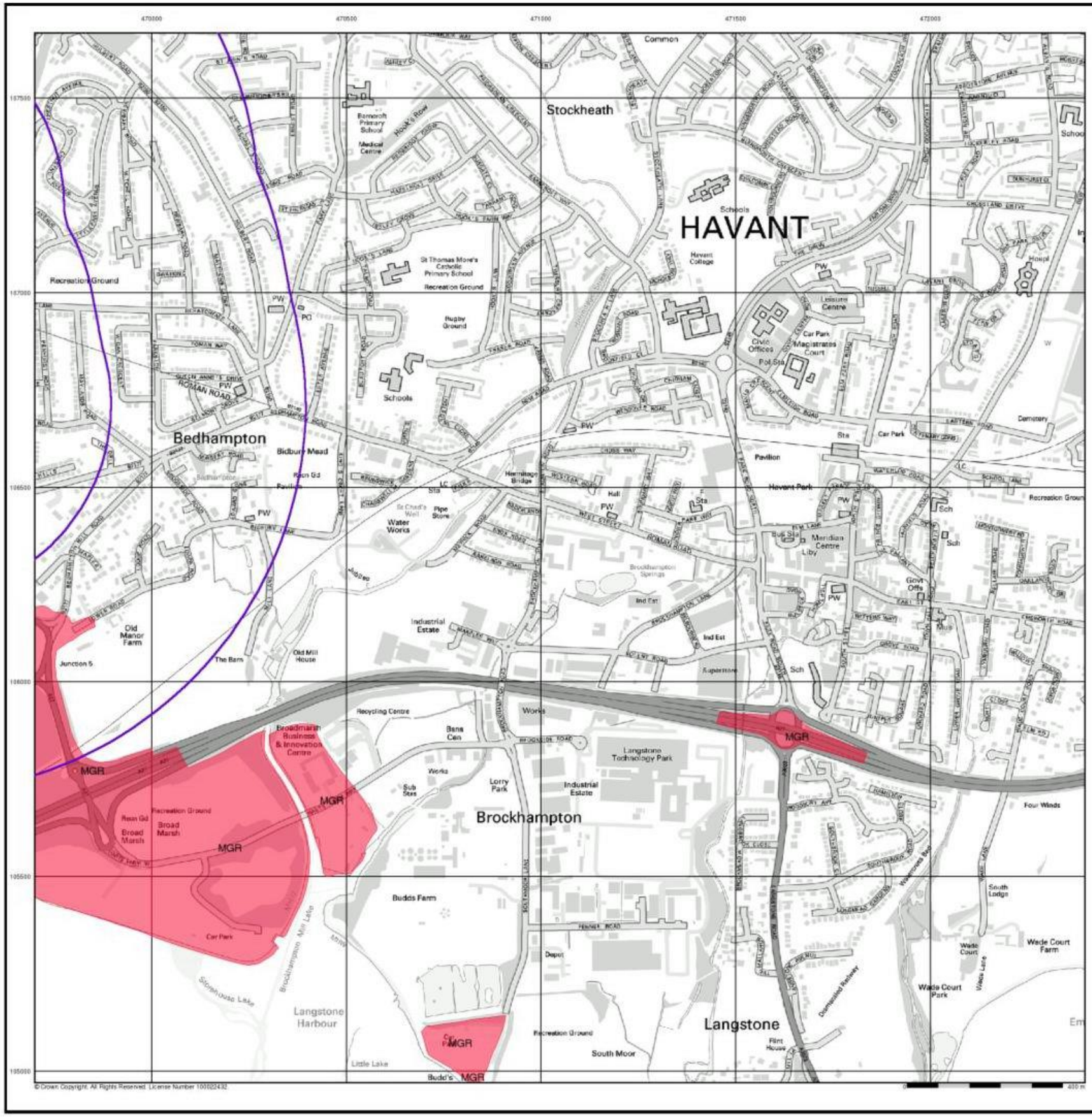


Order Details

Order Number: 92122794_1_1
Customer Ref: 28720
National Grid Reference: 470000, 106780
Slice: B
Site Area (Ha): 26.37
Search Buffer (m): 1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



Artificial Ground and Landslip

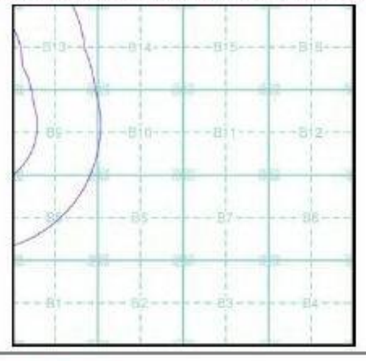
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions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

Artificial ground includes:

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

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

Artificial Ground and Landslip Map - Slice B

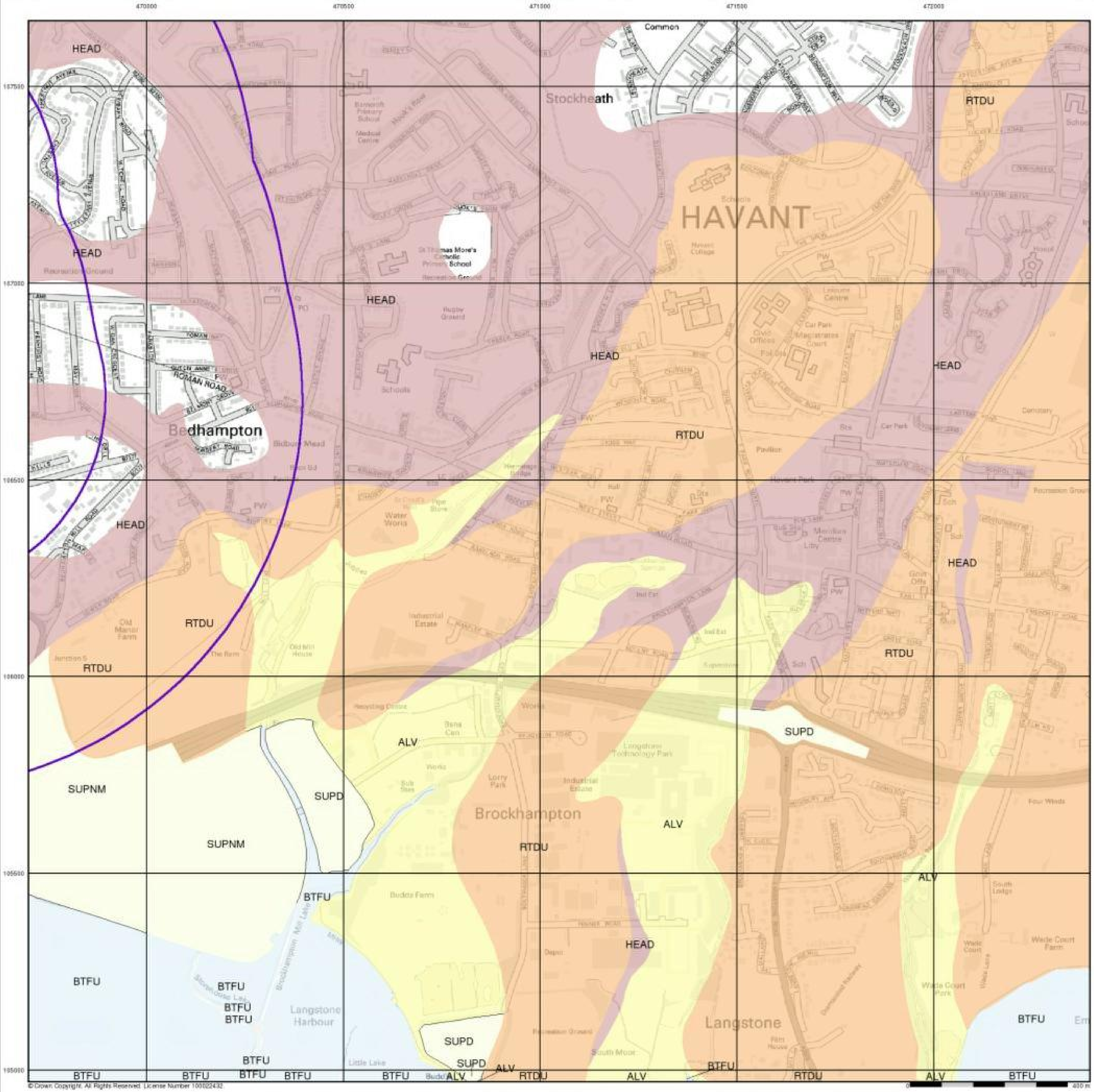


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Envirocheck® Geology

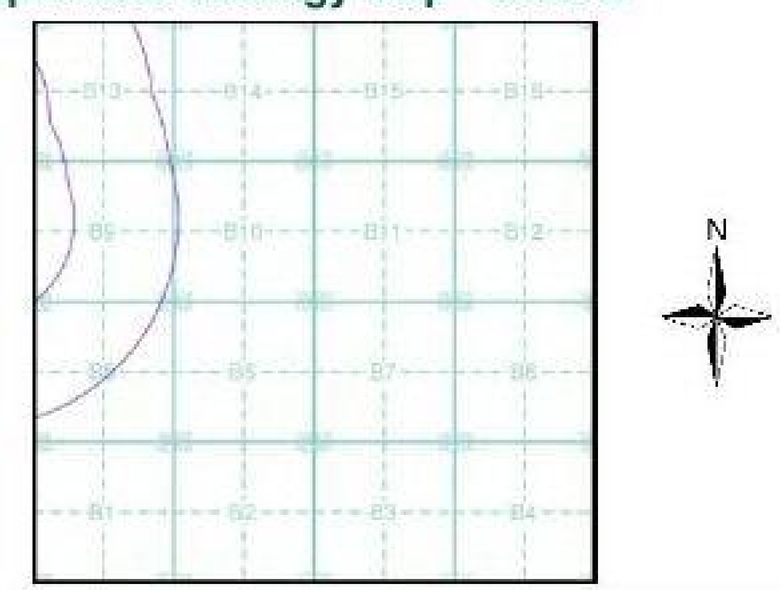
Superficial Geology

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

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

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

Superficial Geology Map - Slice B



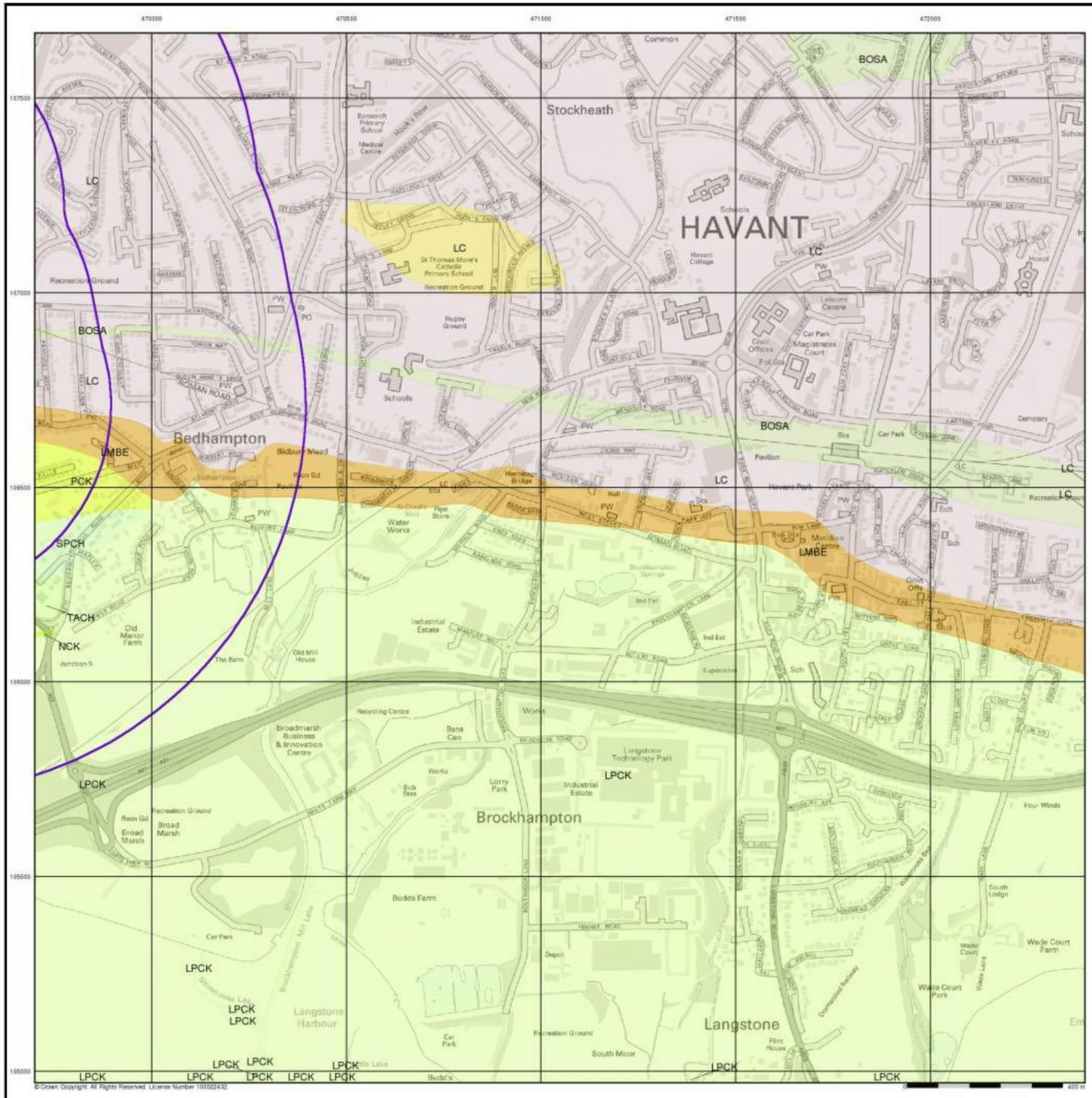
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Slice: B
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Web: www.envirocheck.co.uk



Envirocheck Geology

Bedrock and Faults

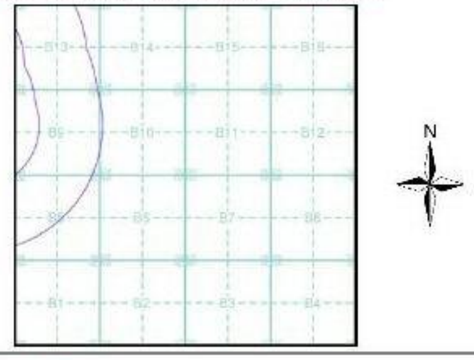
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

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

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

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

Bedrock and Faults Map - Slice B



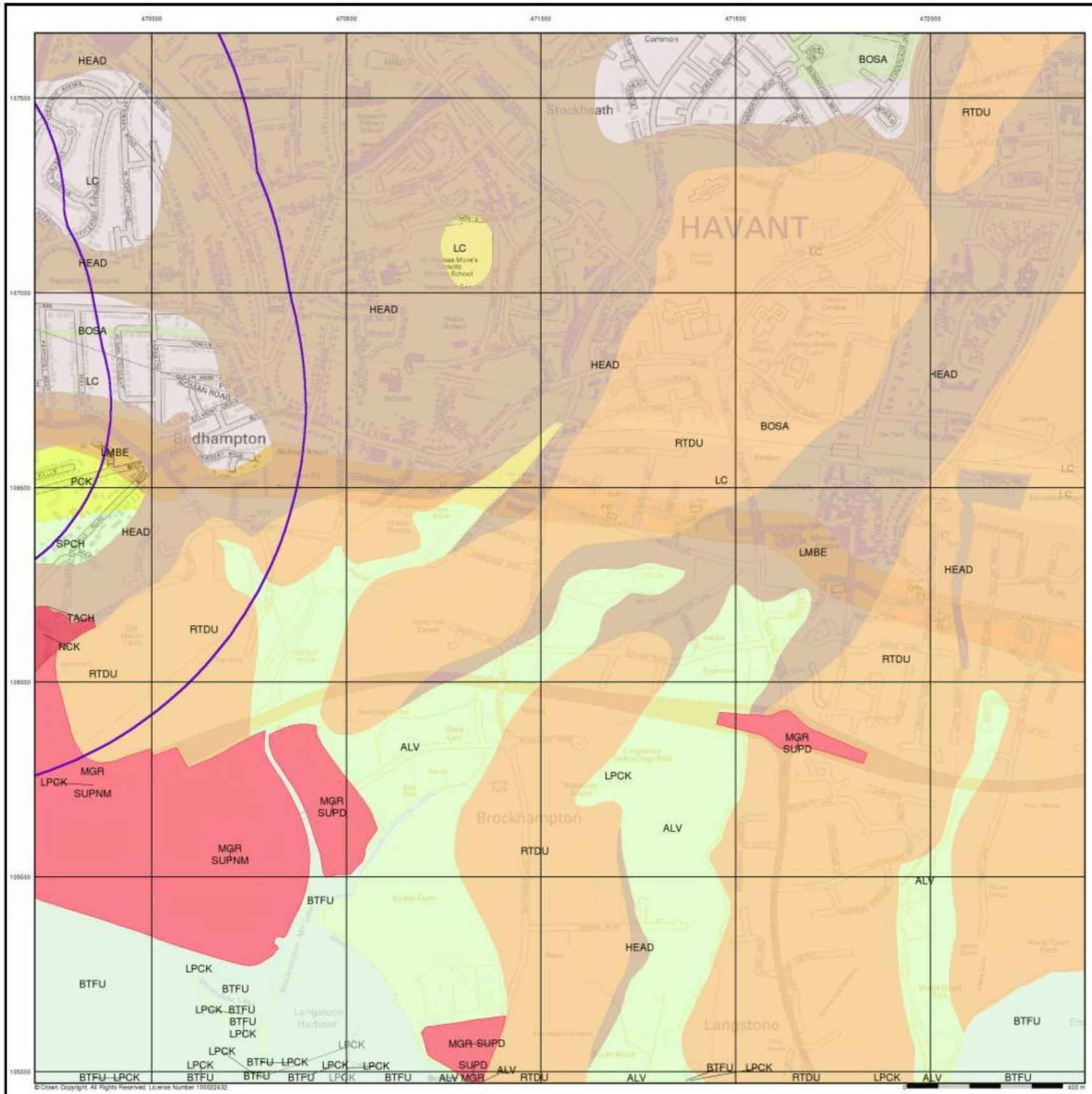
Order Details

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Envirocheck® Geology

Combined Surface Geology

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

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

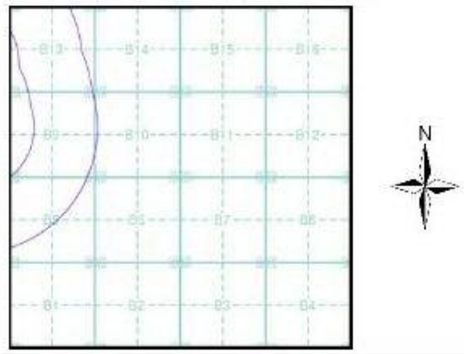
Additional Information

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

Contact

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

Combined Geology Map - Slice B



Order Details

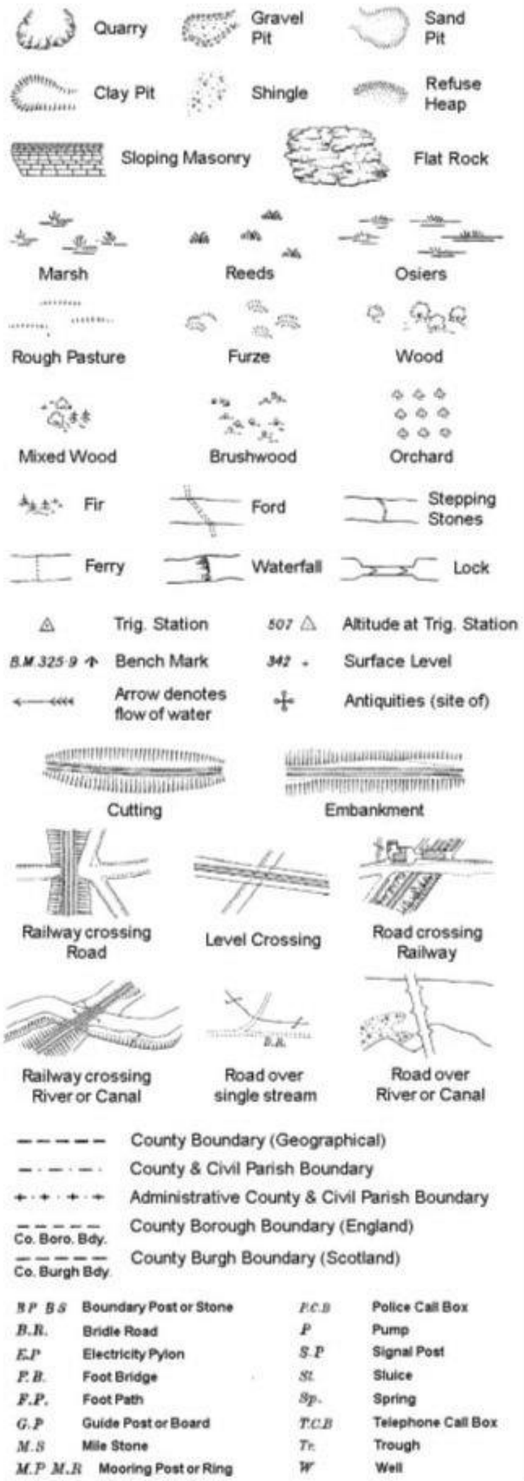
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Slice:	B
Site Area (Ha):	26.37
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Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

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



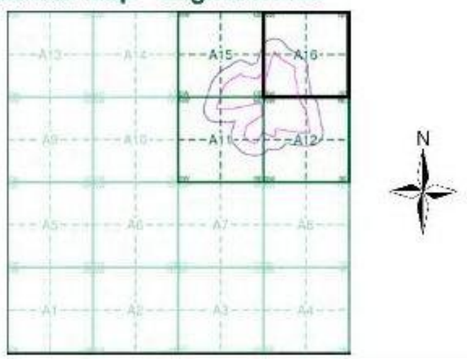
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity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

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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Hampshire & Isle Of Wight	1:2,500	1868	2
Hampshire & Isle Of Wight	1:2,500	1897	3
Hampshire & Isle Of Wight	1:2,500	1909	4
Hampshire & Isle Of Wight	1:2,500	1932	5
Ordnance Survey Plan	1:2,500	1952 - 1966	6
Ordnance Survey Plan	1:2,500	1954	7
Ordnance Survey Plan	1:1,250	1957 - 1973	8
Ordnance Survey Plan	1:1,250	1963 - 1989	9
Ordnance Survey Plan	1:2,500	1969	10
Ordnance Survey Plan	1:2,500	1969	11
Ordnance Survey Plan	1:1,250	1975	12
Ordnance Survey Plan	1:1,250	1979	13
Additional SIMs	1:1,250	1979 - 1985	14
Additional SIMs	1:2,500	1981	15
Additional SIMs	1:1,250	1985 - 1987	16
Large-Scale National Grid Data	1:1,250	1993	17

Historical Map - Segment A16



Order Details

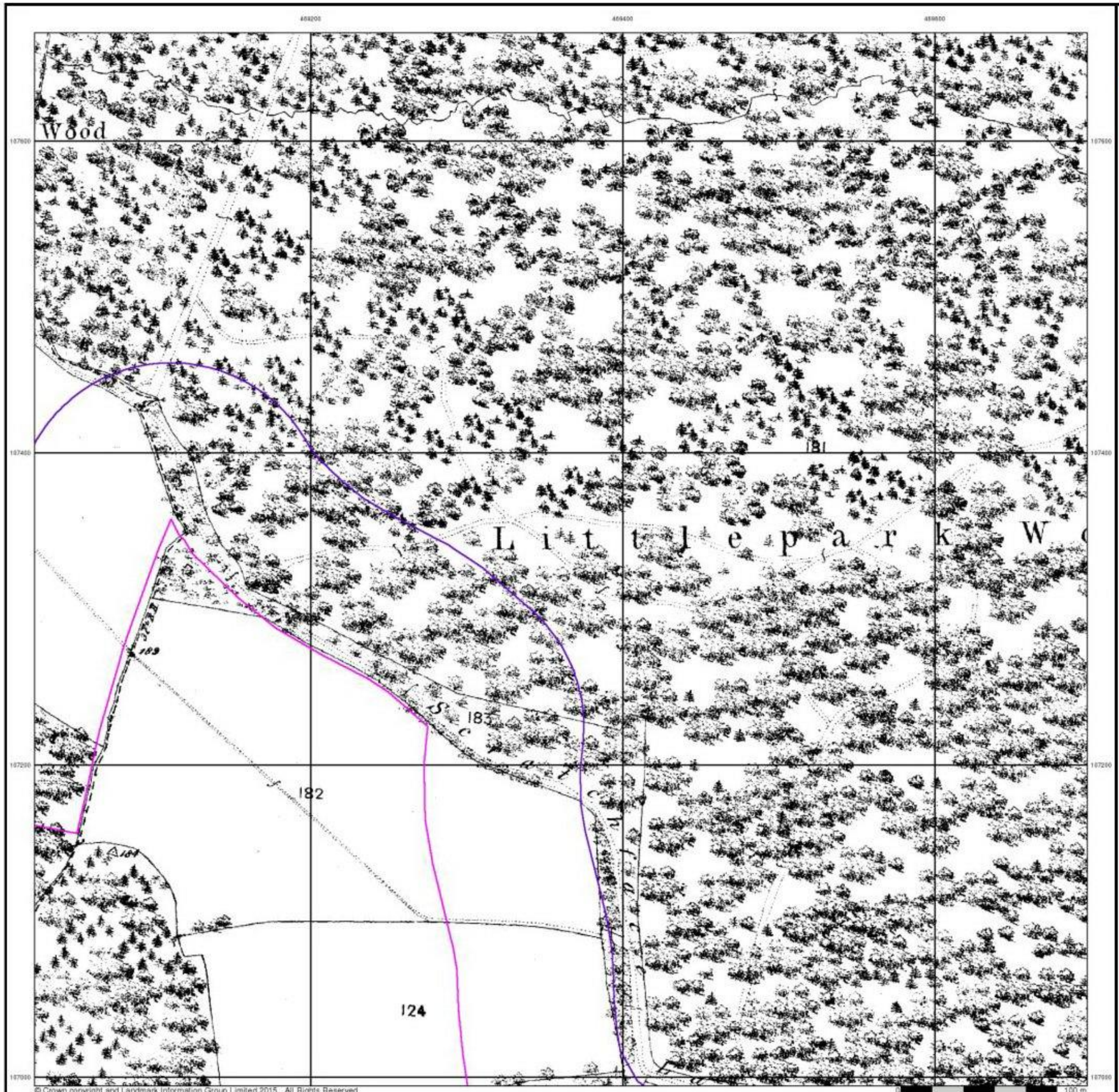
Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468760, 106730
Slice:	A
Site Area (Ha):	26.37
Search Buffer (m):	100

Site Details

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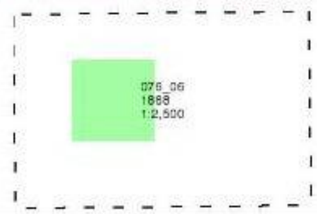
Hampshire & Isle Of Wight

Published 1868

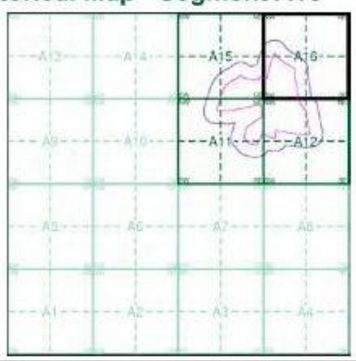
Source map scale - 1:2,500

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 A16

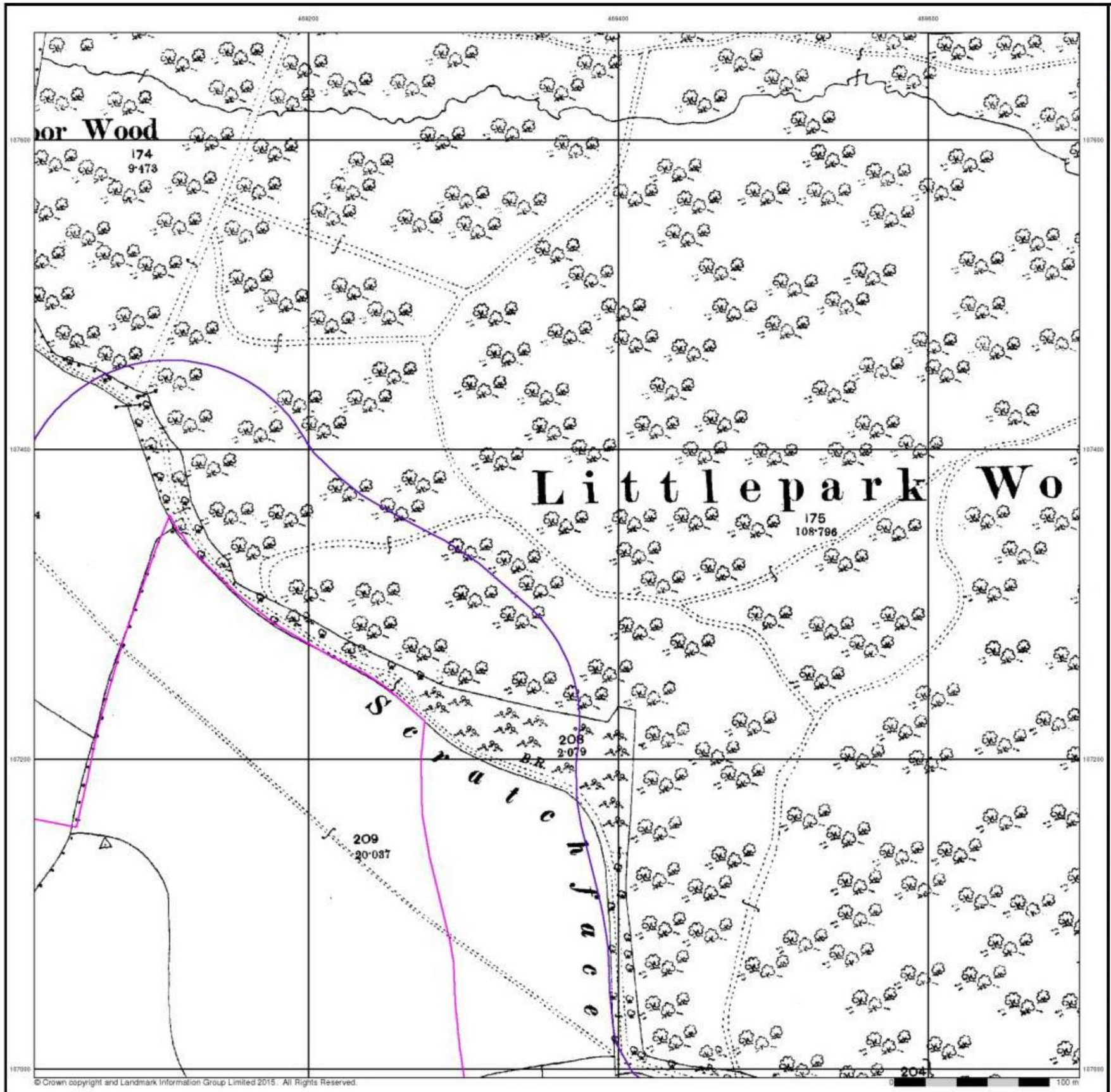


Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468760, 106730
Slice:	A
Site Area (Ha):	26.37
Search Buffer (m):	100

Site Details

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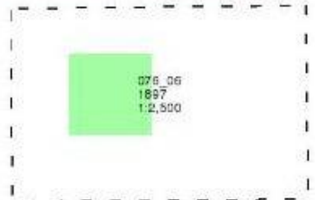
Hampshire & Isle Of Wight

Published 1897

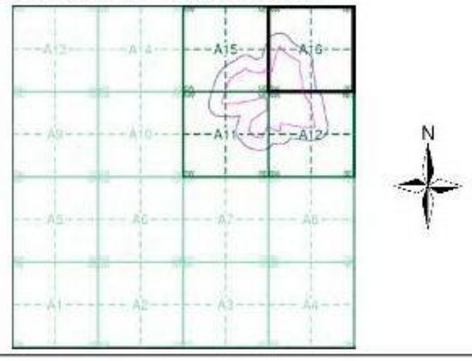
Source map scale - 1:2,500

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 A16



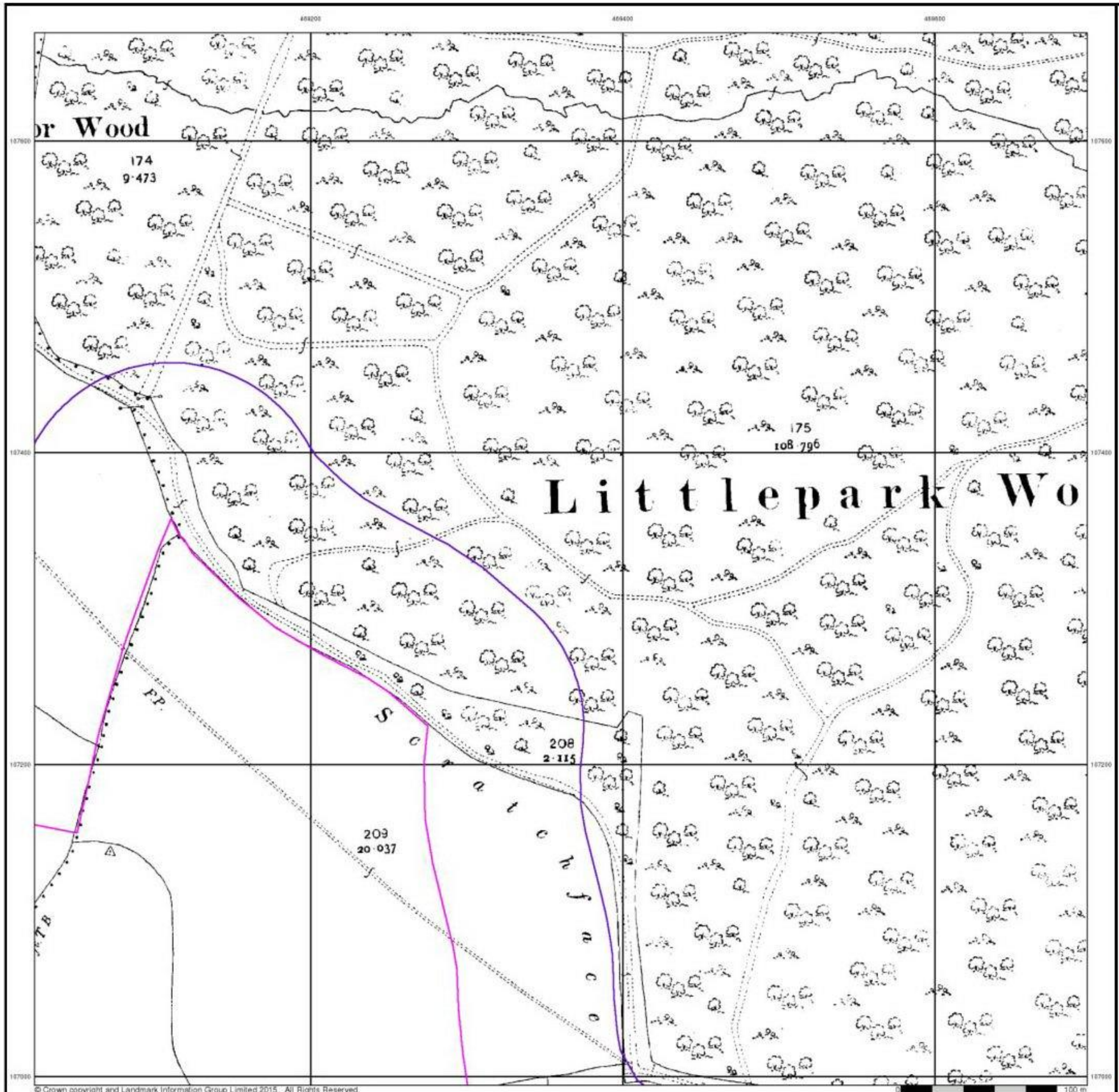
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Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468760, 106730
Slice:	A
Site Area (Ha):	26.37
Search Buffer (m):	100

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

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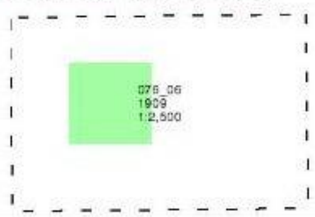
Hampshire & Isle Of Wight

Published 1909

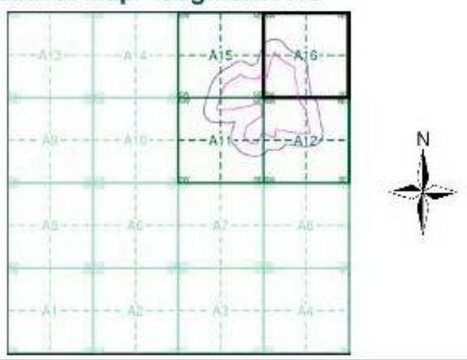
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A16

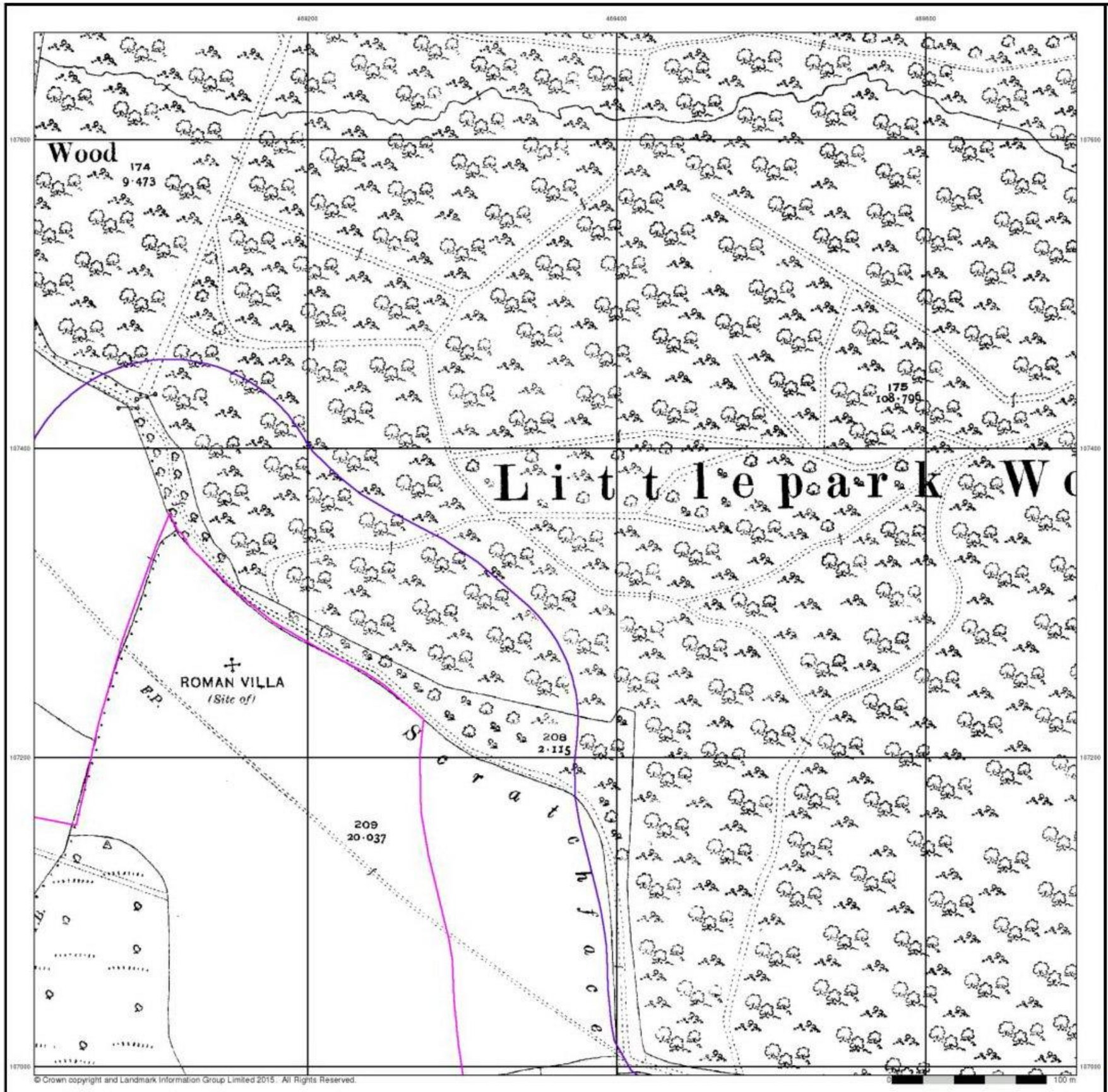


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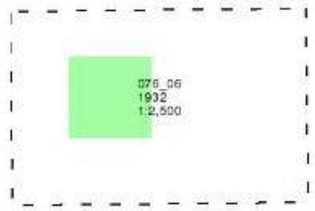
Hampshire & Isle Of Wight

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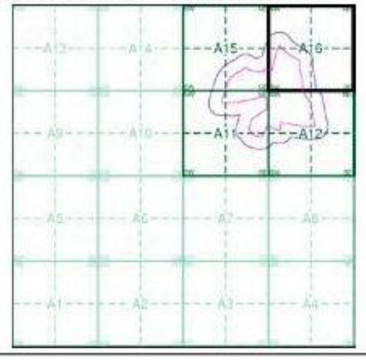
Source map scale - 1:2,500

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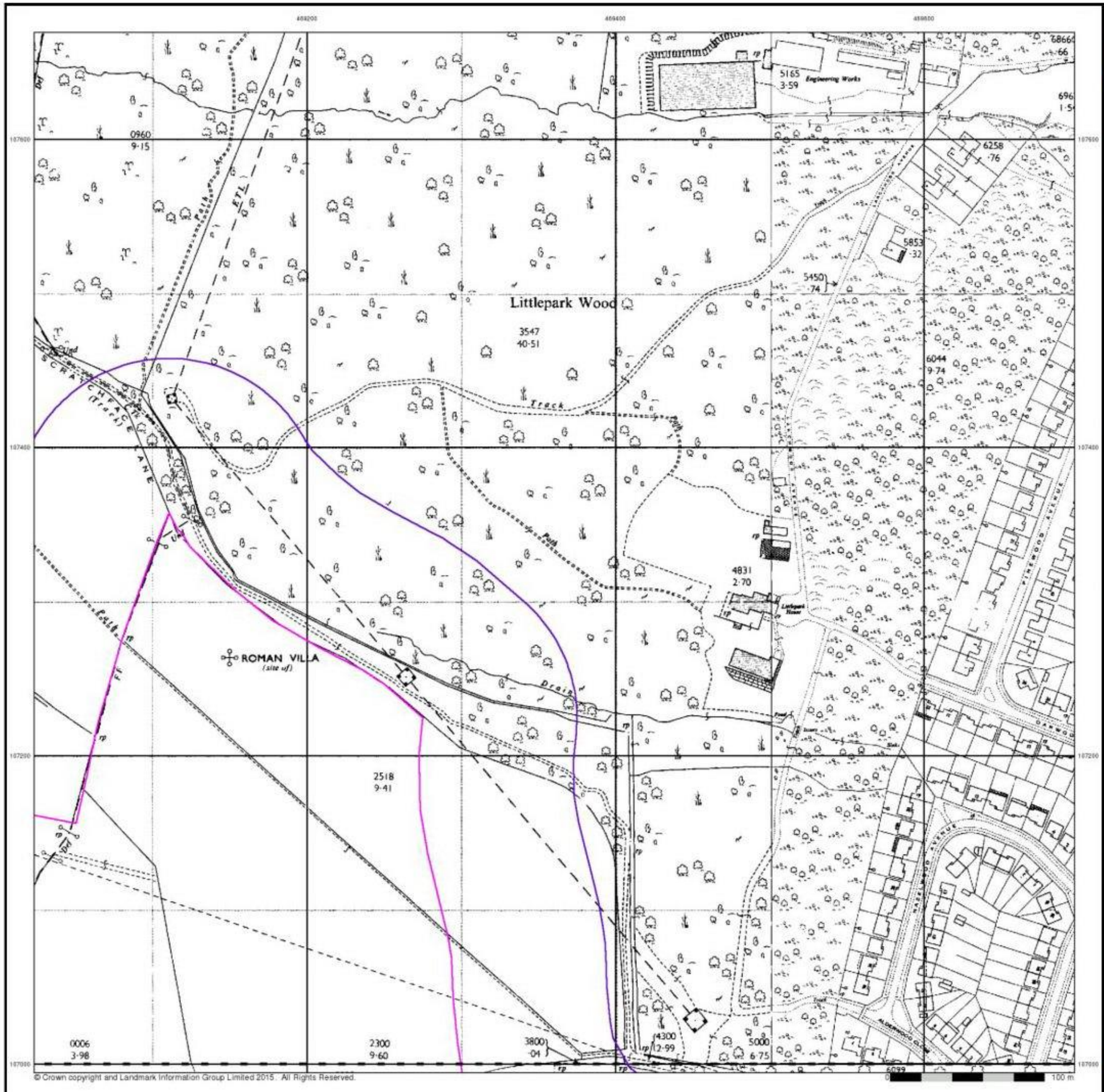


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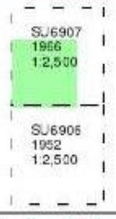
Ordnance Survey Plan

Published 1952 - 1966

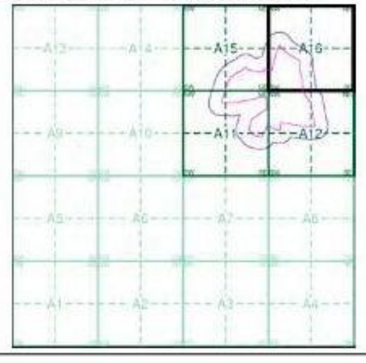
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Map Name(s) and Date(s)



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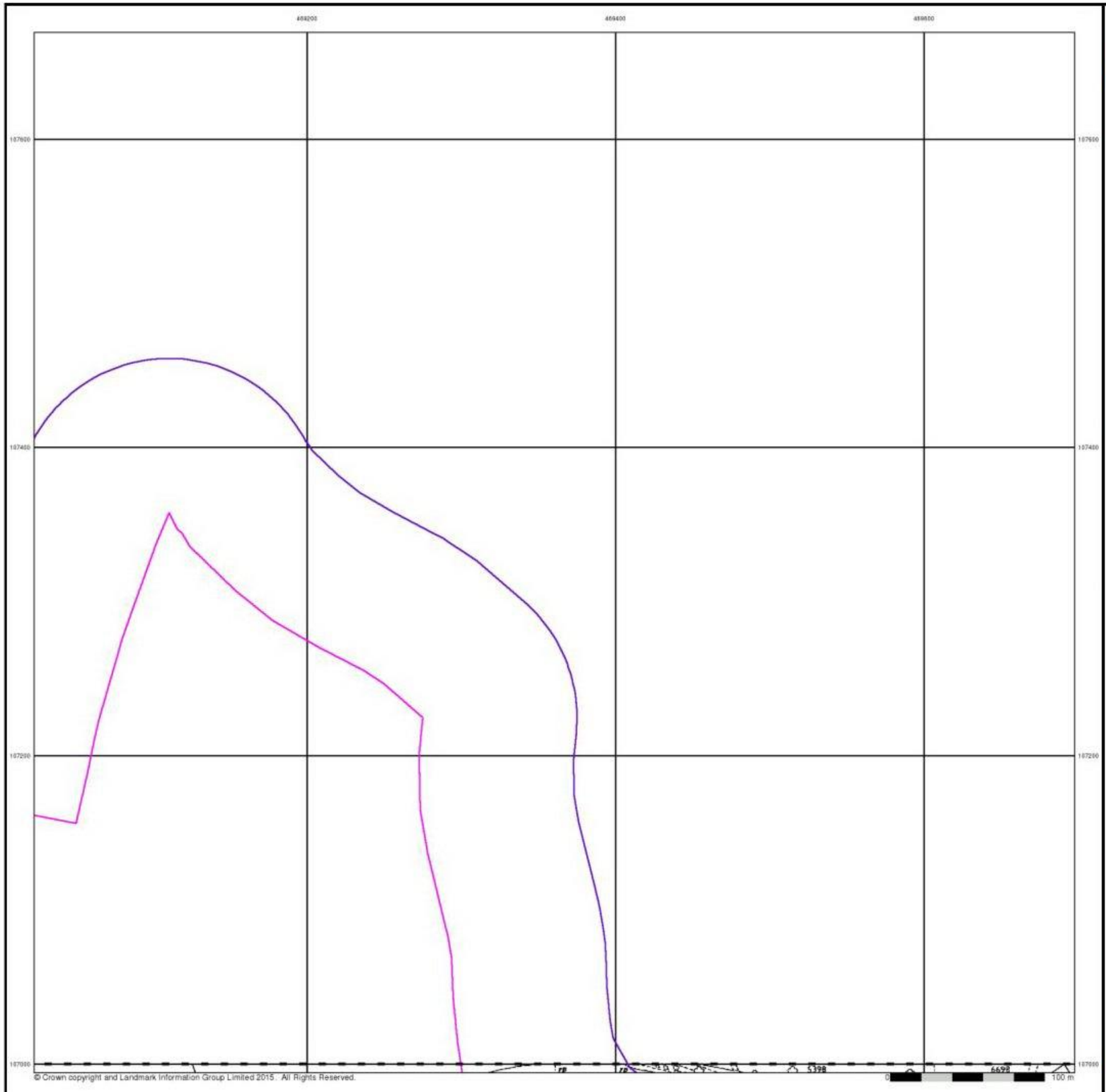
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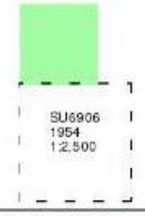
Ordnance Survey Plan

Published 1954

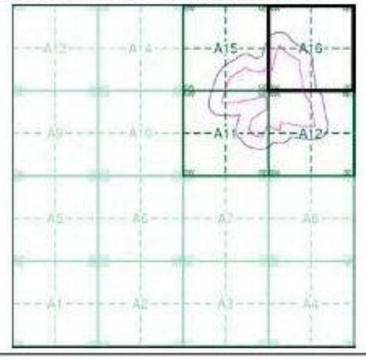
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A16

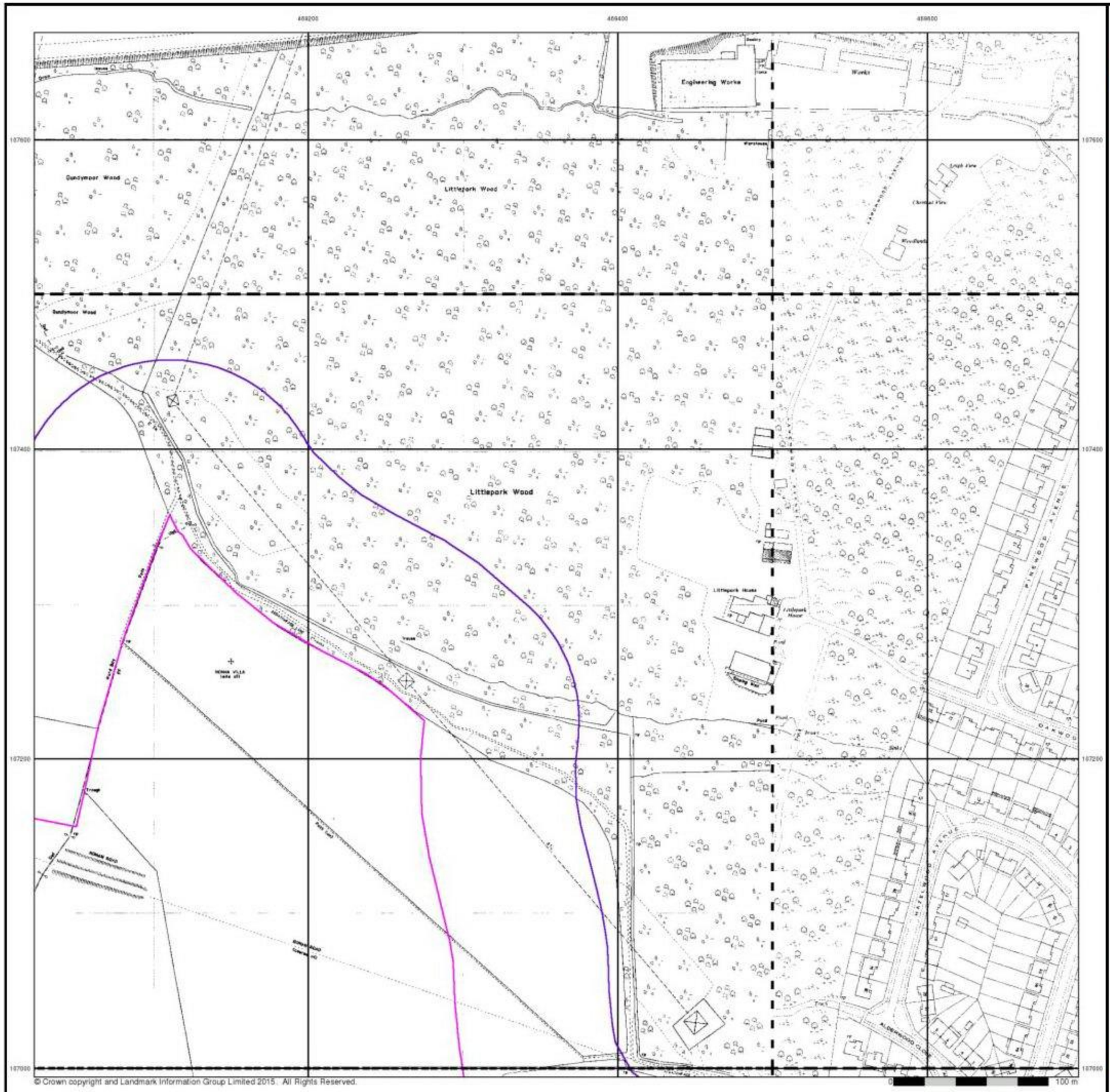


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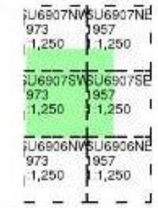
Ordnance Survey Plan

Published 1957 - 1973

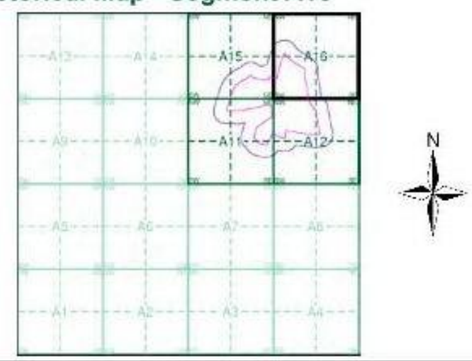
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A16

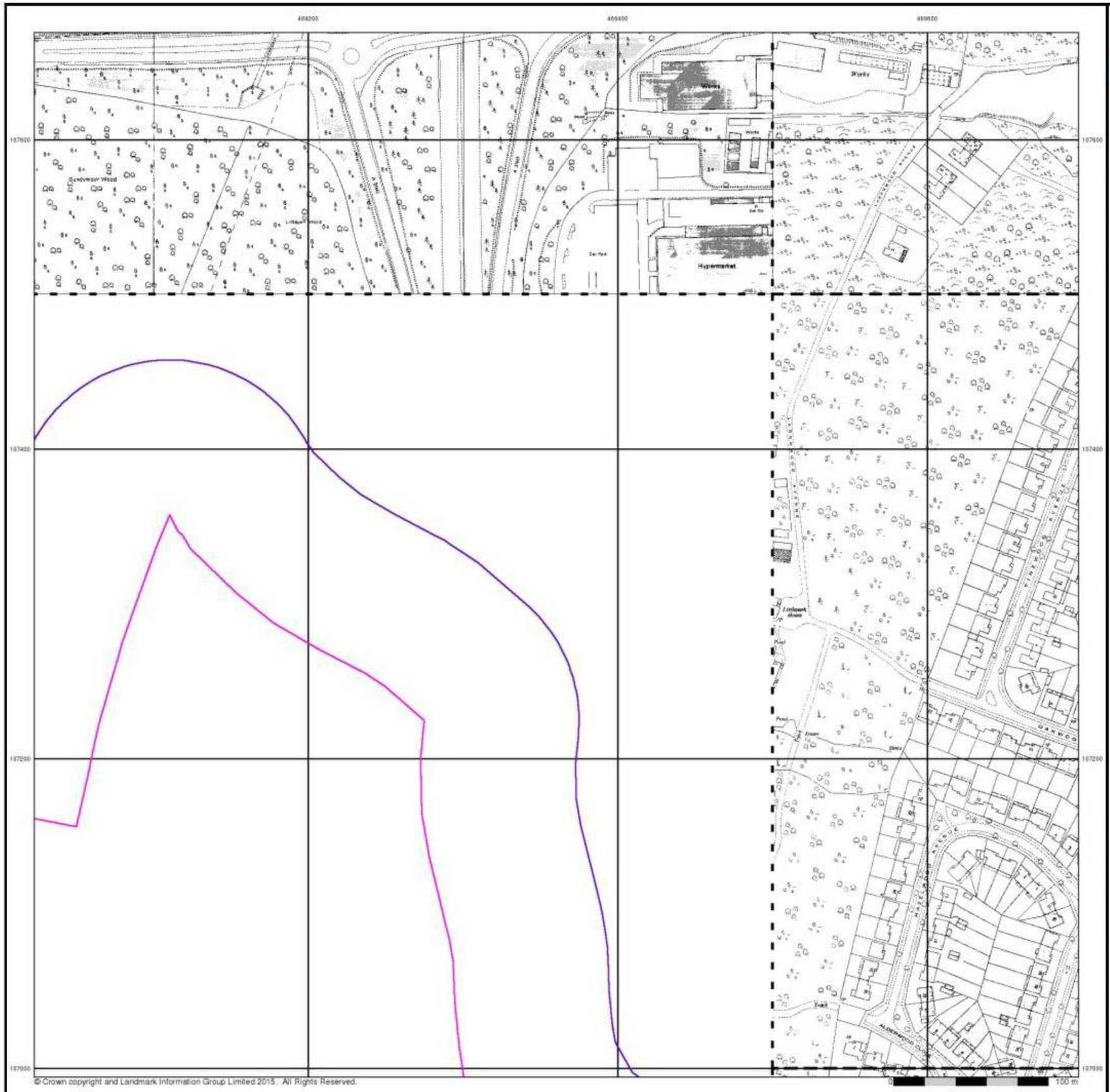


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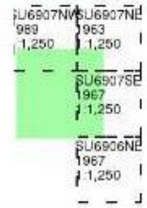
Ordnance Survey Plan

Published 1963 - 1989

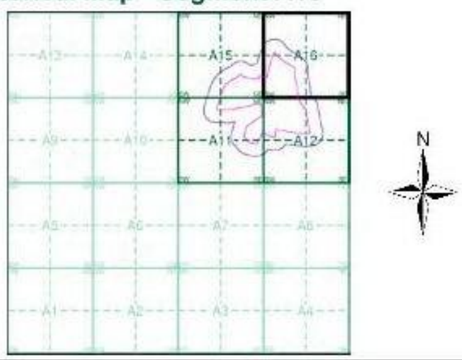
Source map scale - 1:1,250

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Map Name(s) and Date(s)



Historical Map - Segment A16



Order Details

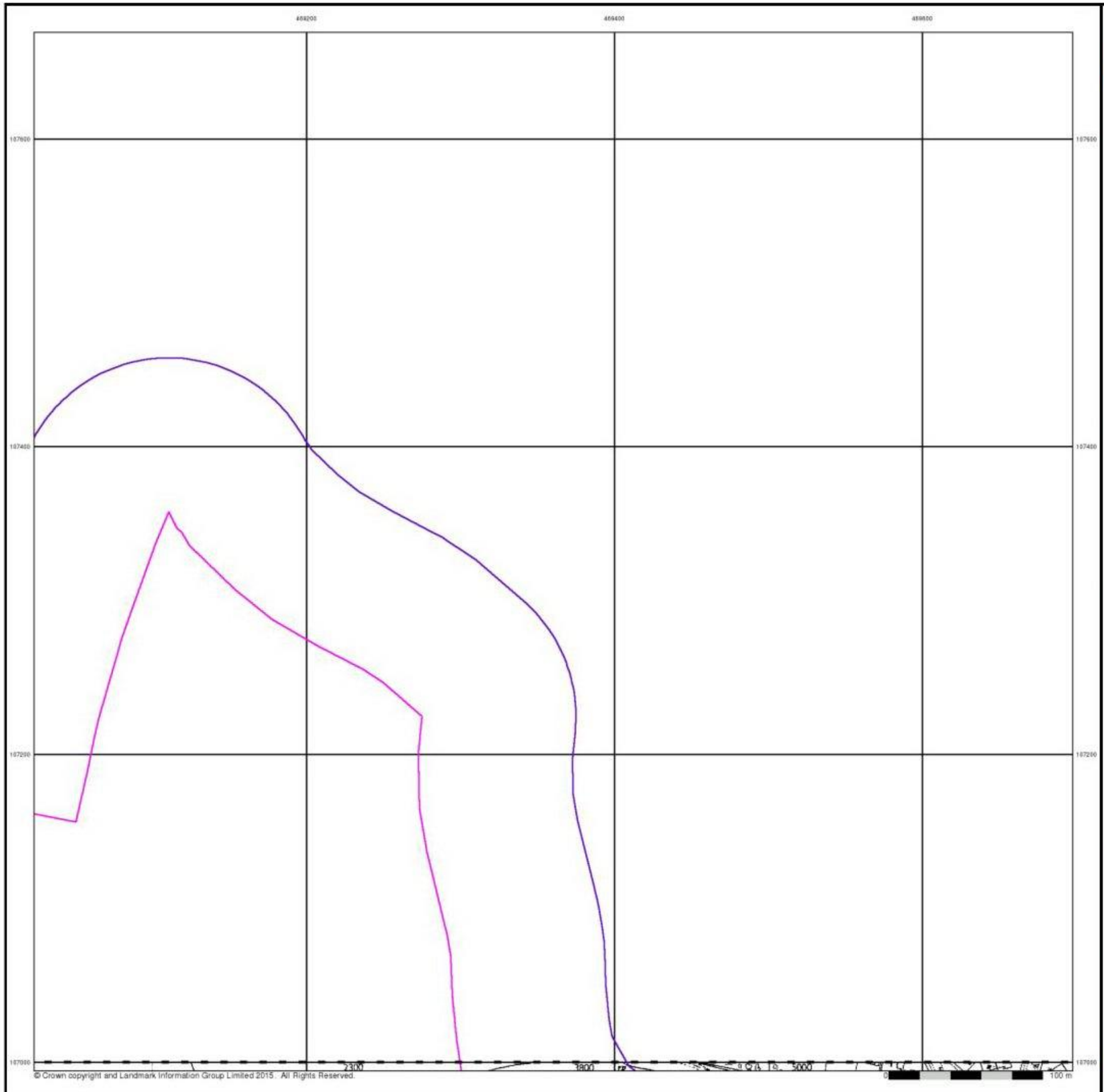
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Ordnance Survey Plan

Published 1969

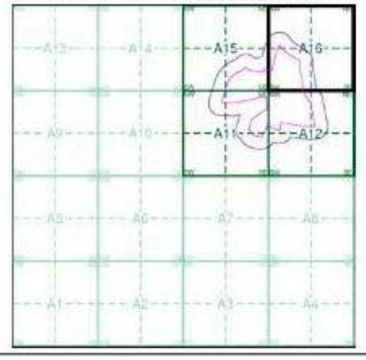
Source map scale - 1:2,500

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Map Name(s) and Date(s)

SU6906
1969
1:2,500

Historical Map - Segment A16



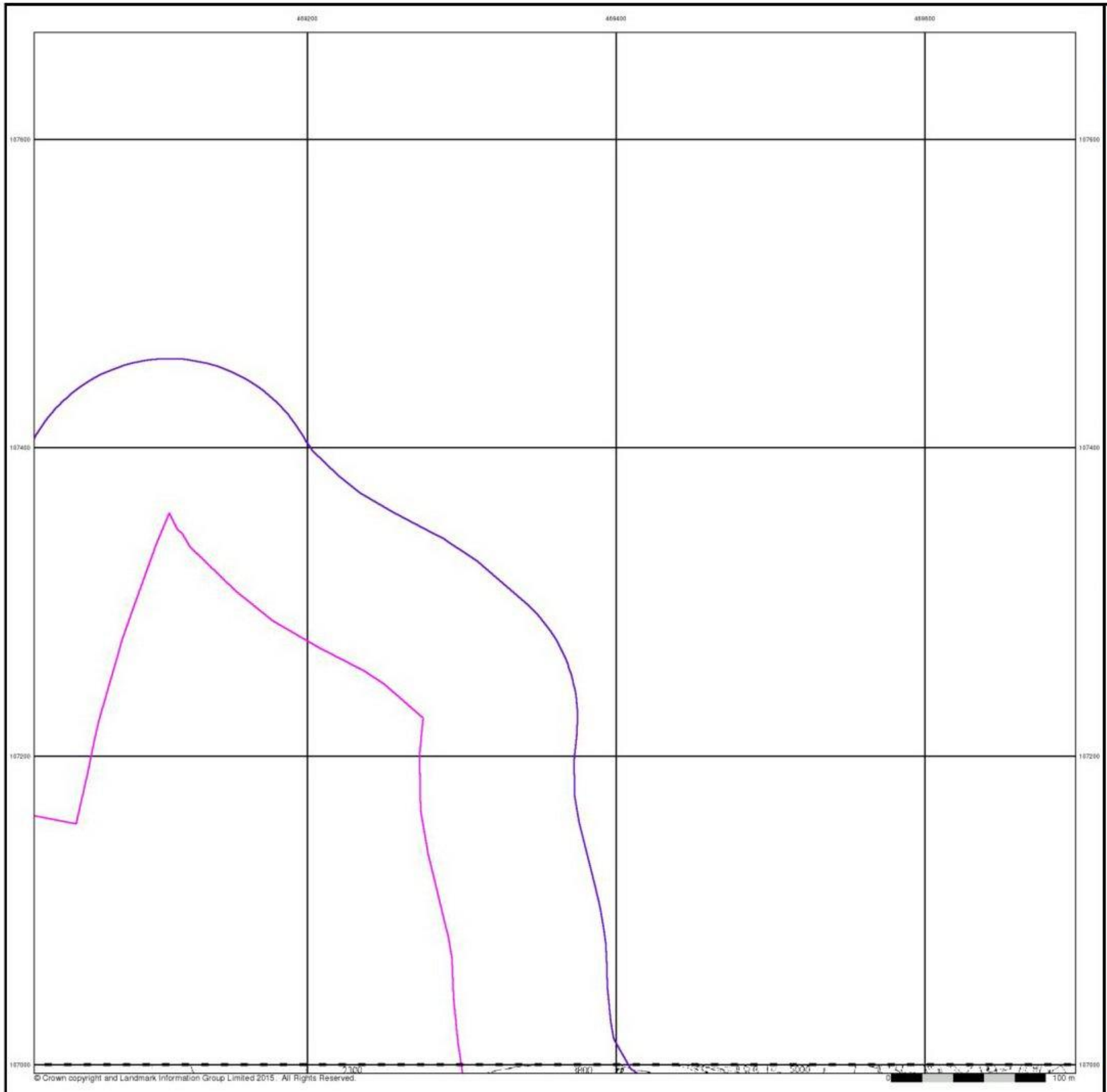
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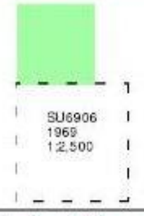
Ordnance Survey Plan

Published 1969

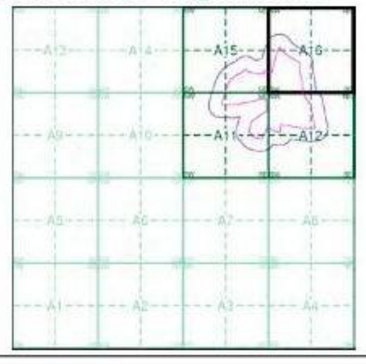
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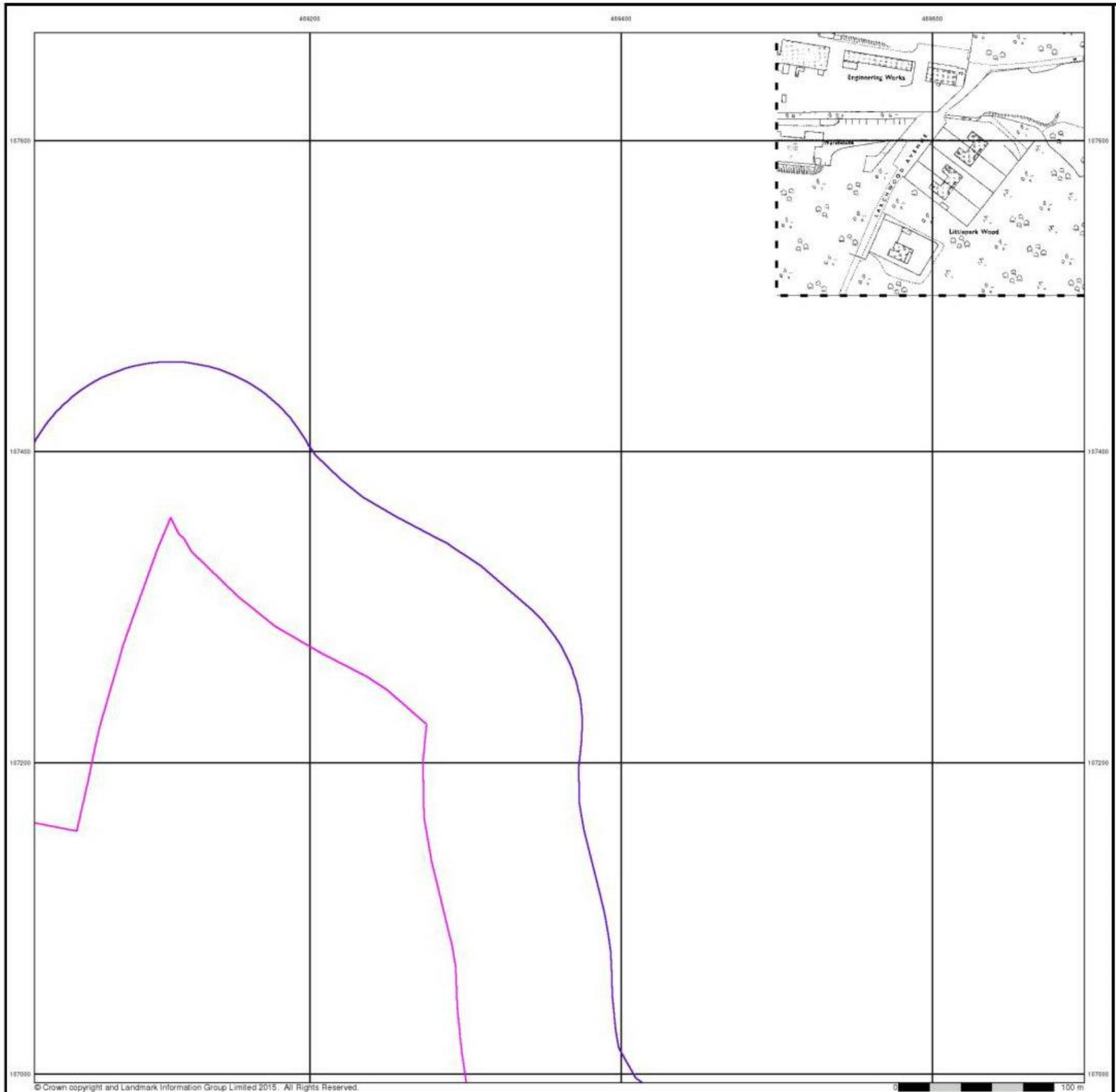
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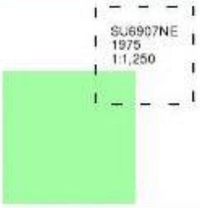
Ordnance Survey Plan

Published 1975

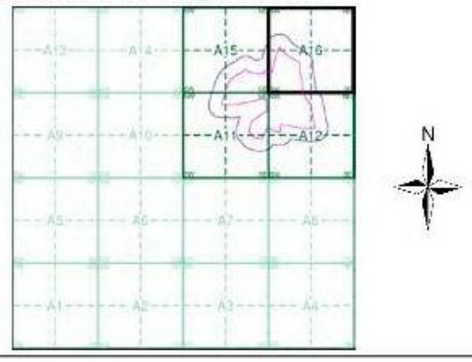
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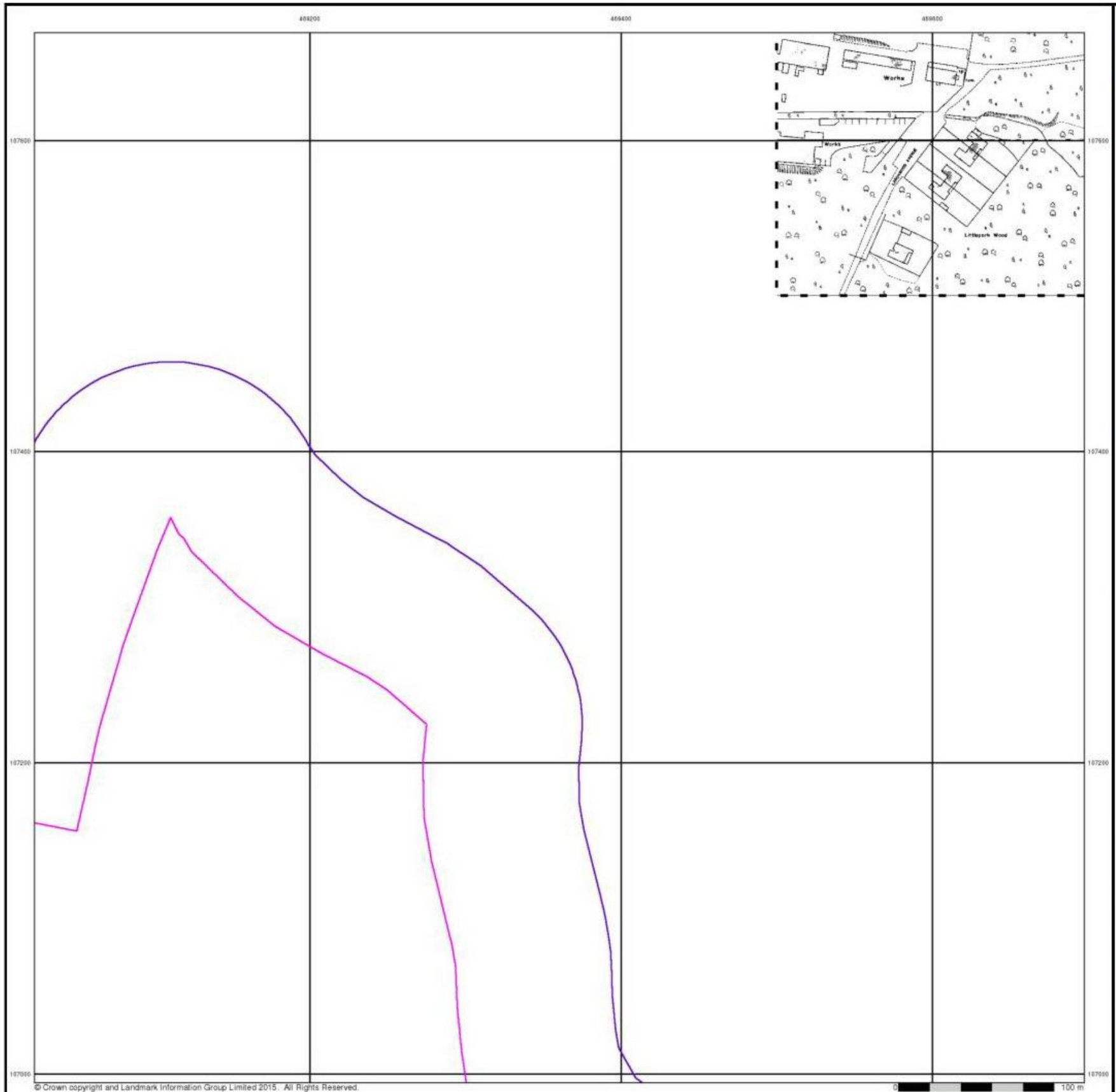
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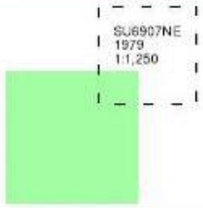
Ordnance Survey Plan

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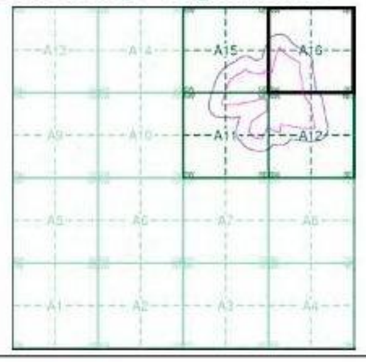
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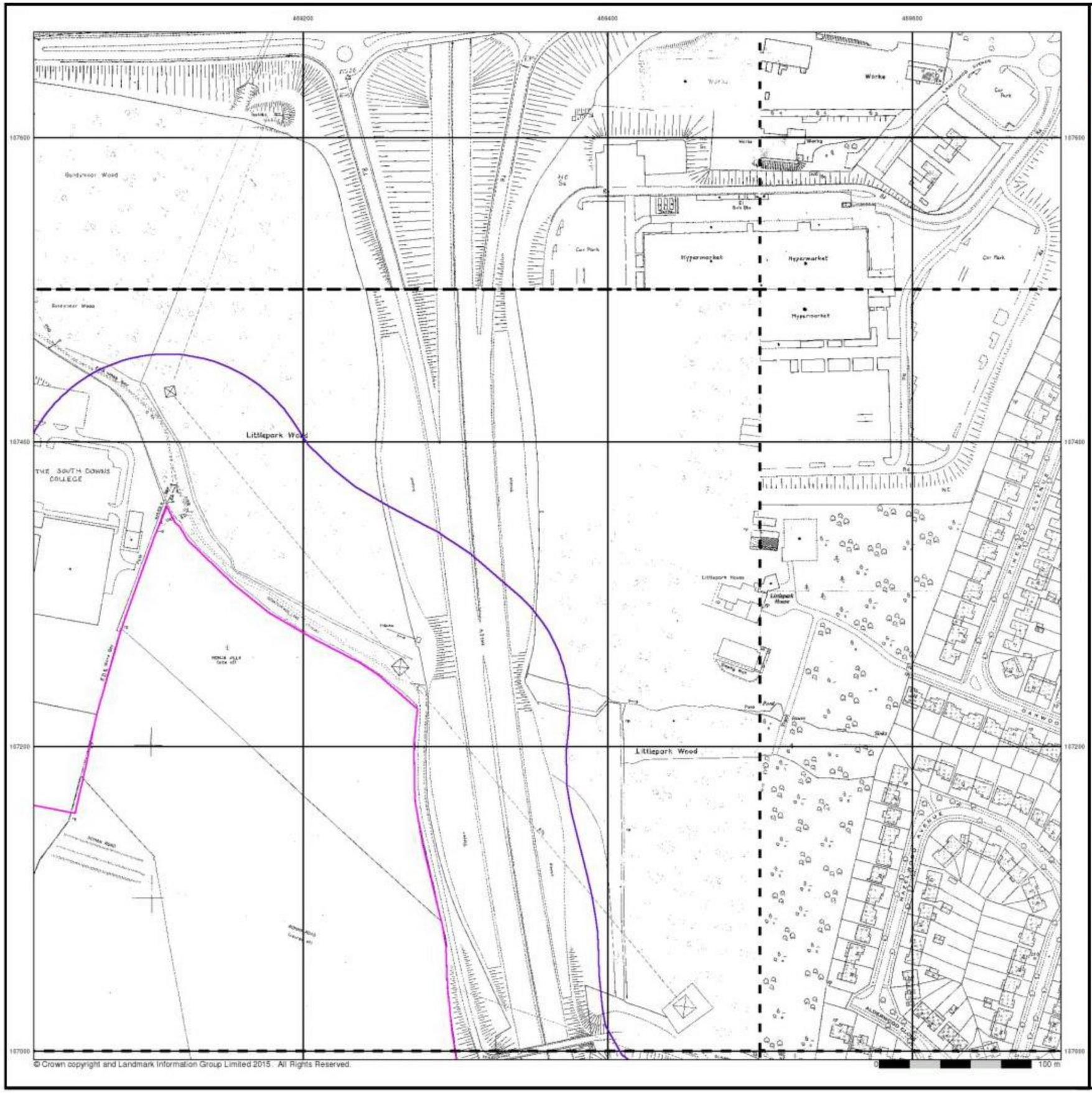
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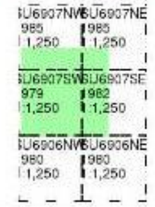
Additional SIMs

Published 1979 - 1985

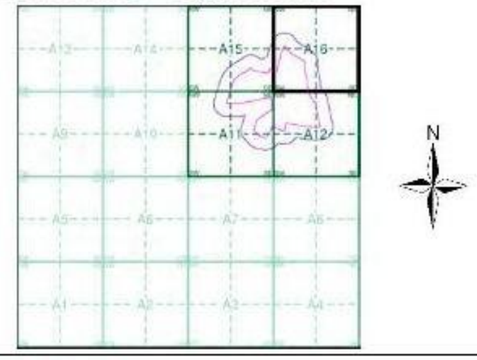
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The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information 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 A16



Order Details

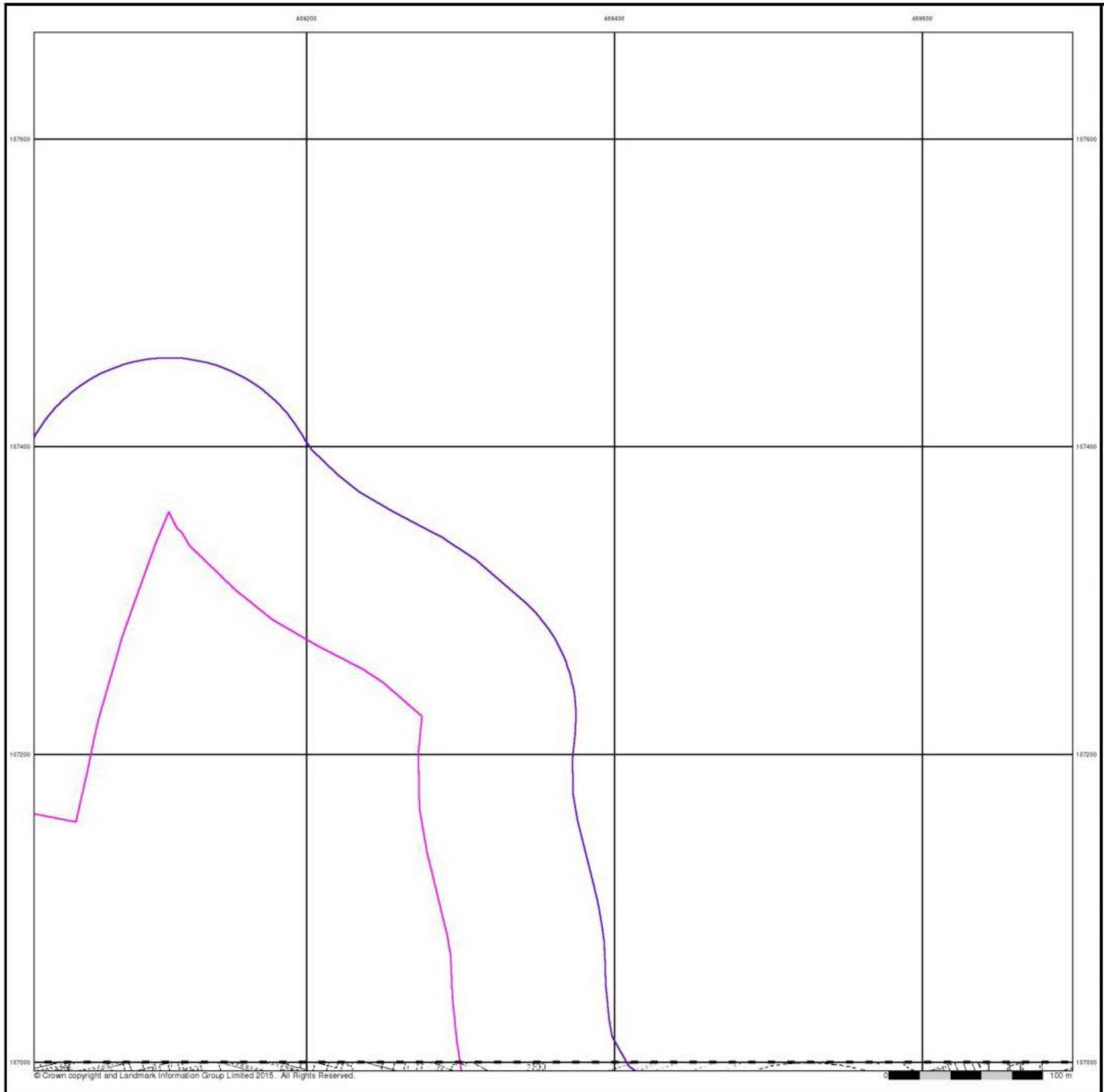
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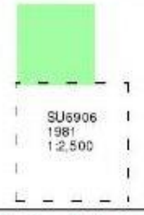
Additional SIMs

Published 1981

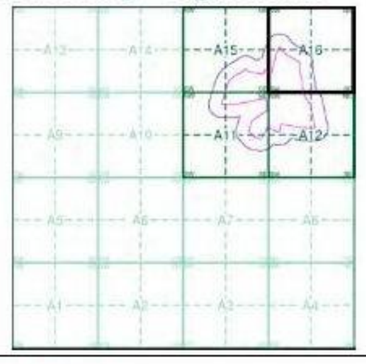
Source map scale - 1:2,500

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 A16



Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468760, 106730
Slice:	A
Site Area (Ha):	26.37
Search Buffer (m):	100

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

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Web: www.envirocheck.co.uk



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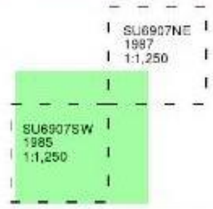
Additional SIMs

Published 1985 - 1987

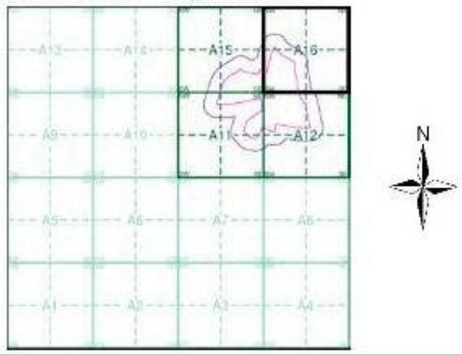
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A16



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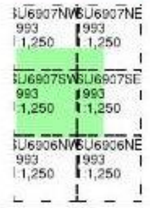
Large-Scale National Grid Data

Published 1993

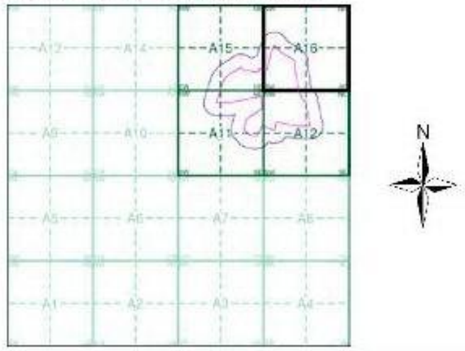
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A16



Order Details

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Slice:	A
Site Area (Ha):	26.37
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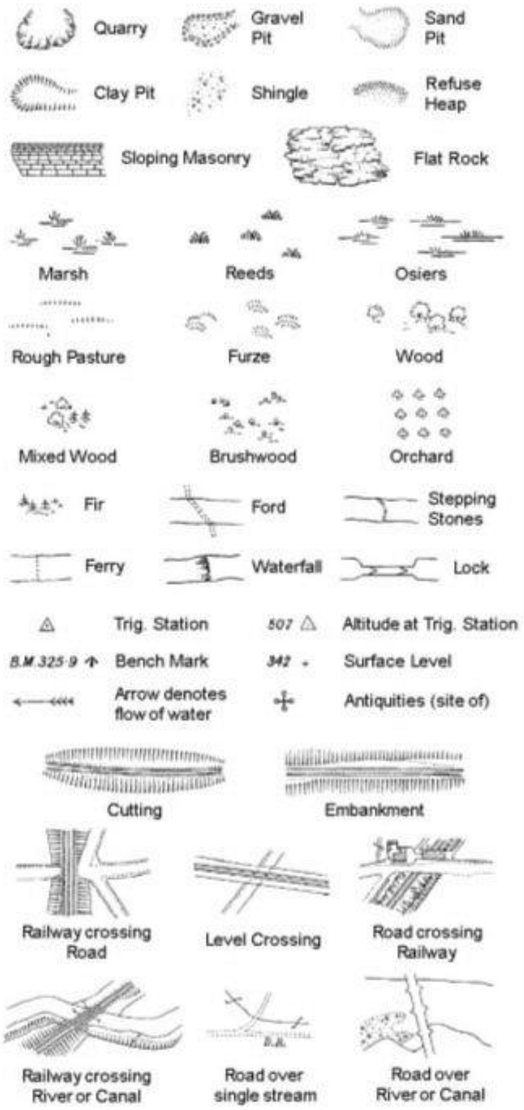
Site Details

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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	Sl.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

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



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



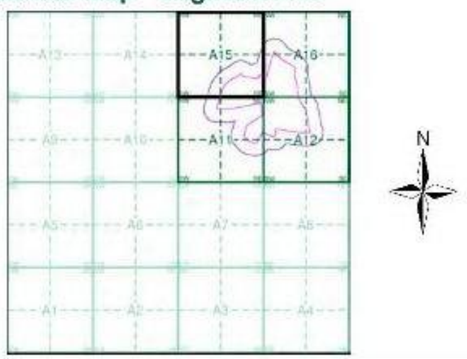
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity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

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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Hampshire & Isle Of Wight	1:2,500	1868 - 1878	2
Hampshire & Isle Of Wight	1:2,500	1897	3
Hampshire & Isle Of Wight	1:2,500	1909	4
Hampshire & Isle Of Wight	1:2,500	1932	5
Ordnance Survey Plan	1:1,250	1951 - 1973	6
Ordnance Survey Plan	1:2,500	1952 - 1966	7
Ordnance Survey Plan	1:2,500	1954 - 1960	8
Ordnance Survey Plan	1:2,500	1966 - 1969	9
Ordnance Survey Plan	1:2,500	1969	10
Ordnance Survey Plan	1:1,250	1973 - 1989	11
Additional SIMs	1:1,250	1977 - 1990	12
Additional SIMs	1:2,500	1981	13
Ordnance Survey Plan	1:1,250	1983 - 1986	14
Additional SIMs	1:1,250	1985 - 1989	15
Additional SIMs	1:1,250	1989	16
Large-Scale National Grid Data	1:1,250	1993	17
Large-Scale National Grid Data	1:1,250	1995	18

Historical Map - Segment A15



Order Details

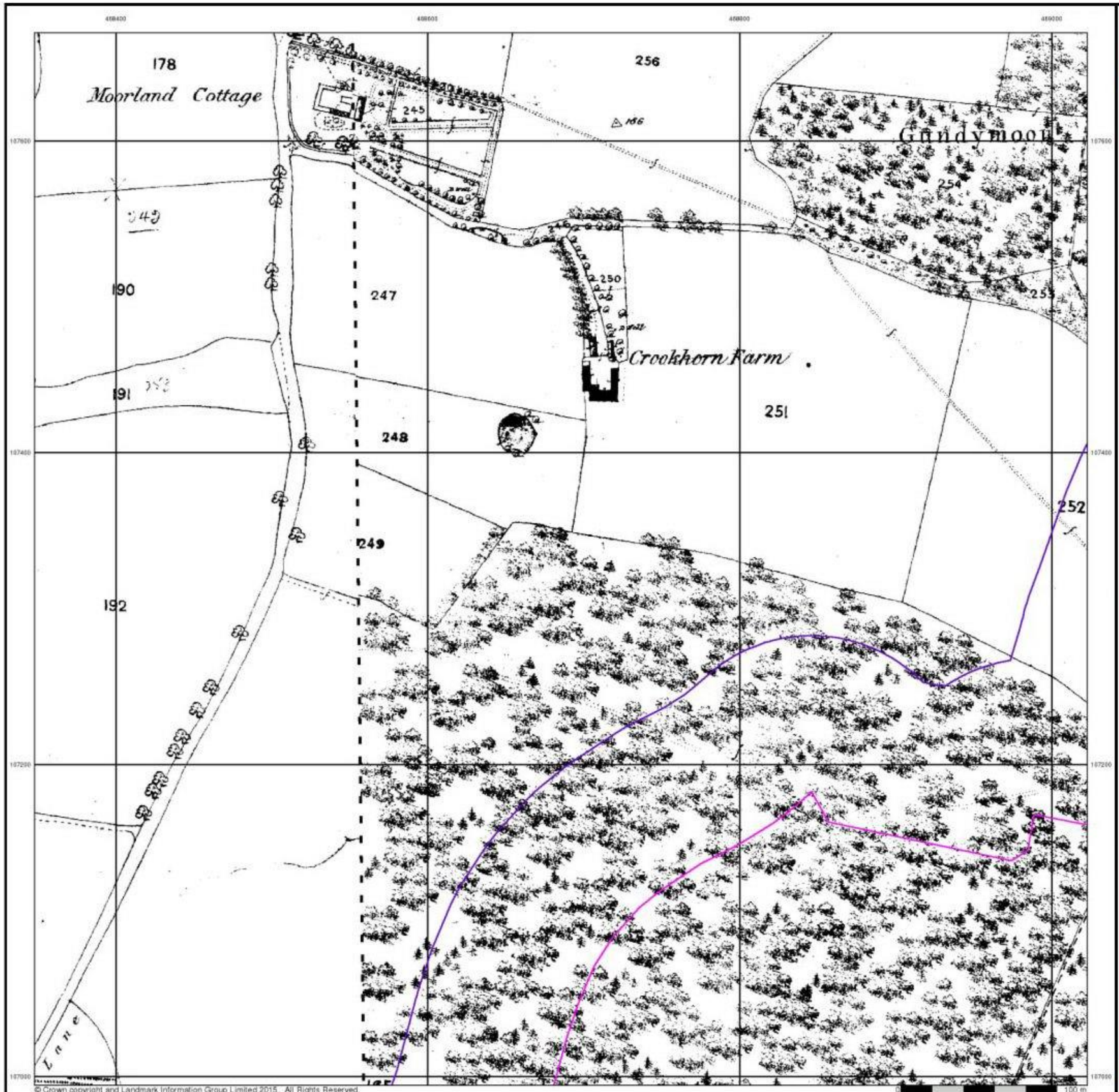
Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468760, 106730
Slice:	A
Site Area (Ha):	26.37
Search Buffer (m):	100

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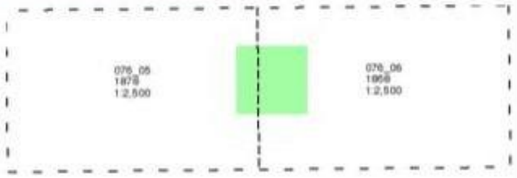
Hampshire & Isle Of Wight

Published 1868 - 1878

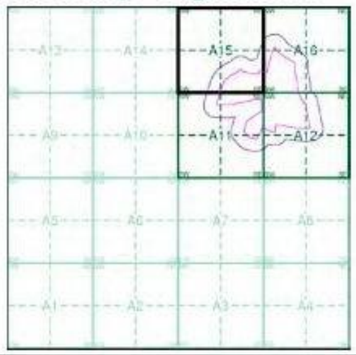
Source map scale - 1:2,500

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 A15



Order Details

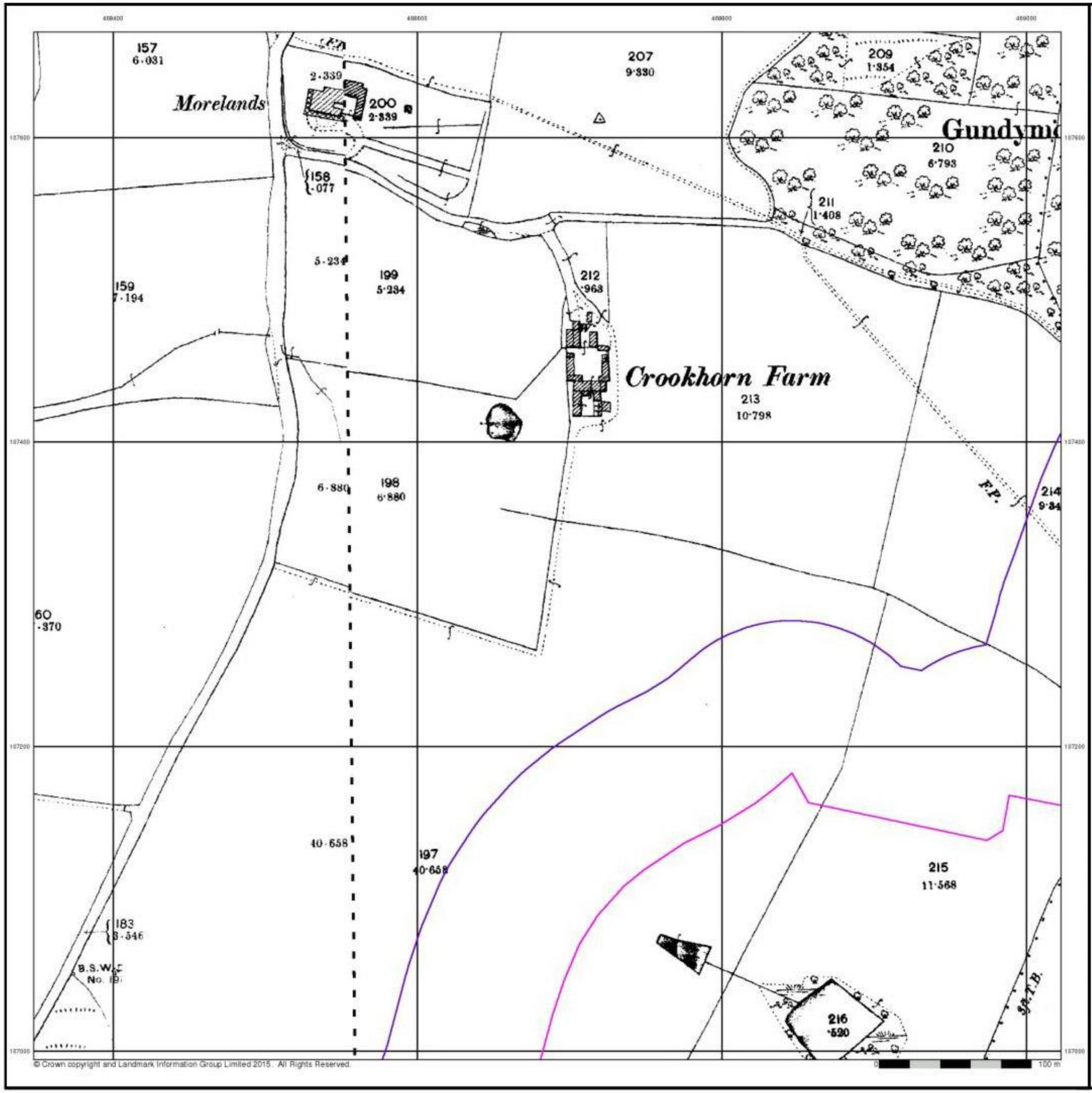
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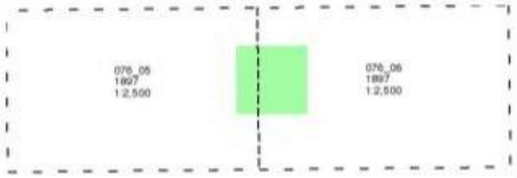
Hampshire & Isle Of Wight

Published 1897

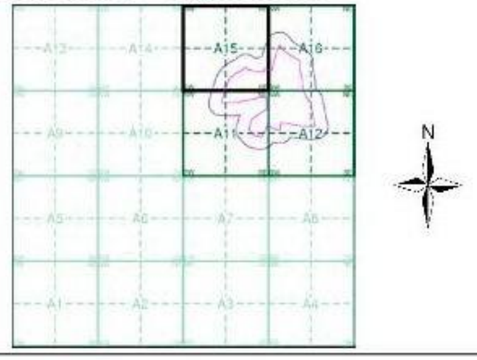
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A15



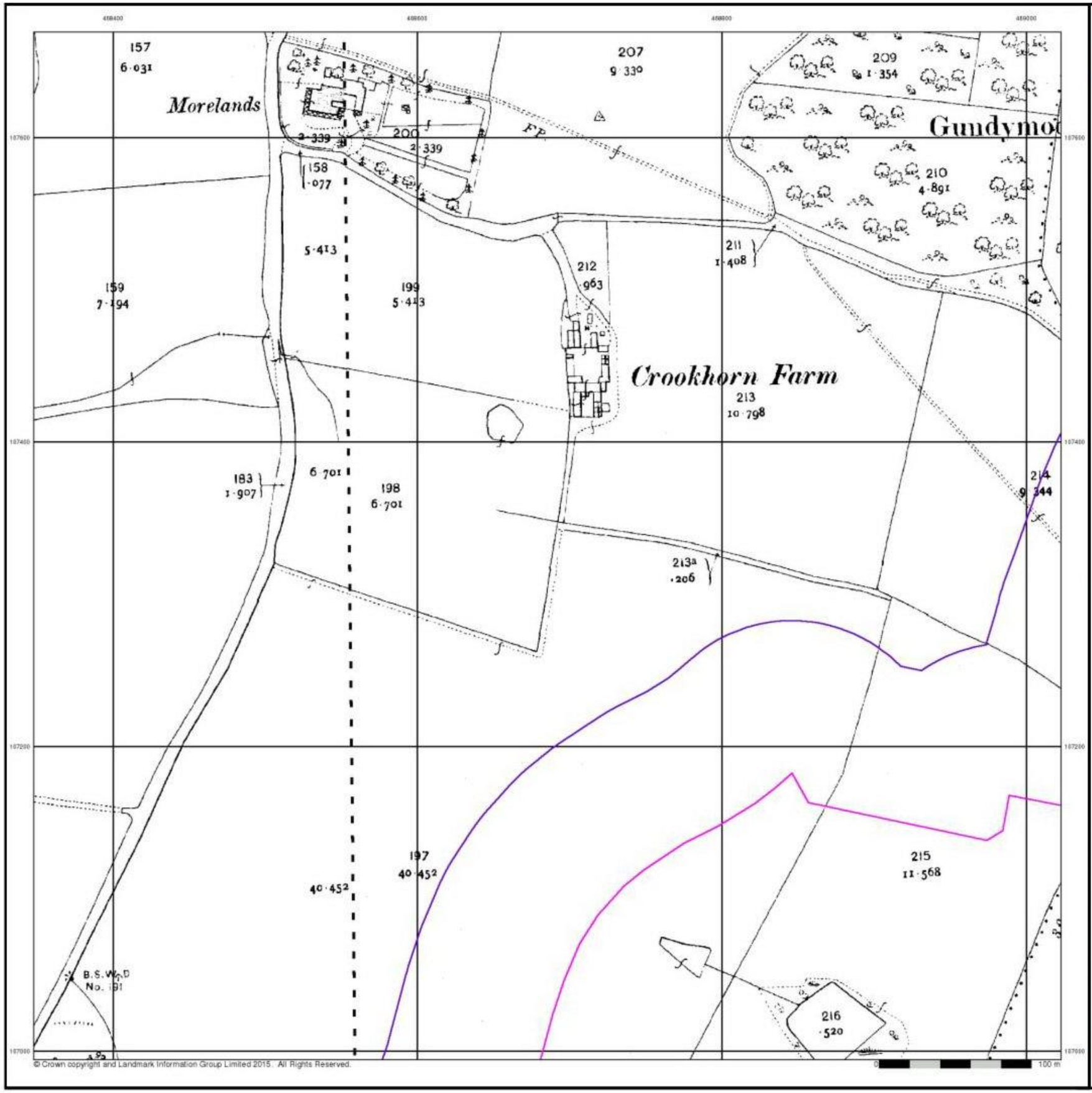
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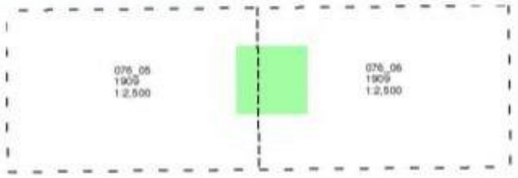
Hampshire & Isle Of Wight

Published 1909

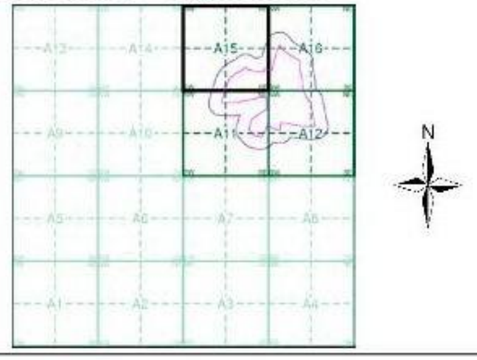
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A15



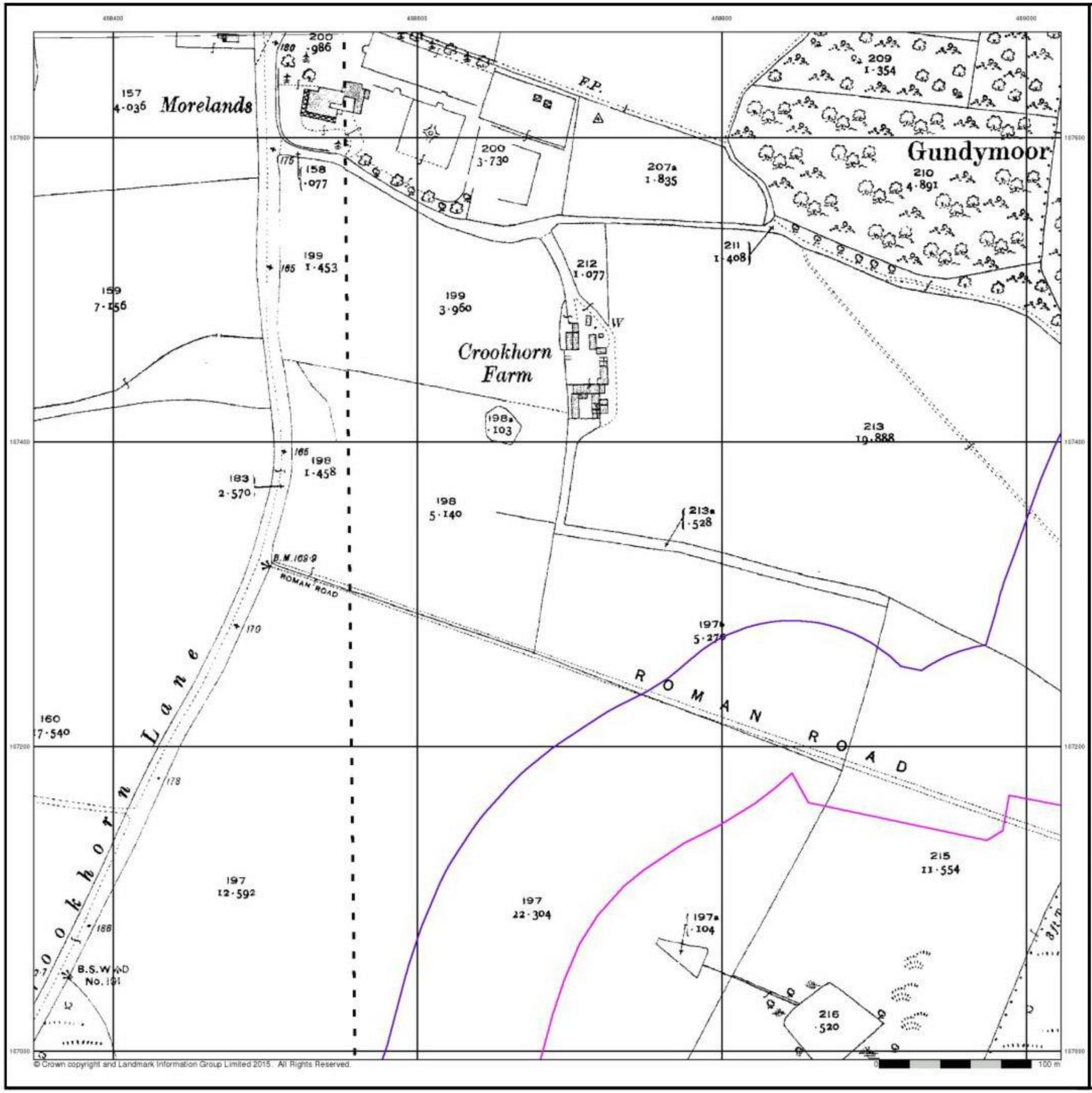
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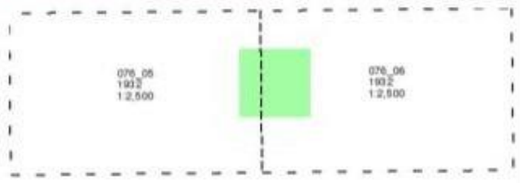
Hampshire & Isle Of Wight

Published 1932

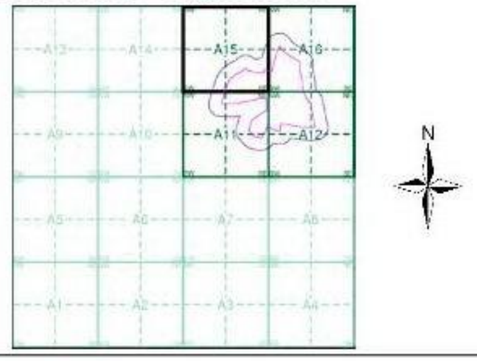
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A15



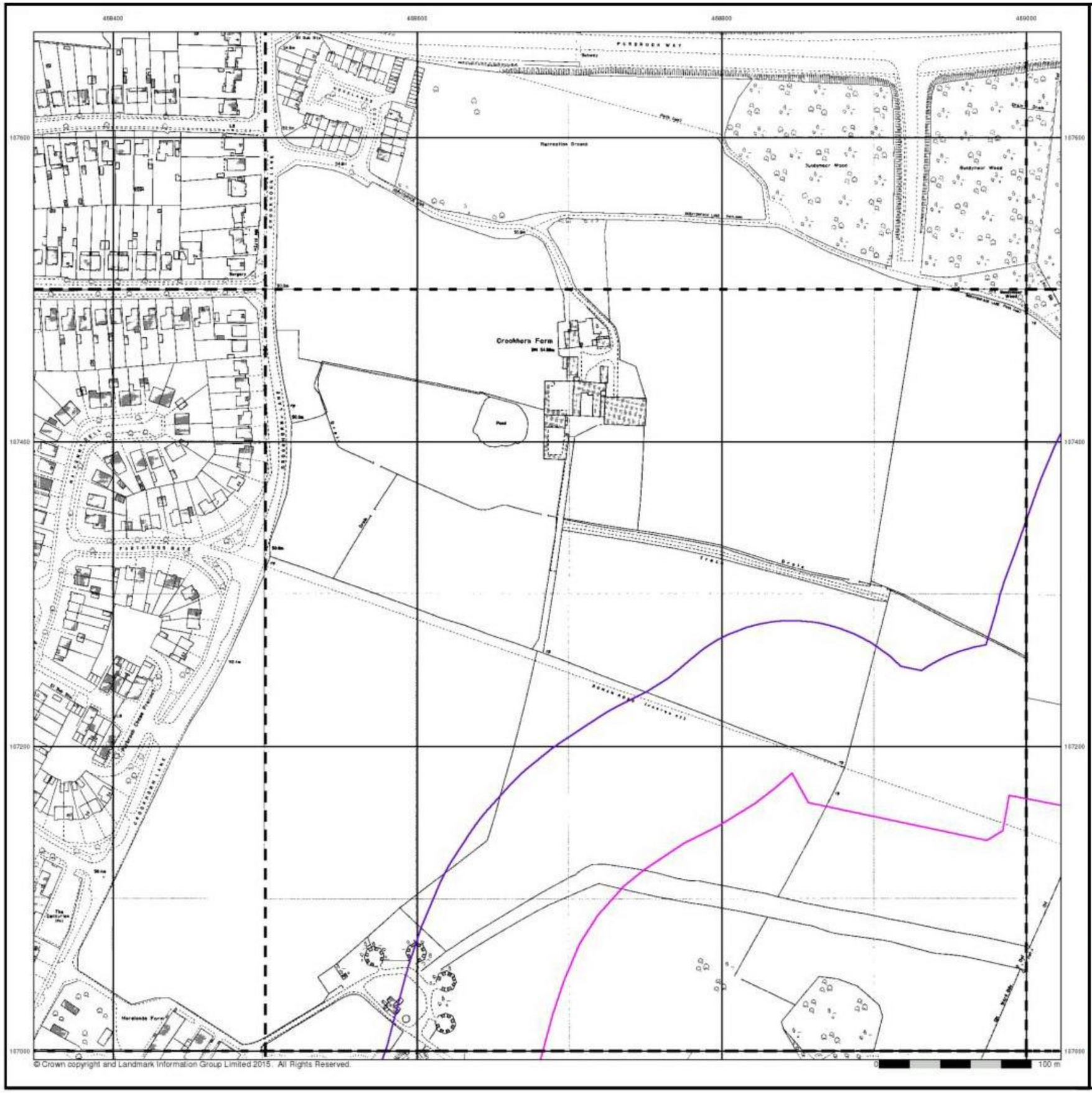
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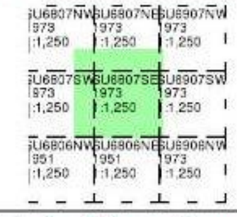
Ordnance Survey Plan

Published 1951 - 1973

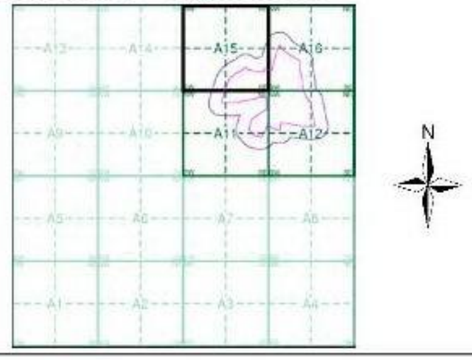
Source map scale - 1:1,250

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Map Name(s) and Date(s)



Historical Map - Segment A15



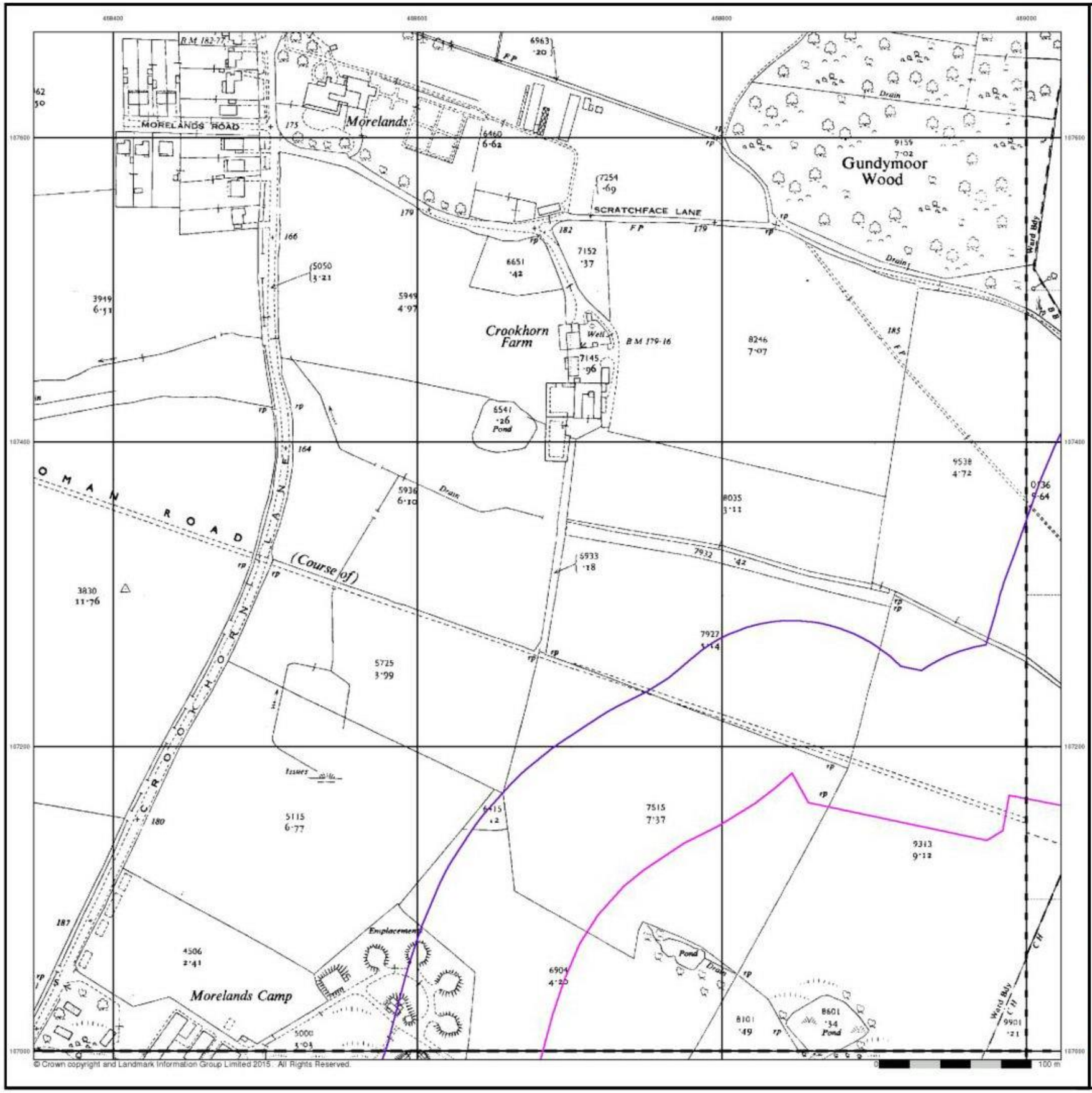
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Ordnance Survey Plan

Published 1952 - 1966

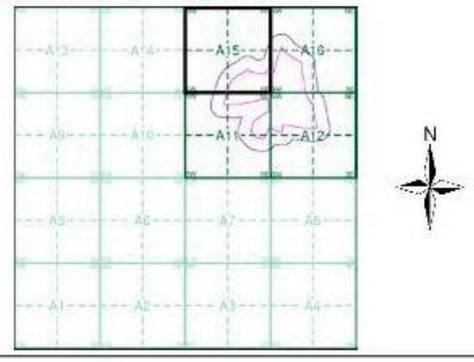
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Map Name(s) and Date(s)

SU6807 1953 12,500	SU6907 1966 12,500
SU6806 1952 12,500	SU6906 1952 12,500

Historical Map - Segment A15

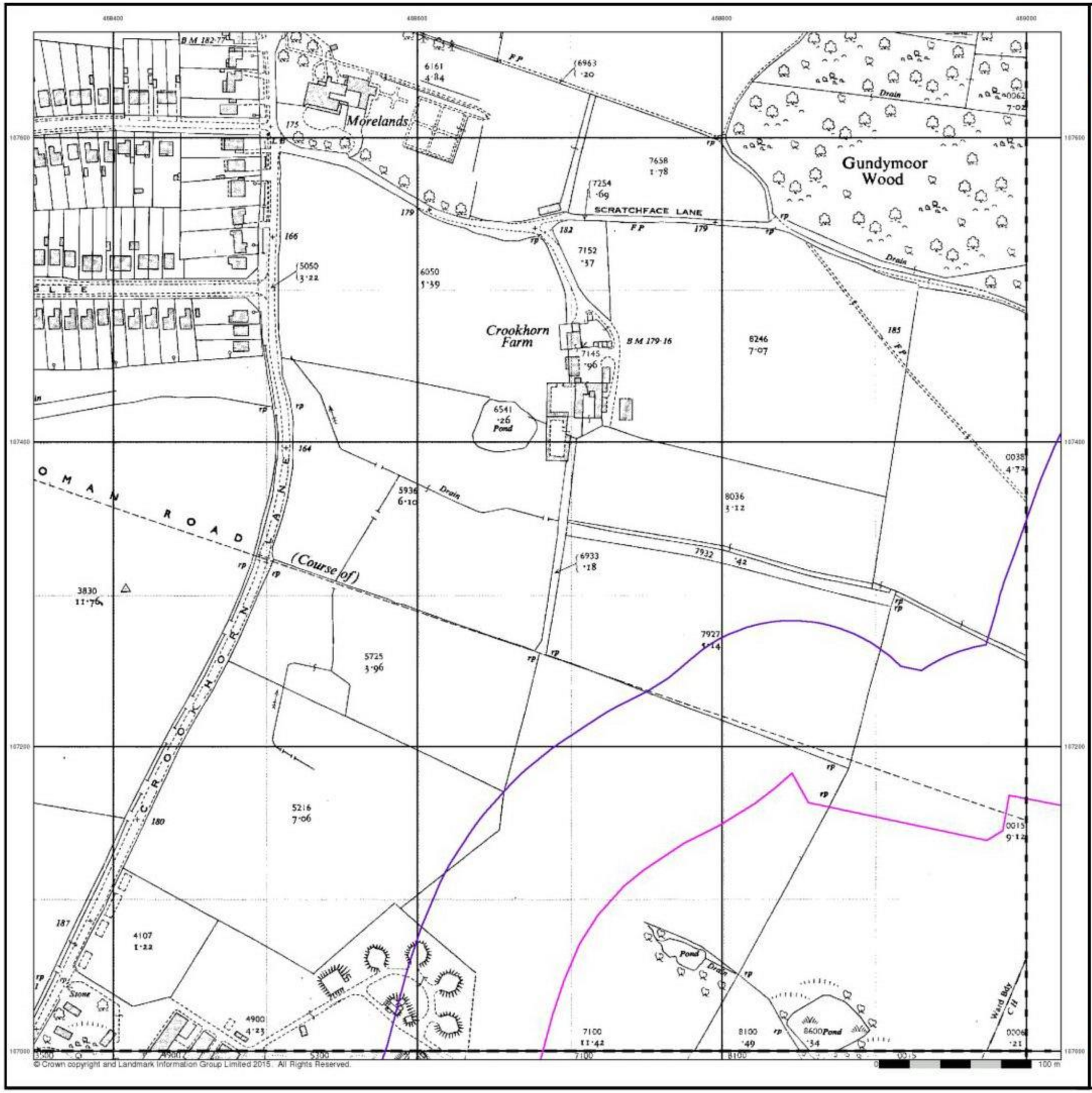


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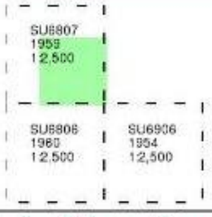
Ordnance Survey Plan

Published 1954 - 1960

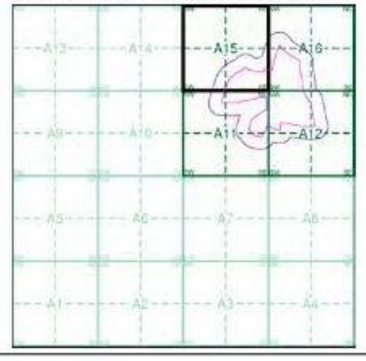
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A15



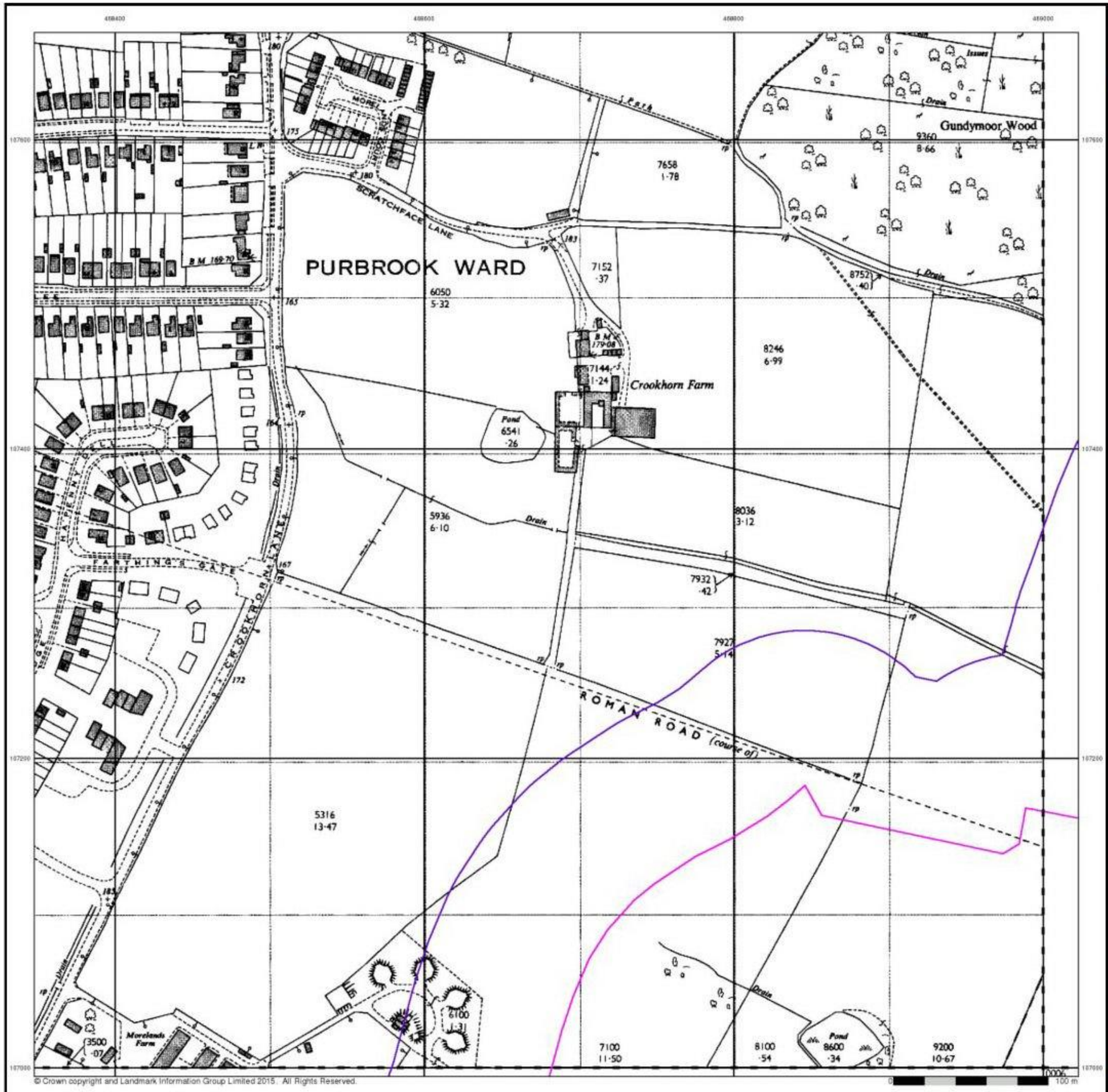
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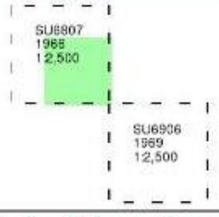
Ordnance Survey Plan

Published 1966 - 1969

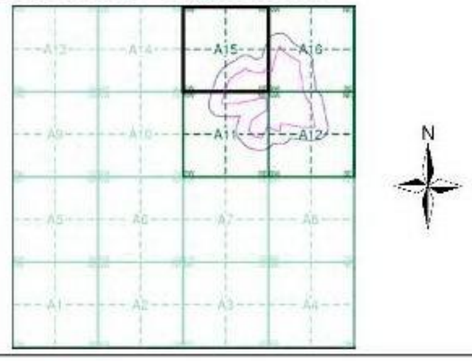
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A15

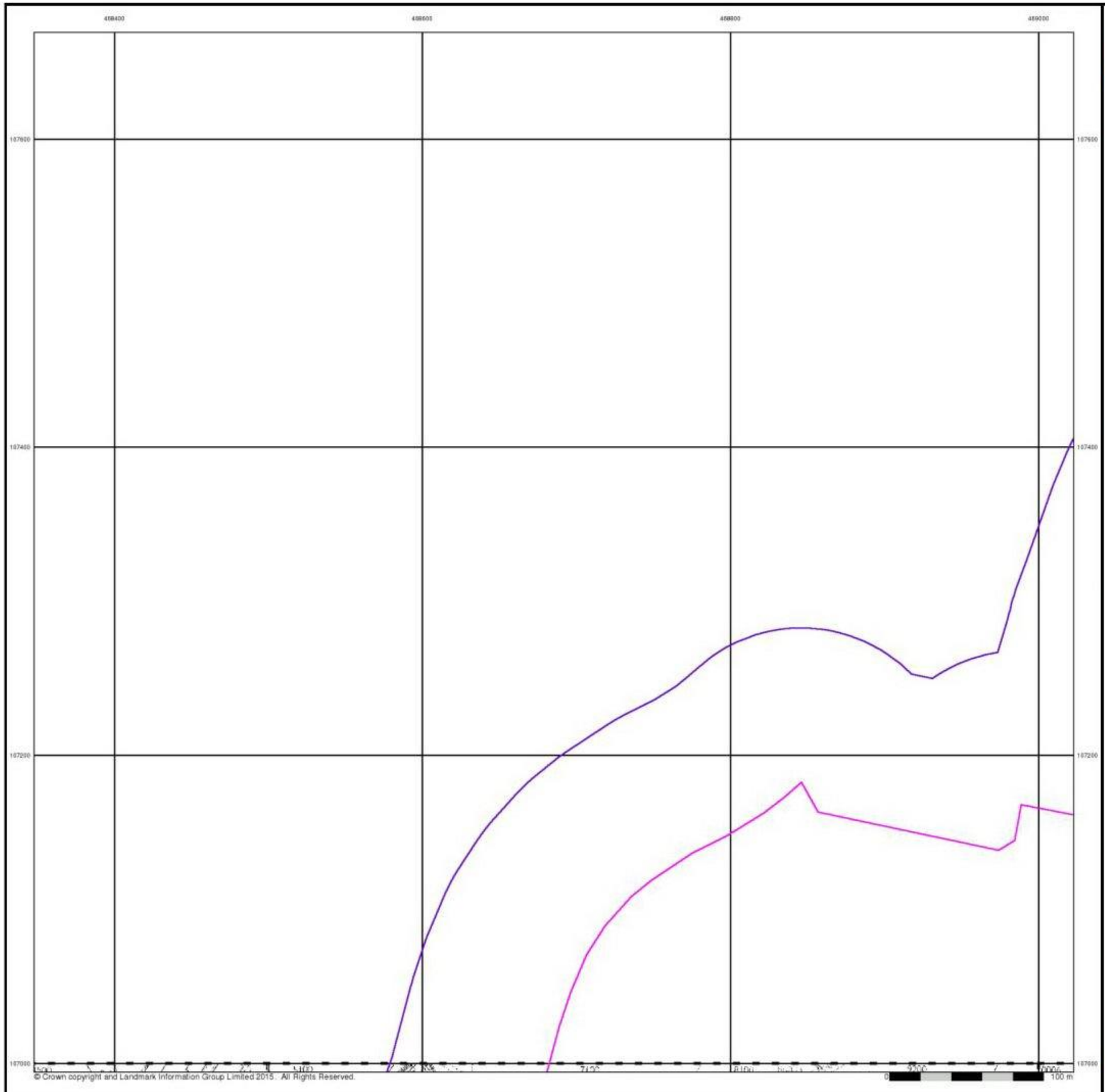


Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468760, 106730
Slice:	A
Site Area (Ha):	26.37
Search Buffer (m):	100

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



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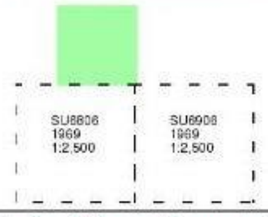
Ordnance Survey Plan

Published 1969

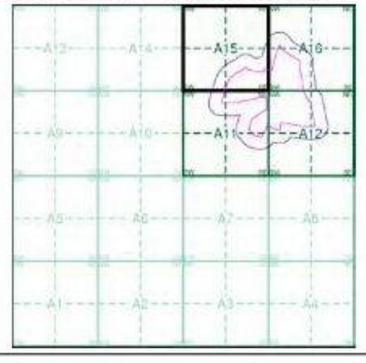
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered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

Map Name(s) and Date(s)



Historical Map - Segment A15



Order Details

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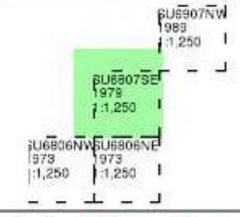
Ordnance Survey Plan

Published 1973 - 1989

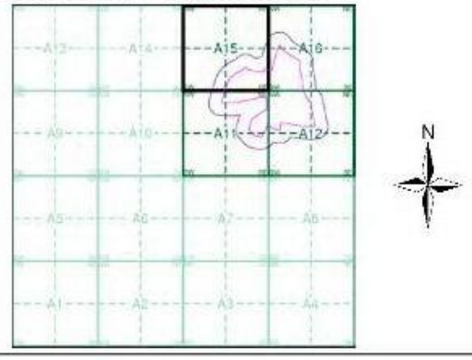
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A15



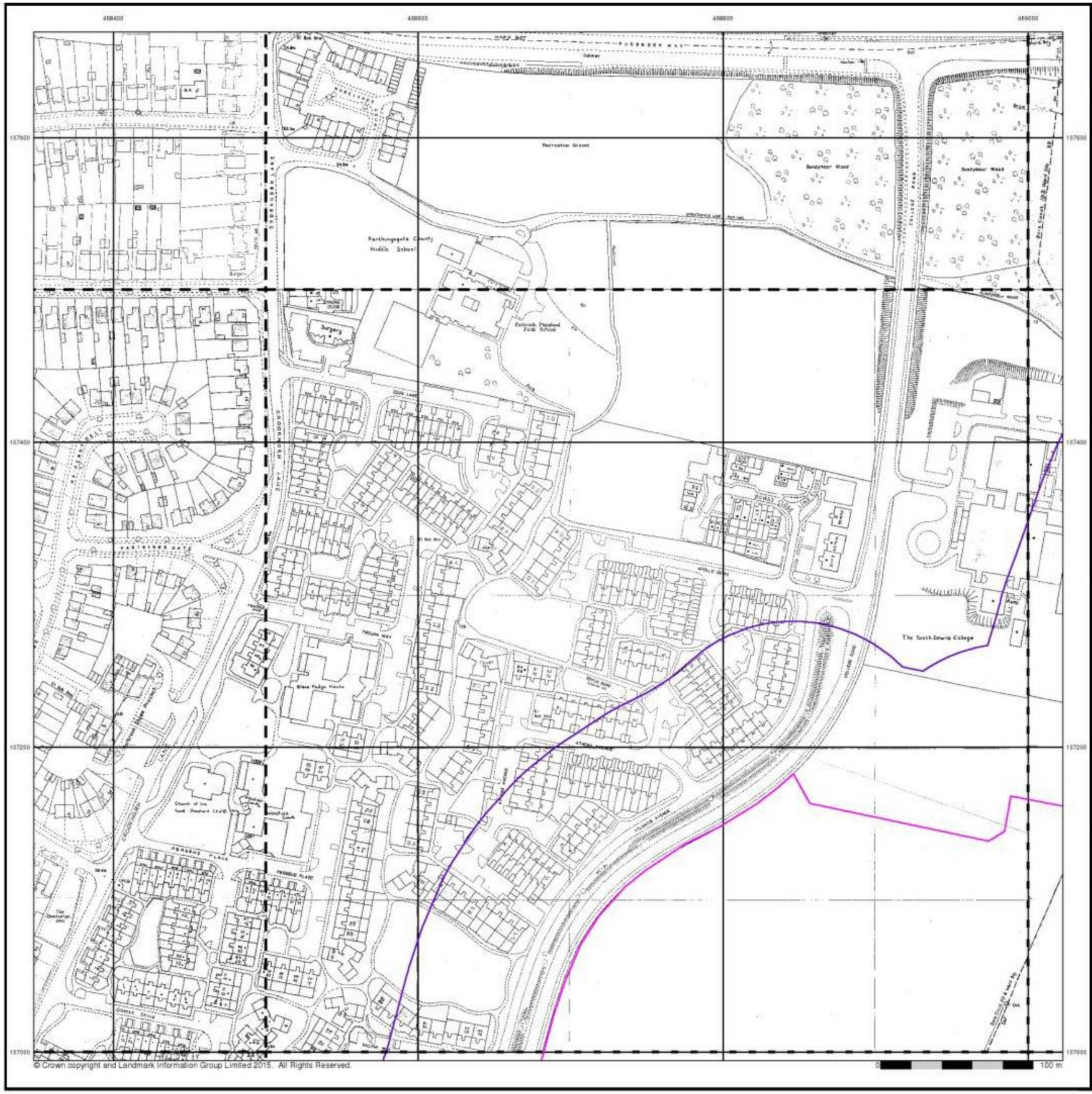
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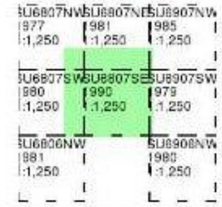
Additional SIMs

Published 1977 - 1990

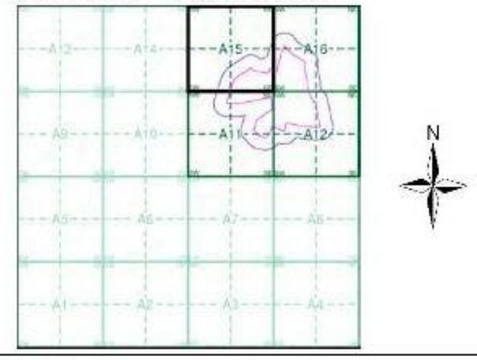
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A15



Order Details

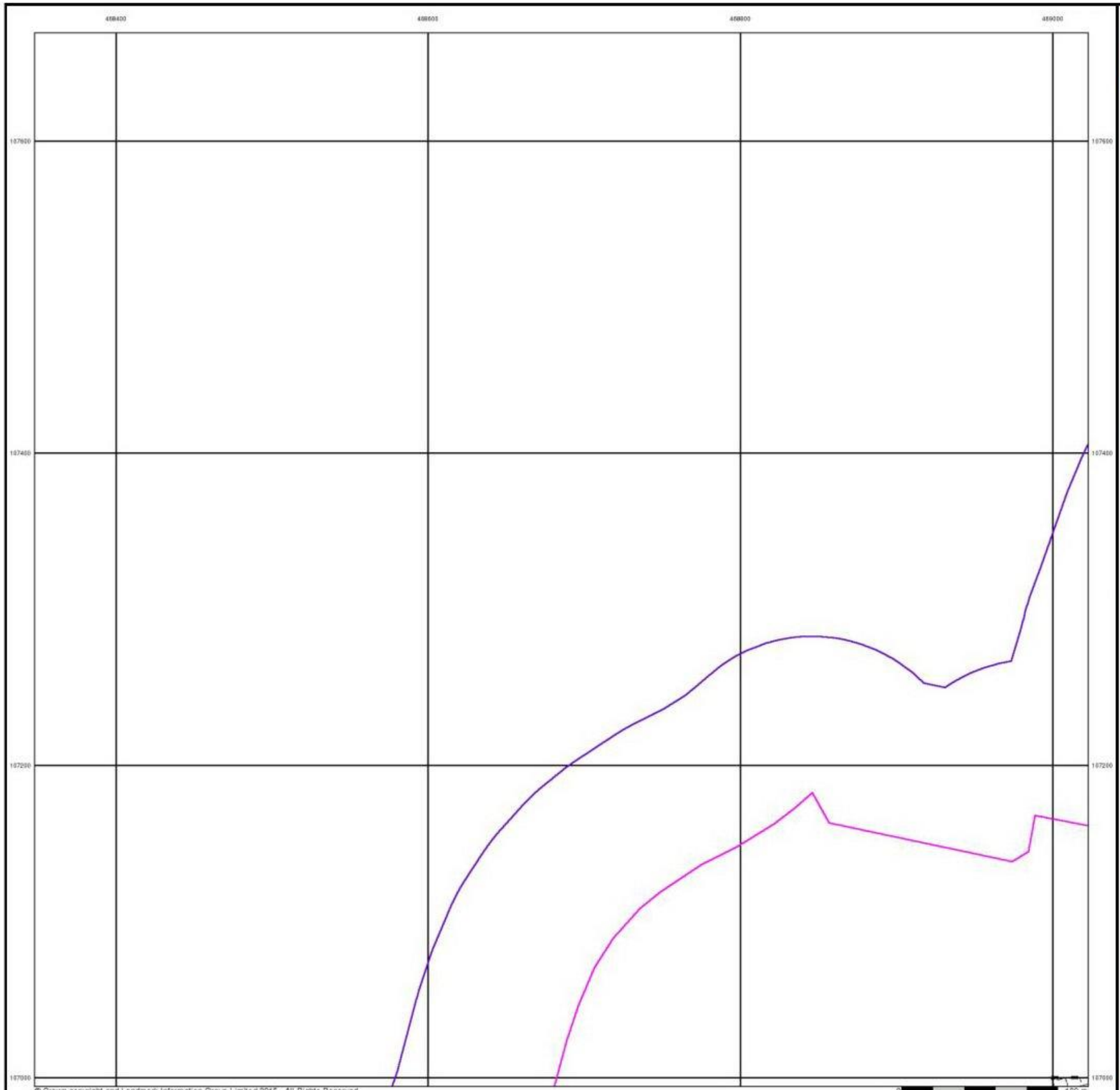
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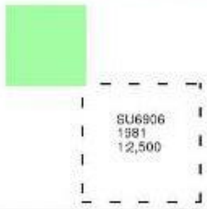
Additional SIMs

Published 1981

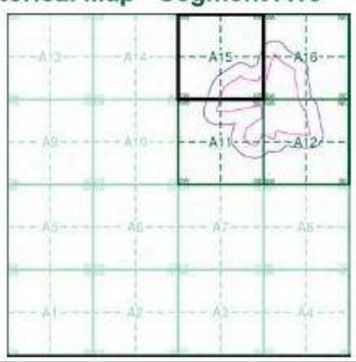
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A15



Order Details

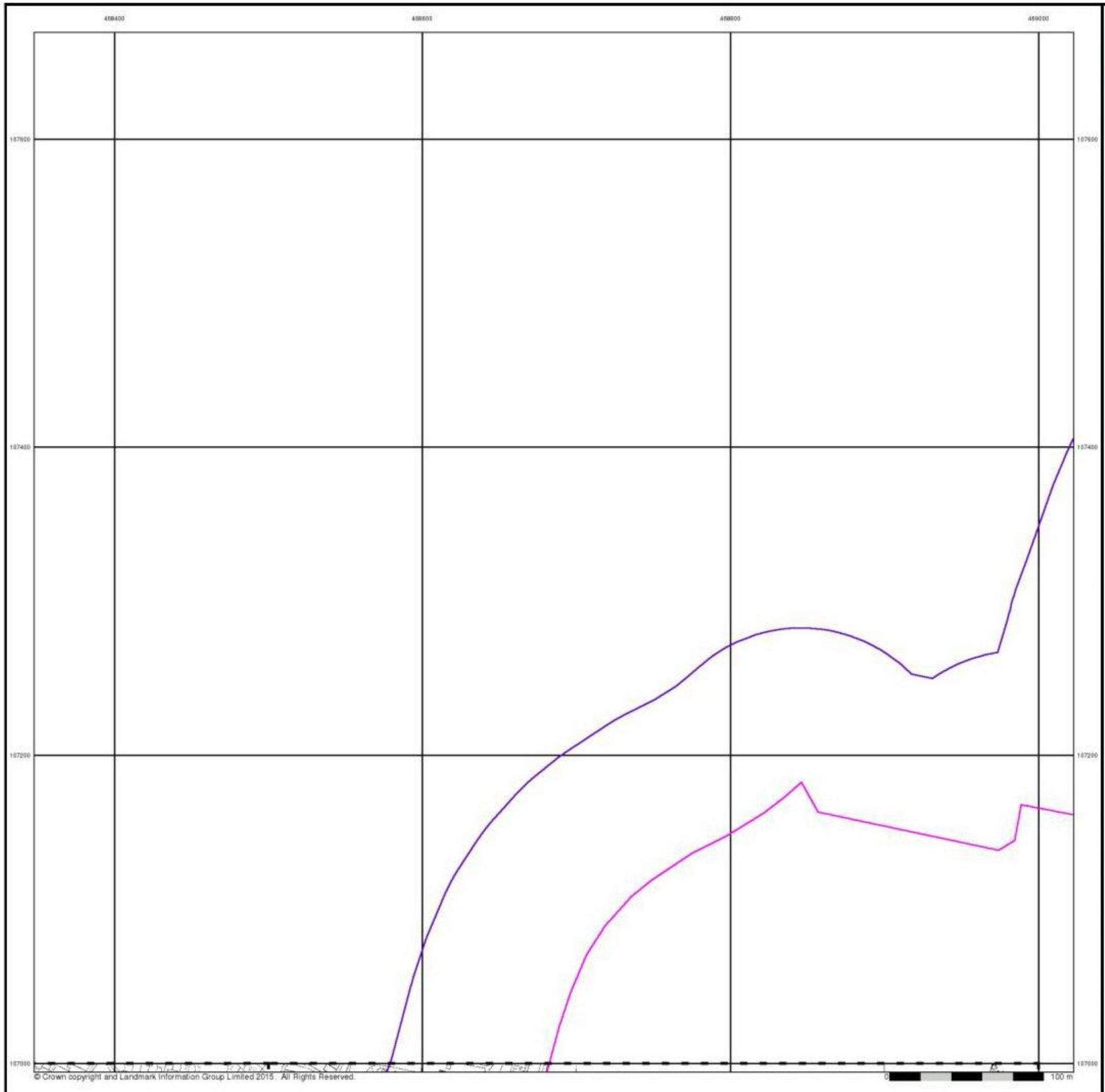
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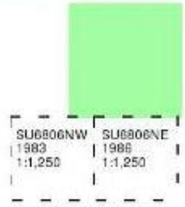
Ordnance Survey Plan

Published 1983 - 1986

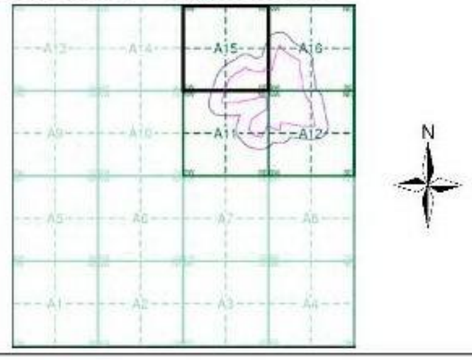
Source map scale - 1:1,250

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Map Name(s) and Date(s)



Historical Map - Segment A15



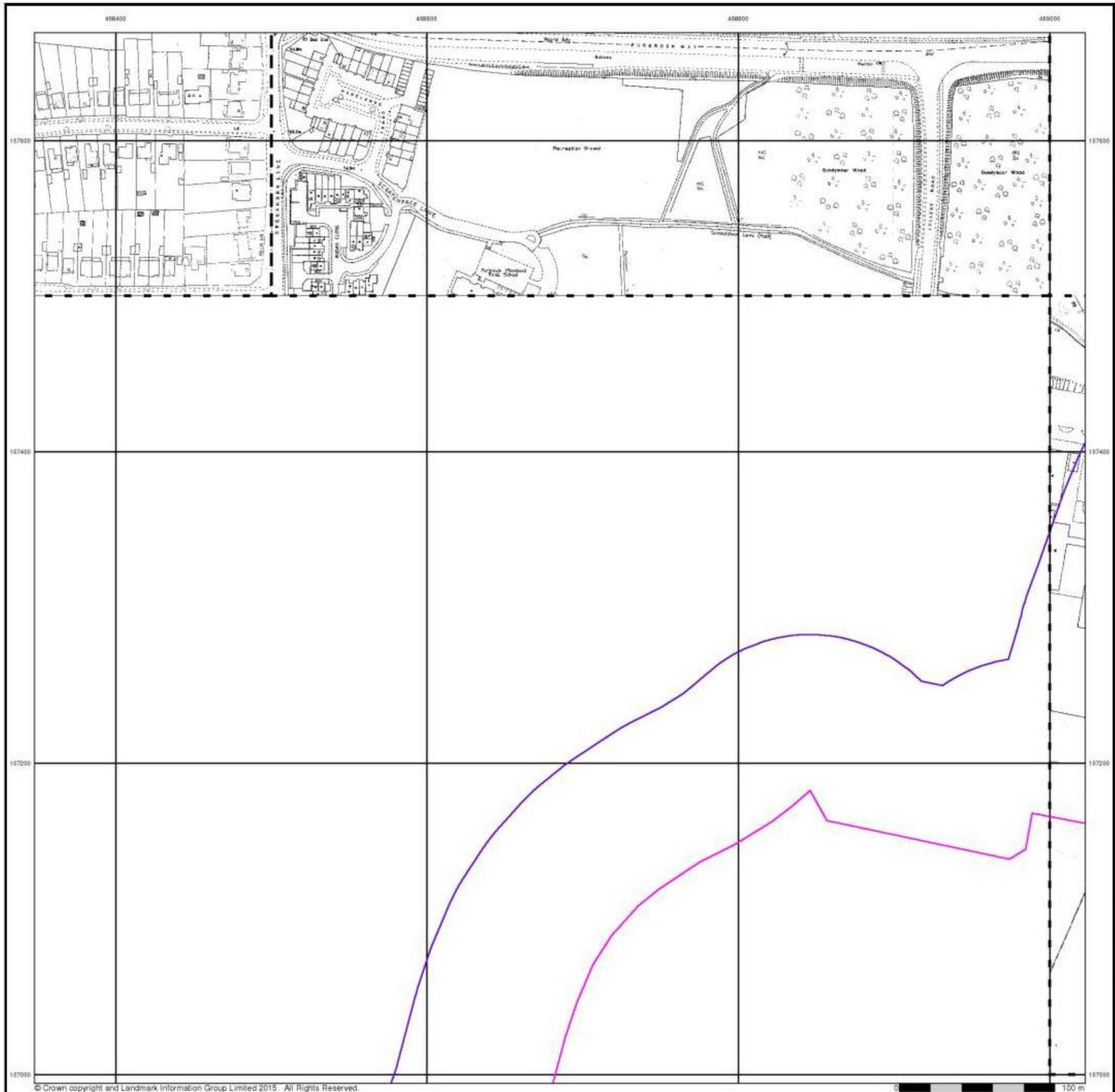
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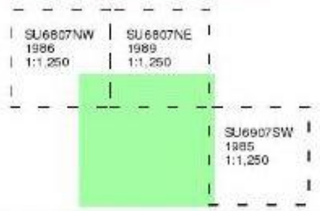
Additional SIMs

Published 1985 - 1989

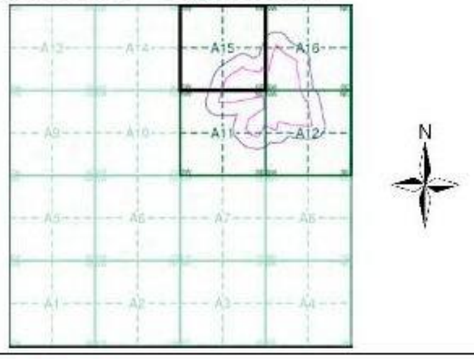
Source map scale - 1:1,250

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Map Name(s) and Date(s)



Historical Map - Segment A15



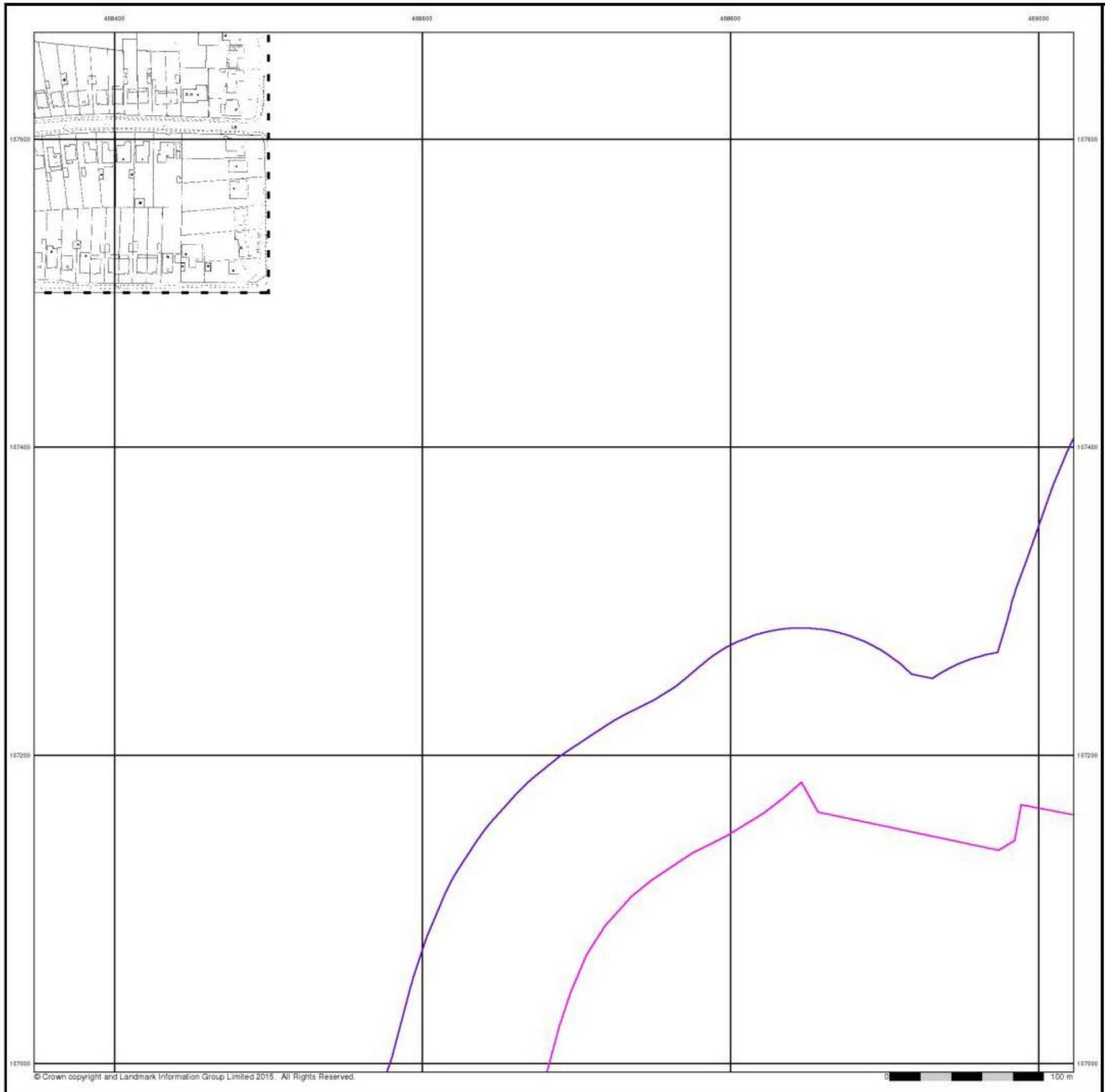
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Slice:	A
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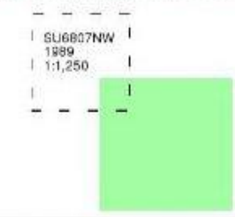
Additional SIMs

Published 1989

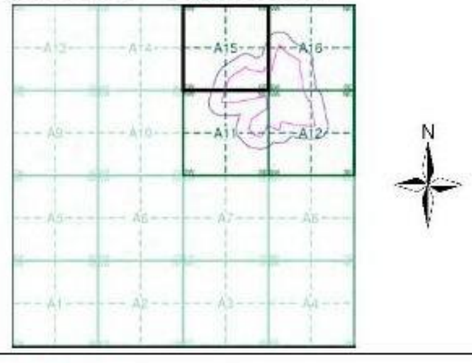
Source map scale - 1:1,250

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Map Name(s) and Date(s)



Historical Map - Segment A15



Order Details

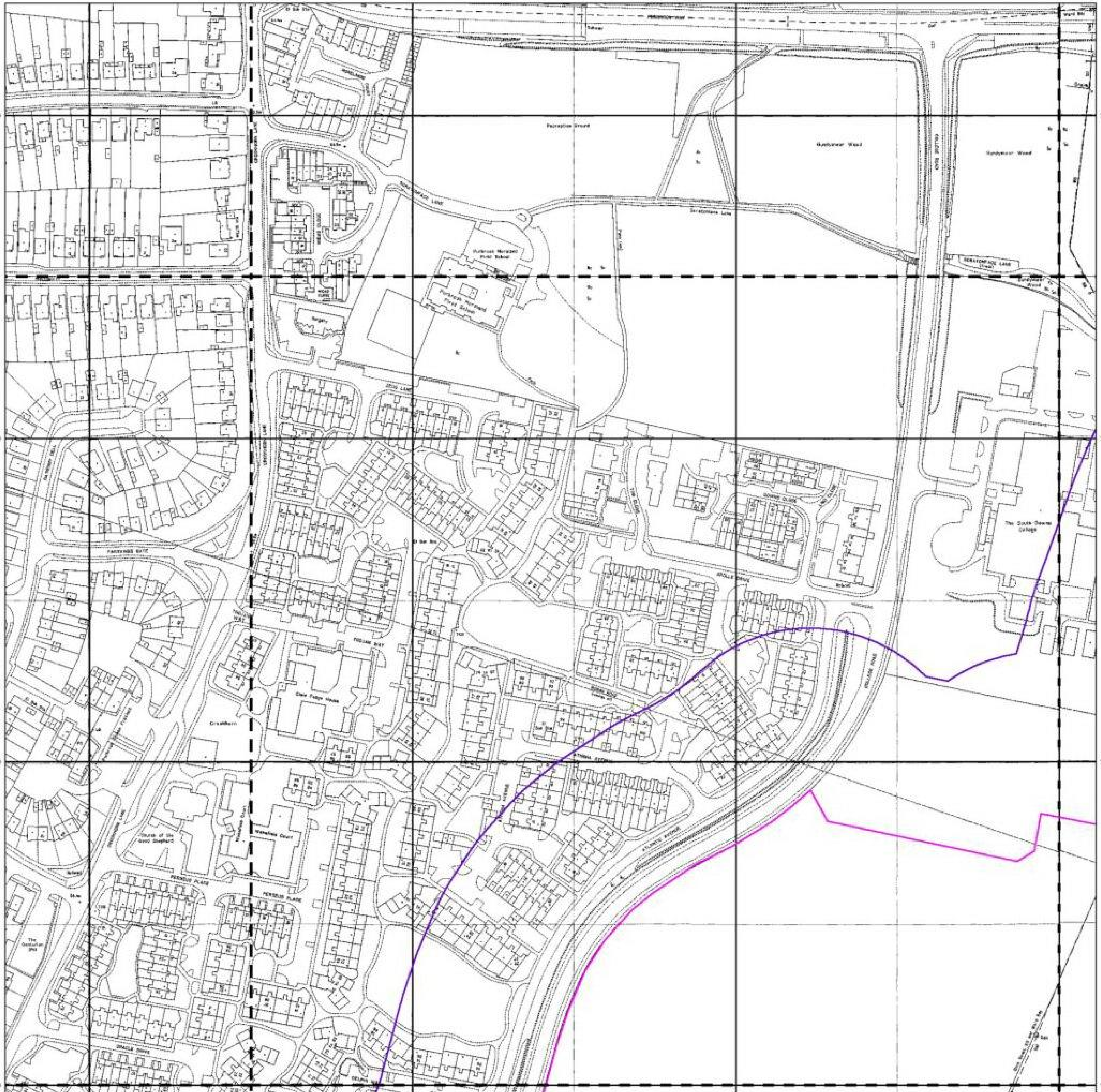
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0 100 m

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Large-Scale National Grid Data

Published 1993

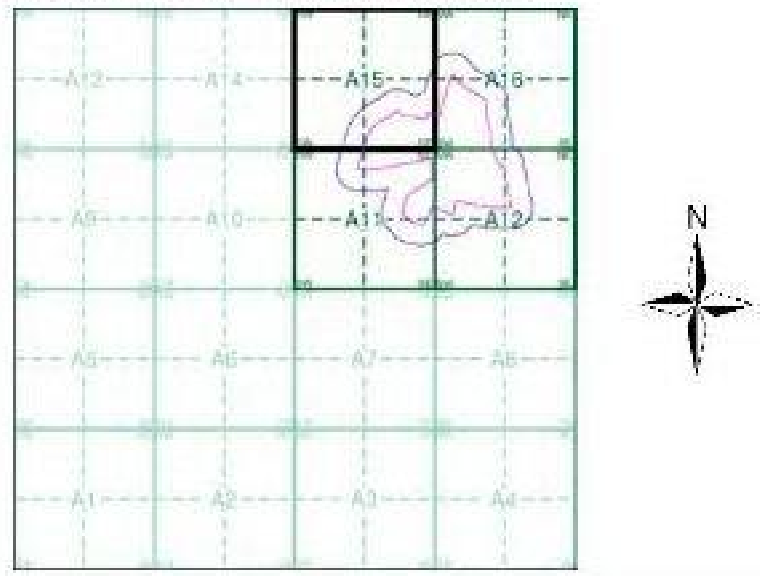
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

SU6807NW 1993 1:1,250	SU6807NE 1993 1:1,250	SU6907NW 1993 1:1,250
SU6807SW 1993 1:1,250	SU6807SE 1993 1:1,250	SU6907SW 1993 1:1,250
SU6806NW 1993 1:1,250	SU6806NE 1993 1:1,250	SU6906NW 1993 1:1,250

Historical Map - Segment A15

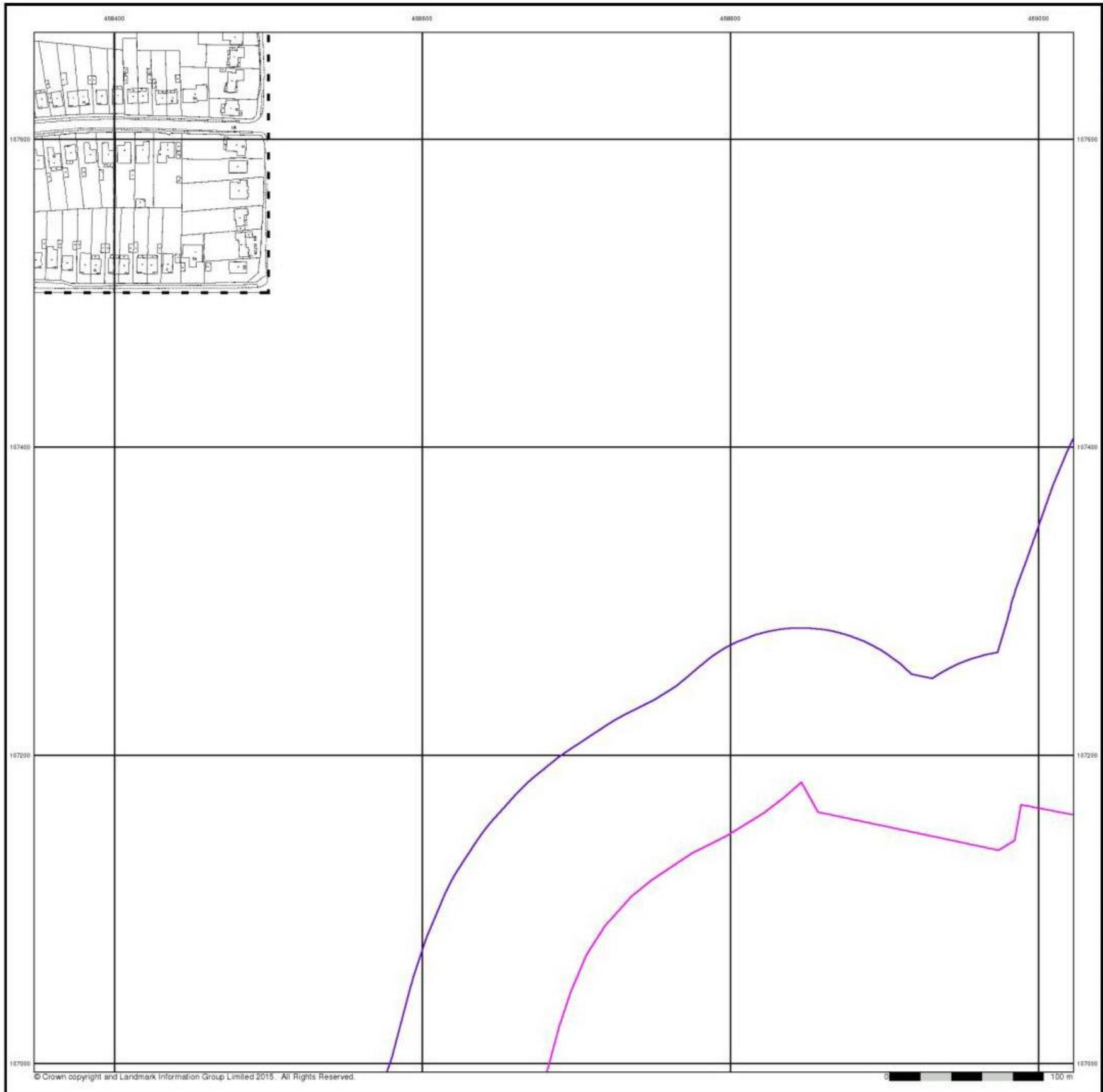


Order Details

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Site Details

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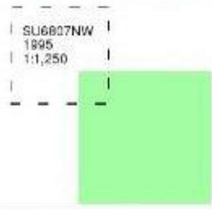
Large-Scale National Grid Data

Published 1995

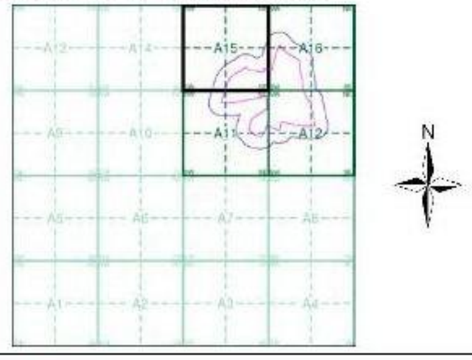
Source map scale - 1:1,250

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Map Name(s) and Date(s)



Historical Map - Segment A15



Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
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Slice:	A
Site Area (Ha):	26.37
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Site Details

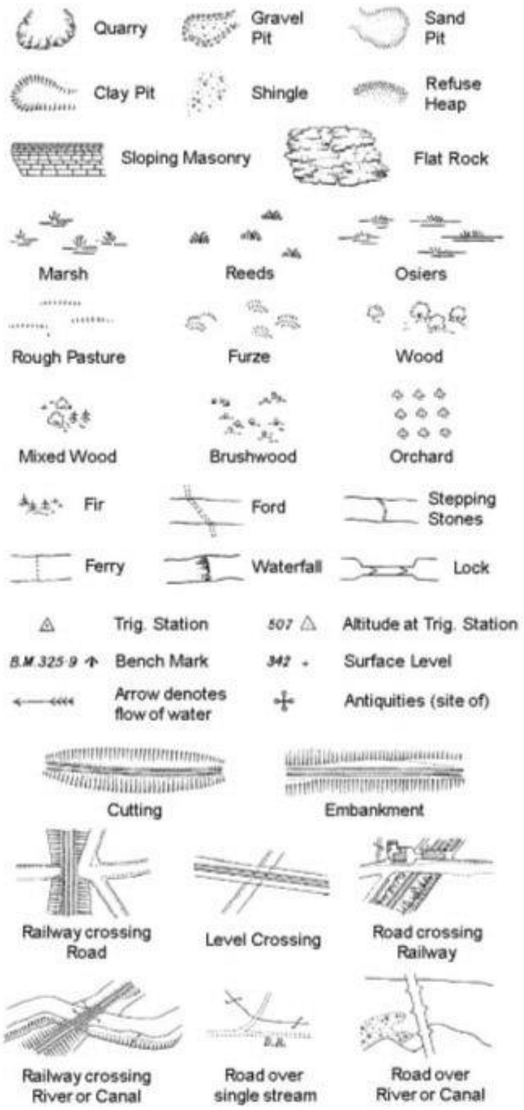
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Historical Mapping Legends

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	Sl.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

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



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



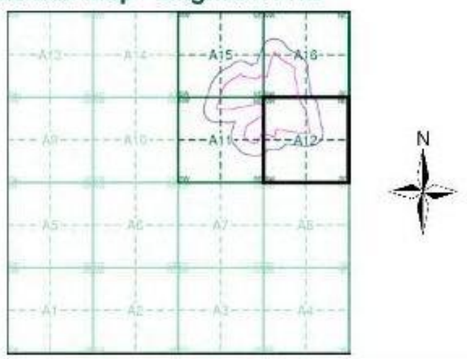
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity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

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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Hampshire & Isle Of Wight	1:2,500	1868	2
Hampshire & Isle Of Wight	1:2,500	1897	3
Hampshire & Isle Of Wight	1:2,500	1909	4
Hampshire & Isle Of Wight	1:2,500	1932	5
Ordnance Survey Plan	1:2,500	1952	6
Ordnance Survey Plan	1:2,500	1954	7
Ordnance Survey Plan	1:1,250	1957 - 1973	8
Ordnance Survey Plan	1:1,250	1967	9
Ordnance Survey Plan	1:2,500	1969	10
Ordnance Survey Plan	1:2,500	1969	11
Additional SIMs	1:1,250	1980 - 1989	12
Additional SIMs	1:2,500	1981	13
Ordnance Survey Plan	1:1,250	1982	14
Large-Scale National Grid Data	1:1,250	1993	15

Historical Map - Segment A12



Order Details

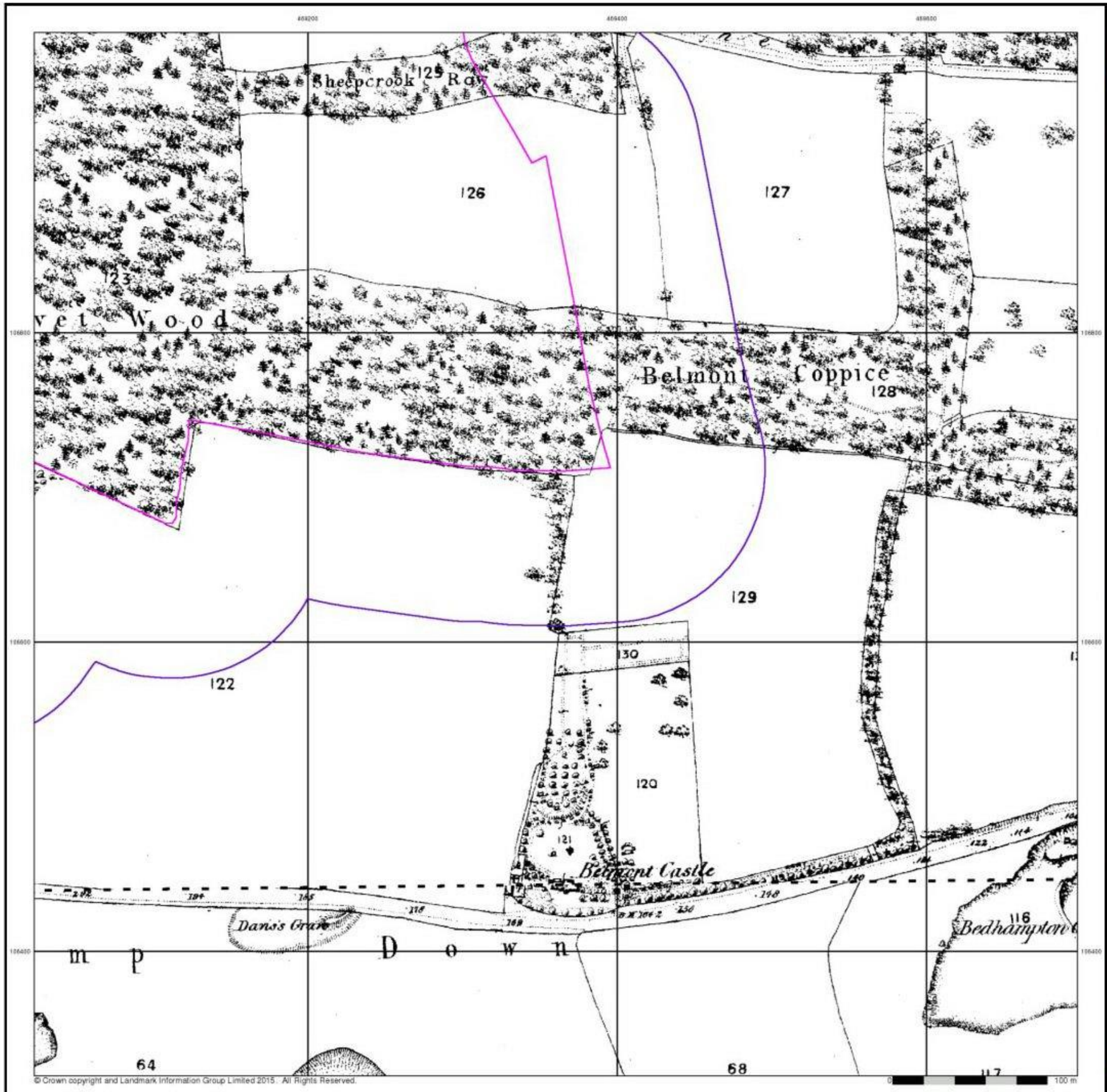
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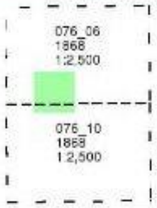
Hampshire & Isle Of Wight

Published 1868

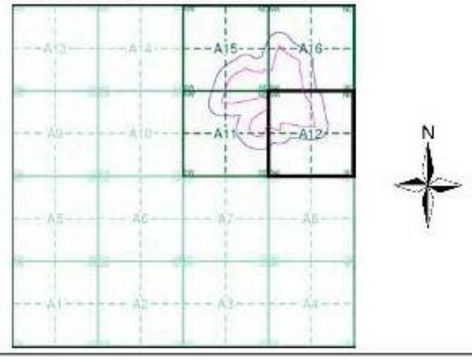
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A12



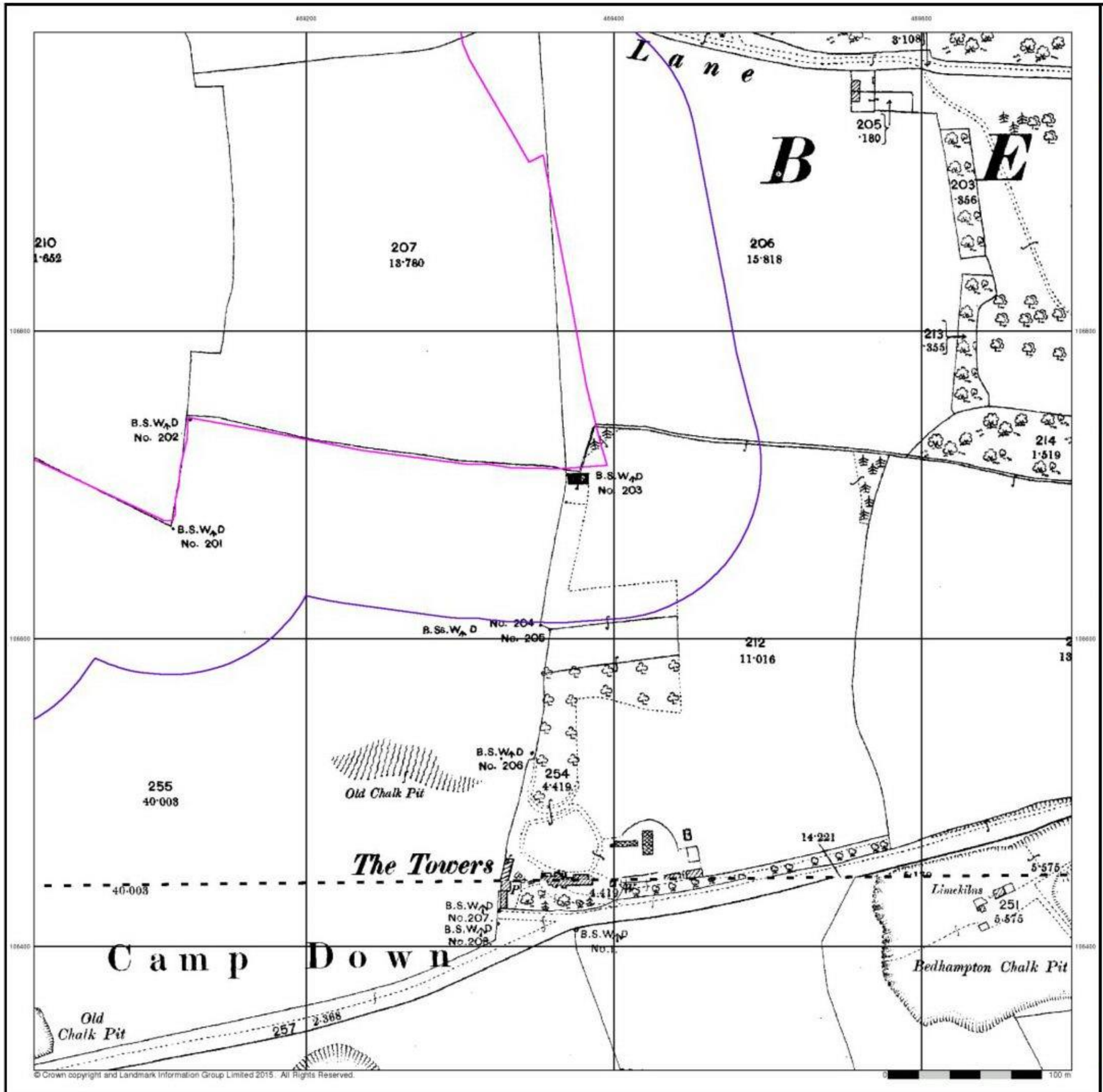
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Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468760, 106730
Slice:	A
Site Area (Ha):	26.37
Search Buffer (m):	100

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

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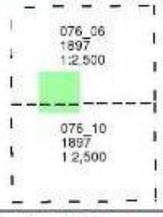
Hampshire & Isle Of Wight

Published 1897

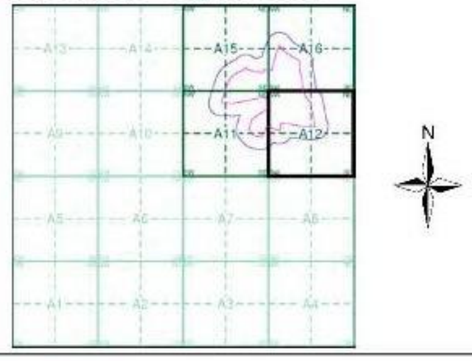
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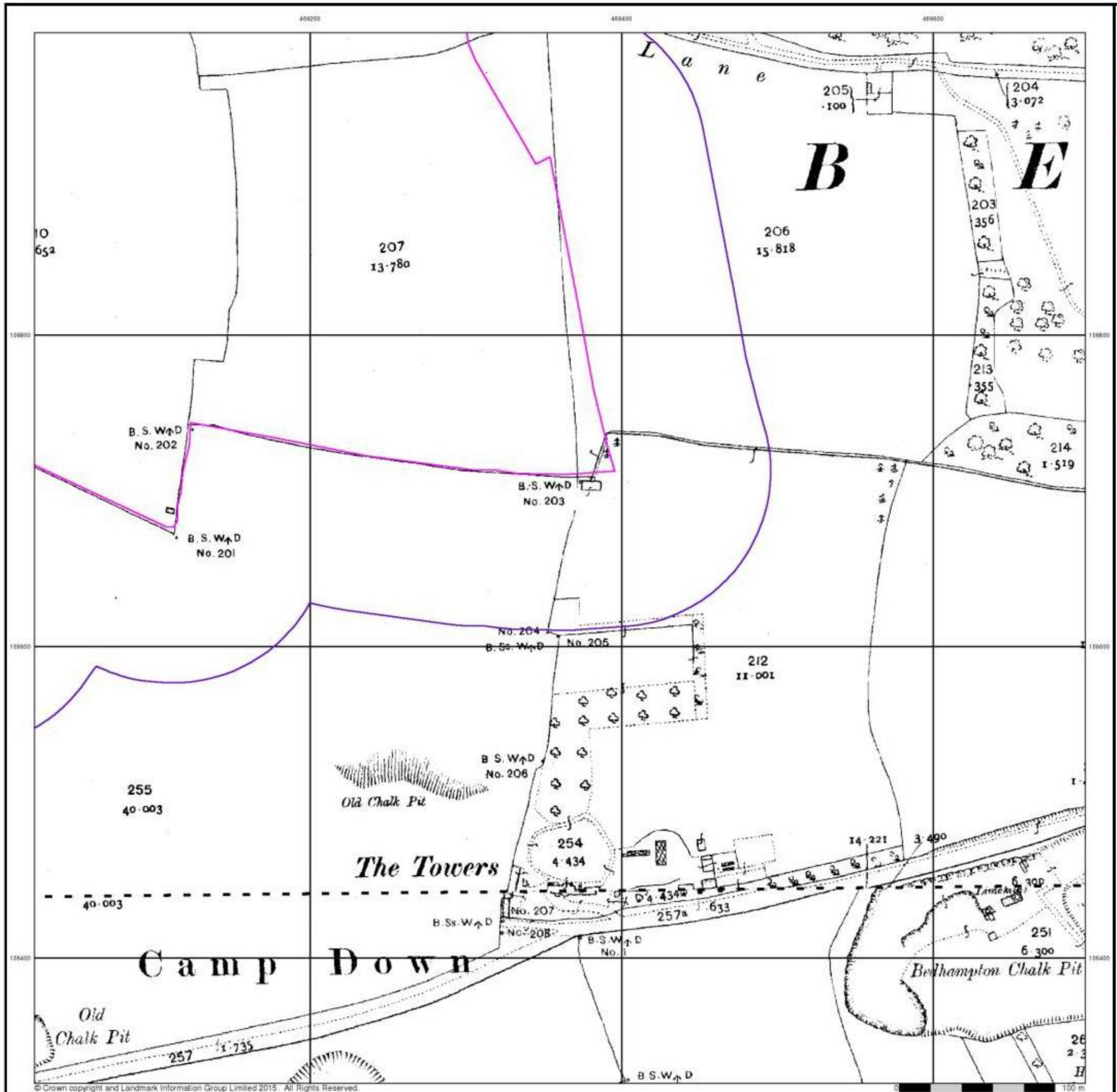
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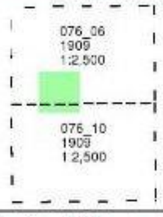
Hampshire & Isle Of Wight

Published 1909

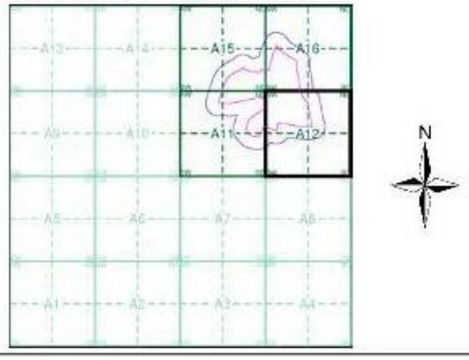
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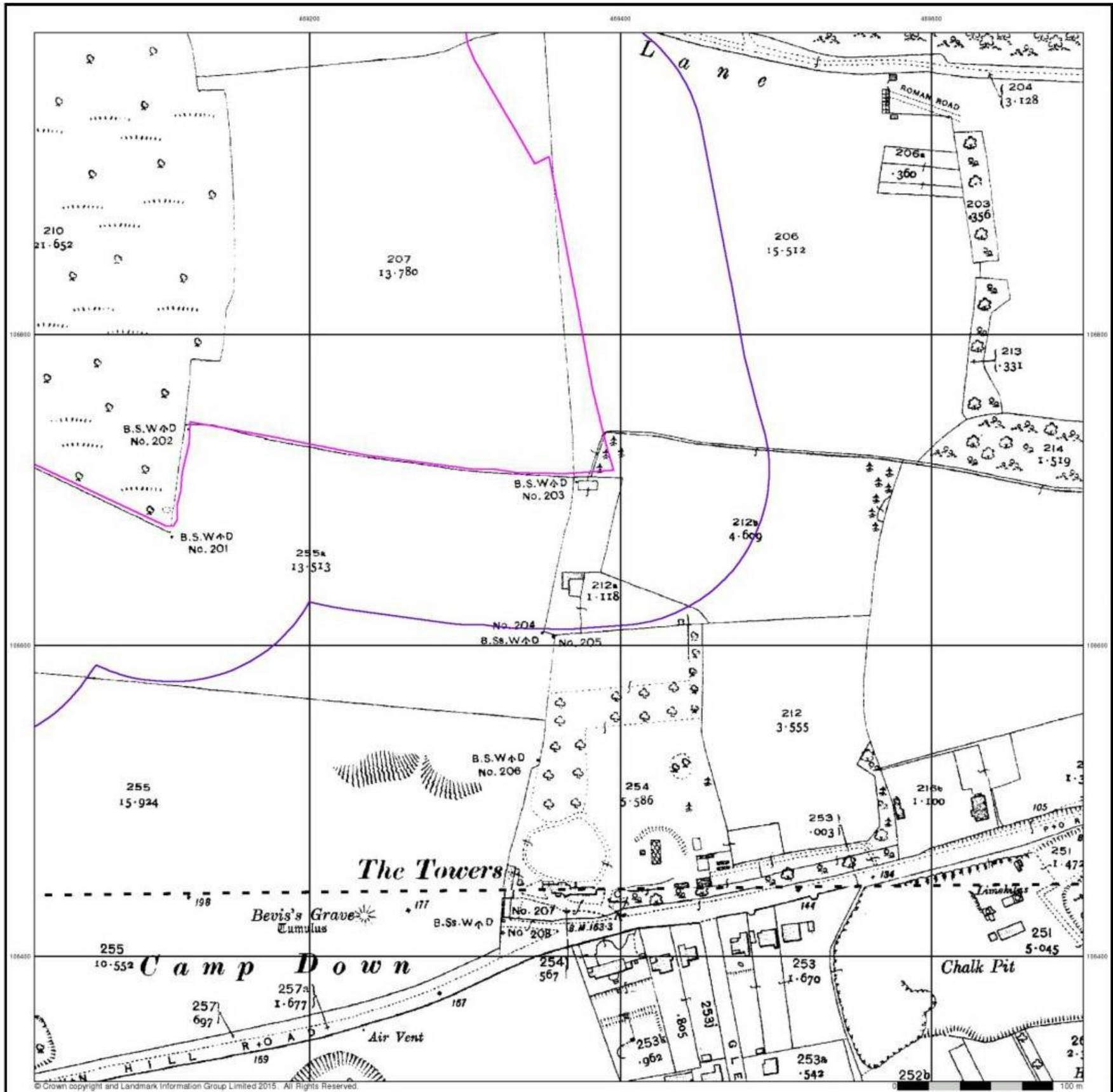


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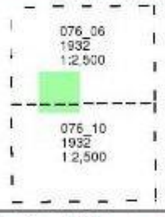
Hampshire & Isle Of Wight

Published 1932

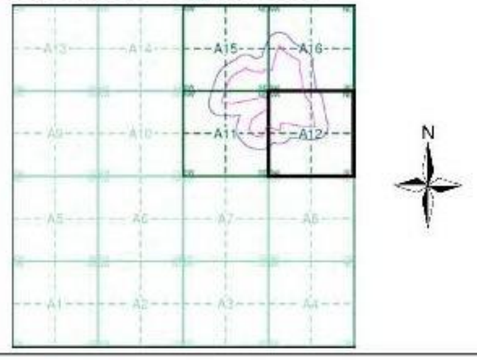
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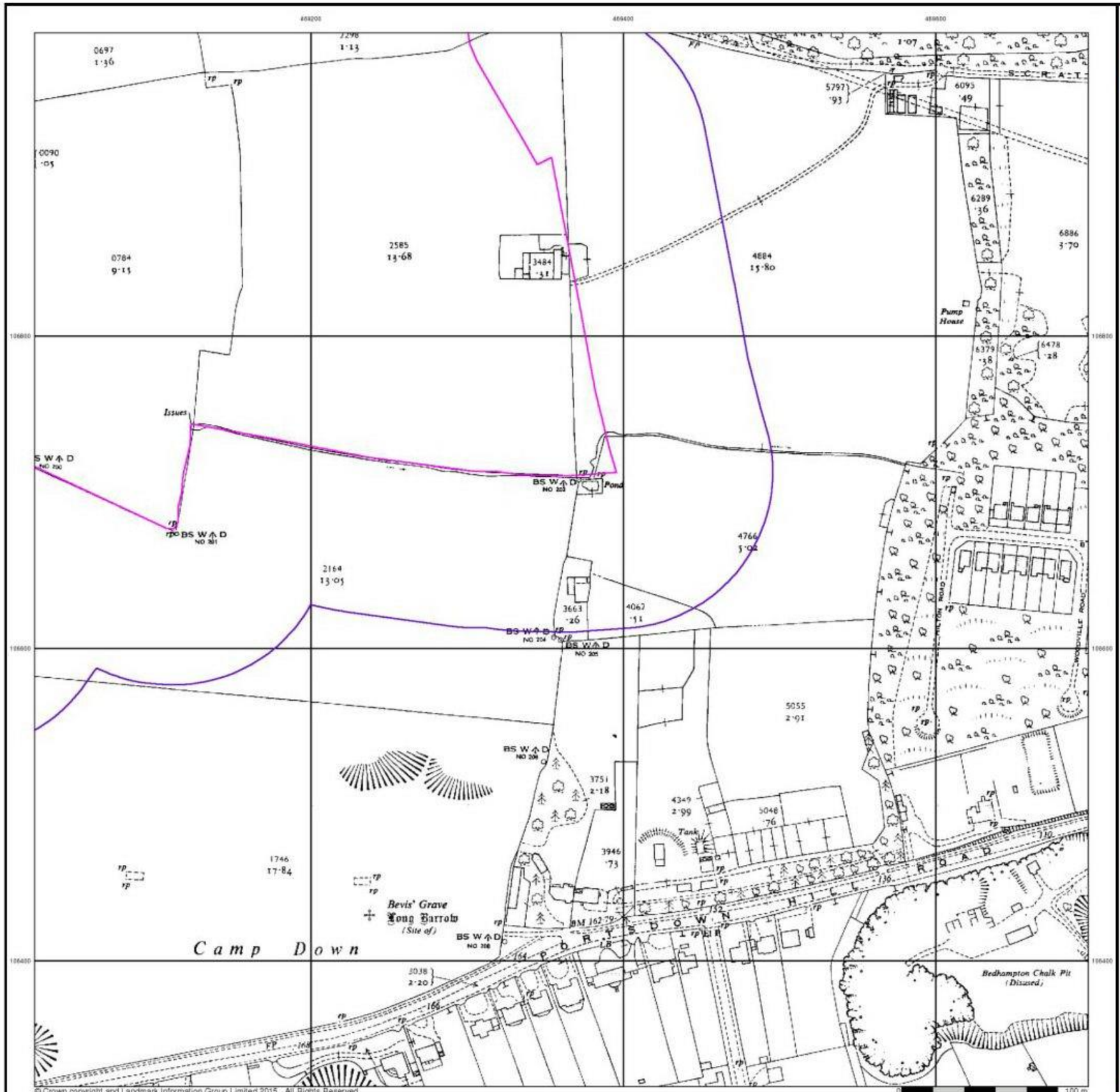
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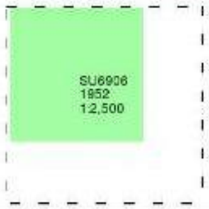
Ordnance Survey Plan

Published 1952

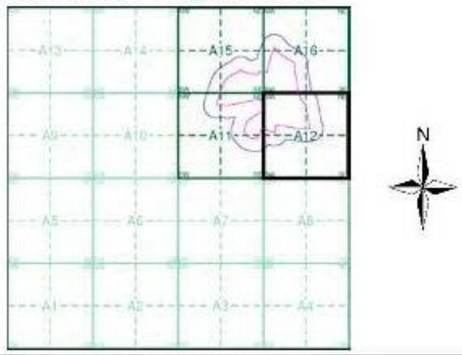
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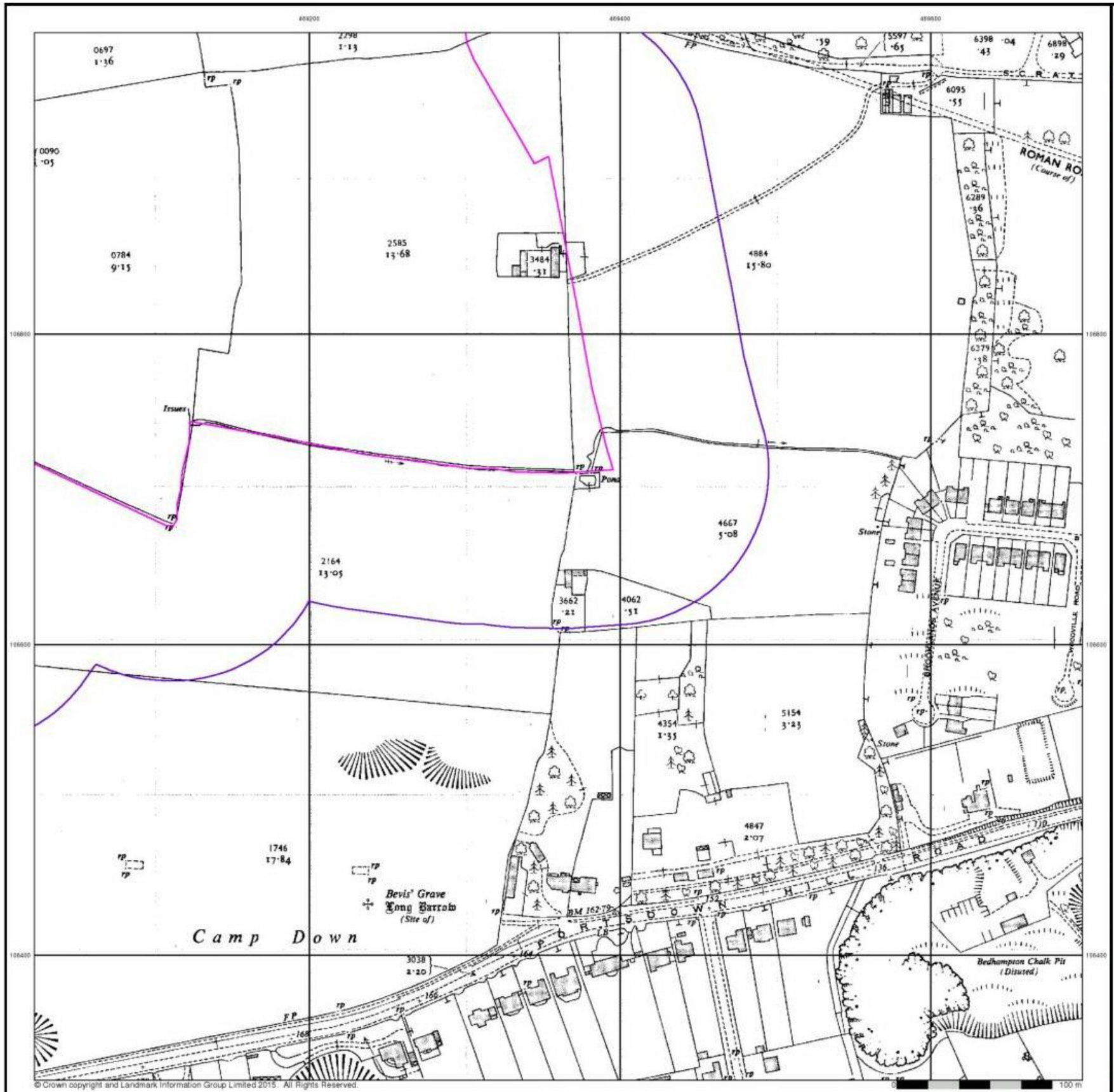


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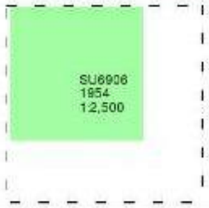
Ordnance Survey Plan

Published 1954

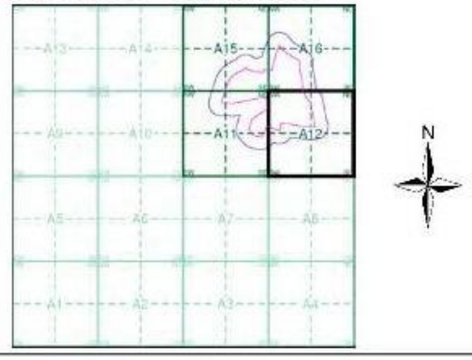
Source map scale - 1:2,500

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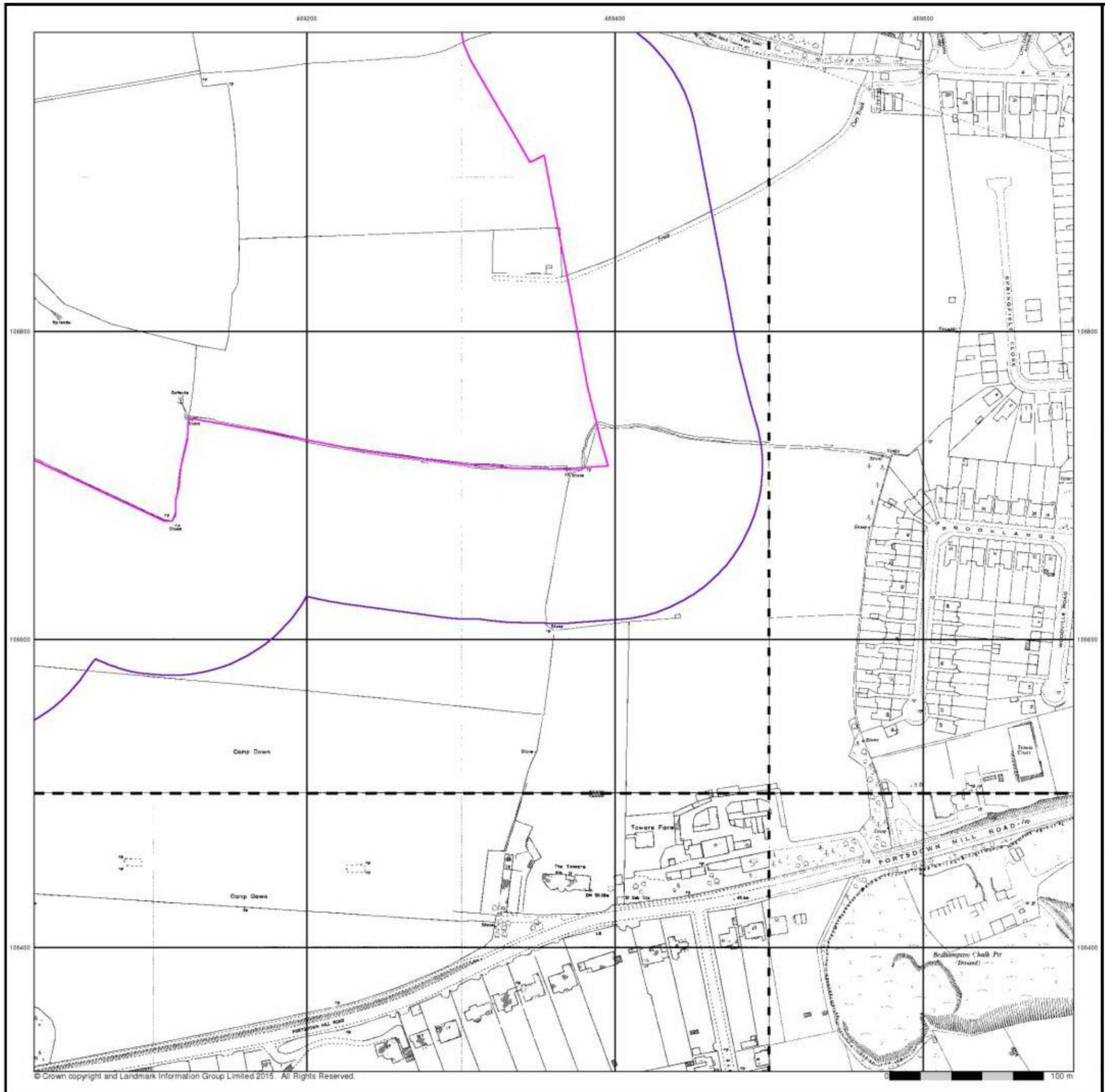
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Ordnance Survey Plan

Published 1957 - 1973

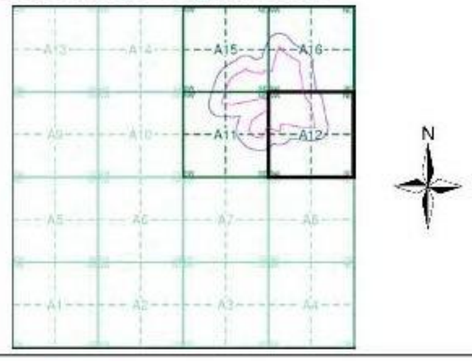
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

SU6906NW 1973 1:1,250	SU6906NE 1957 1:1,250
SU6906SW 1973 1:1,250	SU6906SE 1959 1:1,250

Historical Map - Segment A12



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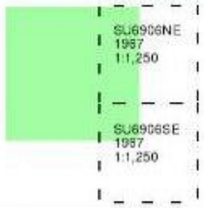
Ordnance Survey Plan

Published 1967

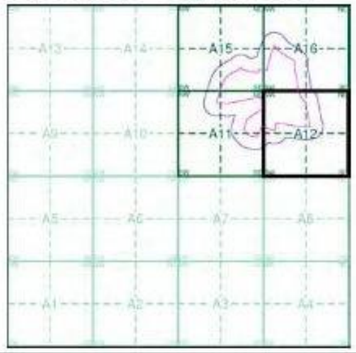
Source map scale - 1:1,250

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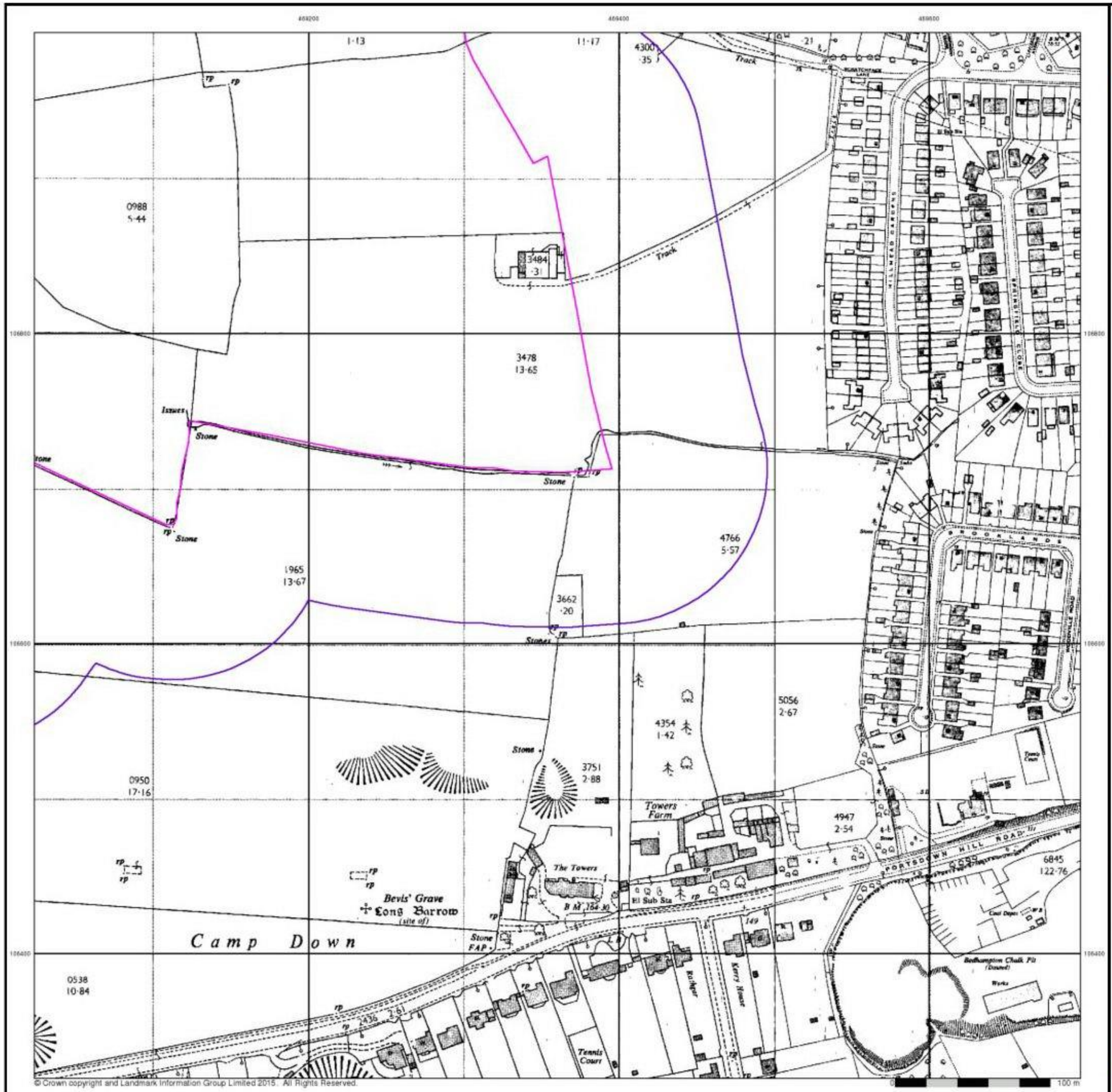
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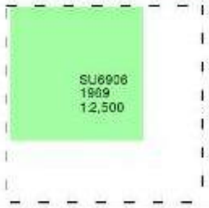
Ordnance Survey Plan

Published 1969

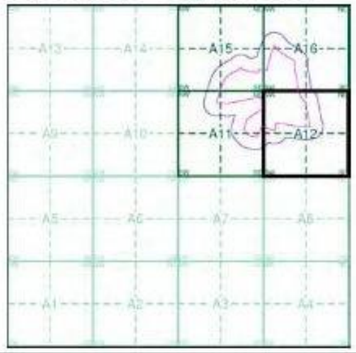
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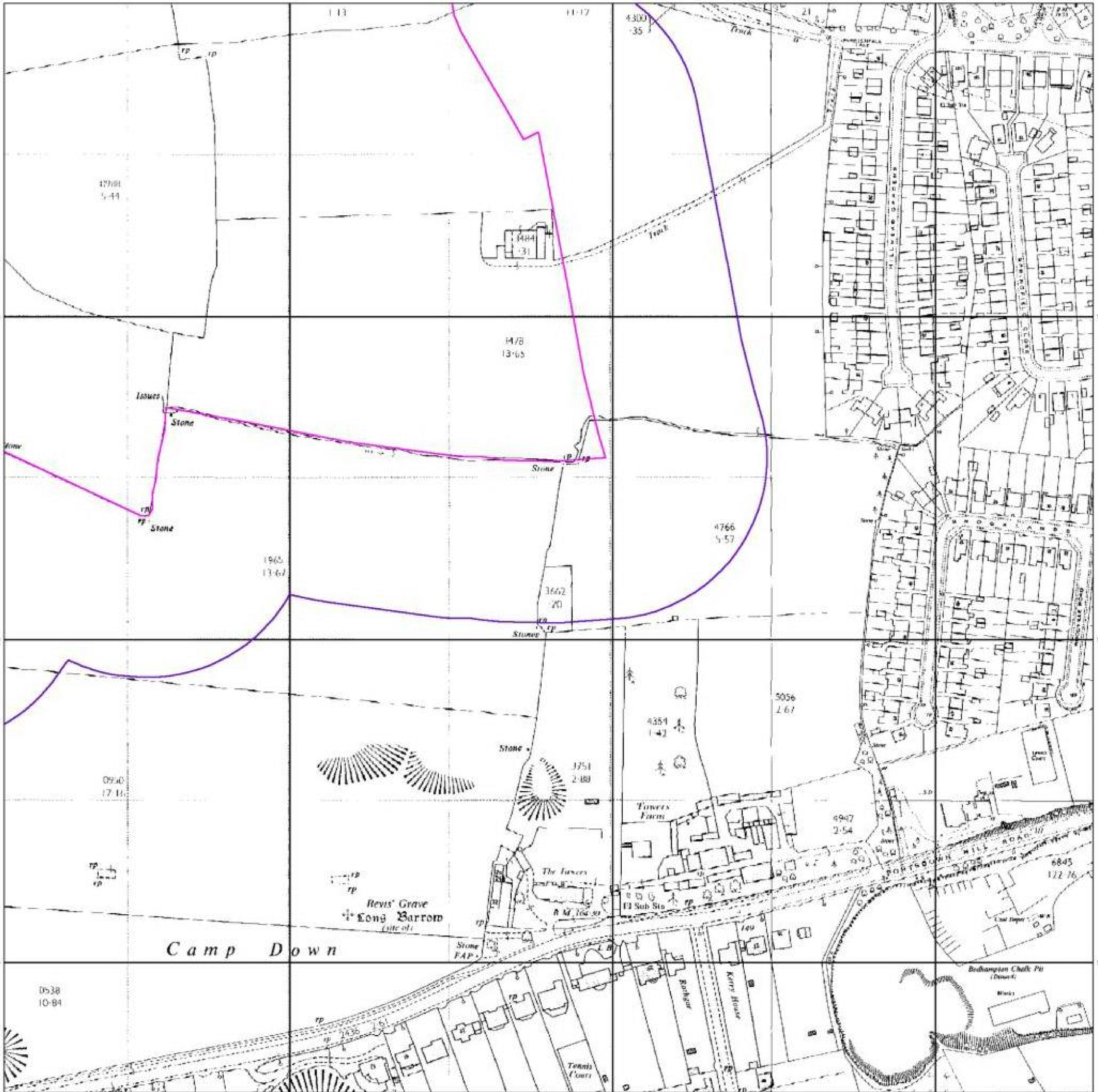
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Ordnance Survey Plan

Published 1969

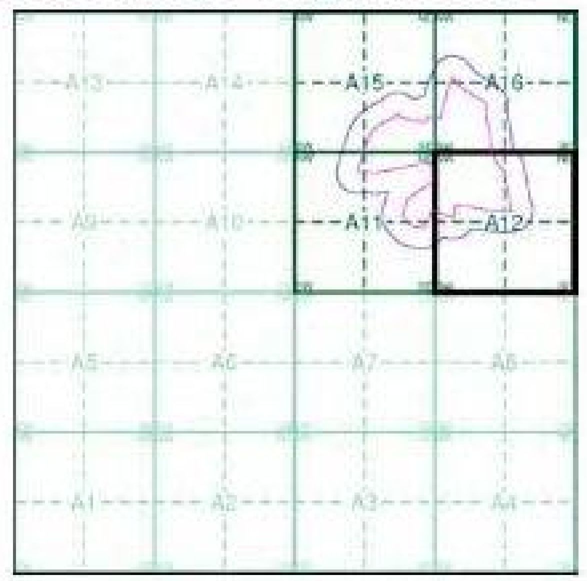
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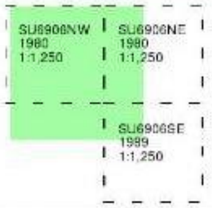
Additional SIMs

Published 1980 - 1989

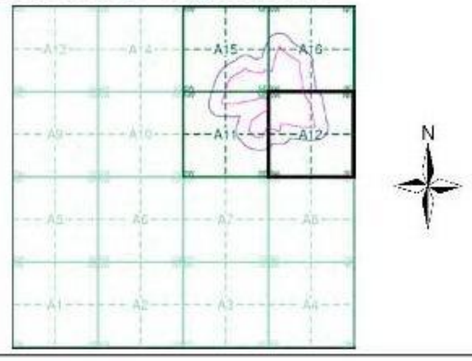
Source map scale - 1:1,250

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

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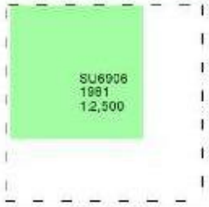
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Published 1981

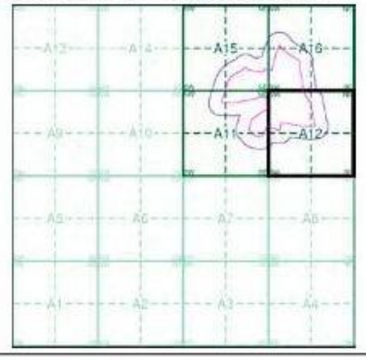
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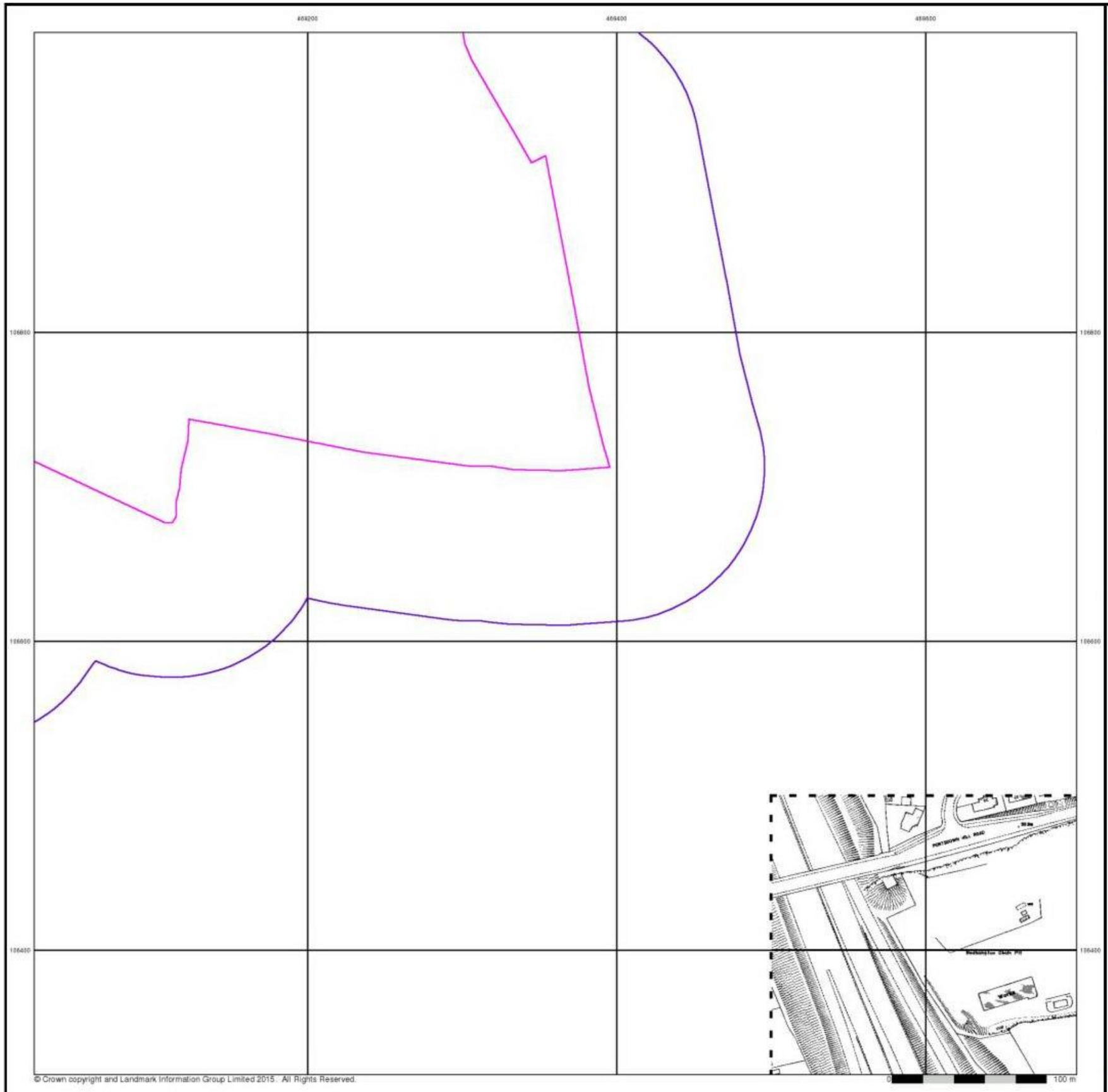
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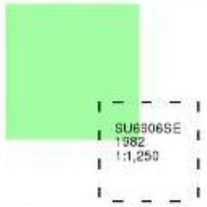
Ordnance Survey Plan

Published 1982

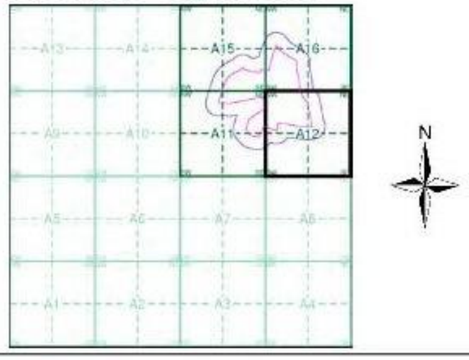
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A12



Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468760, 106730
Slice:	A
Site Area (Ha):	26.37
Search Buffer (m):	100

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



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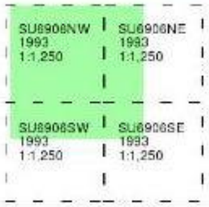
Large-Scale National Grid Data

Published 1993

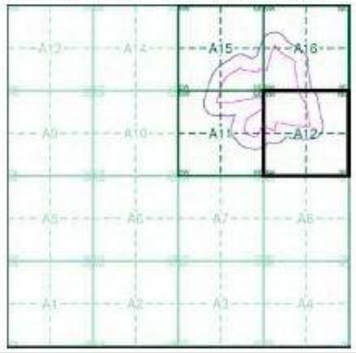
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A12



Order Details

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Slice:	A
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Search Buffer (m):	100

Site Details

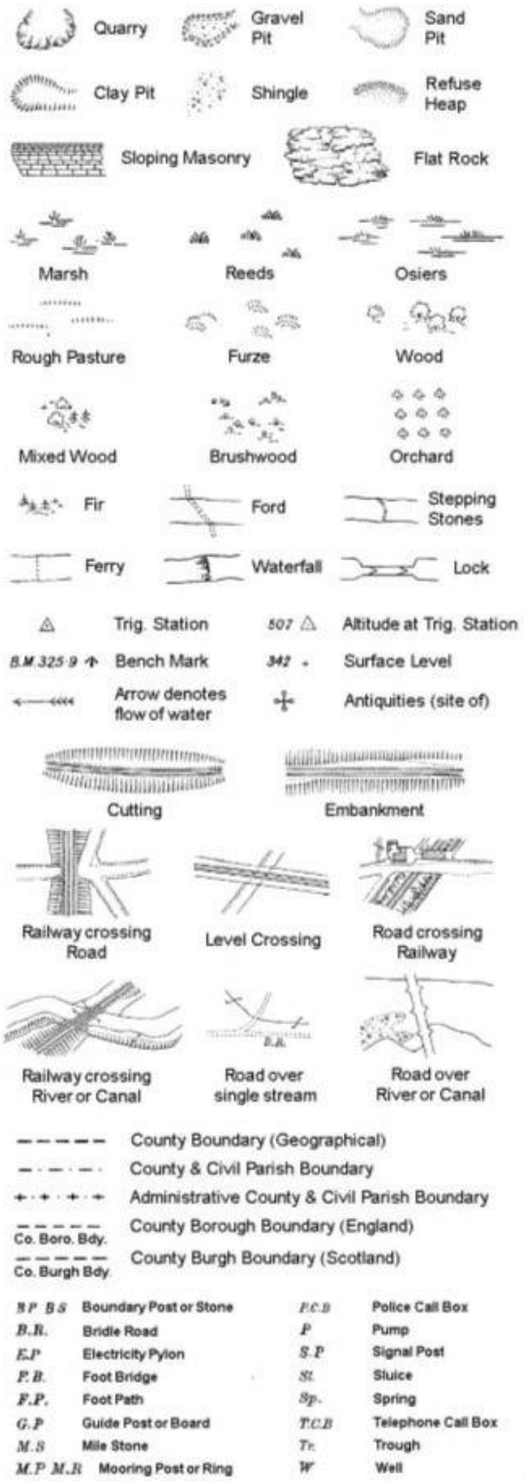
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Historical Mapping Legends

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	Sl.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

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



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



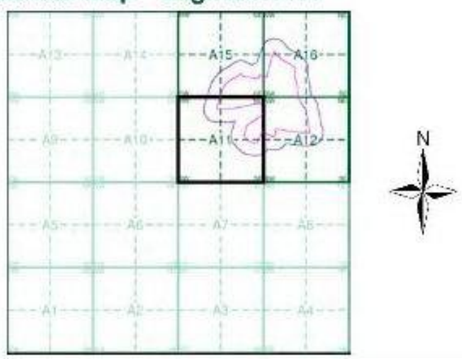
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity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

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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Hampshire & Isle Of Wight	1:2,500	1868 - 1878	2
Hampshire & Isle Of Wight	1:2,500	1897	3
Hampshire & Isle Of Wight	1:2,500	1909	4
Hampshire & Isle Of Wight	1:2,500	1932	5
Ordnance Survey Plan	1:1,250	1951 - 1973	6
Additional SIMs	1:1,250	1951 - 1981	7
Ordnance Survey Plan	1:2,500	1952	8
Ordnance Survey Plan	1:1,250	1953 - 1973	9
Ordnance Survey Plan	1:2,500	1954 - 1960	10
Ordnance Survey Plan	1:1,250	1968 - 1986	11
Ordnance Survey Plan	1:2,500	1969	12
Ordnance Survey Plan	1:2,500	1969	13
Additional SIMs	1:2,500	1981	14
Additional SIMs	1:1,250	1984	15
Large-Scale National Grid Data	1:1,250	1993	16

Historical Map - Segment A11



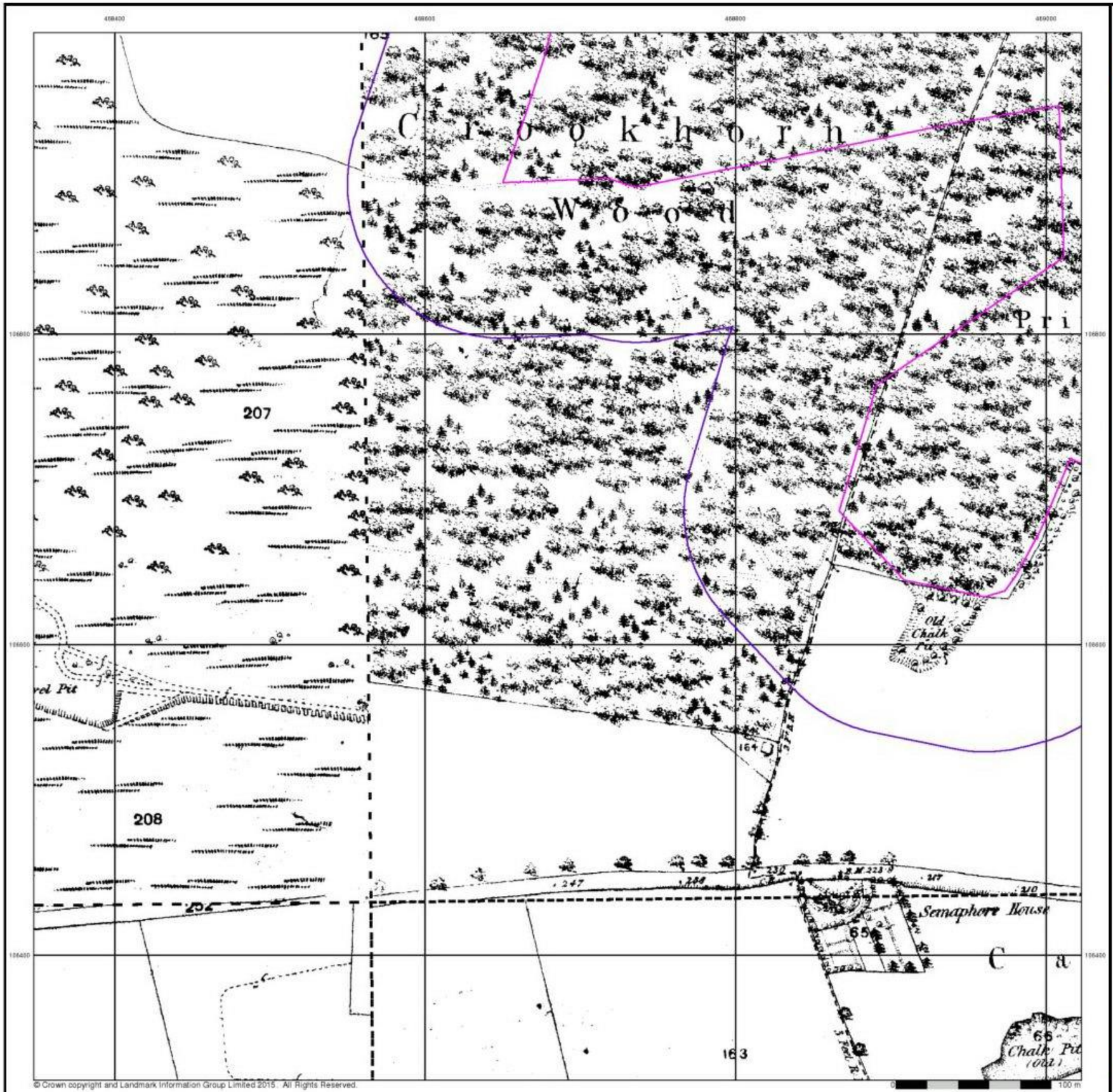
Order Details

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Search Buffer (m):	100

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Hampshire & Isle Of Wight

Published 1868 - 1878

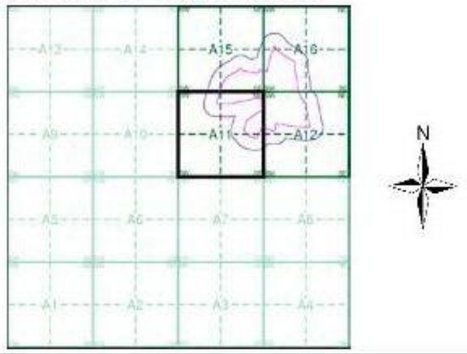
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A11



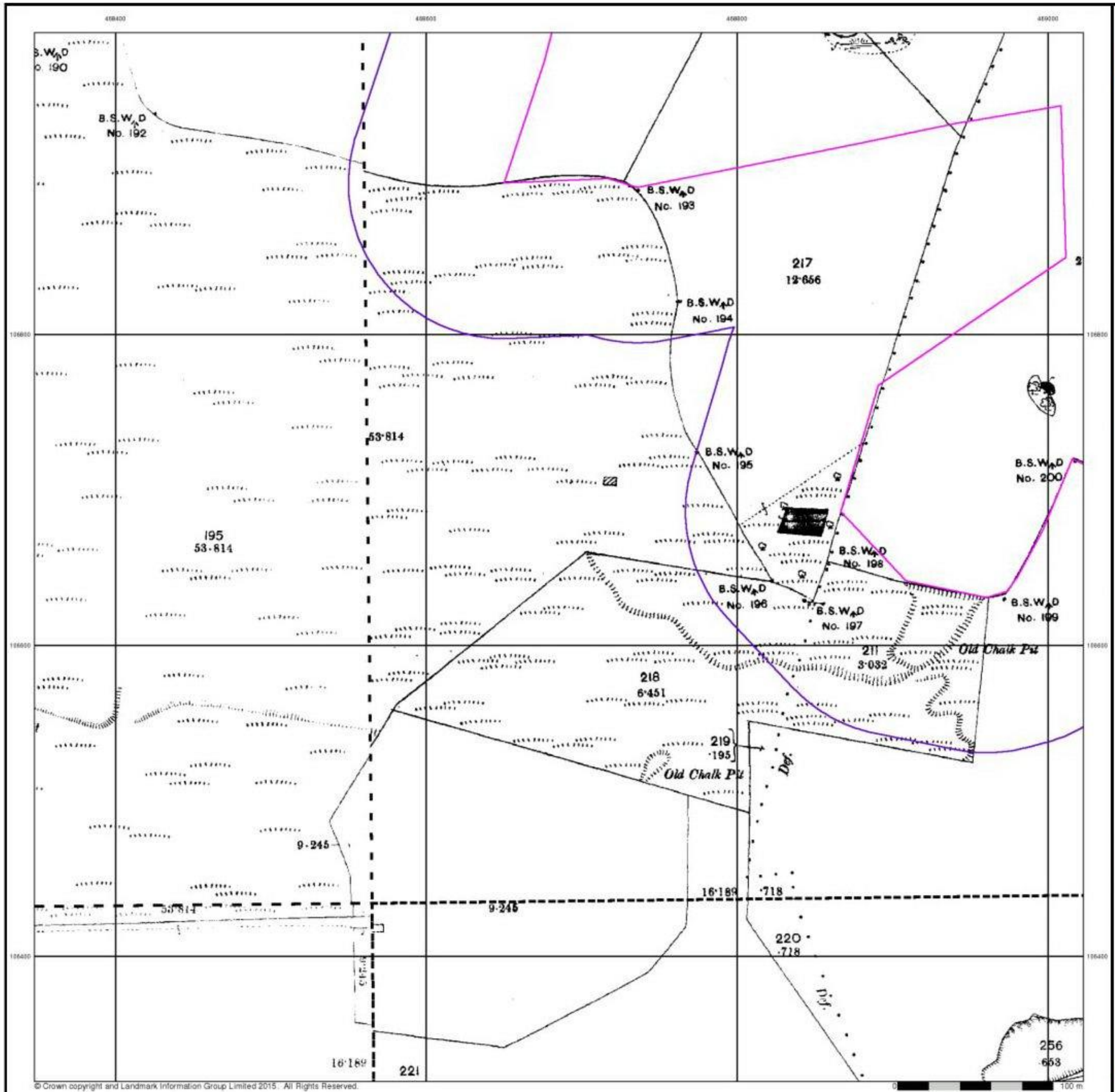
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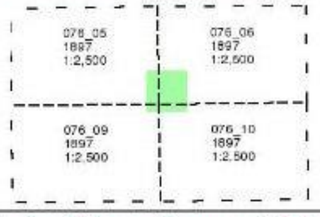
Hampshire & Isle Of Wight

Published 1897

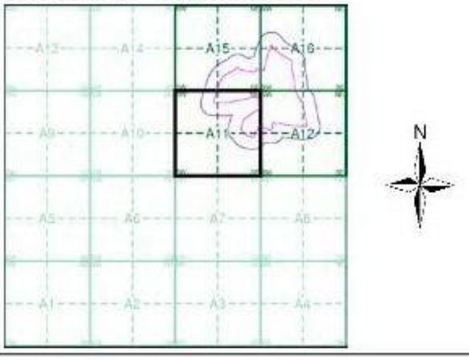
Source map scale - 1:2,500

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Historical Map - Segment A11



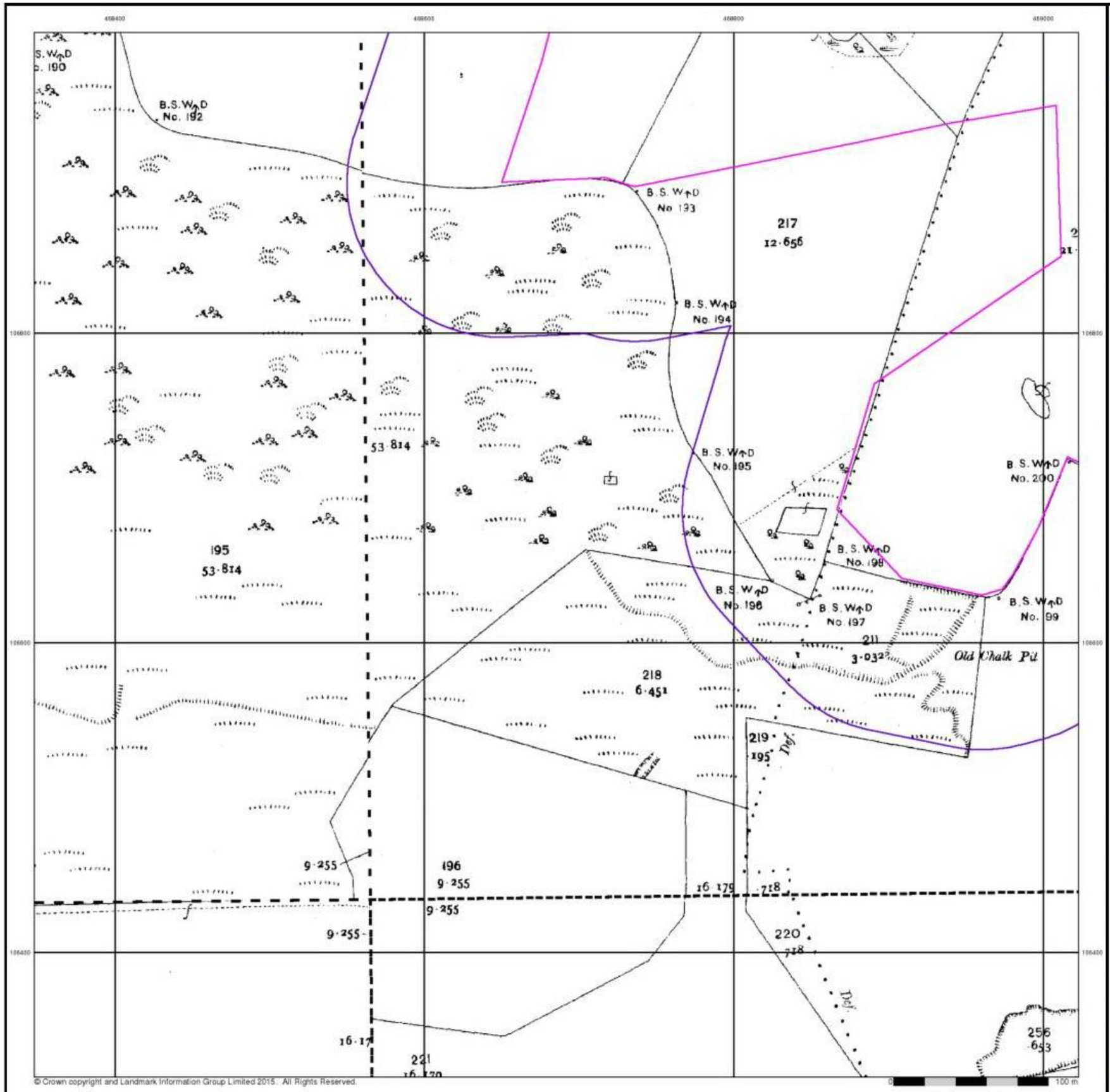
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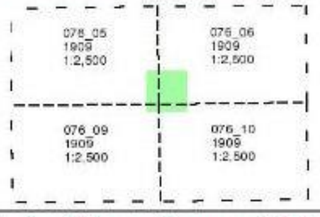
Hampshire & Isle Of Wight

Published 1909

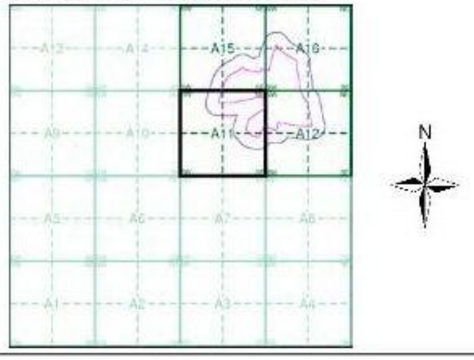
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A11



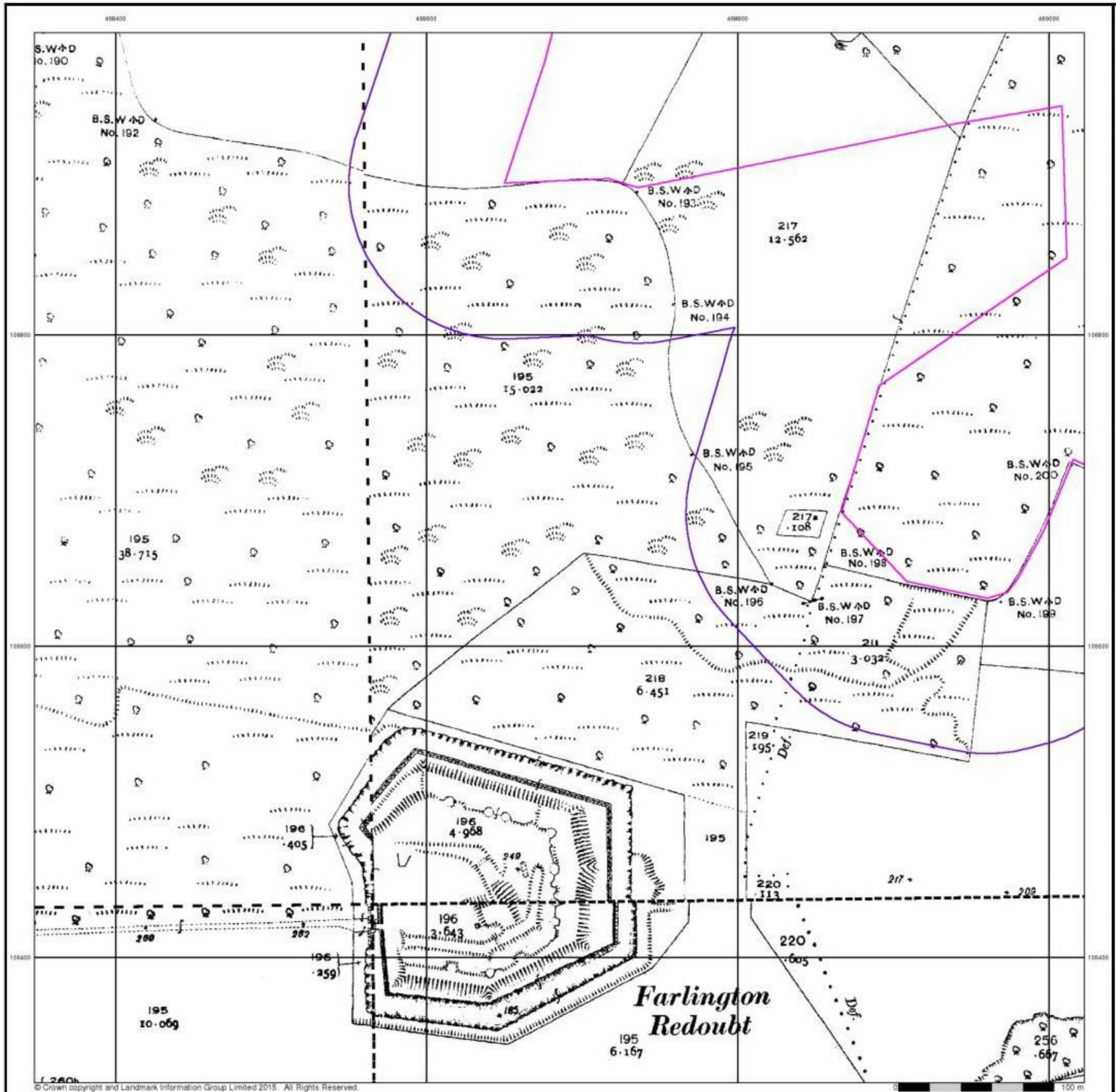
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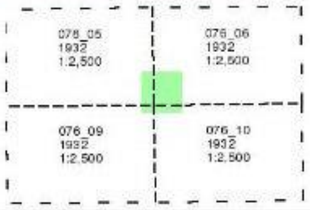
Hampshire & Isle Of Wight

Published 1932

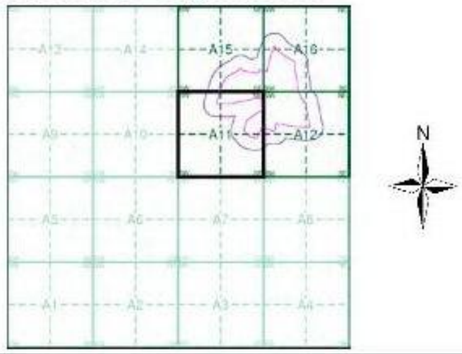
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A11

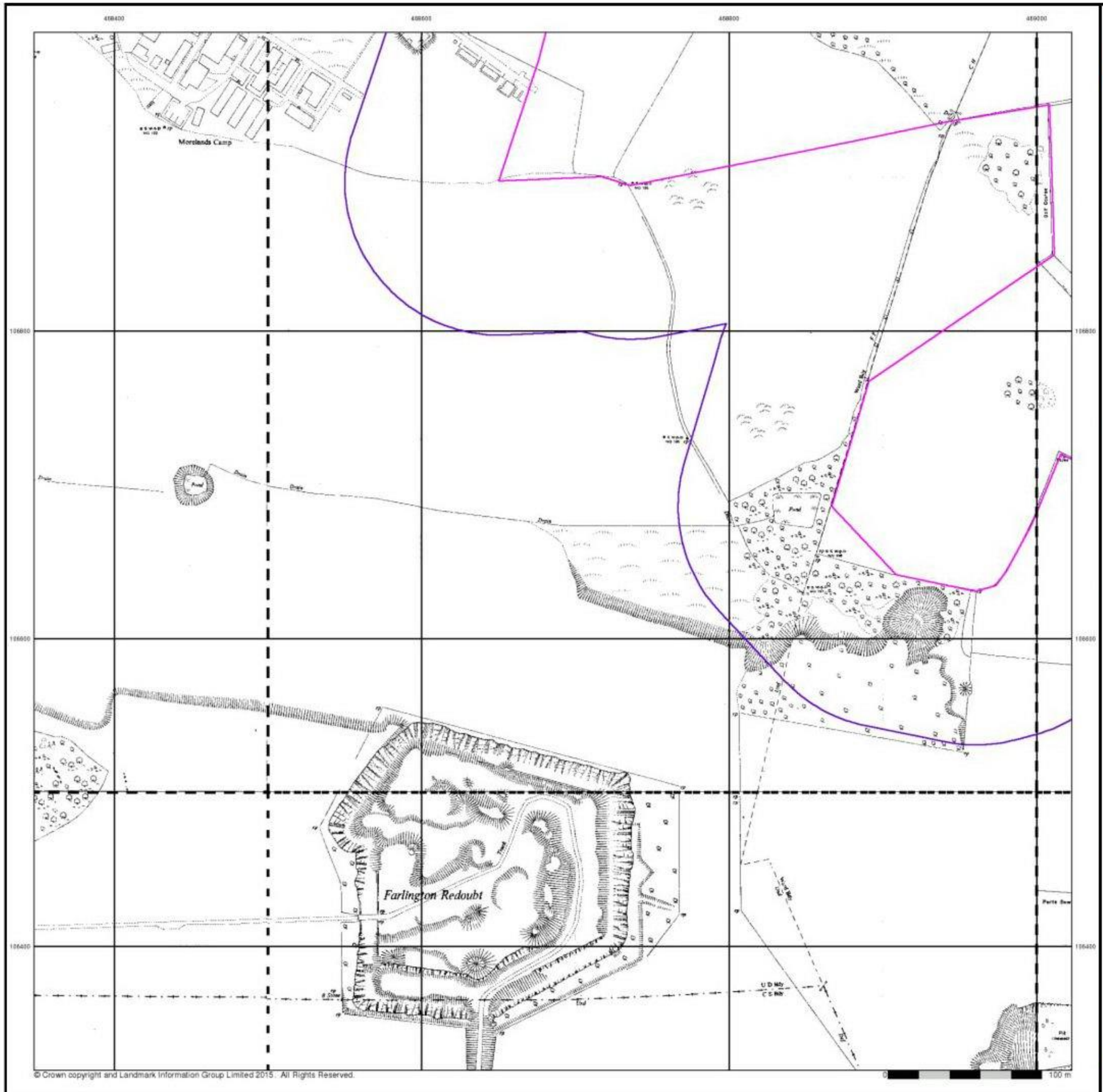


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Ordnance Survey Plan

Published 1951 - 1973

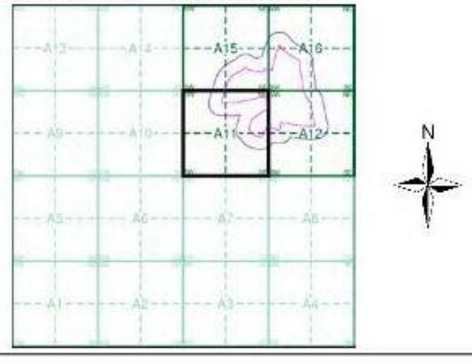
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

SU6806NW 1951 1:1,250	SU6806NE 1951 1:1,250	SU6906NW 1973 1:1,250
SU6806SW 1951 1:1,250	SU6806SE 1951 1:1,250	SU6906SW 1973 1:1,250

Historical Map - Segment A11



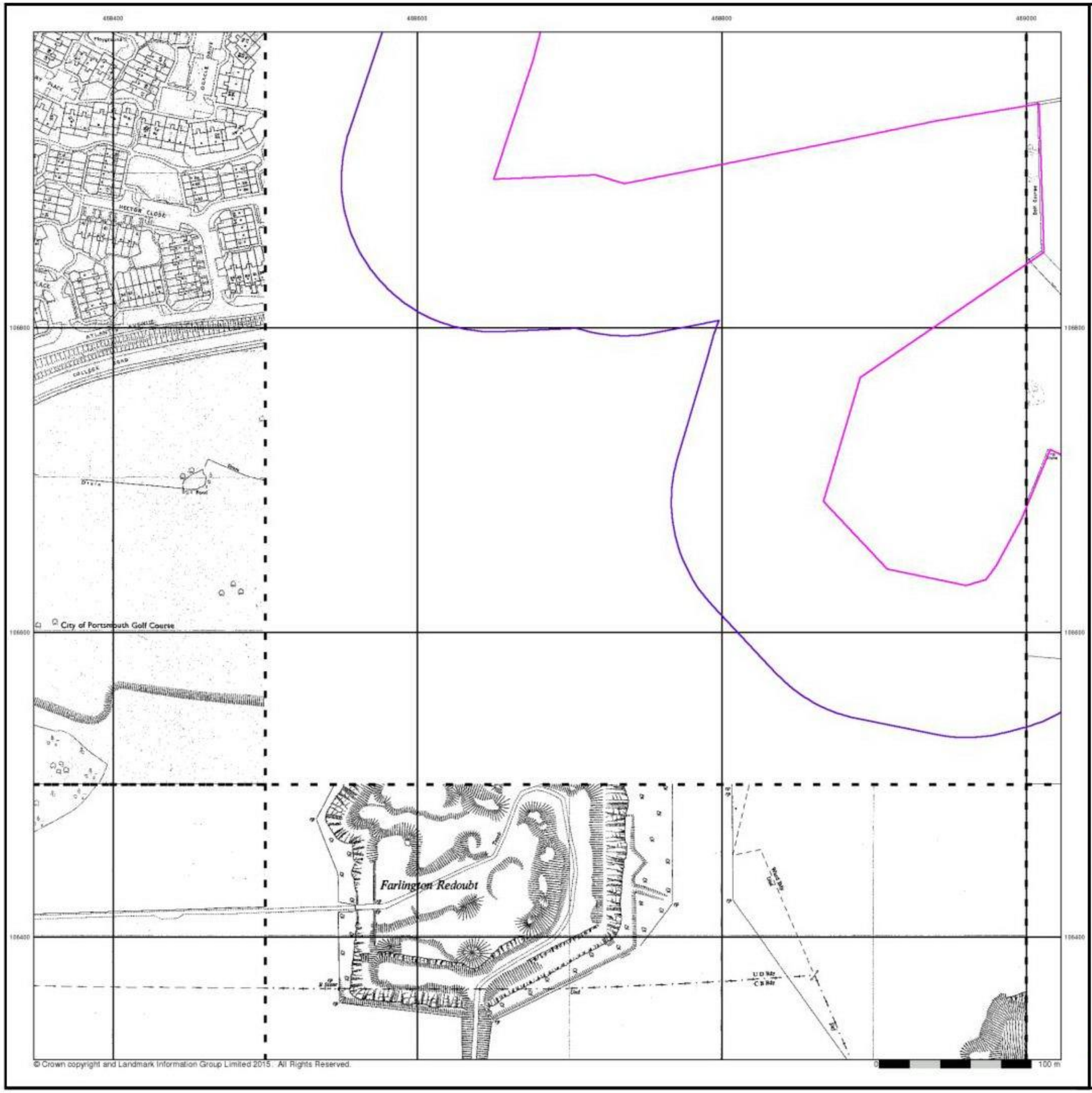
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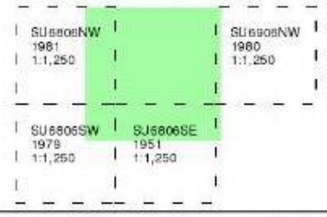
Additional SIMs

Published 1951 - 1981

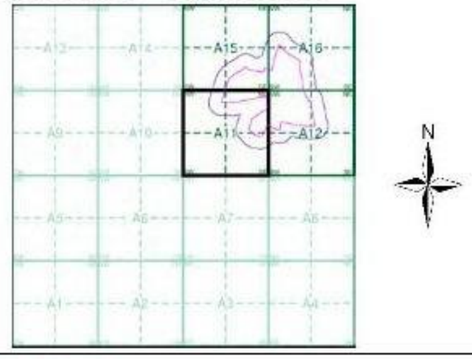
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A11



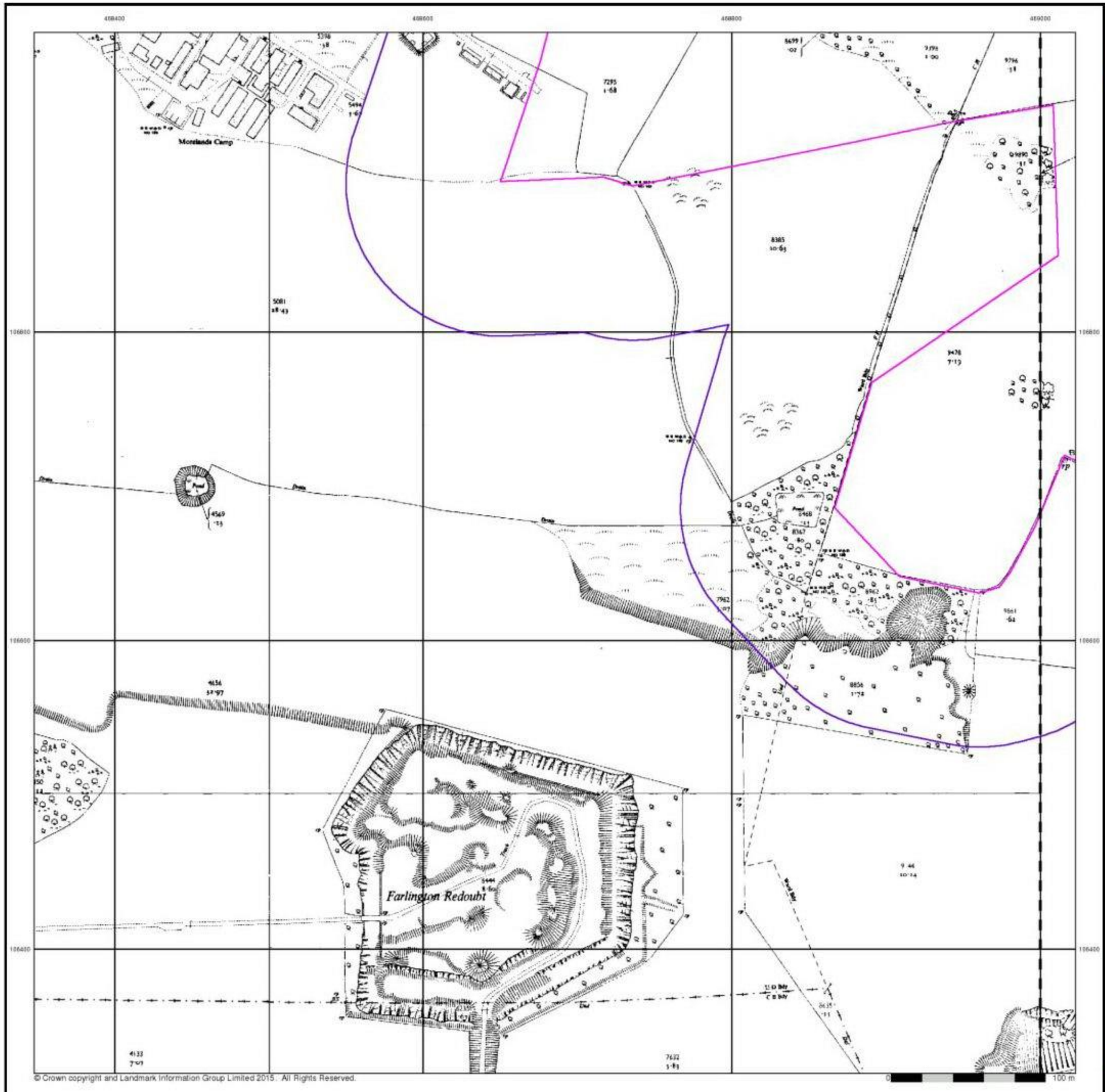
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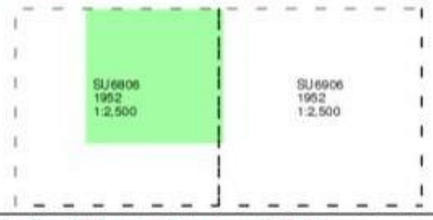
Ordnance Survey Plan

Published 1952

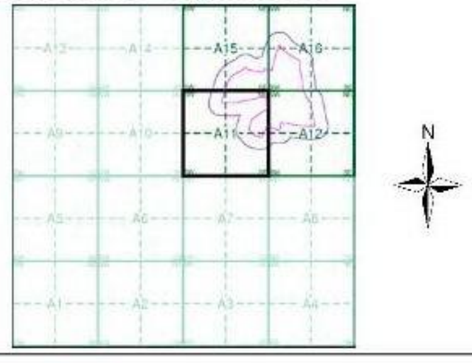
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A11



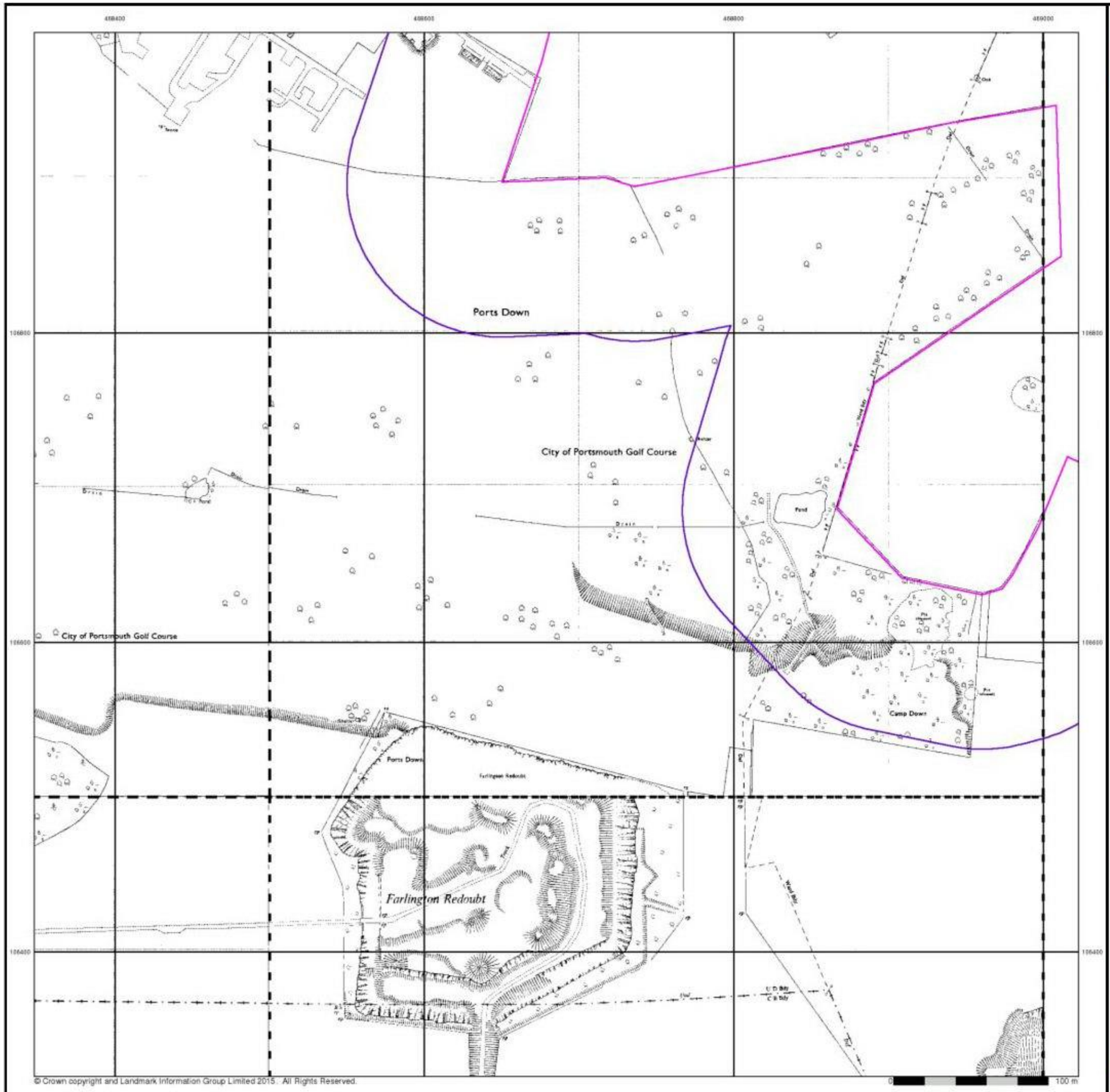
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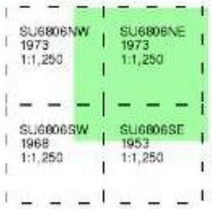
Ordnance Survey Plan

Published 1953 - 1973

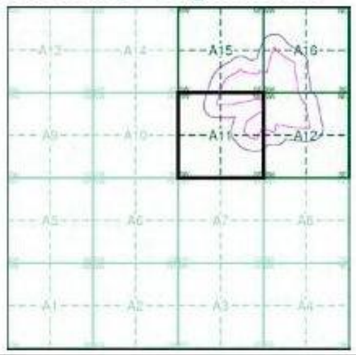
Source map scale - 1:1,250

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Map Name(s) and Date(s)



Historical Map - Segment A11

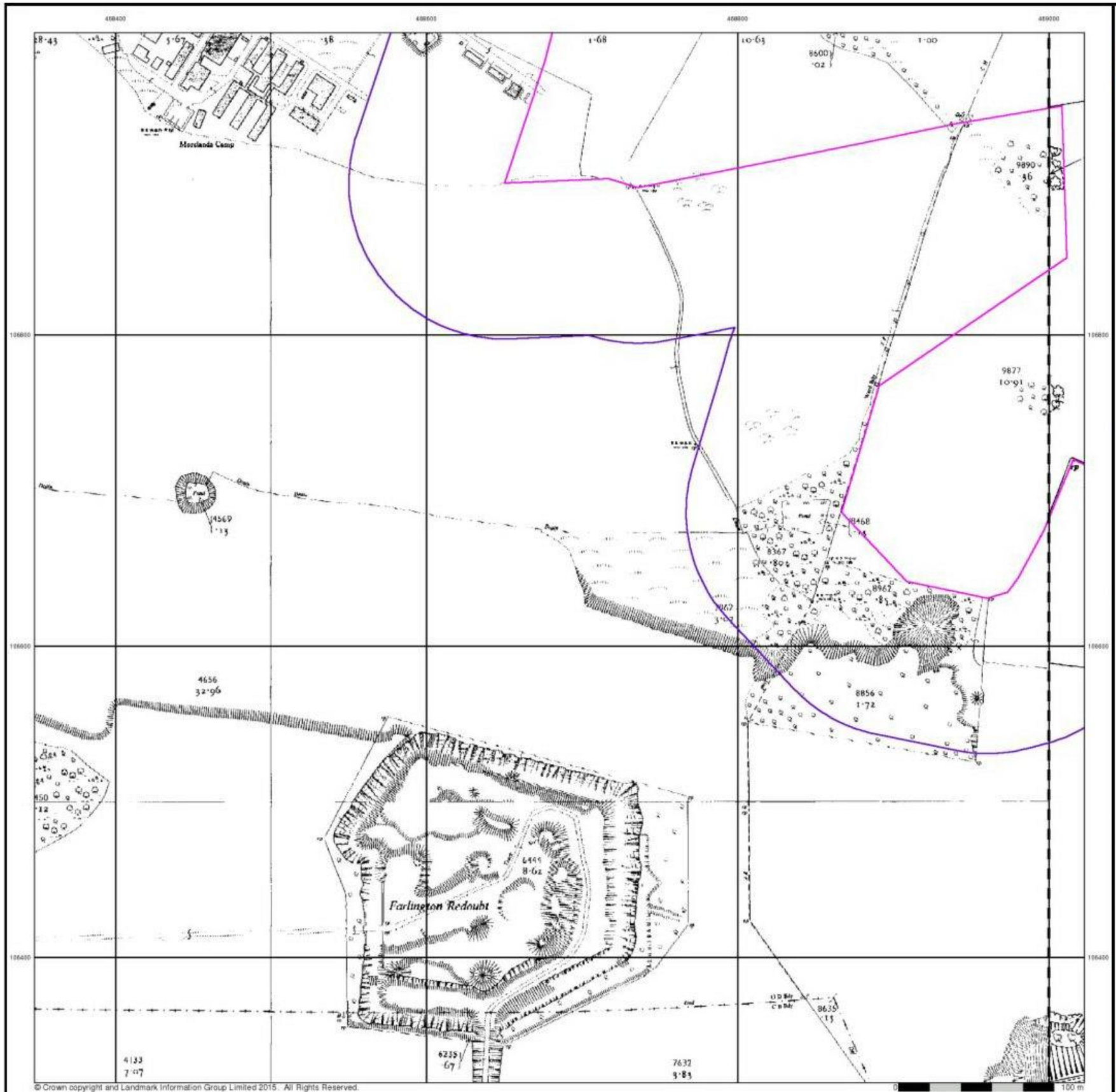


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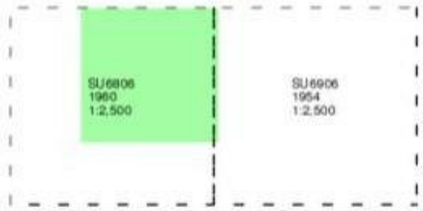
Ordnance Survey Plan

Published 1954 - 1960

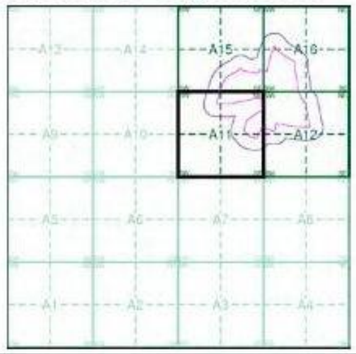
Source map scale - 1:2,500

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:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468760, 106730
Slice:	A
Site Area (Ha):	26.37
Search Buffer (m):	100

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



Envirocheck

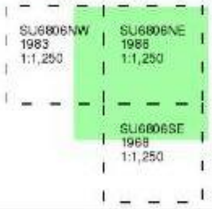
Ordnance Survey Plan

Published 1968 - 1986

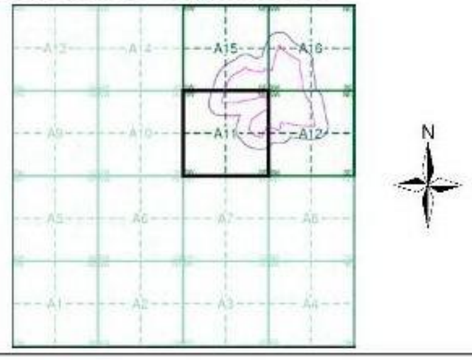
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A11



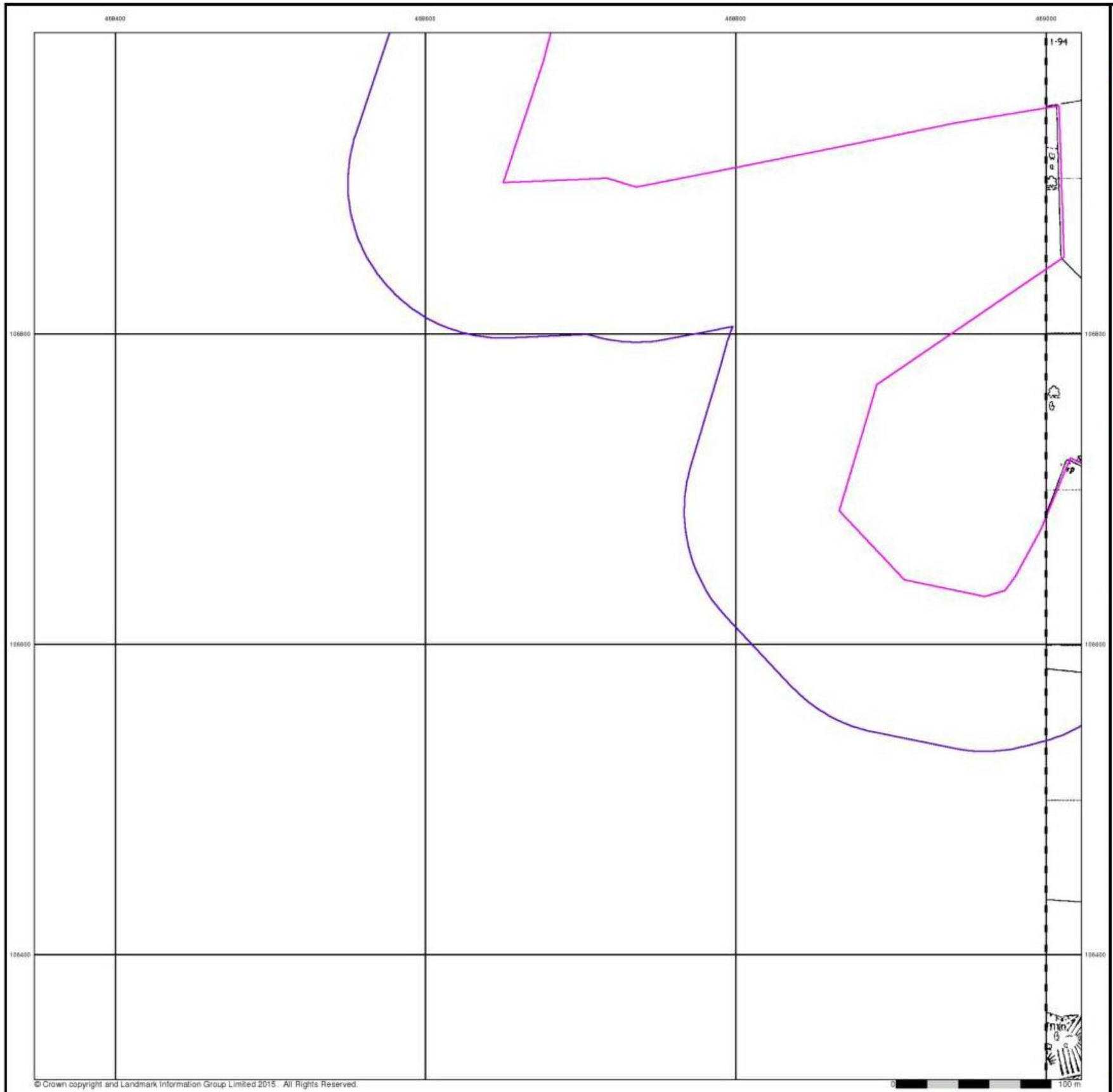
Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468760, 106730
Slice:	A
Site Area (Ha):	26.37
Search Buffer (m):	100

Site Details

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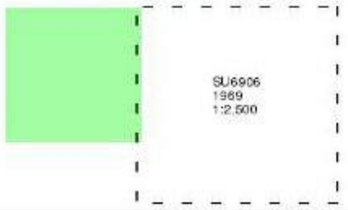
Ordnance Survey Plan

Published 1969

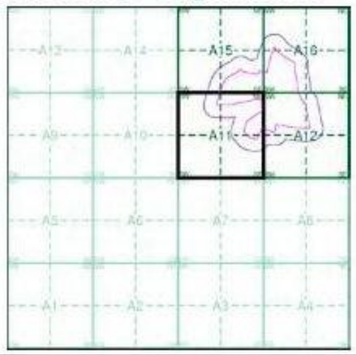
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A11



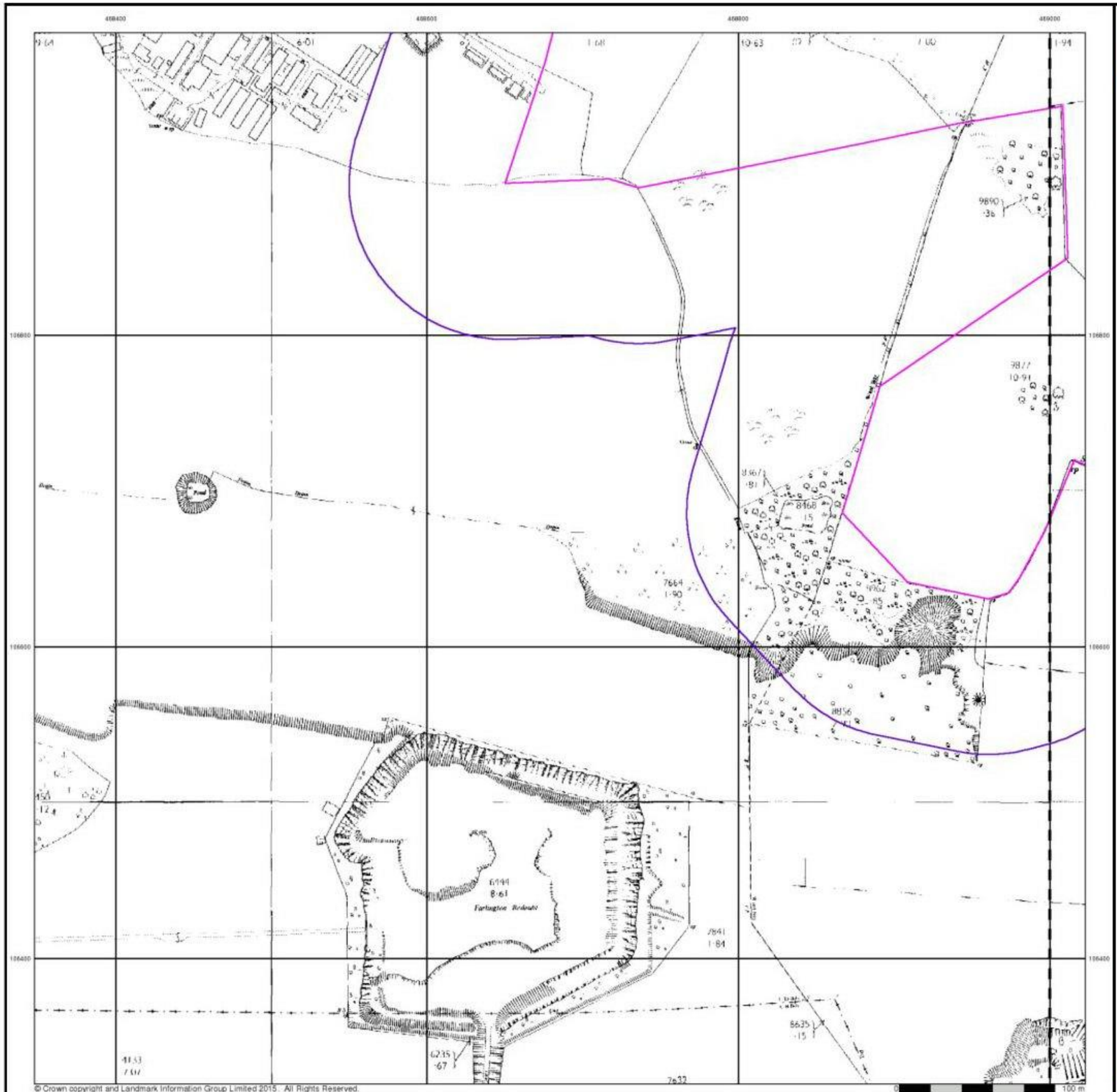
Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468760, 106730
Slice:	A
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Site Details

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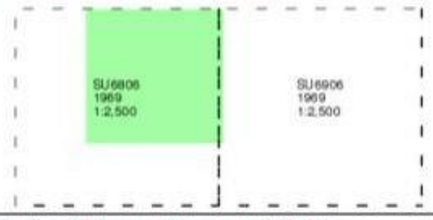
Ordnance Survey Plan

Published 1969

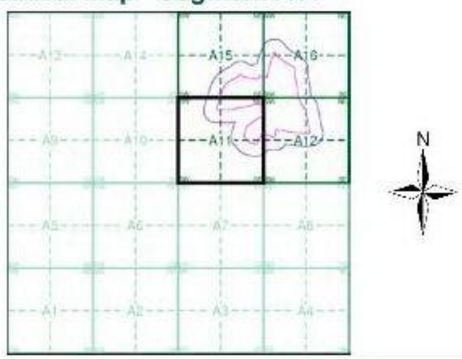
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A11



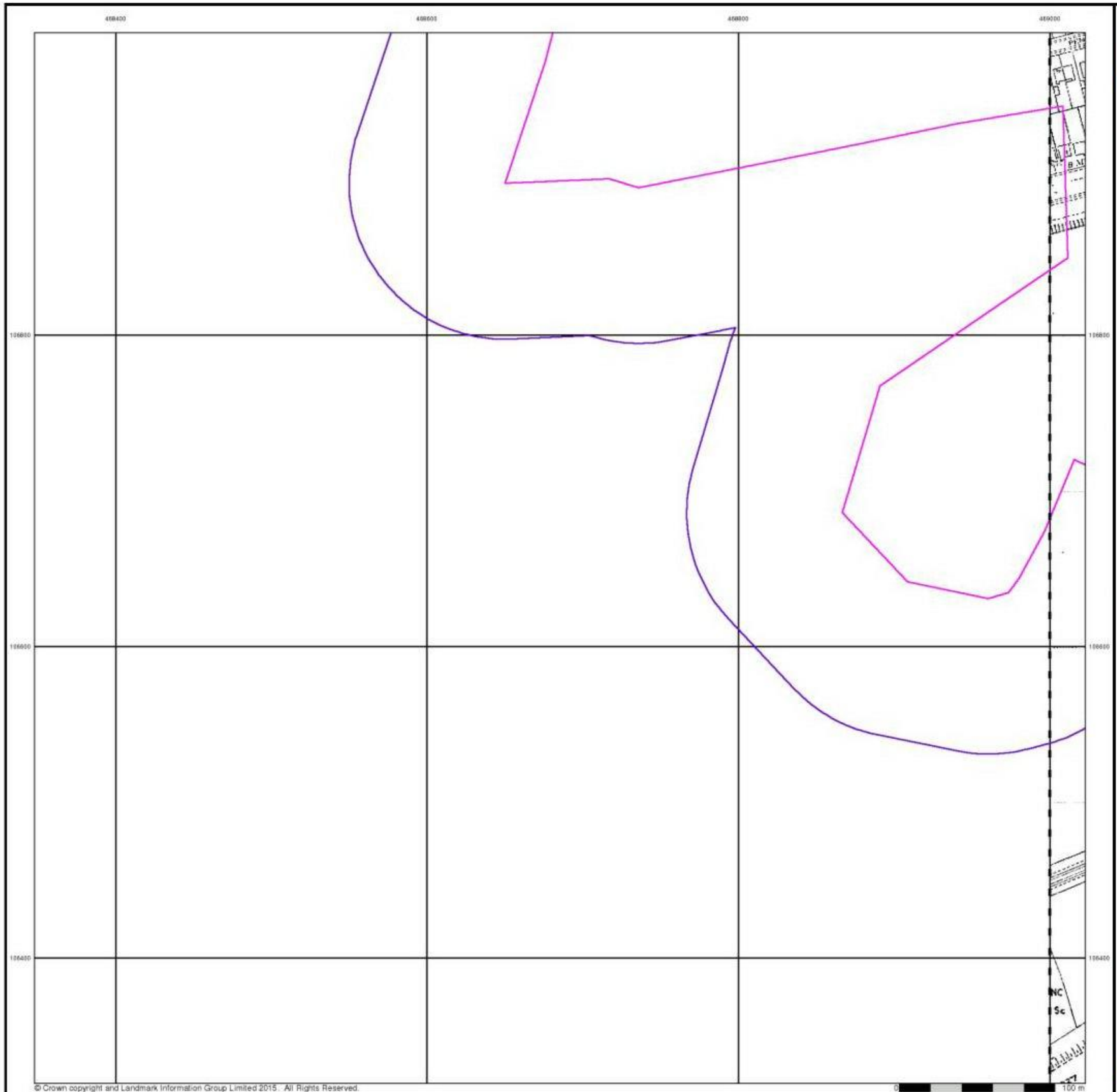
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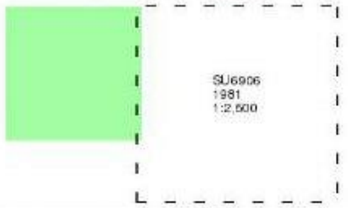
Additional SIMs

Published 1981

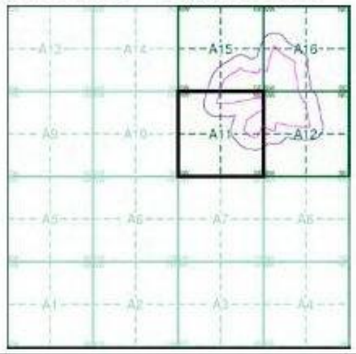
Source map scale - 1:2,500

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



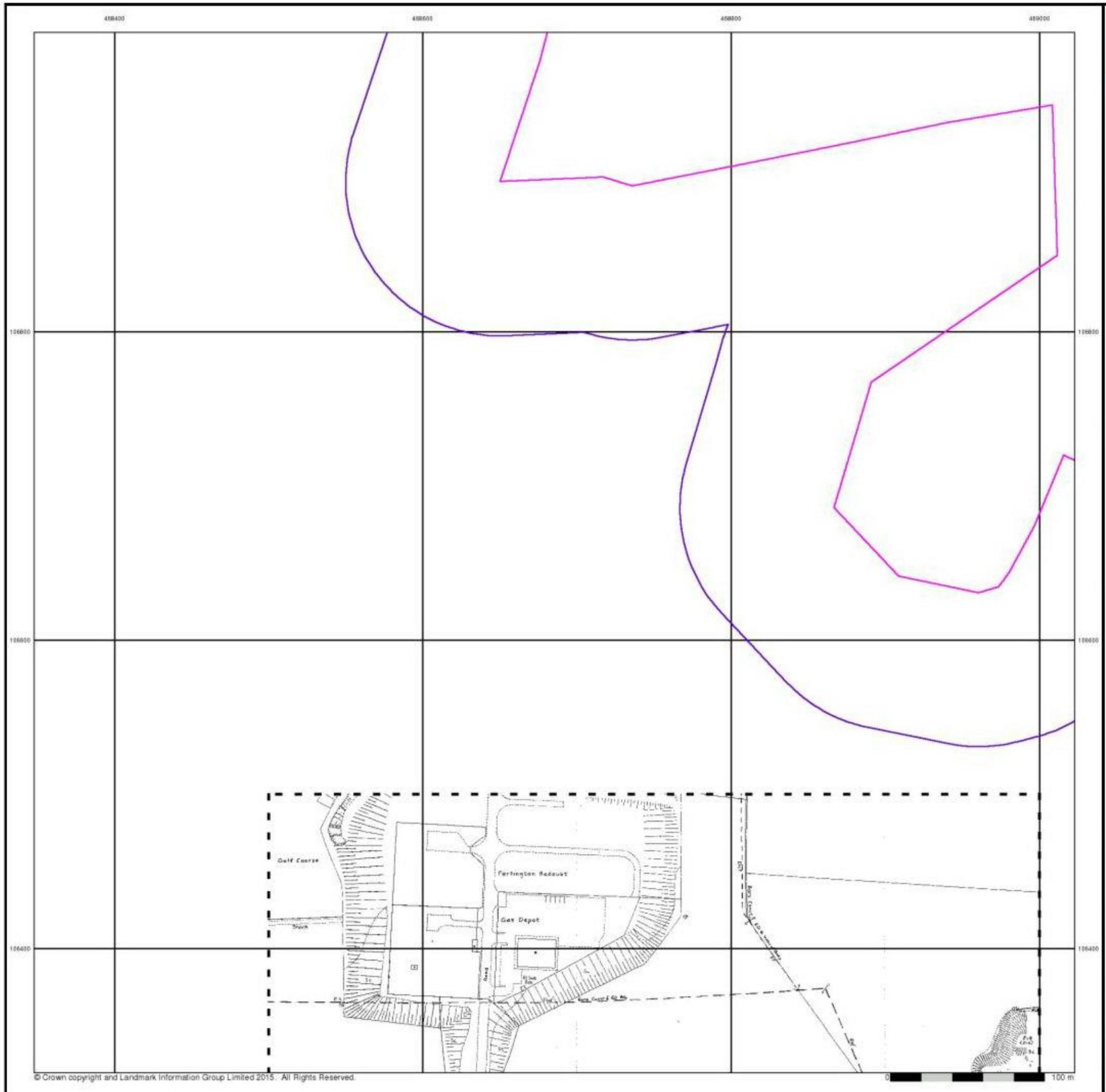
Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468760, 106730
Slice:	A
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Search Buffer (m):	100

Site Details

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Additional SIMs

Published 1984

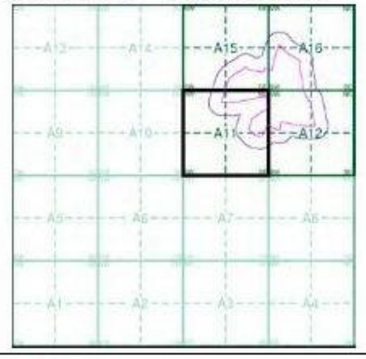
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

SU6806SE
1984
1:1,250

Historical Map - Segment A11



Order Details

Order Number:	92122794_1_1
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National Grid Reference:	468760, 106730
Slice:	A
Site Area (Ha):	26.37
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Large-Scale National Grid Data

Published 1993

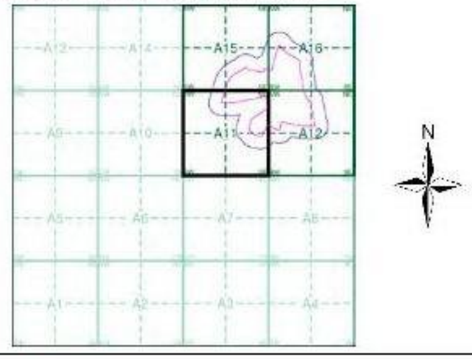
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

SU6806NW 1993 1:1,250	SU6806NE 1993 1:1,250	SU6906NW 1993 1:1,250
SU6806SW 1993 1:1,250	SU6806SE 1993 1:1,250	SU6906SW 1993 1:1,250

Historical Map - Segment A11



Order Details

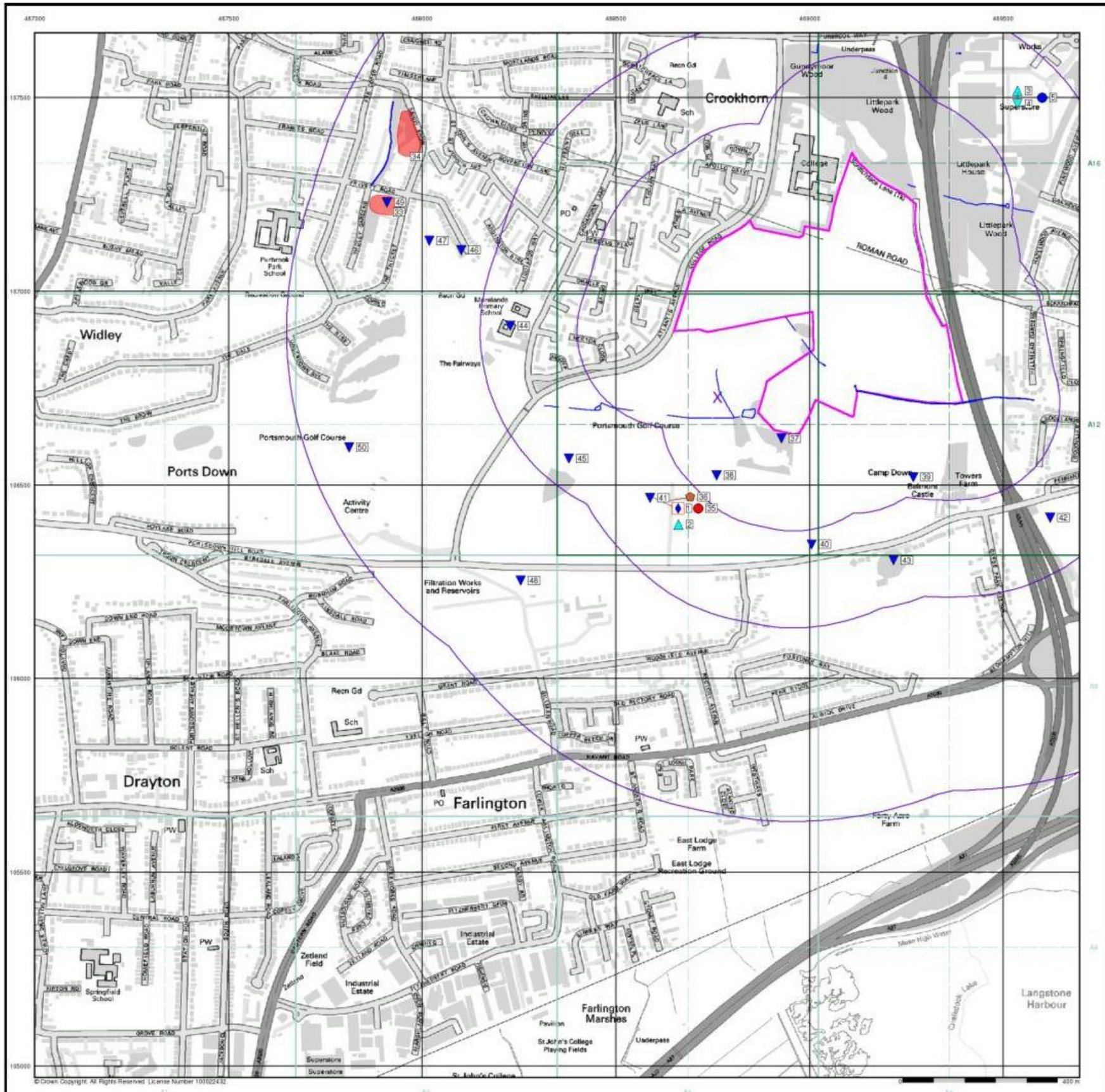
Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468760, 106730
Slice:	A
Site Area (Ha):	26.37
Search Buffer (m):	100

Site Details

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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

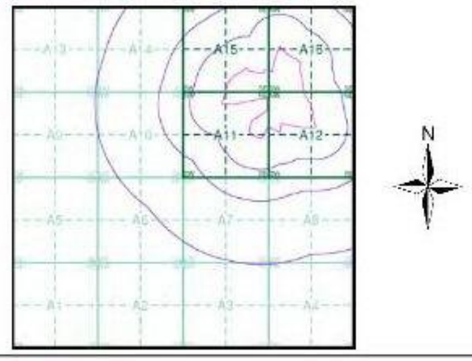
Waste

- 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 (Pass Buffered to 100m)
- Registered Landfill Site (Pass 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



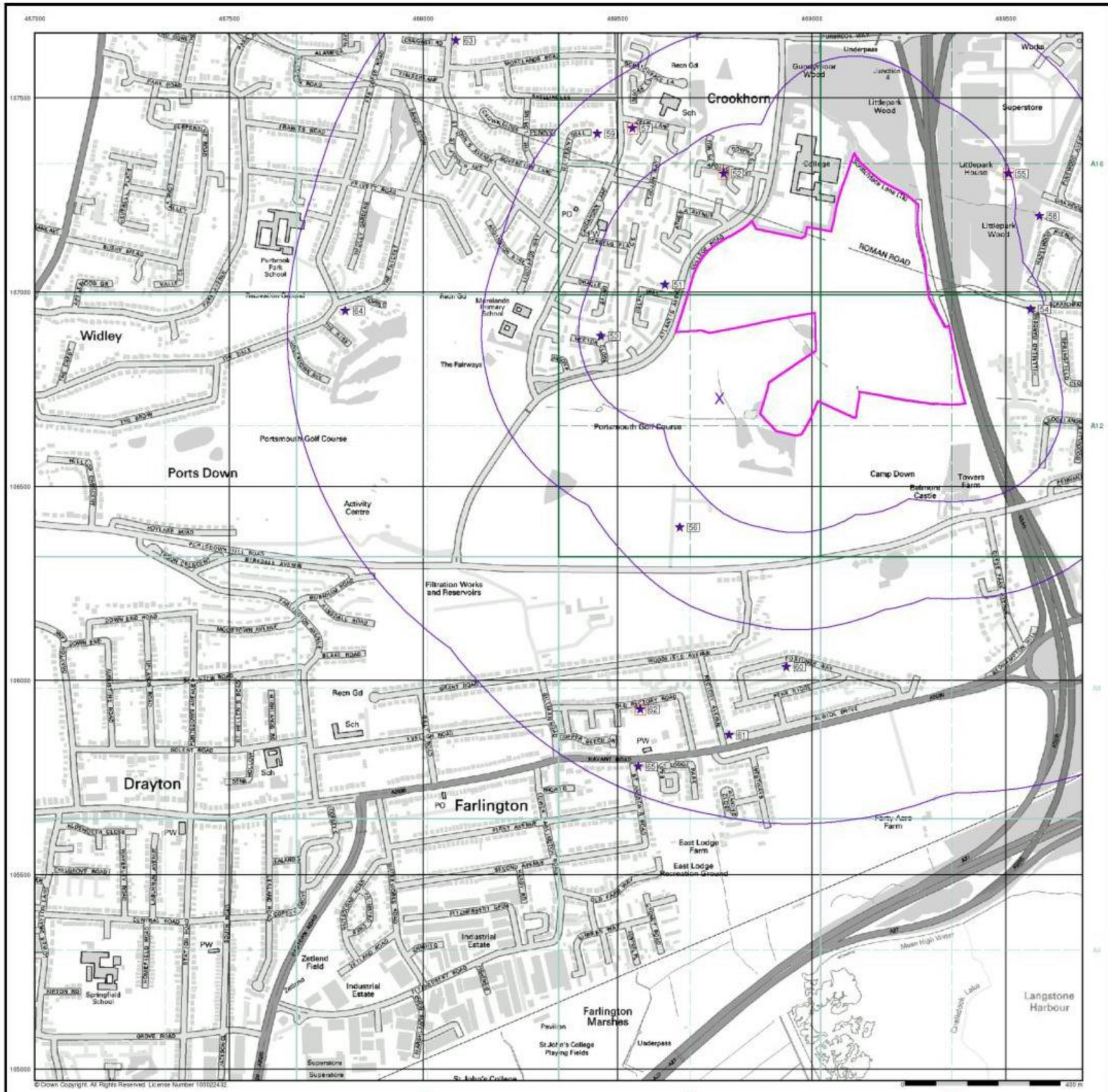
Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468760, 106730
Slice:	A
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

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Industrial Land Use Map

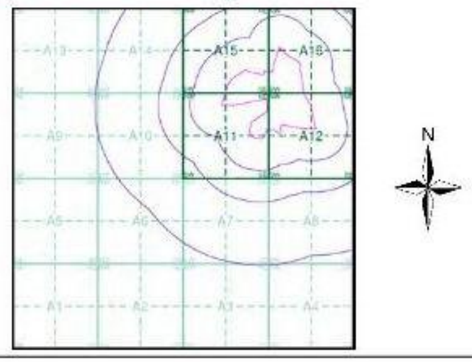
General

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

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- Gas Pipeline
- Underground Electrical Cables

Industrial Land Use Map - Slice A

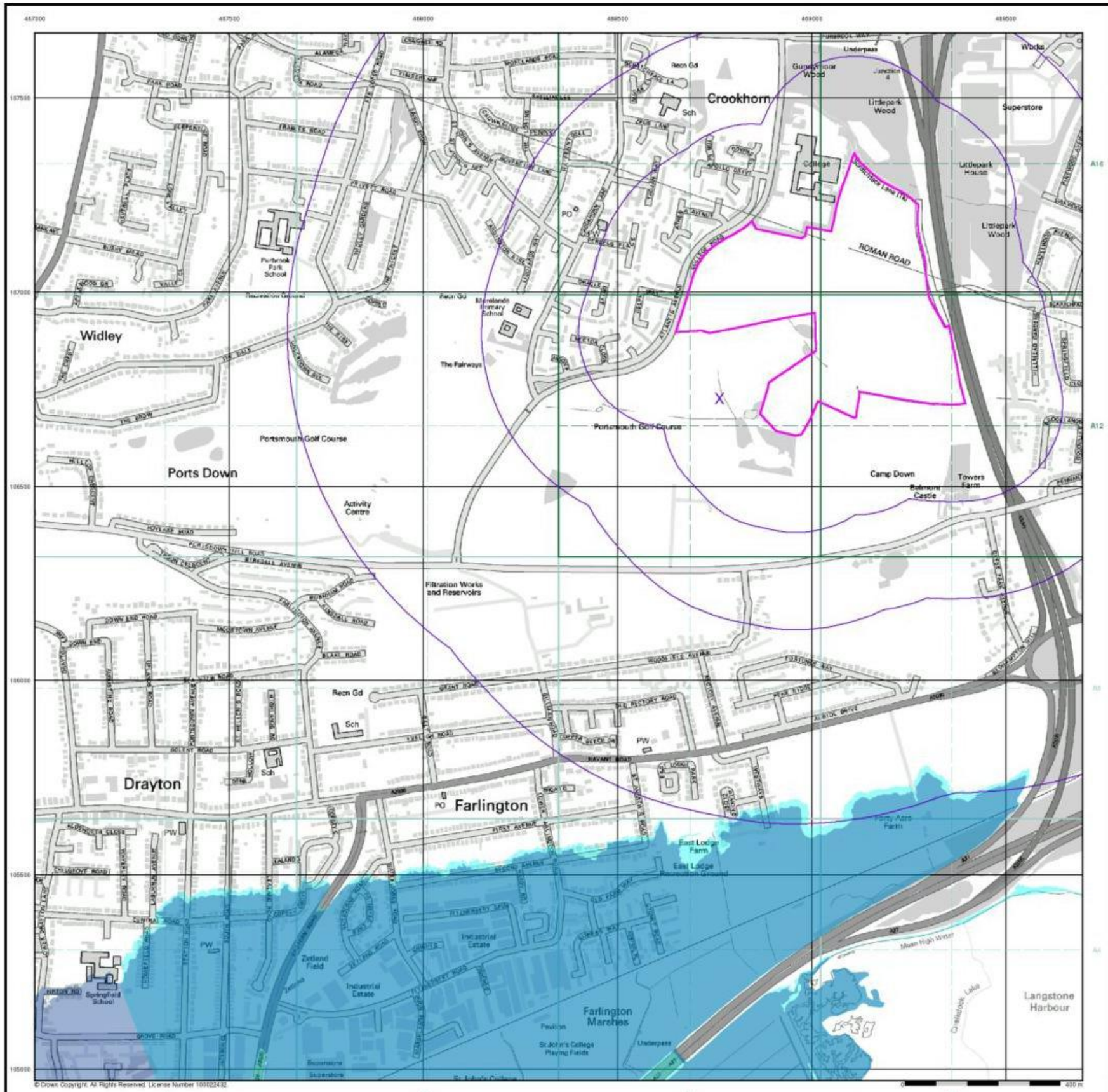


Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468760, 106730
Slice:	A
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



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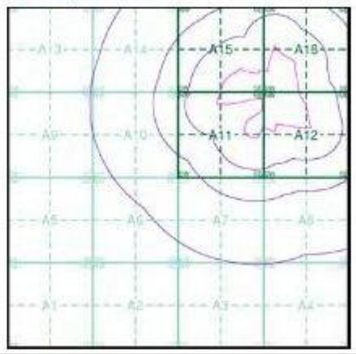
General

- 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

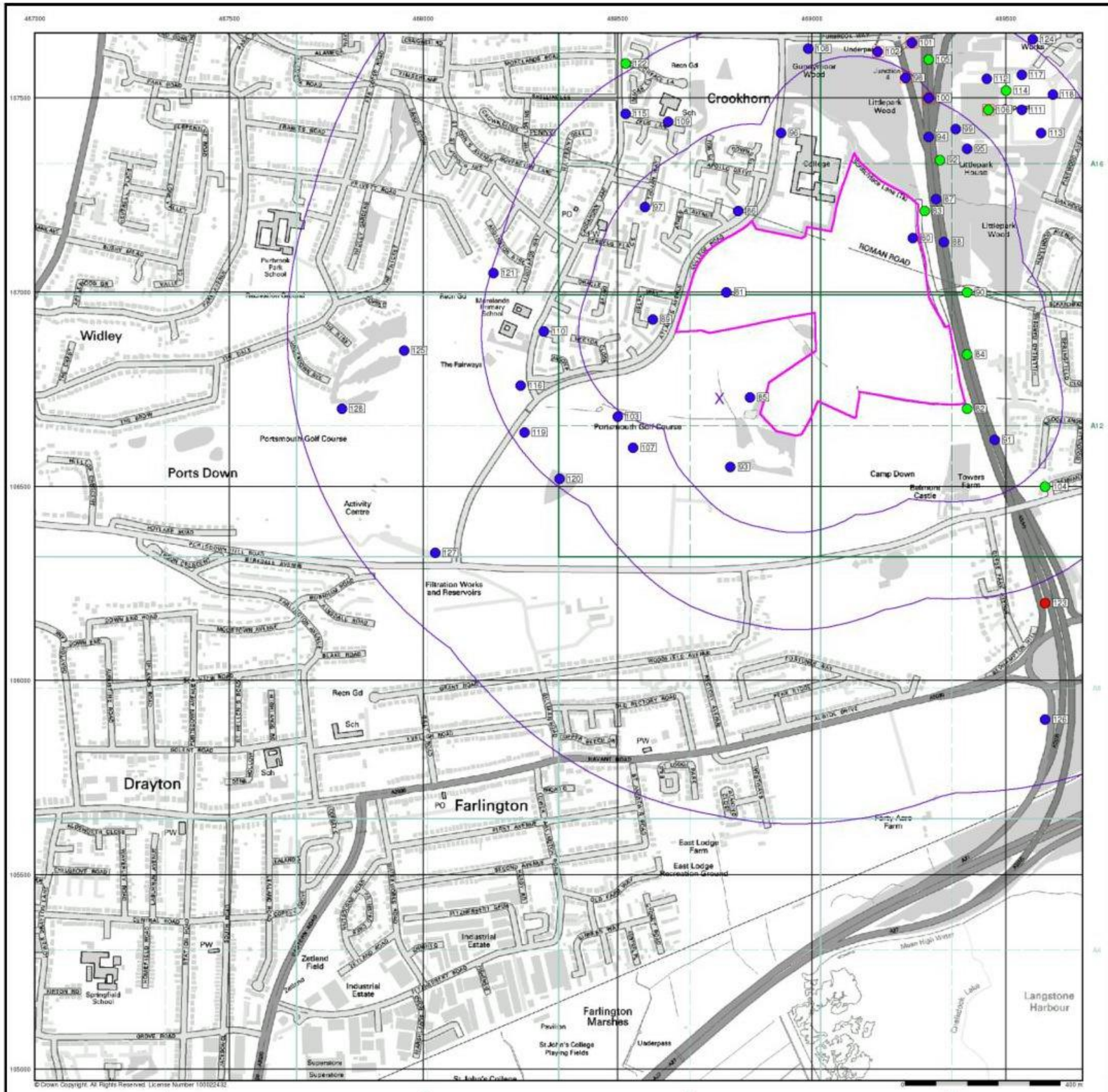


Order Details

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National Grid Reference:	468760, 106730
Slice:	A
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



Envirocheck®

General

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

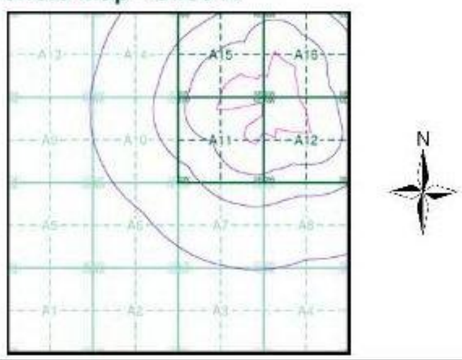
Agency and Hydrological (Boreholes)

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

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

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

Borehole Map - Slice A

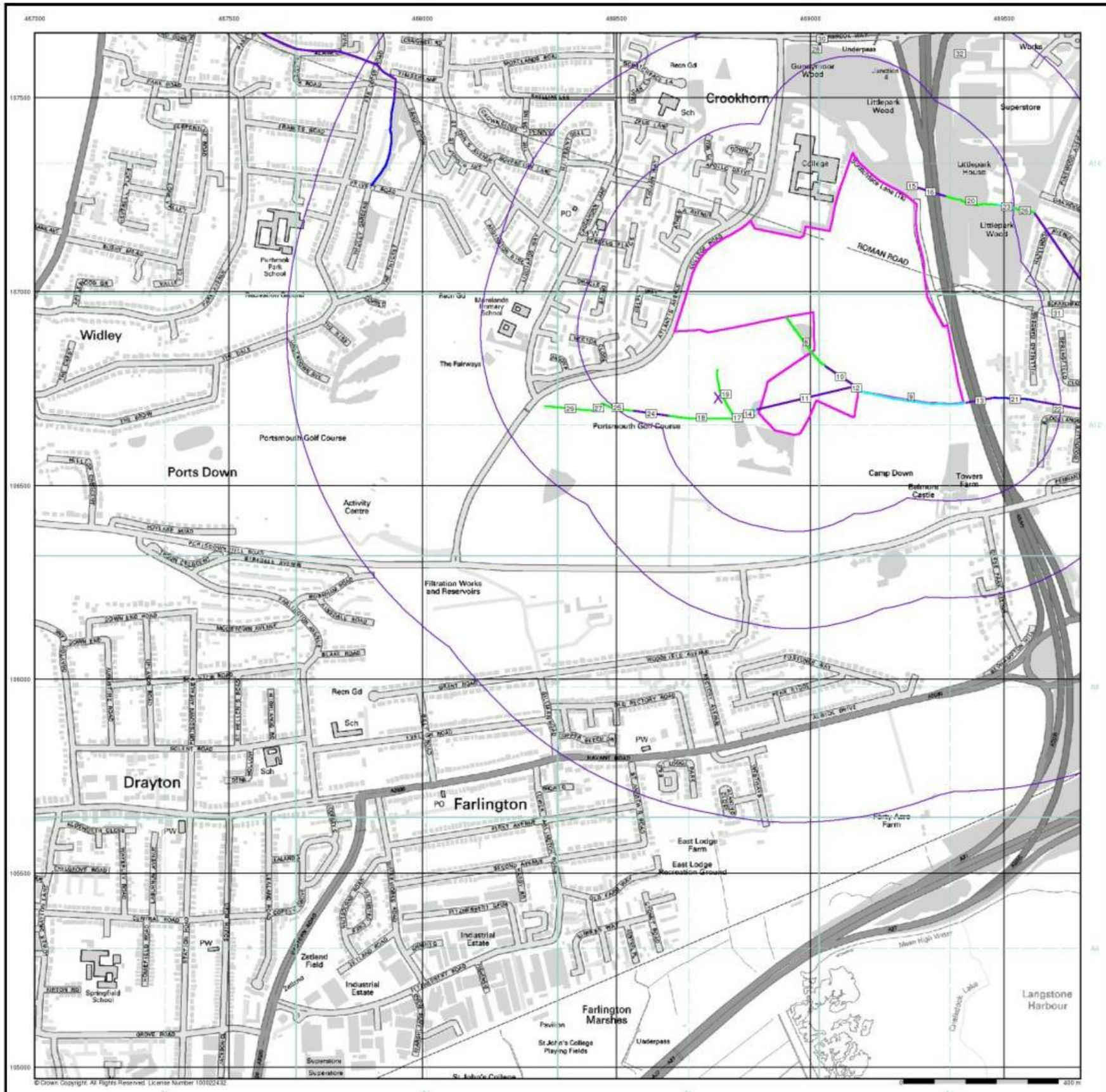


Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468760, 106730
Slice:	A
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

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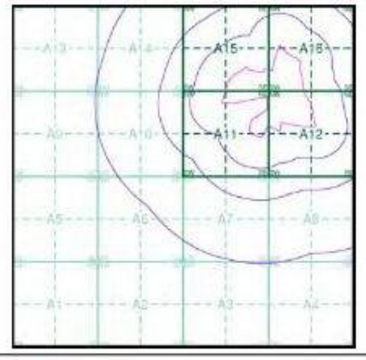
General

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

Detailed River Network Data

- Primary River
- Secondary River
- Tertiary River
- Canal
- Canal Tunnel
- Undefined River
- Lake/Reservoir
- Offline Drainage Feature
- Extended Culvert (greater than 50m)
- Underground River (inferred)
- Underground River (local knowledge)
- Downstream of High Water Mark
- Downstream of Seaward Extension
- Not assigned River feature

EA/NRW Detailed River Network Map - Slice A



Order Details

Order Number:	92122794_1_1
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Slice:	A
Site Area (Ha):	26.37
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Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

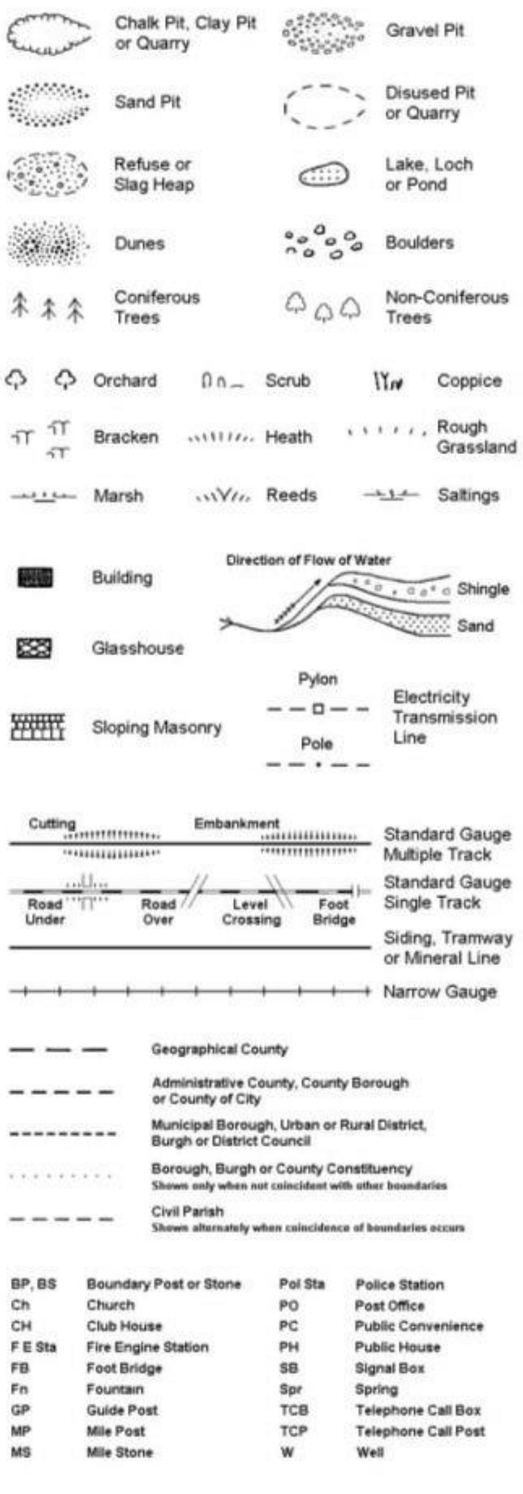
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Historical Mapping Legends

Ordnance Survey County Series 1:10,560

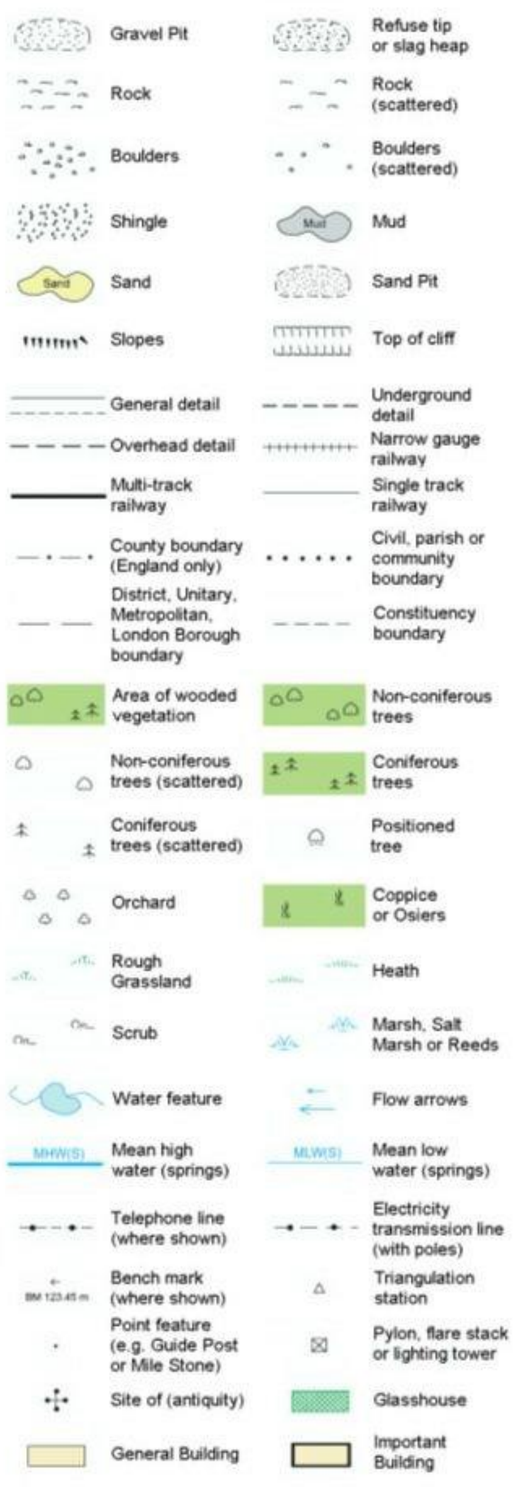


Ordnance Survey Plan 1:10,000



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

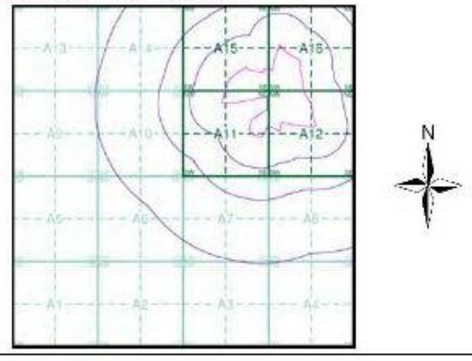


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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Hampshire & Isle Of Wight	1:10,560	1870	2
Hampshire & Isle Of Wight	1:10,560	1898	3
Hampshire & Isle Of Wight	1:10,560	1909 - 1910	4
Hampshire & Isle Of Wight	1:10,560	1932	5
Hampshire & Isle Of Wight	1:10,560	1932	6
Hampshire & Isle Of Wight	1:10,560	1933	7
Hampshire & Isle Of Wight	1:10,560	1933	8
Hampshire & Isle Of Wight	1:10,560	1938	9
Ordnance Survey Plan	1:10,000	1963	10
Ordnance Survey Plan	1:10,000	1973	11
Ordnance Survey Plan	1:10,000	1982	12
Ordnance Survey Plan	1:10,000	1990 - 1991	13
10K Raster Mapping	1:10,000	2000	14
Street View	1:10,000	2016	15

Historical Map - Slice A



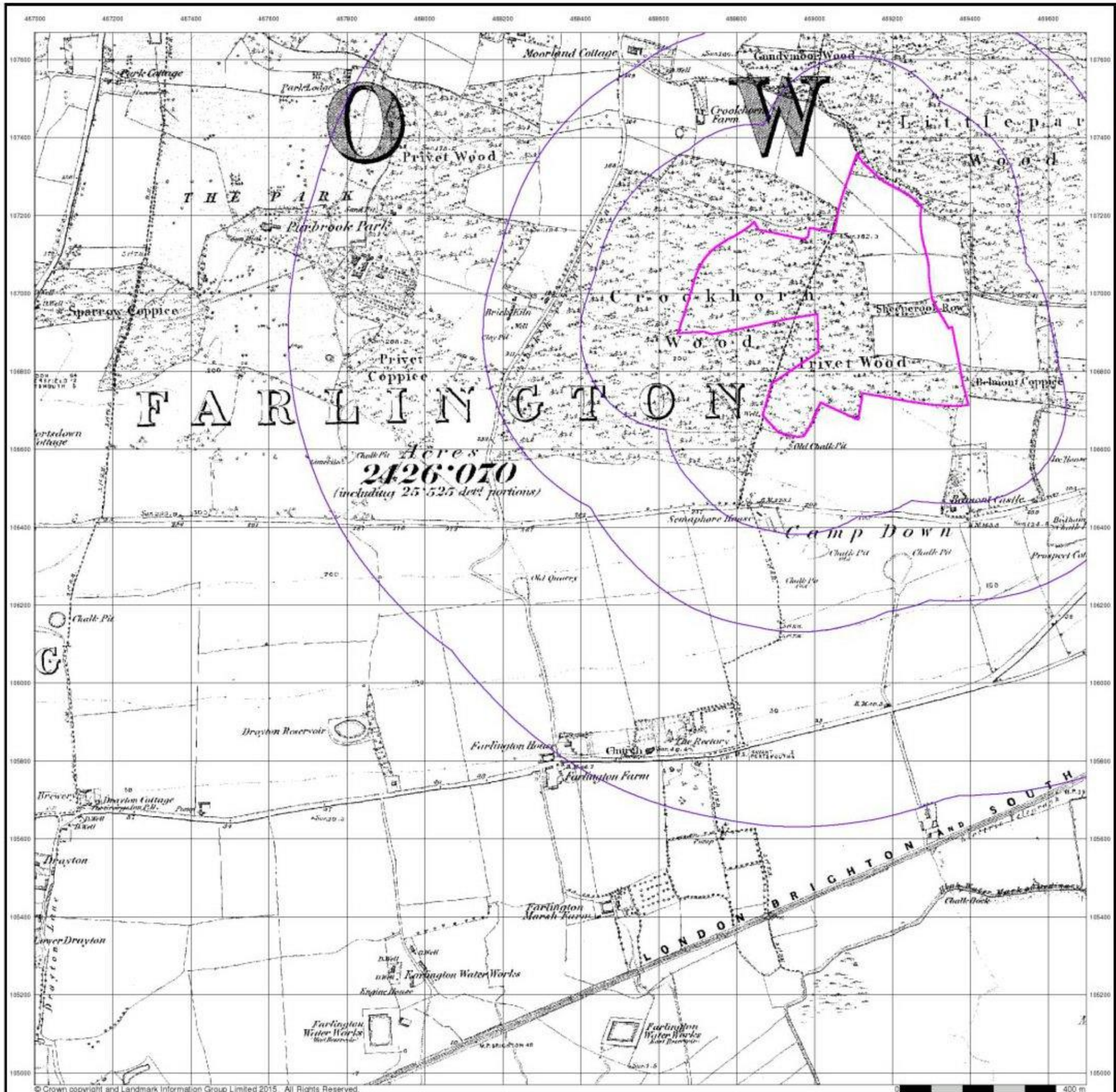
Order Details

Order Number: 92122794_1_1
Customer Ref: 28720
National Grid Reference: 468760, 106730
Slice: A
Site Area (Ha): 26.37
Search Buffer (m): 1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

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Hampshire & Isle Of Wight

Published 1870

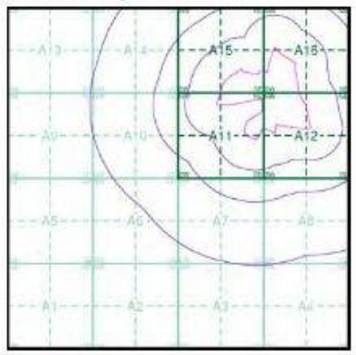
Source map scale - 1:10,560

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)

07600
1870
1:10,560

Historical Map - Slice A



Order Details

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Hampshire & Isle Of Wight

Published 1898

Source map scale - 1:10,560

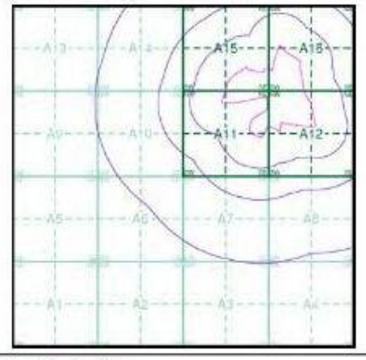
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Map Name(s) and Date(s)

076NW
1898
1:10,560

076SW
1898
1:10,560

Historical Map - Slice A



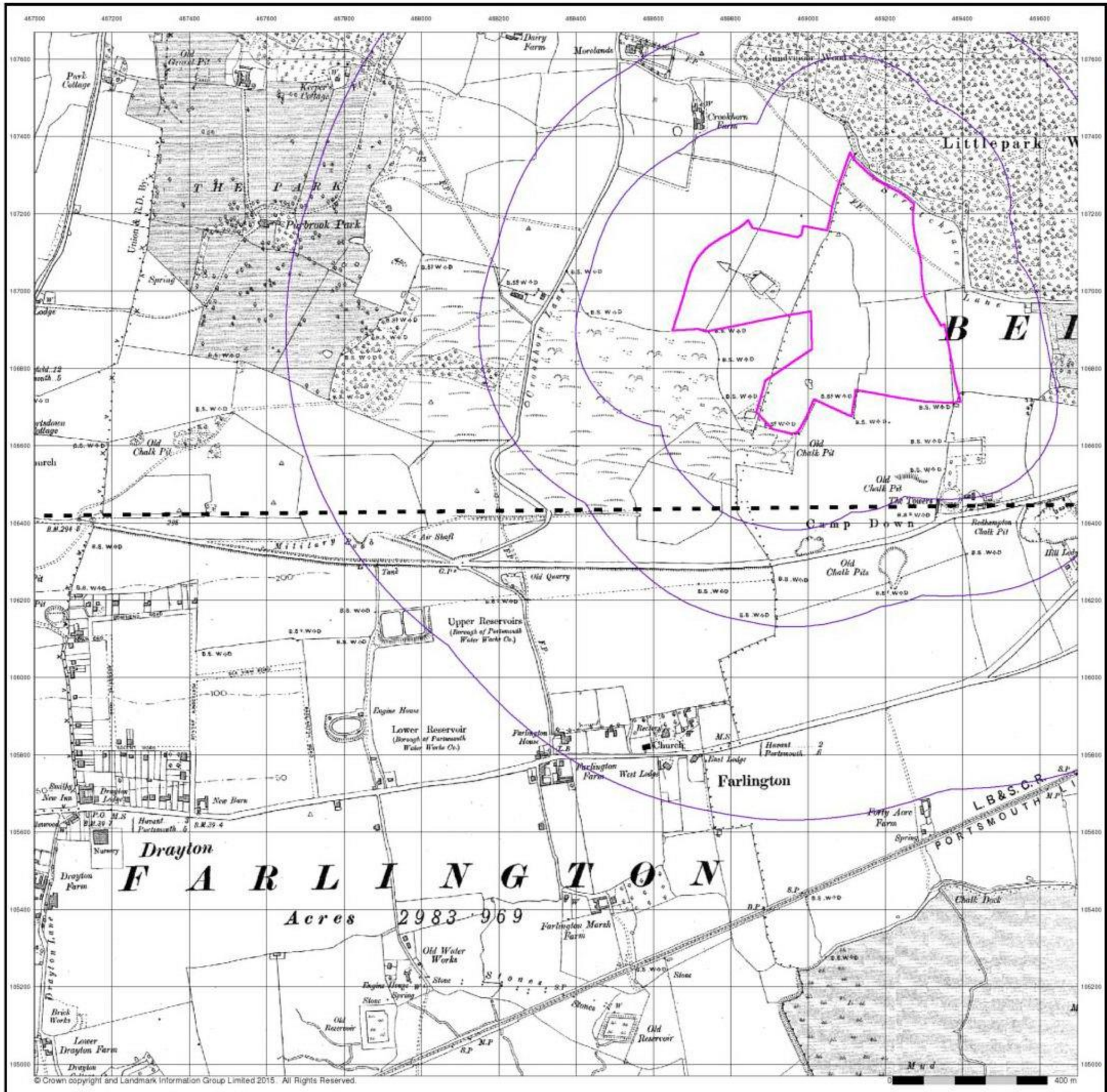
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Hampshire & Isle Of Wight

Published 1909 - 1910

Source map scale - 1:10,560

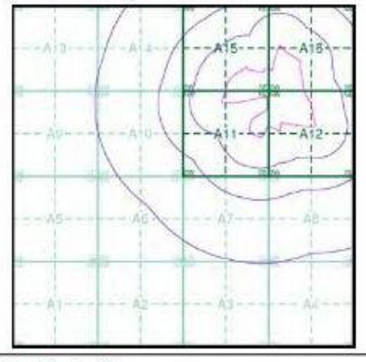
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Map Name(s) and Date(s)

076NW
1909
1:10,560

076SW
1910
1:10,560

Historical Map - Slice A



Order Details

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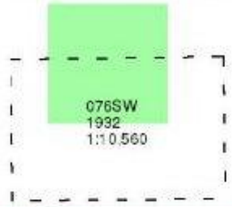
Hampshire & Isle Of Wight

Published 1932

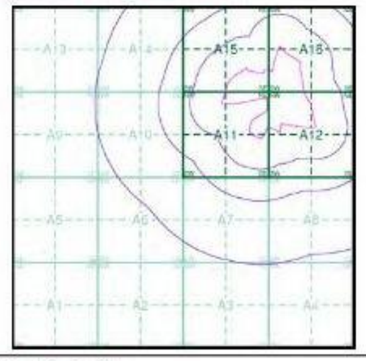
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice A



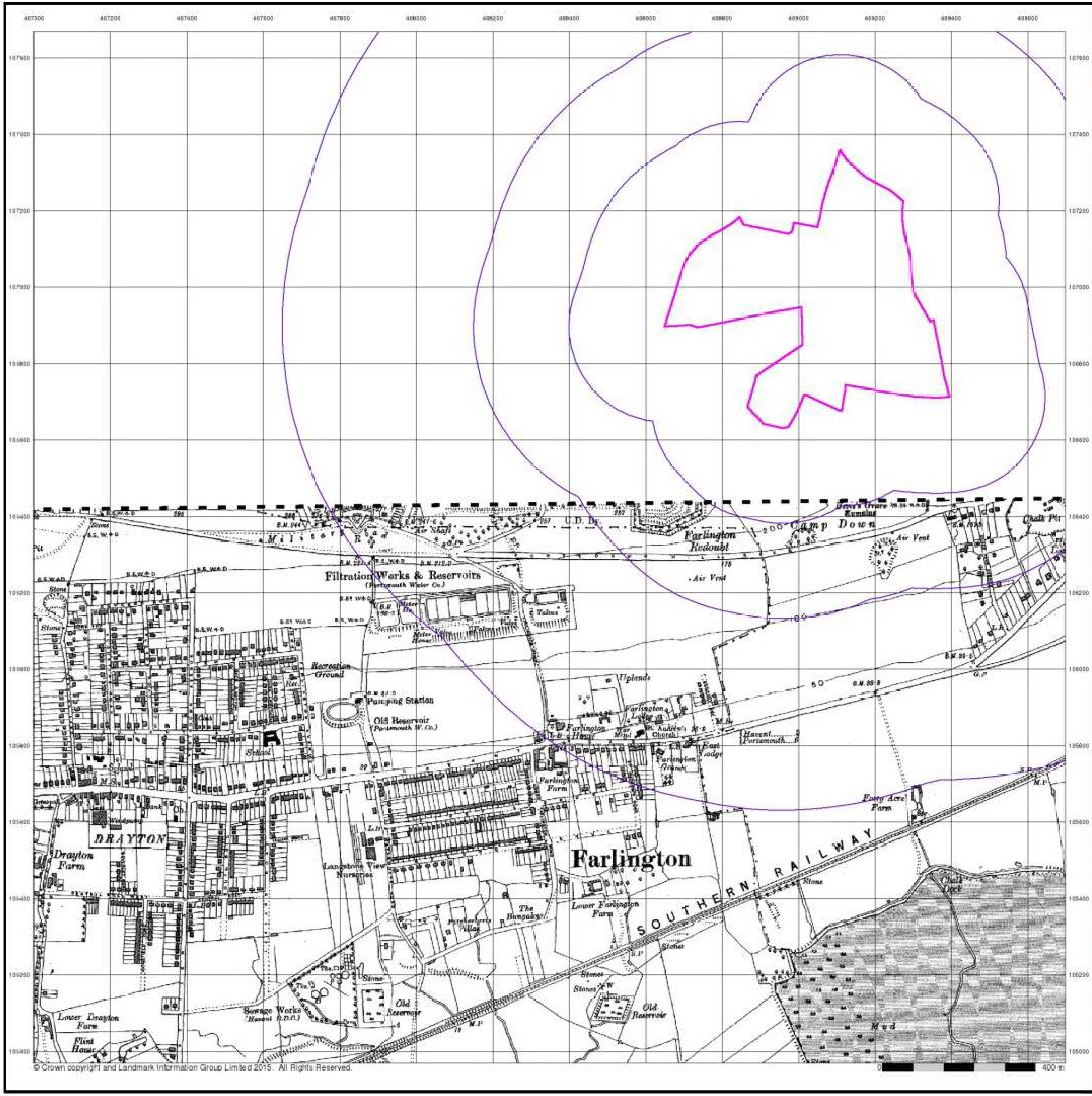
Order Details

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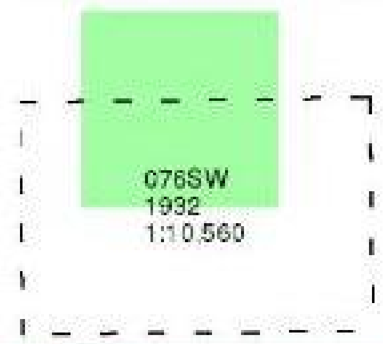
Hampshire & Isle Of Wight

Published 1932

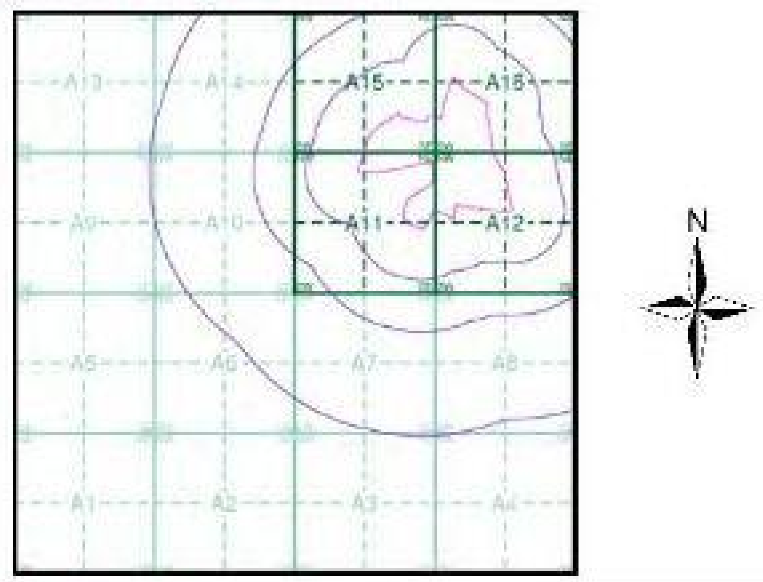
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

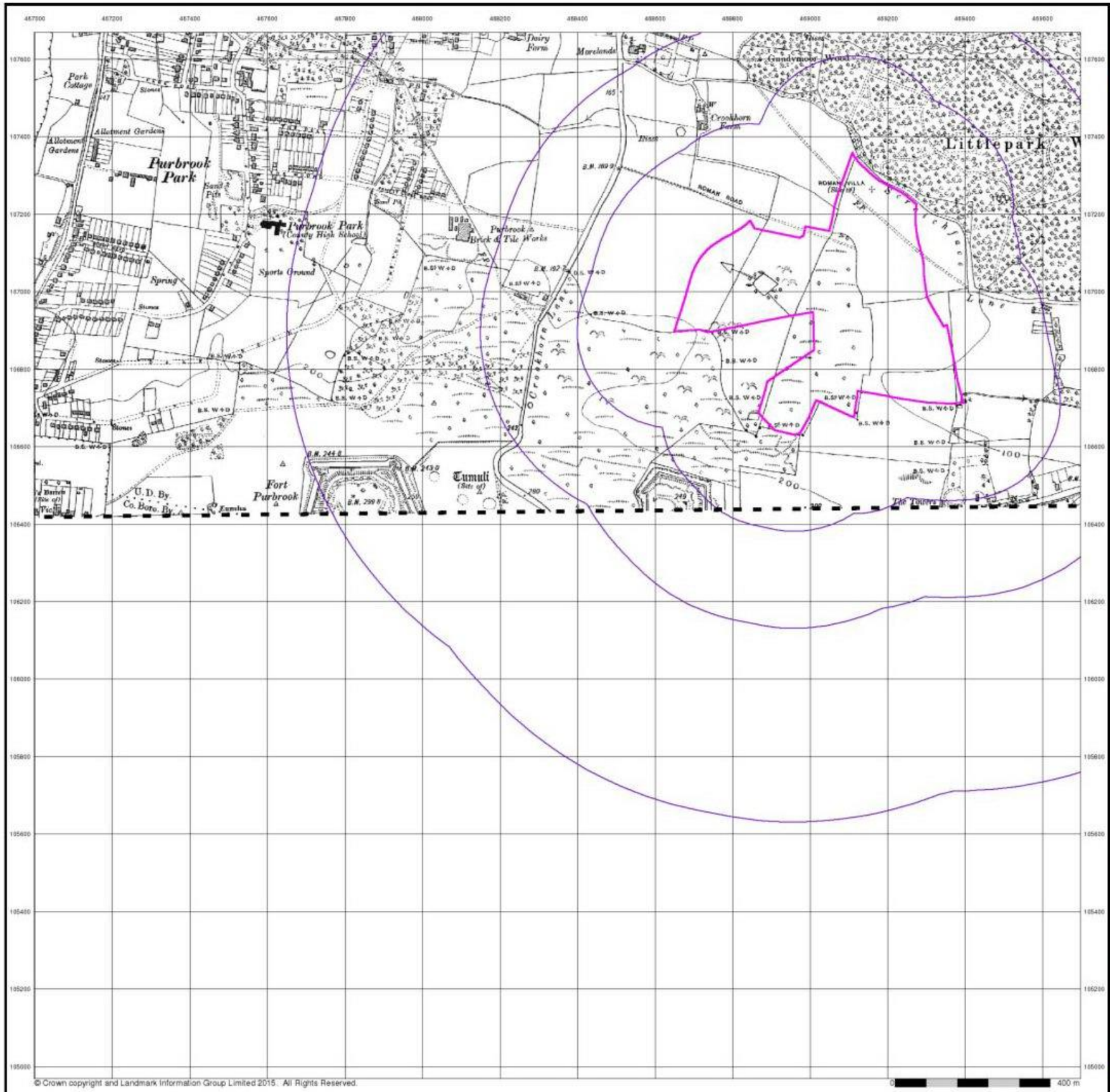
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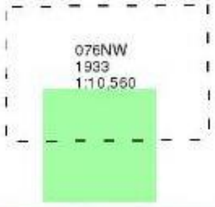
Hampshire & Isle Of Wight

Published 1933

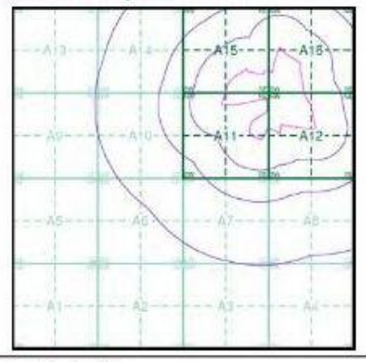
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice A

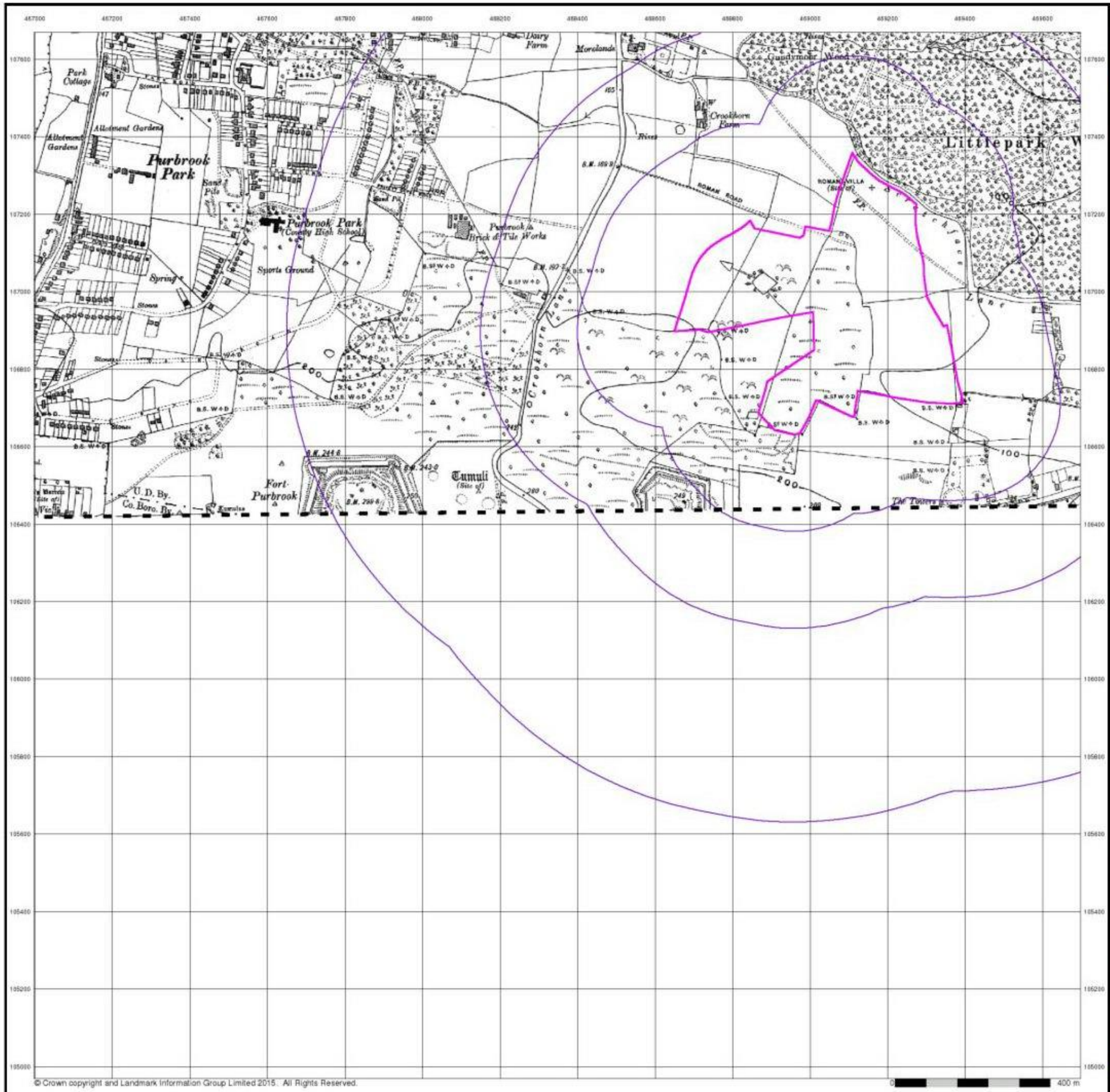


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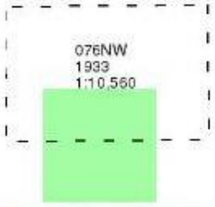
Hampshire & Isle Of Wight

Published 1933

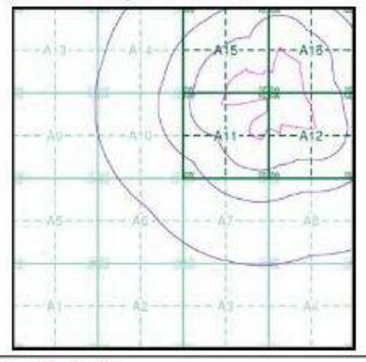
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice A

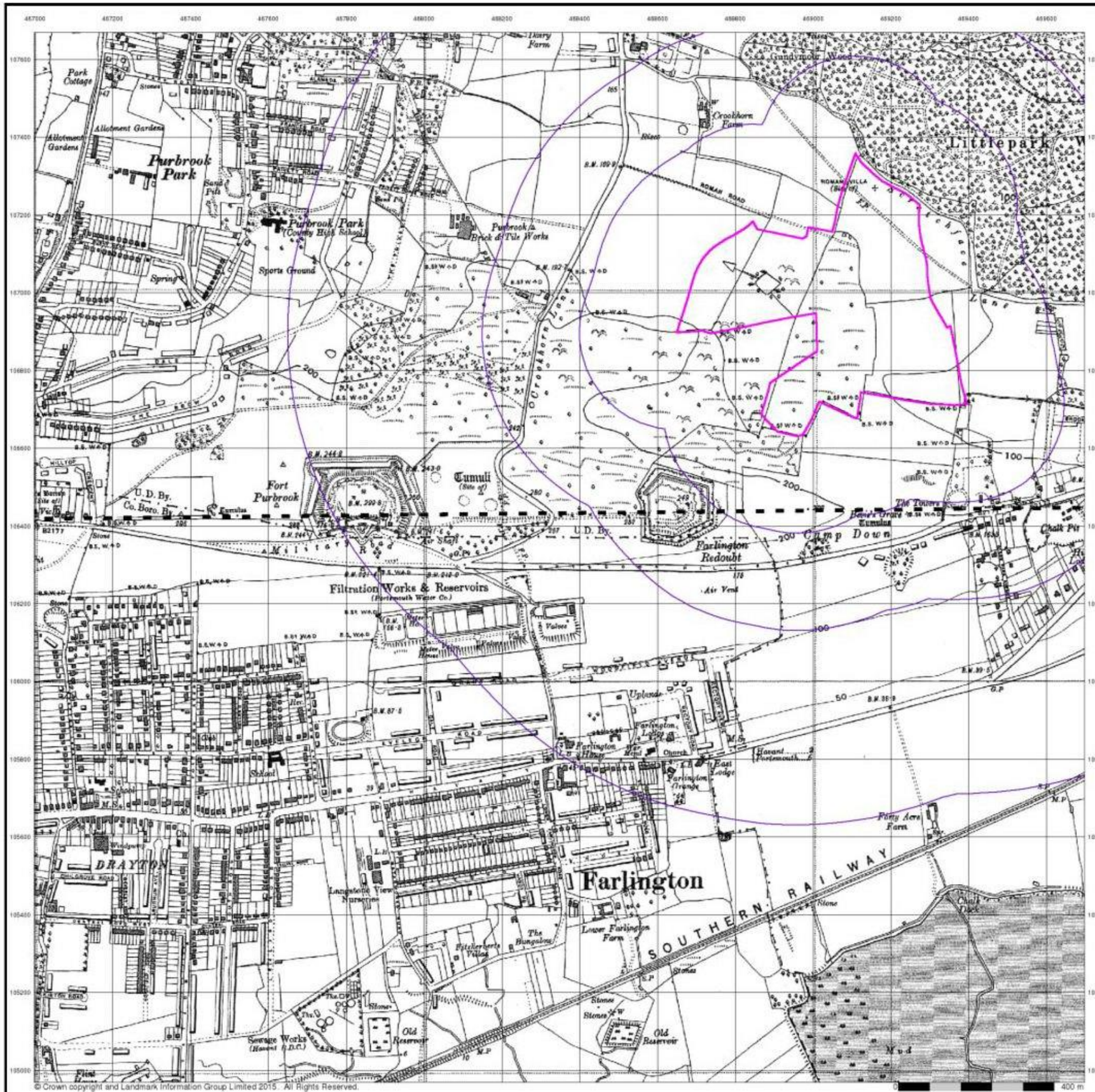


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Hampshire & Isle Of Wight

Published 1938

Source map scale - 1:10,560

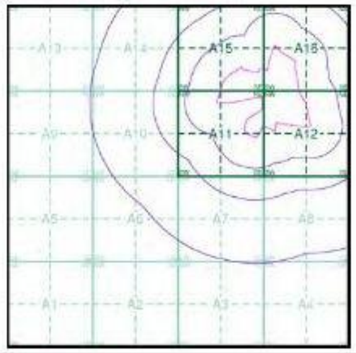
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Map Name(s) and Date(s)

076NW
1938
1:10,560

076SW
1938
1:10,560

Historical Map - Slice A

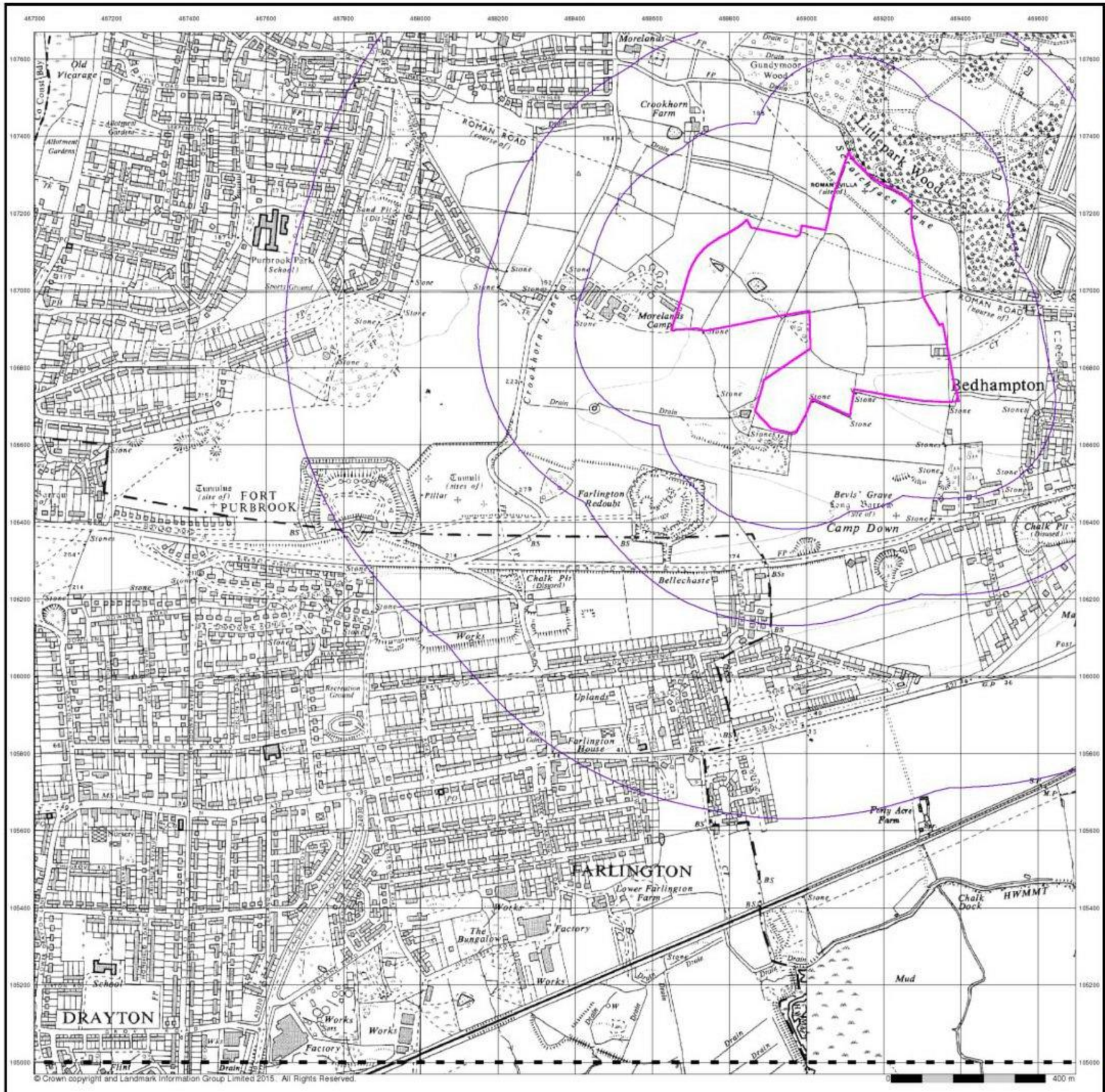


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Ordnance Survey Plan

Published 1963

Source map scale - 1:10,000

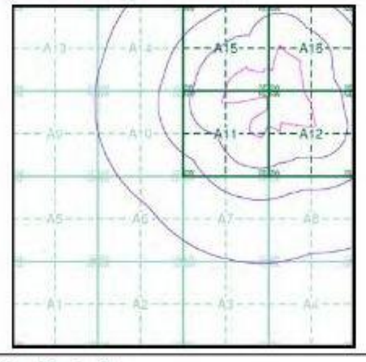
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Map Name(s) and Date(s)

SU60NE 1963 1:10,560

SU60SE 1963 1:10,560

Historical Map - Slice A



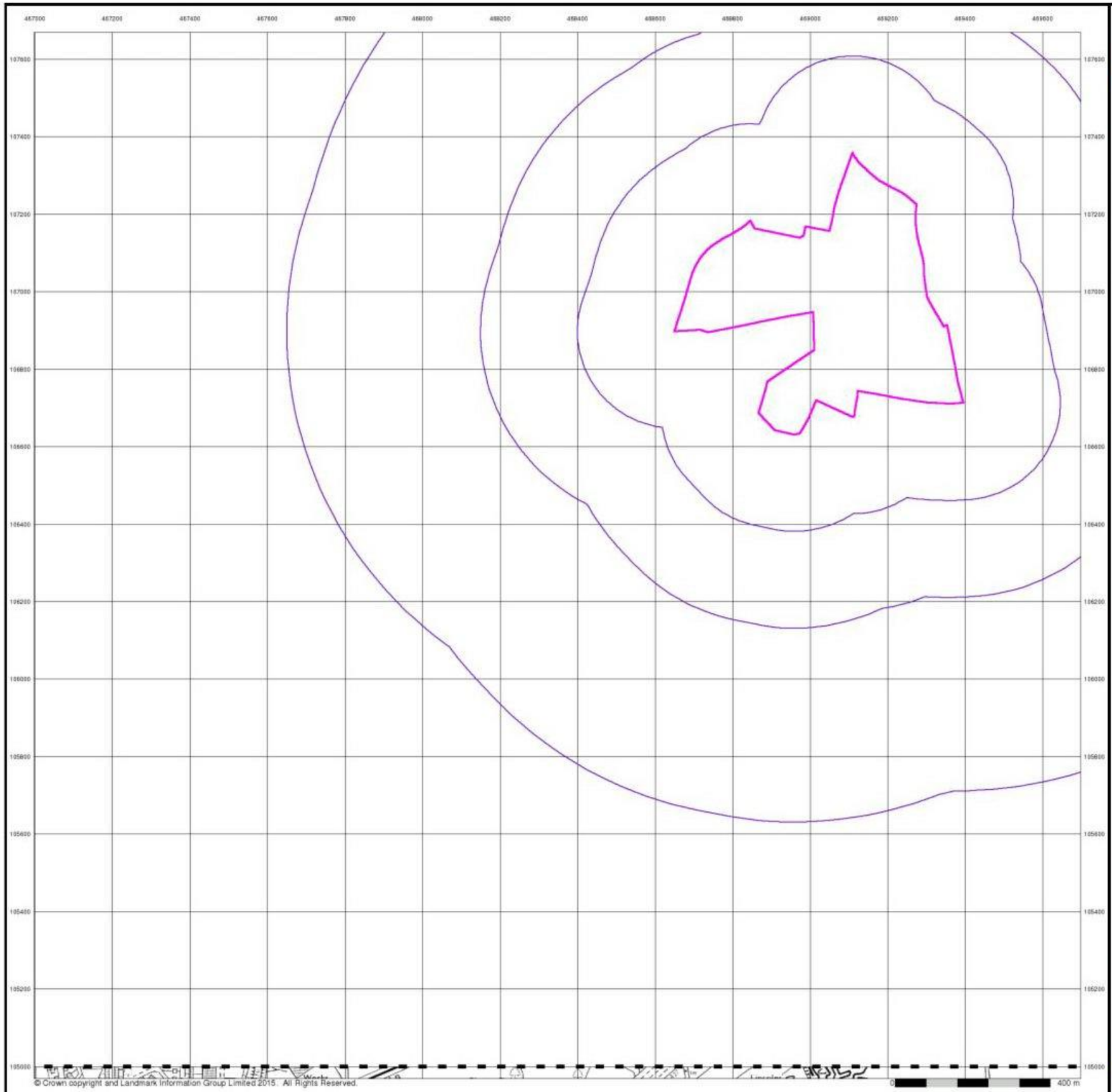
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Ordnance Survey Plan

Published 1973

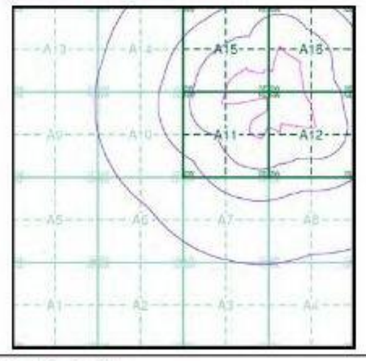
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Map Name(s) and Date(s)

SU60SE
1973
1:10,000

Historical Map - Slice A



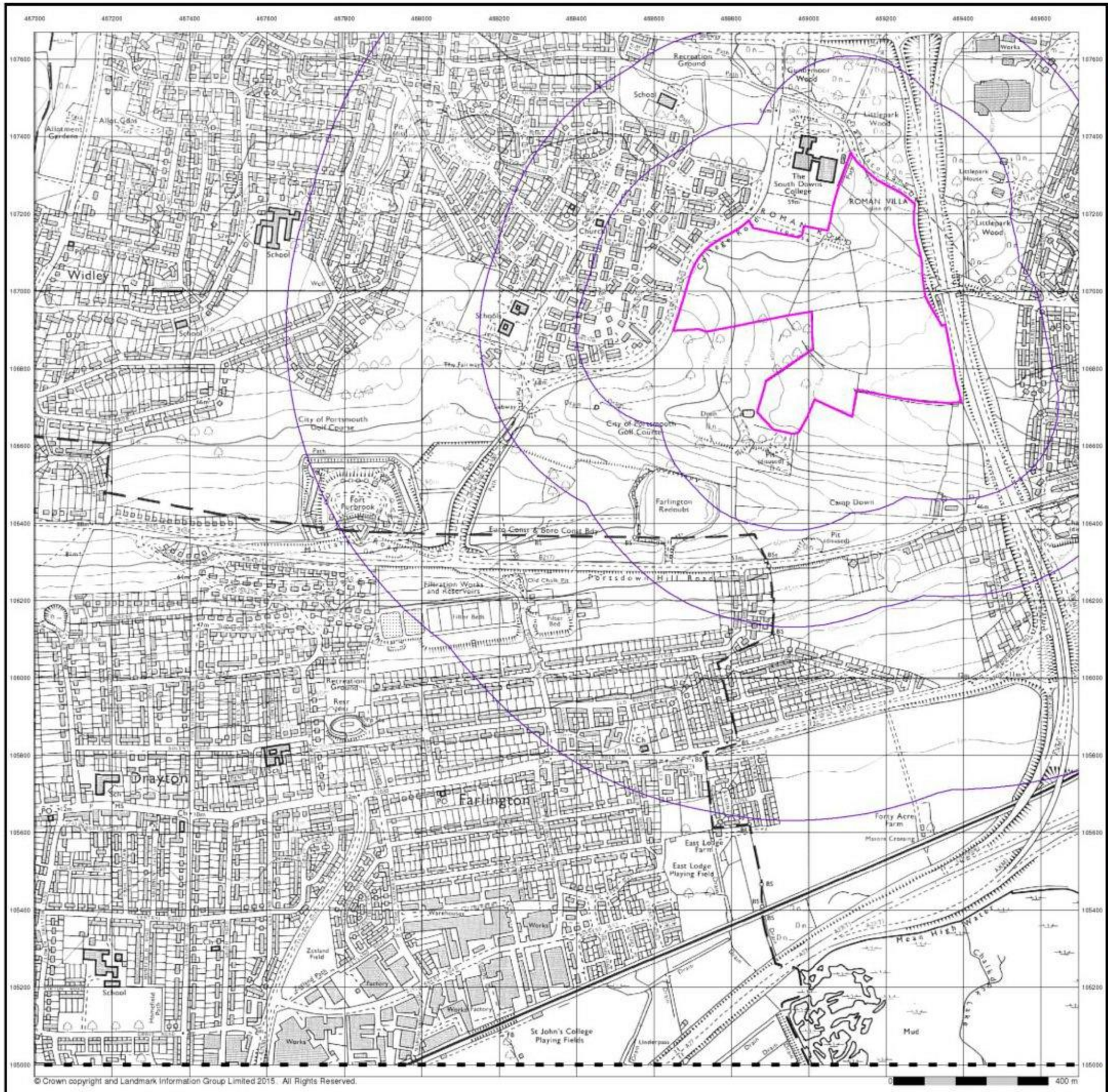
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Ordnance Survey Plan

Published 1982

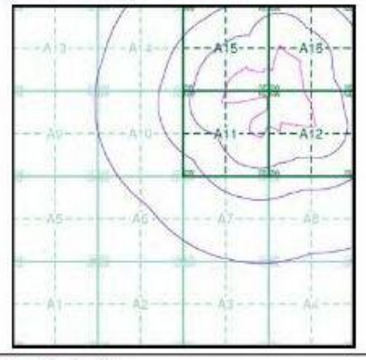
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Map Name(s) and Date(s)



Historical Map - Slice A



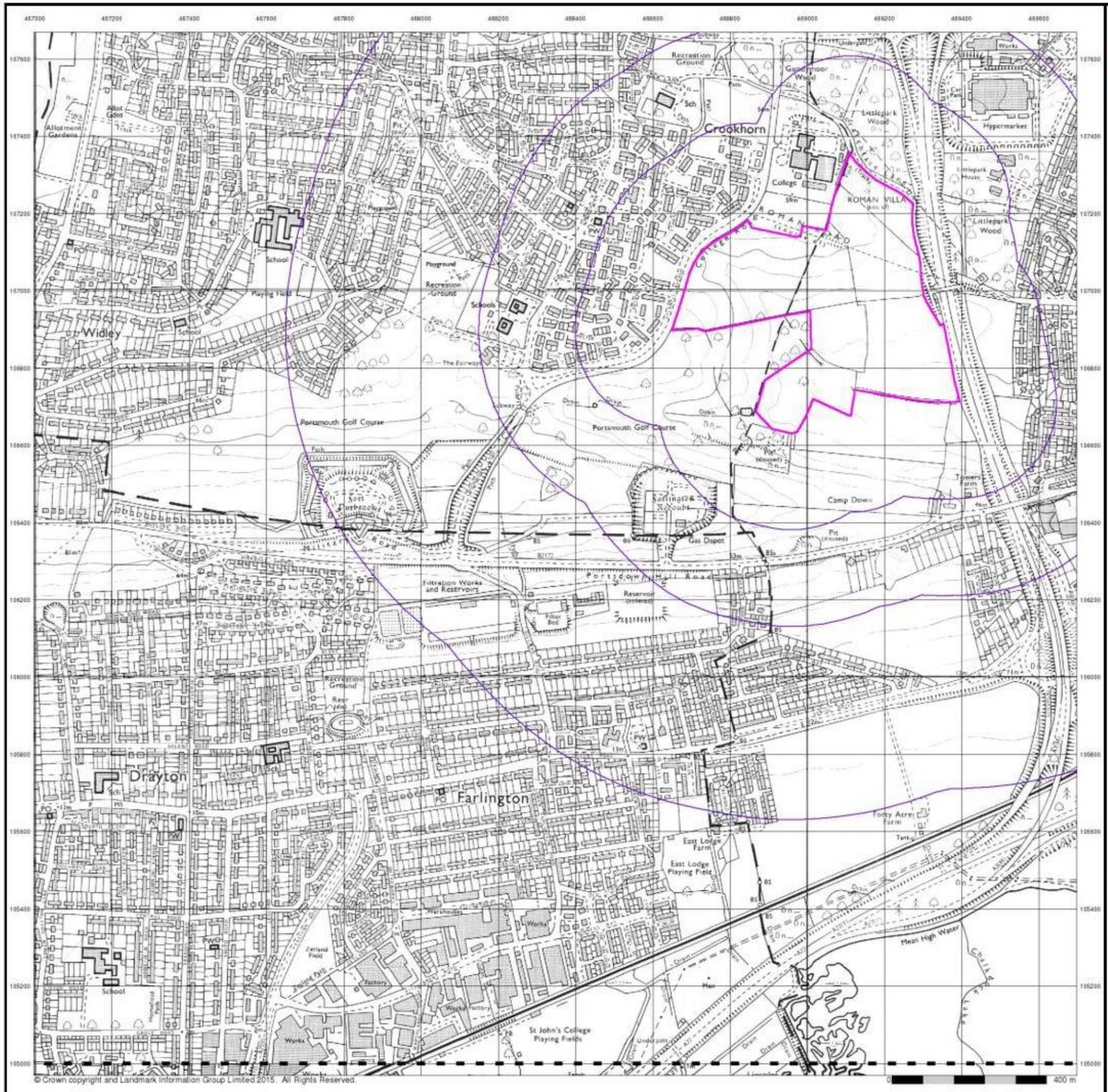
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Ordnance Survey Plan

Published 1990 - 1991

Source map scale - 1:10,000

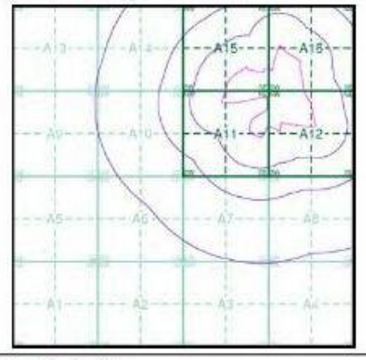
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some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

SU50NE
1991
1:10,000

SU60SE
1990
1:10,000

Historical Map - Slice A



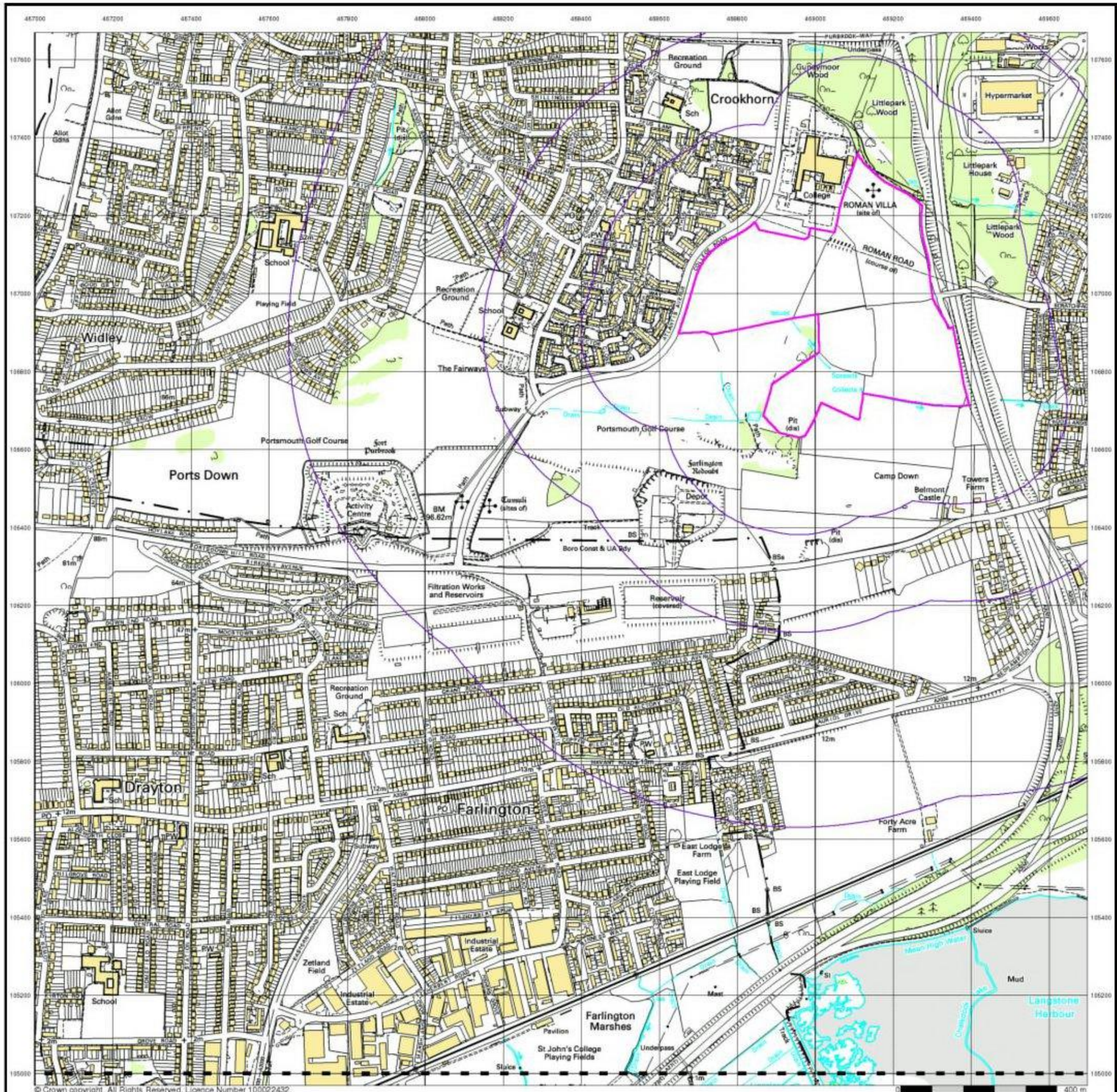
Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468760, 106730
Slice:	A
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

Landmark Information Group
Tel: 0844 844 9952
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10k Raster Mapping

Published 2000

Source map scale - 1:10,000

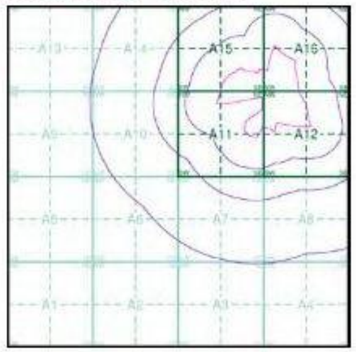
The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks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

Map Name(s) and Date(s)

SU60NE
2000
1:10,000

SU60SE
2000
1:10,000

Historical Map - Slice A



Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468760, 106730
Slice:	A
Site Area (Ha):	26.37
Search Buffer (m):	1000

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Street View

Published 2016

Source map scale - 1:10,000

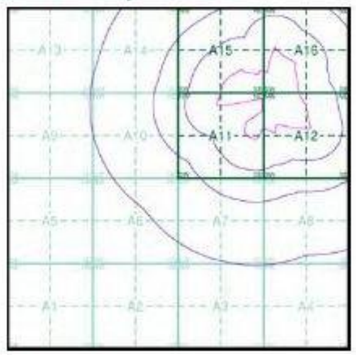
Street View is a street-level map for the whole of Great Britain produced by the Ordnance Survey. These maps are provided at a nominal scale of 1:10,000

Map Name(s) and Date(s)

SU60NE
2016
1:10,000

SU60SE
2016
1:10,000

Street View Map - Slice A



Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468760, 106730
Slice:	A
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA

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Envirocheck® Report:

Datasheet

Order Details:

Order Number:
92122794_1_1

Customer Reference:
28720

National Grid Reference:
468760, 106730

Slice:
A

Site Area (Ha):
26.37

Search Buffer (m):
1000

Site Details:

Land off College Road
Purbrook
WATERLOOVILLE
Hampshire
PO7 8AA

Client Details:

Mr R Speight
RSK Environment Ltd
Unit 18
Basepoint Abbey Enterprise Centre
Premier Way
Romsey
Hampshire
SO51 9AQ

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Contents

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Introduction

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

In 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.

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Radon Potential dataset Copyright Notice

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Report Version v50.0

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 4			2	
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 4			2	
Local Authority Pollution Prevention and Control Enforcements	pg 5			1	
Nearest Surface Water Feature		Yes			
Pollution Incidents to Controlled Waters	pg 5			1	
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality	pg 5			1	
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions					
Water Industry Act Referrals					
Groundwater Vulnerability	pg 5	Yes	n/a	n/a	n/a
Drift Deposits			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 5	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 6	Yes	n/a	n/a	n/a
Source Protection Zones	pg 6	2			
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
Detailed River Network Lines	pg 6	Yes	Yes	Yes	n/a
Detailed River Network Offline Drainage	pg 10			Yes	n/a

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites	pg 11				2
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)	pg 11			1	
Local Authority Landfill Coverage	pg 11	2	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Registered Landfill Sites					
Registered Waste Transfer Sites	pg 12			1	
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					
Geological					
BGS 1:625,000 Solid Geology	pg 13	Yes	n/a	n/a	n/a
BGS Recorded Mineral Sites	pg 13		3	6	5
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					
Non Coal Mining Areas of Great Britain	pg 15	Yes		n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 15	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 15	Yes	Yes	n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 16	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 16	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 17	Yes	Yes	n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Industrial Land Use					
Contemporary Trade Directory Entries	pg 18		7	5	7
Fuel Station Entries					
Gas Pipelines					
Underground Electrical Cables					
Sensitive Land Use					
Ancient Woodland	pg 20		5	2	6
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	pg 20	1			
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A15SE (N)	0	1	468950 107200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NW (E)	0	1	469100 106850
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A11NE (NE)	0	1	468850 106900
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A11NE (NE)	0	1	469000 106900
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12NW (NE)	0	1	469050 106900
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12NW (E)	0	1	469350 106900
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A11SE (SE)	0	1	468950 106650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11NE (E)	0	1	468900 106728
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A11NE (NE)	0	1	468900 106850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A15SE (N)	0	1	468763 107000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A15SE (N)	0	1	468800 107000
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A11SE (S)	0	1	468763 106650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NW (E)	0	1	469300 106750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11NE (E)	0	1	468850 106700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NW (E)	0	1	469100 106700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (E)	5	1	469400 106728
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (E)	15	1	469400 106750
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A11NE (S)	17	1	468763 106700
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12SW (E)	27	1	469100 106650
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A11NW (NW)	50	1	468600 106850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A12SW (E)	61	1	469300 106650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12SW (E)	64	1	469200 106650

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A16SW (NE)	74	1	469350 107150
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A15NE (N)	93	1	468900 107500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12SW (E)	111	1	469250 106600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12SE (E)	113	1	469400 106600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12SW (E)	117	1	469200 106600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A11NE (SW)	117	1	468750 106700
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A16NW (NE)	129	1	469200 107450
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A11NW (W)	156	1	468600 106728
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A16SE (NE)	176	1	469450 107200
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A16NW (N)	193	1	469100 107550
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A16NW (NE)	197	1	469150 107550
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A16NW (NE)	200	1	469250 107500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12SE (E)	220	1	469450 106500
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12SE (E)	225	1	469550 106550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A16NW (NE)	238	1	469300 107500
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A16NW (N)	243	1	469100 107600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A16NW (NE)	246	1	469150 107600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A11NW (NW)	250	1	468400 106900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A16SE (E)	261	1	469600 107000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12SE (E)	262	1	469600 106550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12SE (E)	262	1	469650 106650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12SE (E)	263	1	469550 106500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A15NE (N)	280	1	469000 107650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12SE (E)	295	1	469600 106500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12SE (E)	302	1	469650 106550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A16NW (NE)	308	1	469350 107550
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A15NE (N)	313	1	468900 107650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A16NE (NE)	319	1	469500 107450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A16NW (NE)	341	1	469350 107600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(N)	343	1	469000 107700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A16NE (NE)	356	1	469500 107500
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A15NE (N)	356	1	468800 107600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A16SE (NE)	365	1	469650 107150
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12SE (SE)	367	1	469450 106350
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A16NE (NE)	406	1	469450 107600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NW (SE)	411	1	469350 106300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (SE)	417	1	469450 106300
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NW (SE)	424	1	469150 106250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A16NE (NE)	427	1	469600 107500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A7NE (S)	431	1	468950 106200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A7NE (S)	432	1	468900 106200
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A7NE (SE)	433	1	469000 106200
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A7NE (S)	436	1	468763 106200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (SE)	441	1	469050 106200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A15NW (NW)	445	1	468400 107400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (SE)	449	1	469250 106250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (SE)	453	1	469100 106200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (SE)	461	1	469350 106250
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14SE (NW)	472	1	468250 107200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A7NE (S)	483	1	469000 106150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A7NE (S)	485	1	468763 106150
1	**Discharge Consents** Operator: Lift & Shift Skip Hire Ltd Property Type: Other Mach & Mech Equipment Location: Farlington Redoubt, Portsdown Hill Road, Portsmouth Authority: Environment Agency, Southern Region Catchment Area: Not Supplied Reference: P10535 Permit Version: 2 Effective Date: 21st December 2012 Issued Date: 21st December 2012 Revocation Date: Not Supplied Discharge Type: Trade Effluent Discharge-Site Drainage Discharge Environment: Into Land Receiving Water: Into Land **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A11SW (S)	320	2	468660 106440
1	**Discharge Consents** Operator: Lift & Shift Skip Hire Ltd Property Type: Other Mach & Mech Equipment Location: Farlington Redoubt, Portsdown Hill Road, Portsmouth Authority: Environment Agency, Southern Region Catchment Area: Not Supplied Reference: P10535 Permit Version: 1 Effective Date: 9th April 2002 Issued Date: 9th April 2002 Revocation Date: 20th December 2012 Discharge Type: Trade Effluent Discharge-Site Drainage Discharge Environment: Into Land Receiving Water: Into Land **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 10m	A11SW (S)	320	2	468660 106440
2	**Local Authority Pollution Prevention and Controls** Name: L&S Waste Management Ltd Location: Farlington Redoubt, Portsdown Hill Road, Havant, Po6 1bw Authority: Havant Borough Council, Environmental Health Department Permit Reference: HBC/IPPC/10/00354 Dated: 4th May 2010 Process Type: Local Authority Pollution Prevention and Control Description: PG3/1Blending, packing, loading and use of bulk cement **Status: Permitted** Positional Accuracy: Manually positioned to the address or location	A11SW (S)	351	3	468661 106394
3	**Local Authority Pollution Prevention and Controls** Name: Asda Stores Ltd Pfs Location: Larchwood Avenue, Purbrook Way, Bedhampton, HAVANT, Hampshire, PO7 3QW Authority: Havant Borough Council, Environmental Health Department Permit Reference: PERM09-00326 Dated: 9th December 1998 Process Type: Local Authority Pollution Prevention and Control Description: PG1/14 Petrol filling station **Status: Permitted** Positional Accuracy: Manually positioned to the address or location	A16NE (NE)	390	3	469536 107514

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
4	**Local Authority Pollution Prevention and Control Enforcements** Location: Larchwood Road, Bedhampton, Havant, Hampshire, Po7 3qw Type: Air Pollution Control Enforcement Notice Reference: HBC/EPA1/5/98 Date Issued: 19th September 2000 Enforcement Date: Not Supplied Details: Not Supplied Positional Accuracy: Manually positioned to the address or location	A16NE (NE)	390	3	469536 107514
	Nearest Surface Water Feature	A12NW (E)	0	-	469120 106750
5	**Pollution Incidents to Controlled Waters** Property Type: Industrial: Other Location: Vickers Systems Authority: Environment Agency, Southern Region Pollutant: Oils - Other Oil Note: Oil Loss Into Drains; Industrial: Other Incident Date: 8th February 1995 Incident Reference: 1678 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Oils/Related Products Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A16NE (NE)	427	2	469600 107500
	River Quality Name: Potwell Trib GQA Grade: River Quality C Reach: Wallington Conf - Purbrook Estimated Distance (km): 6.6 Flow Rate: Flow less than 0.31 cumecs Flow Type: River Year: 2000	A15NW (N)	350	2	468567 107418
	Groundwater Vulnerability Soil Classification: Not classified Map Sheet: Sheet 52 Southern Hampshire Scale: 1:100,000	A11NE (N)	0	2	468765 106832
	Groundwater Vulnerability Soil Classification: Soils of Low Leaching Potential - Soils in which pollutants are unlikely to penetrate the soil layer because water movement is largely horizontal or they have large ability to attenuate diffuse pollutants. Lateral flow from these soils contribute to groundwater recharge elsewhere in the catchment Map Sheet: Sheet 52 Southern Hampshire Scale: 1:100,000	A11NE (E)	0	2	468763 106728
	Groundwater Vulnerability Soil Classification: Soils of Low Leaching Potential - Soils in which pollutants are unlikely to penetrate the soil layer because water movement is largely horizontal or they have large ability to attenuate diffuse pollutants. Lateral flow from these soils contribute to groundwater recharge elsewhere in the catchment Map Sheet: Sheet 52 Southern Hampshire Scale: 1:100,000	A15SW (N)	0	2	468647 107049
	Drift Deposits None				
	Bedrock Aquifer Designations Aquifer Designation: Principal Aquifer	A11NE (S)	0	1	468761 106671
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - A	A11NE (E)	0	1	468763 106728
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - A	A15SE (NE)	0	1	469003 107191
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - A	A11NE (N)	0	1	468763 106882
	Bedrock Aquifer Designations Aquifer Designation: Unproductive Strata	A11NE (N)	0	1	468752 106911
	Bedrock Aquifer Designations Aquifer Designation: Unproductive Strata	A11NE (N)	0	1	468763 106759

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	A11NE (S)	0	1	468763 106703
6	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone Ic (Inner Protection Zone): Travel time of 50 days or less to the groundwater source - subsurface activity only.	A11NE (E)	0	2	468763 106728
7	**Source Protection Zones** Name: Bedhampton & Havant Springs Source: Environment Agency, Head Office Reference: Su049 Type: Zone I (Inner Protection Zone): Travel time of 50 days or less to the groundwater source.	A12NW (E)	0	2	469081 106681
	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				
8	**Detailed River Network Lines** River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A11NE (NE)	0	2	468976 106881
9	**Detailed River Network Lines** River Type: Secondary River River Name: Not Supplied Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A12NW (E)	0	2	469120 106750
10	**Detailed River Network Lines** River Type: Extended Culvert (greater than 50m) River Name: Not Supplied Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Below Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A12NW (E)	0	2	469040 106807

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
11	**Detailed River Network Lines** River Type: Extended Culvert (greater than 50m) River Name: Not Supplied Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Below Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A11NE (E)	0	2	468860 106695
12	**Detailed River Network Lines** River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A12NW (E)	0	2	469117 106756
13	**Detailed River Network Lines** River Type: Extended Culvert (greater than 50m) River Name: Not Supplied Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Below Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A12NE (E)	5	2	469400 106713
14	**Detailed River Network Lines** River Type: Secondary River River Name: Not Supplied Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A11NE (SE)	10	2	468819 106676
15	**Detailed River Network Lines** River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A16SW (NE)	27	2	469254 107276
16	**Detailed River Network Lines** River Type: Extended Culvert (greater than 50m) River Name: Not Supplied Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Below Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A16SW (NE)	33	2	469274 107269

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
17	**Detailed River Network Lines** River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A11NE (SE)	49	2	468806 106673
18	**Detailed River Network Lines** River Type: Tertiary River River Name: Drain Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A11NE (S)	63	2	468763 106673
19	**Detailed River Network Lines** River Type: Tertiary River River Name: Drain Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A11NE (NE)	63	2	468772 106733
20	**Detailed River Network Lines** River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A16SW (NE)	76	2	469347 107247
21	**Detailed River Network Lines** River Type: Primary River River Name: Not Supplied Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Bedhampton Brook Water Course Reference: S535	A12NE (E)	83	2	469477 106727
22	**Detailed River Network Lines** River Type: Extended Culvert (greater than 50m) River Name: Not Supplied Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Below Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Bedhampton Brook Water Course Reference: S535	A12NE (E)	184	2	469579 106719

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
23	**Detailed River Network Lines** River Type: Secondary River River Name: Not Supplied Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A16SE (NE)	209	2	469484 107224
24	**Detailed River Network Lines** River Type: Extended Culvert (greater than 50m) River Name: Not Supplied Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Below Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A11NW (W)	218	2	468634 106680
25	**Detailed River Network Lines** River Type: Tertiary River River Name: Drain Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A11NW (W)	231	2	468544 106693
26	**Detailed River Network Lines** River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A16SE (NE)	254	2	469528 107215
27	**Detailed River Network Lines** River Type: Secondary River River Name: Not Supplied Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A11NW (W)	269	2	468461 106707
28	**Detailed River Network Lines** River Type: Tertiary River River Name: Drain Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A15NE (N)	274	2	469005 107618

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
29	**Detailed River Network Lines** River Type: Tertiary River River Name: Drain Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A11NW (W)	289	2	468447 106693
30	**Detailed River Network Lines** River Type: Extended Culvert (greater than 50m) River Name: Not Supplied Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Below Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A16NW (N)	293	2	469025 107637
31	**Detailed River Network Lines** River Type: Extended Culvert (greater than 50m) River Name: Not Supplied Hydrographic Area: D007 River Flow Type: Primary Flow Path River Surface Level: Below Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A16SE (NE)	303	2	469577 107205
32	**Detailed River Network Offline Drainage** River Type: Tertiary River Hydrographic Area: D007	A16NE (NE)	372	2	469380 107614

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
33	**Historical Landfill Sites** Licence Holder: Not Supplied Location: Sandy Brow, Waterlooville, Hampshire Name: Disused Sand Pit B Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD20824 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Unknown Material EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 1700/1302 BGS Ref: Not Supplied Other Ref: FHA8, HAV 2	A14SW (NW)	770	2	467939 107205
34	**Historical Landfill Sites** Licence Holder: Not Supplied Location: Sandy Brow, Waterlooville, Hampshire Name: Disused Sand Pit A Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD20823 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Unknown Material EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 1700/1302 BGS Ref: Not Supplied Other Ref: FHA7, HAV 2	A14NW (NW)	771	2	467984 107349
35	**Licensed Waste Management Facilities (Locations)** Licence Number: 10226 Location: Farlington Redoubt, Portsdown Hill Road, Portsmouth, Hampshire, PO6 1BW Operator Name: L & S Waste Management Limited Operator Location: Not Supplied Authority: Environment Agency - South East Region, Solent & South Downs Area Site Category: Physical Treatment Facilities **Licence Status: Modified** Issued: 8th April 2002 Last Modified: 27th November 2015 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A11SE (S)	291	2	468700 106440
	Local Authority Landfill Coverage Name: Havant Borough Council - Has supplied landfill data		0	3	468763 106728
	Local Authority Landfill Coverage Name: Hampshire County Council - Had landfill data but passed it to the relevant environment agency		0	4	468763 106728
	Local Authority Landfill Coverage Name: Portsmouth City Unitary Council - Has not been able to supply Landfill data		272	5	468779 106370

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
36	**Registered Waste Transfer Sites** Licence Holder: Mc Nicholas Construction Co Ltd Licence Reference: HV 031A Site Location: Farlington Redoubt, Portsdown Hill Road, Havant, Hampshire Operator Location: Unit 8 Lismarrane Industrial Park, ELSTREE, Hertfordshire, WD6 3EA Authority: Environment Agency - Southern Region, Hampshire Area Site Category: Transfer Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st December 1991 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Arisings From Cable Trench Excav'Ns Max.Waste Permitted By Licence-Stated Sand,Chalk,Gravel Prohibited Waste: All Tar-Based Surfacing Wastes Biodegradable Waste Clinical - As In Wmp 25 Food/Vegetable Matter Hazardous Wastes Liquid/Slurry/Sludge Wastes Paper/Cardboard/Packaging Phenols/Mat'Ls Cont. Phenol Poisonous, Noxious, Polluting Wastes Rubble Ex Prems Storing Tox/Sol Chems Special Wastes Waste N.O.S.	A11SW (SW)	320	2	468640 106460

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Bracklesham Group And Barton Group (Undifferentiated)	A15SE (NE)	0	1	469011 107177
	BGS 1:625,000 Solid Geology Description: Thames Group	A11NE (N)	0	1	468758 106796
	BGS 1:625,000 Solid Geology Description: Lambeth Group	A11NE (E)	0	1	468763 106728
37	**BGS Recorded Mineral Sites** Site Name: Privet Wood Chalk Pit Location: , Bedhampton, Havant, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 163079 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Cretaceous Geology: Portsdown Chalk Formation Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A11SE (SE)	13	1	468927 106625
38	**BGS Recorded Mineral Sites** Site Name: Bedhampton Chalk Pit Location: , Bedhampton, Havant, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 163093 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Cretaceous Geology: Portsdown Chalk Formation Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A11SE (S)	187	1	468759 106529
39	**BGS Recorded Mineral Sites** Site Name: Bedhampton Chalk Pit Location: , Bedhampton, Havant, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 163092 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Cretaceous Geology: Portsdown Chalk Formation Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A12SW (E)	192	1	469267 106525
40	**BGS Recorded Mineral Sites** Site Name: Camp Down Location: , Portsdown Hill Road, Purbrook, Portsmouth, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 55252 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Cretaceous Geology: Portsdown Chalk Formation Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A11SE (SE)	284	1	469005 106351
41	**BGS Recorded Mineral Sites** Site Name: Farlington Redoubt Location: , Portsdown Hill Road, Purbrook, Portsmouth, Hampshire, Po6 1bw Source: British Geological Survey, National Geoscience Information Service Reference: 55253 Type: Opencast **Status: Active** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Not Available Geology: Aggregates For Recycling Commodity: Secondary Positional Accuracy: Located by supplier to within 10m	A11SW (SW)	327	1	468645 106445

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
42	**BGS Recorded Mineral Sites** Site Name: Bedhampton Chalk Pit Location: , Bedhampton, Havant, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 13718 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Cretaceous Geology: Portsdown Chalk Formation Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A12SE (E)	369	1	469620 106420
43	**BGS Recorded Mineral Sites** Site Name: Camp Down Chalk Pit Location: , Farlington, Portsmouth, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 163080 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Cretaceous Geology: Spetisbury Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A8NW (SE)	382	1	469216 106310
44	**BGS Recorded Mineral Sites** Site Name: Crookhorn Lane Brick Kiln Location: , Purbrook, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 163078 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Palaeogene Geology: London Clay Formation Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A10NE (W)	424	1	468227 106916
45	**BGS Recorded Mineral Sites** Site Name: Crookhorn Lane Gravel Pit Location: , Purbrook, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 163094 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Cretaceous Geology: Portsdown Chalk Formation Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A11SW (W)	424	1	468378 106573
46	**BGS Recorded Mineral Sites** Site Name: Purbrook Brick & Tile Works Location: , Purbrook, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 163097 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Palaeogene Geology: London Clay Formation Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A14SE (NW)	590	1	468100 107111
47	**BGS Recorded Mineral Sites** Site Name: Purbrook Brick & Tile Works Location: , Purbrook, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 163098 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Palaeogene Geology: London Clay Formation Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A14SE (NW)	675	1	468018 107135

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
48	**BGS Recorded Mineral Sites** Site Name: Farlington Farm Chalk Pit Location: , Farlington, Portsmouth, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 163081 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A6NE (SW)	748	1	468254 106258
49	**BGS Recorded Mineral Sites** Site Name: Purbrook Park Sand Pits Location: , Purbrook, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 163099 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Ypresian - Lutetian Geology: Wittering Formation Commodity: Sand Positional Accuracy: Located by supplier to within 10m	A14SW (NW)	809	1	467908 107234
50	**BGS Recorded Mineral Sites** Site Name: Privet Coppice Chalk Pit Location: , Purbrook, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 163077 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Cretaceous Geology: Portsdown Chalk Formation Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A10SW (W)	890	1	467811 106602
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Non Coal Mining Areas of Great Britain Risk: Rare Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	0	1	468763 106728
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	0	1	468763 106728
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	0	1	468763 106728
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A11NE (S)	0	1	468761 106671
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	0	1	468763 106728
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11NE (S)	0	1	468763 106697
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SE (S)	26	1	468739 106626
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SE (SE)	26	1	468947 106607
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SE (S)	27	1	468752 106632

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A12SW (SE)	92	1	469090 106586
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SE (S)	150	1	468787 106495
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SE (S)	188	1	468740 106522
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SW (SW)	208	1	468665 106639
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SE (S)	214	1	468699 106549
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A12SE (E)	234	1	469573 106561
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	0	1	468763 106728
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11NE (N)	0	1	468793 106914
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A15SE (NE)	0	1	468915 107012
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11SE (S)	0	1	468764 106649
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SE (S)	25	1	468739 106626
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A12NE (E)	31	1	469422 106738
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A12SW (E)	101	1	469178 106578
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11NW (W)	110	1	468663 106724
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A12SE (E)	153	1	469425 106548
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A12SE (E)	229	1	469572 106560
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11NE (N)	0	1	468763 106882
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11NE (NE)	0	1	468977 106959
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	0	1	468763 106728
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A12NW (E)	0	1	469152 106879
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NE (N)	0	1	468763 106759

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NE (N)	0	1	468752 106911
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SE (S)	25	1	468739 106626
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A16SW (NE)	72	1	469357 107180
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A16SE (NE)	180	1	469456 107214
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NE (S)	0	1	468761 106671
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NE (NE)	0	1	468897 106915
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NE (N)	0	1	468763 106882
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NE (NE)	0	1	468977 106959
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11NE (N)	0	1	468752 106911
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11NE (N)	0	1	468763 106759
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A15SE (NE)	0	1	469003 107191
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	0	1	468763 106728
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SE (S)	25	1	468739 106626
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A16SW (NE)	72	1	469357 107180
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A16NW (NE)	143	1	469178 107483
	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	A11NE (E)	0	1	468763 106728
	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	A11NE (E)	0	1	468763 106728

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
51	**Contemporary Trade Directory Entries** Name: R J P Services Location: 95, Delphi Way, Waterlooville, Hampshire, PO7 8AY Classification: Waste Disposal Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (NW)	63	-	468623 107019
52	**Contemporary Trade Directory Entries** Name: Amark Catering Equipment Ltd Location: 32, Apollo Drive, Waterlooville, Hampshire, PO7 8AD Classification: Catering Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SE (N)	143	-	468773 107305
52	**Contemporary Trade Directory Entries** Name: Haymark Catering Equipment Ltd Location: 32, Apollo Drive, Waterlooville, Hampshire, PO7 8AD Classification: Catering Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SE (N)	143	-	468773 107305
53	**Contemporary Trade Directory Entries** Name: Done & Dusted Location: 24, Hector Close, Waterlooville, Hampshire, PO7 8AU Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A11NW (NW)	193	-	468457 106887
54	**Contemporary Trade Directory Entries** Name: M J Rose Location: 65, Hillmead Gardens, Havant, Hampshire, PO9 3NN Classification: Power Flushing **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NE (E)	215	-	469564 106955
55	**Contemporary Trade Directory Entries** Name: Headline Printers Ltd Location: The Villa, Littlepark House, Oakwood Avenue, Havant, Hampshire, PO9 3RB Classification: Printers **Status: Active** Positional Accuracy: Manually positioned to the address or location	A16SE (NE)	245	-	469506 107305
55	**Contemporary Trade Directory Entries** Name: John Inkster Littlepark Ltd Location: Littlepark House, Oakwood Avenue, Havant, Hampshire, PO9 3RB Classification: Builders' Merchants **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A16SE (NE)	246	-	469507 107305
56	**Contemporary Trade Directory Entries** Name: L & S Waste Management Ltd Location: Farlington Redoubt, Portsdown Hill Road, Portsmouth, PO6 1BW Classification: Waste Disposal Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A11SW (S)	351	-	468661 106394
57	**Contemporary Trade Directory Entries** Name: Worth A Clean Location: 4, Zeus Lane, Waterlooville, Hampshire, PO7 8AG Classification: Carpet, Curtain & Upholstery Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15NW (N)	369	-	468539 107422
57	**Contemporary Trade Directory Entries** Name: Worth A Clean Ltd Location: 4, Zeus Lane, Waterlooville, Hampshire, PO7 8AG Classification: Carpet, Curtain & Upholstery Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15NW (N)	369	-	468539 107422
58	**Contemporary Trade Directory Entries** Name: The Hampshire Joinery Company Location: 8, Hazelwood Avenue, Havant, Hampshire, PO9 3RE Classification: Homefurnishings - Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A16SE (NE)	378	-	469659 107165
59	**Contemporary Trade Directory Entries** Name: Kinetic Automation Location: 7, Ha'penny Dell, Waterlooville, PO7 5RQ Classification: Gate Manufacturers - Automated **Status: Active** Positional Accuracy: Automatically positioned to the address	A15NW (NW)	416	-	468448 107408

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
60	**Contemporary Trade Directory Entries** Name: H B Cleaning Ltd Location: 30, Fortunes Way, Havant, Hampshire, PO9 3LZ Classification: Carpet, Curtain & Upholstery Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NE (S)	598	-	468934 106035
61	**Contemporary Trade Directory Entries** Name: E S M Recovery Location: 373, Havant Road, Farlington, Portsmouth, PO6 1AA Classification: Car Breakers & Dismantlers **Status: Active** Positional Accuracy: Automatically positioned to the address	A7SE (S)	791	-	468787 105860
62	**Contemporary Trade Directory Entries** Name: Southern Drives Location: 37, Old Rectory Road, Portsmouth, PO6 1AH Classification: Asphalt & Coated Macadam Laying Contractors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7SW (S)	797	-	468559 105926
62	**Contemporary Trade Directory Entries** Name: Southern Drives Location: 37, Old Rectory Road, Portsmouth, PO6 1AH Classification: Asphalt & Coated Macadam Laying Contractors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7SW (S)	797	-	468559 105926
63	**Contemporary Trade Directory Entries** Name: Kingston Plumbing & Heating Ltd Location: 11, St. Johns Avenue, Waterlooville, Hampshire, PO7 5PJ Classification: Boilers - Servicing, Replacements & Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (NW)	846	-	468084 107648
64	**Contemporary Trade Directory Entries** Name: Advance Scaffolding Ltd Location: 2, The Thicket, Widley, Waterlooville, Hampshire, PO7 5JL Classification: Scaffolding & Work Platforms **Status: Active** Positional Accuracy: Automatically positioned to the address	A10NW (W)	852	-	467800 106952
65	**Contemporary Trade Directory Entries** Name: Jag Services (Uk) Ltd Location: 466, Havant Road, Farlington, Portsmouth, PO6 1AB Classification: Ventilators & Ventilation Systems **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7SW (S)	934	-	468553 105778

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
66	**Ancient Woodland** Name: Not Supplied Reference: 1487521 Area(m²): 49712.64 Type: Ancient and Semi-Natural Woodland	A16SW (NE)	6	6	469158 107311
67	**Ancient Woodland** Name: Not Supplied Reference: 1488333 Area(m²): 15356.02 Type: Ancient and Semi-Natural Woodland	A16SE (NE)	72	6	469399 107122
68	**Ancient Woodland** Name: Not Supplied Reference: 1489282 Area(m²): 32441.88 Type: Plantation on Ancient Woodland	A16SE (NE)	110	6	469405 107035
69	**Ancient Woodland** Name: Not Supplied Reference: 1487374 Area(m²): 20019.65 Type: Plantation on Ancient Woodland	A15NE (N)	182	6	468946 107506
70	**Ancient Woodland** Name: Not Supplied Reference: 1489389 Area(m²): 11336.1 Type: Ancient and Semi-Natural Woodland	A16SE (NE)	241	6	469515 107220
71	**Ancient Woodland** Name: Not Supplied Reference: 1487795 Area(m²): 11747.05 Type: Ancient and Semi-Natural Woodland	A15NE (N)	254	6	468912 107515
72	**Ancient Woodland** Name: Not Supplied Reference: 1489383 Area(m²): 68501.86 Type: Ancient and Semi-Natural Woodland	(N)	334	6	468862 107673
73	**Ancient Woodland** Name: Not Supplied Reference: 1488854 Area(m²): 4580.05 Type: Plantation on Ancient Woodland	(N)	581	6	469053 107936
74	**Ancient Woodland** Name: Purbrock Park Wood Reference: 1489538 Area(m²): 4849 Type: Ancient and Semi-Natural Woodland	A10NW (W)	711	6	467943 106825
75	**Ancient Woodland** Name: Purbrock Park Wood Reference: 1489537 Area(m²): 2475.04 Type: Ancient and Semi-Natural Woodland	A10NW (W)	762	6	467889 106871
76	**Ancient Woodland** Name: Purbrock Park Wood Reference: 1489536 Area(m²): 1759.78 Type: Ancient and Semi-Natural Woodland	A10NW (W)	780	6	467885 106744
77	**Ancient Woodland** Name: Not Supplied Reference: 1489661 Area(m²): 4918.42 Type: Plantation on Ancient Woodland	(NE)	911	6	469538 108161
78	**Ancient Woodland** Name: Not Supplied Reference: 1488487 Area(m²): 6374.51 Type: Ancient and Semi-Natural Woodland	(NE)	988	6	469598 108216
79	**Nitrate Vulnerable Zones** Name: Not Supplied Description: Eutrophic Water Source: Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	A11NE (E)	0	7	468763 106728

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Data Currency

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Havant Borough Council - Environmental Health Department	January 2015	Annual Rolling Update
Portsmouth City Council - Health and Trading Standards	October 2014	Annual Rolling Update
Winchester City Council - Environmental Health Department	September 2014	Annual Rolling Update
Discharge Consents		
Environment Agency - Southern Region	April 2016	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Southern Region	March 2013	As notified
Integrated Pollution Controls		
Environment Agency - Southern Region	October 2008	Not Applicable
Integrated Pollution Prevention And Control		
Environment Agency - Southern Region	April 2016	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Portsmouth City Council - Environmental Health Department	August 2014	Annual Rolling Update
Winchester City Council - Environmental Health Department	December 2014	Annual Rolling Update
Havant Borough Council - Environmental Health Department	December 2015	Annual Rolling Update
Local Authority Pollution Prevention and Controls		
Portsmouth City Council - Environmental Health Department	August 2014	Annual Rolling Update
Winchester City Council - Environmental Health Department	December 2014	Annual Rolling Update
Havant Borough Council - Environmental Health Department	December 2015	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
Portsmouth City Council - Environmental Health Department	August 2014	Annual Rolling Update
Winchester City Council - Environmental Health Department	December 2014	Annual Rolling Update
Havant Borough Council - Environmental Health Department	December 2015	Annual Rolling Update
Nearest Surface Water Feature		
Ordnance Survey	July 2012	Quarterly
Pollution Incidents to Controlled Waters		
Environment Agency - Southern Region	December 1999	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - Southern Region	March 2013	As notified
Prosecutions Relating to Controlled Waters		
Environment Agency - Southern Region	March 2013	As notified
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 - Southern Region - Hampshire and Isle of Wight Area Office	April 2016	Quarterly
Environment Agency - Southern Region - Solent and South Downs	April 2016	Quarterly
Water Abstractions		
Environment Agency - Southern Region	April 2016	Quarterly
Water Industry Act Referrals		
Environment Agency - Southern Region	April 2016	Quarterly
Groundwater Vulnerability		
Environment Agency - Head Office	April 2015	Not Applicable
Drift Deposits		
Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations		
British Geological Survey - National Geoscience Information Service	August 2015	As notified

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Data Currency

Agency & Hydrological	Version	Update Cycle
Superficial Aquifer Designations		
British Geological Survey - National Geoscience Information Service	August 2015	As notified
Source Protection Zones		
Environment Agency - Head Office	April 2016	Quarterly
Extreme Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	February 2016	Quarterly
Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	February 2016	Quarterly
Areas Benefiting from Flood Defences		
Environment Agency - Head Office	February 2016	Quarterly
Flood Water Storage Areas		
Environment Agency - Head Office	February 2016	Quarterly
Flood Defences		
Environment Agency - Head Office	February 2016	Quarterly
Detailed River Network Lines		
Environment Agency - Head Office	March 2012	Annually
Detailed River Network Offline Drainage		
Environment Agency - Head Office	March 2012	Annually
BGS Groundwater Flooding Susceptibility		
British Geological Survey - National Geoscience Information Service	May 2013	Annually
Waste	**Version**	**Update Cycle**
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites		
Environment Agency - Head Office	May 2016	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Southern Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - Southern Region - Hampshire and Isle of Wight Area Office	May 2016	Quarterly
Environment Agency - Southern Region - Solent and South Downs	May 2016	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - South East Region - Solent & South Downs Area	April 2016	Quarterly
Environment Agency - Southern Region - Hampshire and Isle of Wight Area Office	April 2016	Quarterly
Environment Agency - Southern Region - Solent and South Downs	April 2016	Quarterly
Local Authority Landfill Coverage		
Hampshire County Council - Minerals and Waste Planning	May 2000	Not Applicable
Havant Borough Council - Environmental Health Department	May 2000	Not Applicable
Portsmouth City Council - Environmental Health Department	May 2000	Not Applicable
Winchester City Council - Environmental Health Department	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Hampshire County Council - Minerals and Waste Planning	May 2000	Not Applicable
Havant Borough Council - Environmental Health Department	May 2000	Not Applicable
Portsmouth City Council - Environmental Health Department	May 2000	Not Applicable
Winchester City Council - Environmental Health Department	May 2000	Not Applicable
Registered Landfill Sites		
Environment Agency - Southern Region - Hampshire Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - Southern Region - Hampshire Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - Southern Region - Hampshire Area	March 2003	Not Applicable

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Data Currency

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	February 2016	Bi-Annually
Explosive Sites		
Health and Safety Executive	February 2016	Bi-Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
Hampshire County Council - Minerals and Waste Planning	February 2016	Annual Rolling Update
Havant Borough Council - Commercial Team	February 2016	Annual Rolling Update
Portsmouth City Council - Planning Office	February 2016	Annual Rolling Update
Winchester City Council - Planning Department	October 2015	Annual Rolling Update
Planning Hazardous Substance Consents		
Hampshire County Council - Minerals and Waste Planning	February 2016	Annual Rolling Update
Havant Borough Council - Commercial Team	February 2016	Annual Rolling Update
Portsmouth City Council - Planning Office	February 2016	Annual Rolling Update
Winchester City Council - Planning Department	October 2015	Annual Rolling Update

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology		
British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Recorded Mineral Sites		
British Geological Survey - National Geoscience Information Service	May 2016	Bi-Annually
Brine Compensation Area		
Cheshire Brine Subsidence Compensation Board	August 2011	Not Applicable
Coal Mining Affected Areas		
The Coal Authority - Property Searches	March 2014	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	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Compressible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Ground Dissolution Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Landslide Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Running Sand Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	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

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Data Currency

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	June 2016	Quarterly
Fuel Station Entries Catalist Ltd - Experian	July 2016	Quarterly
Gas Pipelines National Grid	July 2014	Quarterly
Underground Electrical Cables National Grid	January 2016	Bi-Annually
Sensitive Land Use	**Version**	**Update Cycle**
Ancient Woodland Natural England	June 2015	Bi-Annually
Areas of Outstanding Natural Beauty Natural England	April 2016	Bi-Annually
Environmentally Sensitive Areas Natural England	April 2016	Annually
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Natural England	April 2016	Bi-Annually
Marine Nature Reserves Natural England	April 2016	Bi-Annually
National Nature Reserves Natural England	April 2016	Bi-Annually
National Parks Natural England	March 2016	Bi-Annually
Nitrate Sensitive Areas Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	April 2016	Not Applicable
Nitrate Vulnerable Zones Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	October 2015	Annually
Ramsar Sites Natural England	April 2016	Bi-Annually
Sites of Special Scientific Interest Natural England	April 2016	Bi-Annually
Special Areas of Conservation Natural England	April 2016	Bi-Annually
Special Protection Areas Natural England	April 2016	Bi-Annually
World Heritage Sites English Heritage - National Monument Record Centre	September 2015	Bi-Annually

Data Suppliers

A selection of organisations who provide data within this report

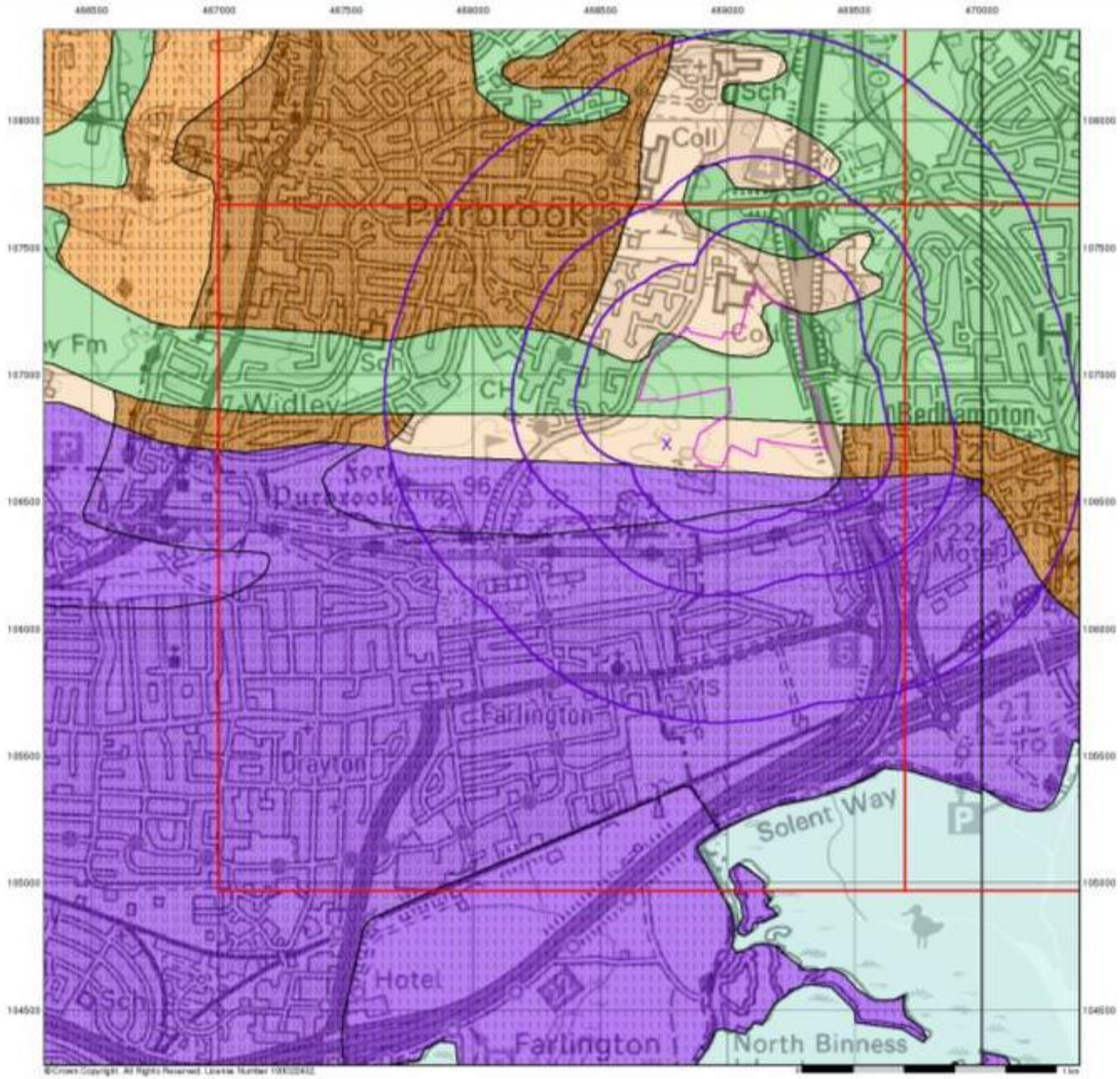
Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	
Centre for Ecology and Hydrology	
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Peter Brett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

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Useful Contacts

Contact	Name and Address	Contact Details
1	**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
2	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	**Havant Borough Council - Environmental Health Department** Public Service PLaza, Civic Centre Road, Havant, Hampshire, PO9 2AX	Telephone: 023 9244 6677 Email: env.services@havant.gov.uk Website: www.havant.gov.uk
4	**Hampshire County Council - Minerals and Waste Planning** Room 130, Ashburton Court West, The Castle, Winchester, Hampshire, SO23 8UD	Telephone: 01962 841841 Fax: 01962 847055 Website: www.hants.gov.uk
5	**Portsmouth City Council - Environmental Health Department** Civic Offices, Guildhall Square, Portsmouth, Hampshire, PO1 2AZ	Telephone: 023 92822251 Fax: 01705 834519 Website: www.portsmouth.gov.uk
6	**Natural England** County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
7	**Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)** Government Buildings, Otley Road, Lawnswood, Leeds, West Yorkshire, LS16 5QT	Telephone: 0113 2613333 Fax: 0113 230 0879
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

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



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Groundwater Vulnerability

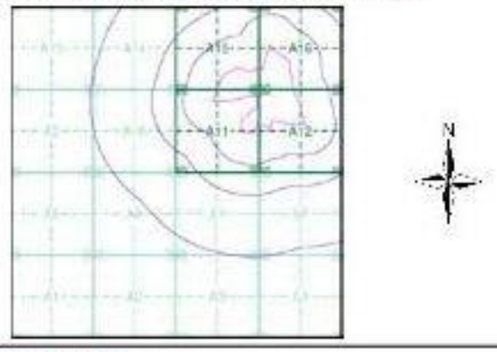
General

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

Agency and Hydrological

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

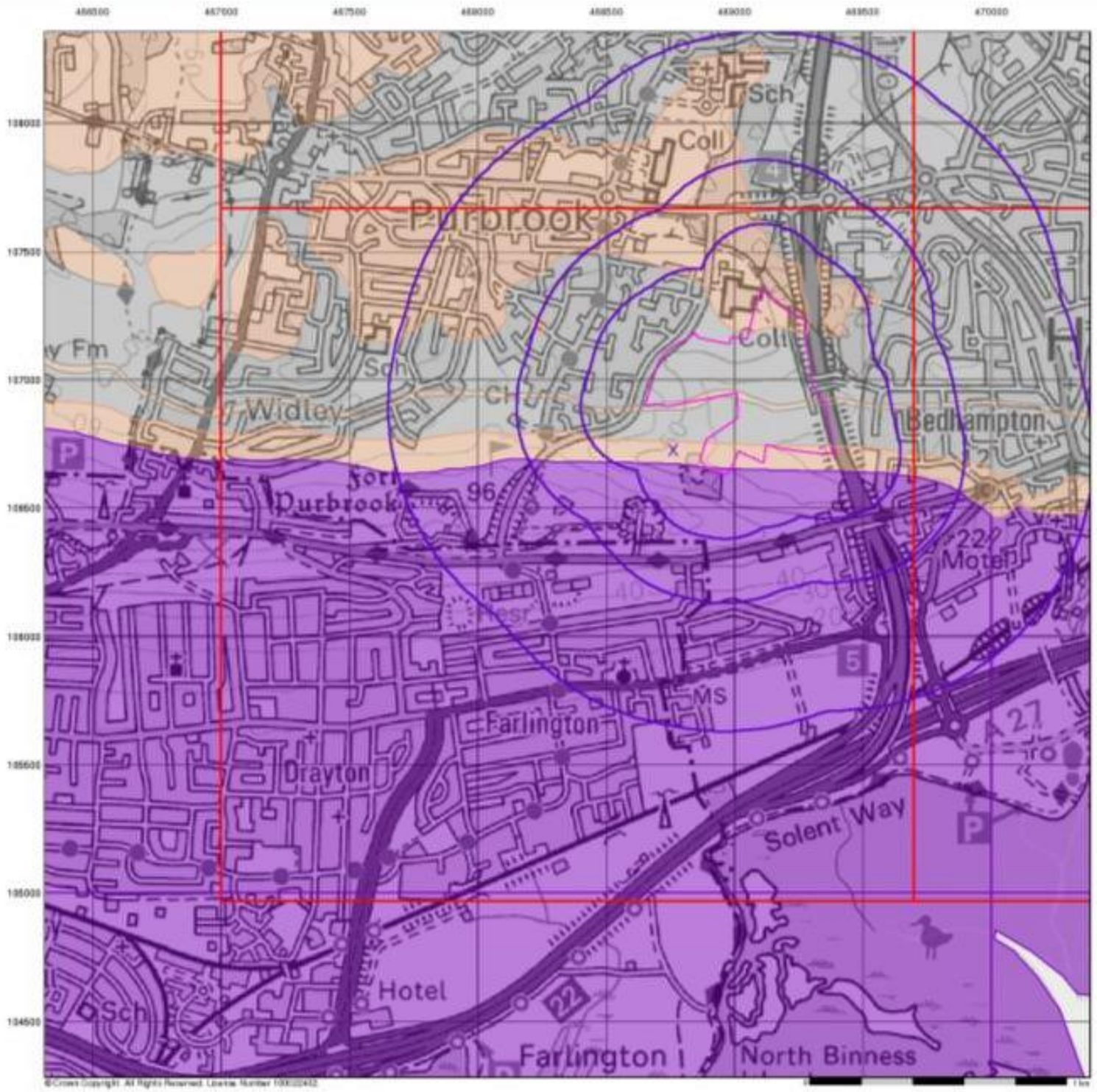


Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468760, 106730
Slice:	A
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



Bedrock Aquifer Designation

General

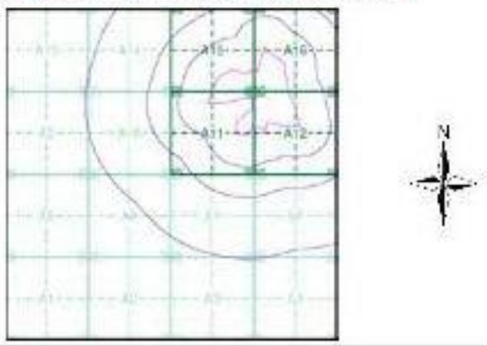
Specified Site | Specified Buffer(s) | Bearing Reference Point
Slice | Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice A

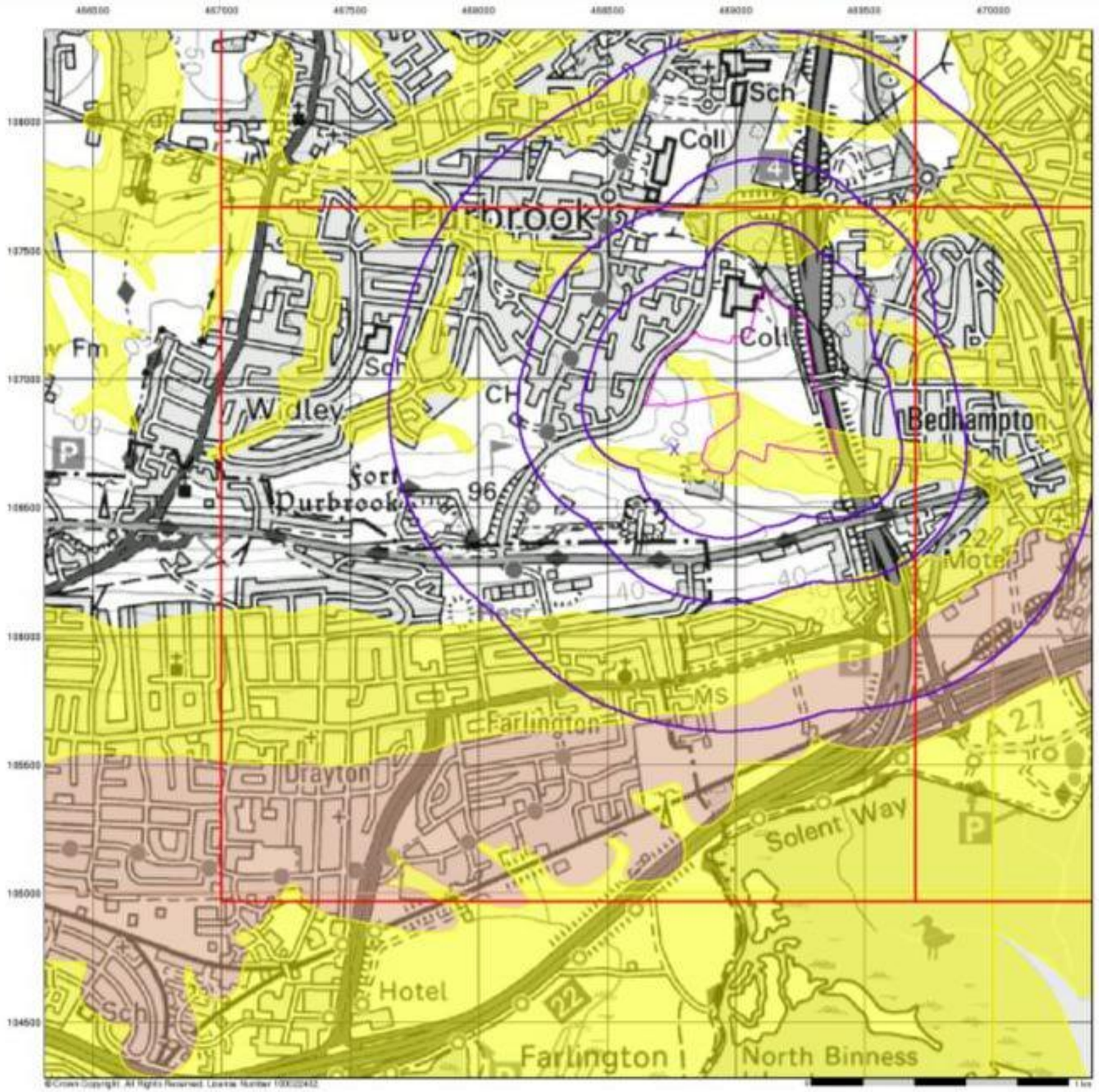


Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468760, 106730
Slice:	A
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



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Superficial Aquifer Designation

General

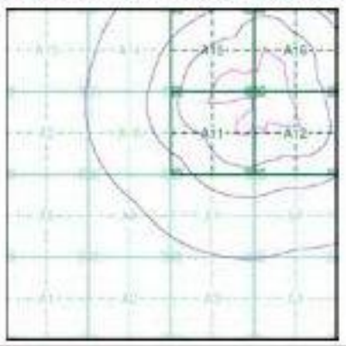
Specified Site | Specified Buffer(s) | Bearing Reference Point
Slice | Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice A

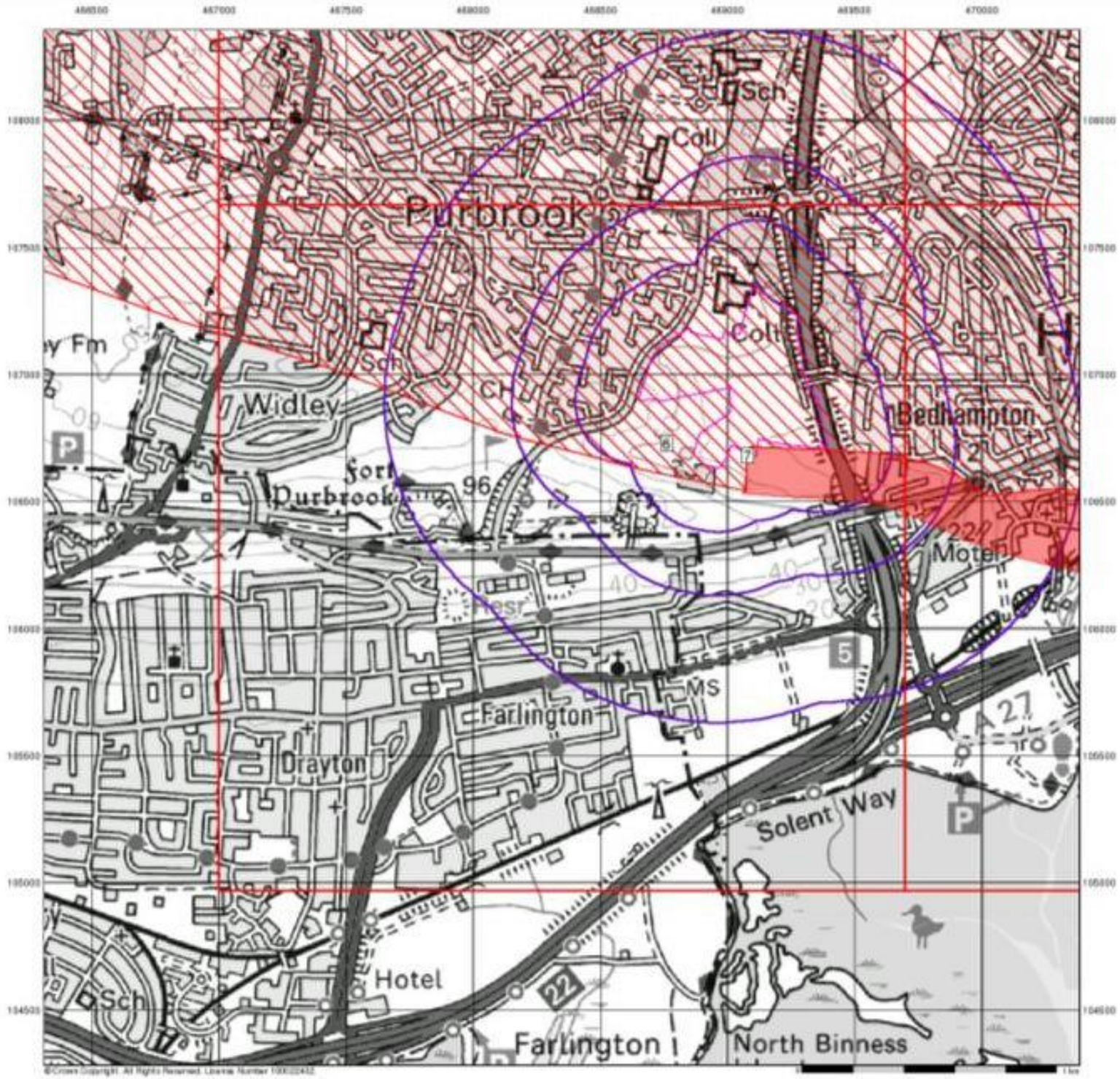


Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468760, 106730
Slice:	A
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

Land off College Road, Purbrook, WATERLOOVILLE, Hampshire, PO7 8AA



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Source Protection Zones

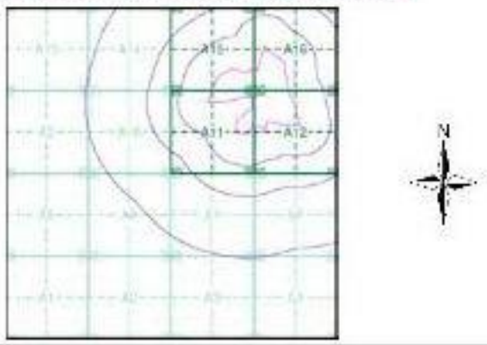
General

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

Agency and Hydrological

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

Site Sensitivity Context Map - Slice A

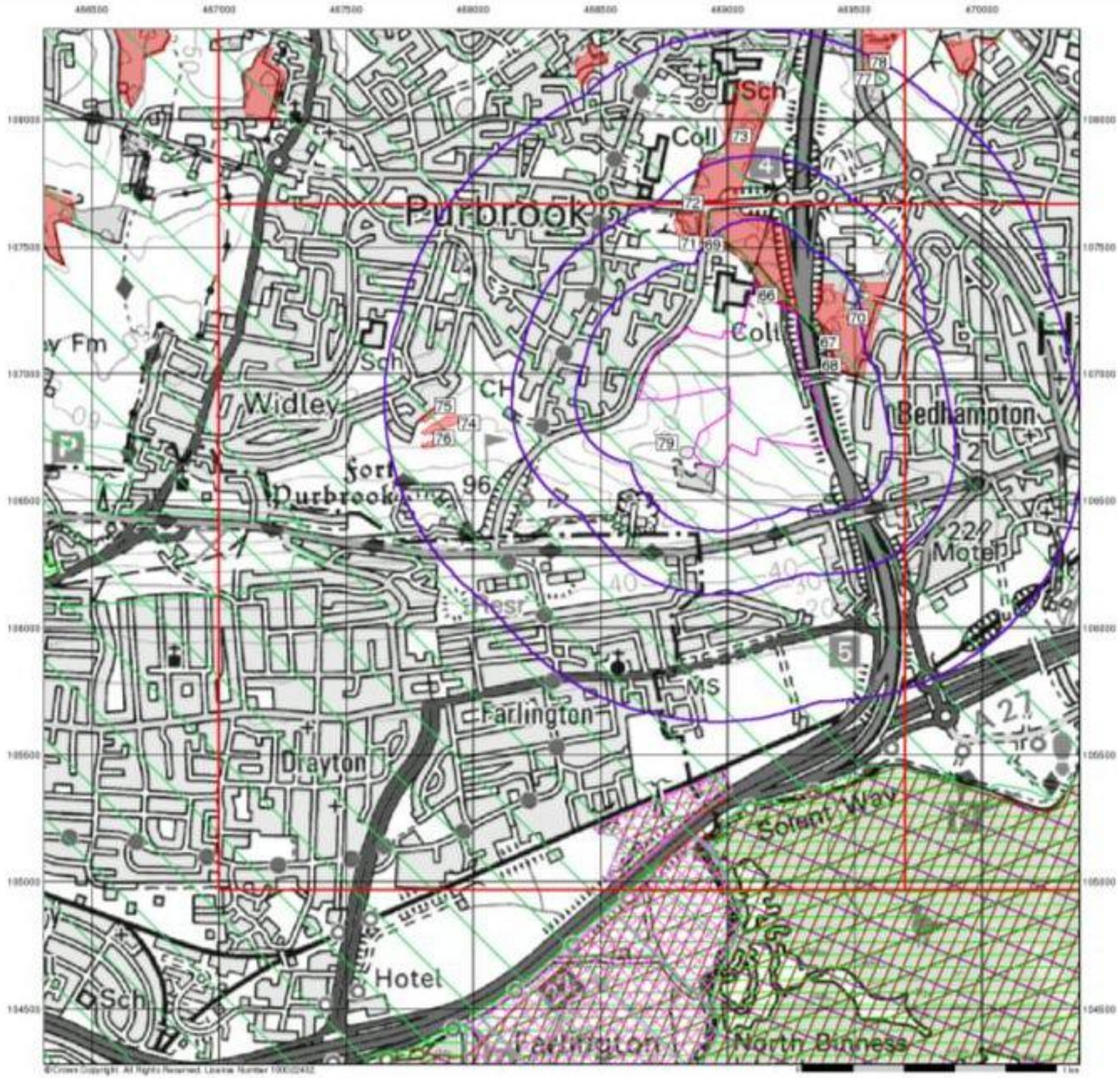


Order Details

Order Number:	92122794_1_1
Customer Ref:	28720
National Grid Reference:	468760, 106730
Slice:	A
Site Area (Ha):	26.37
Search Buffer (m):	1000

Site Details

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Sensitive Land Uses

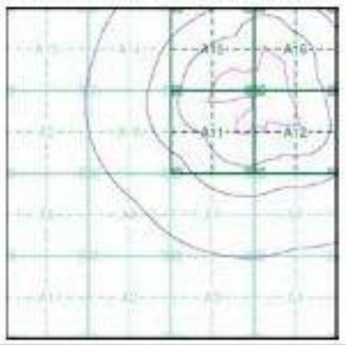
General

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

Sensitive Land Uses

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

Site Sensitivity Context Map - Slice A



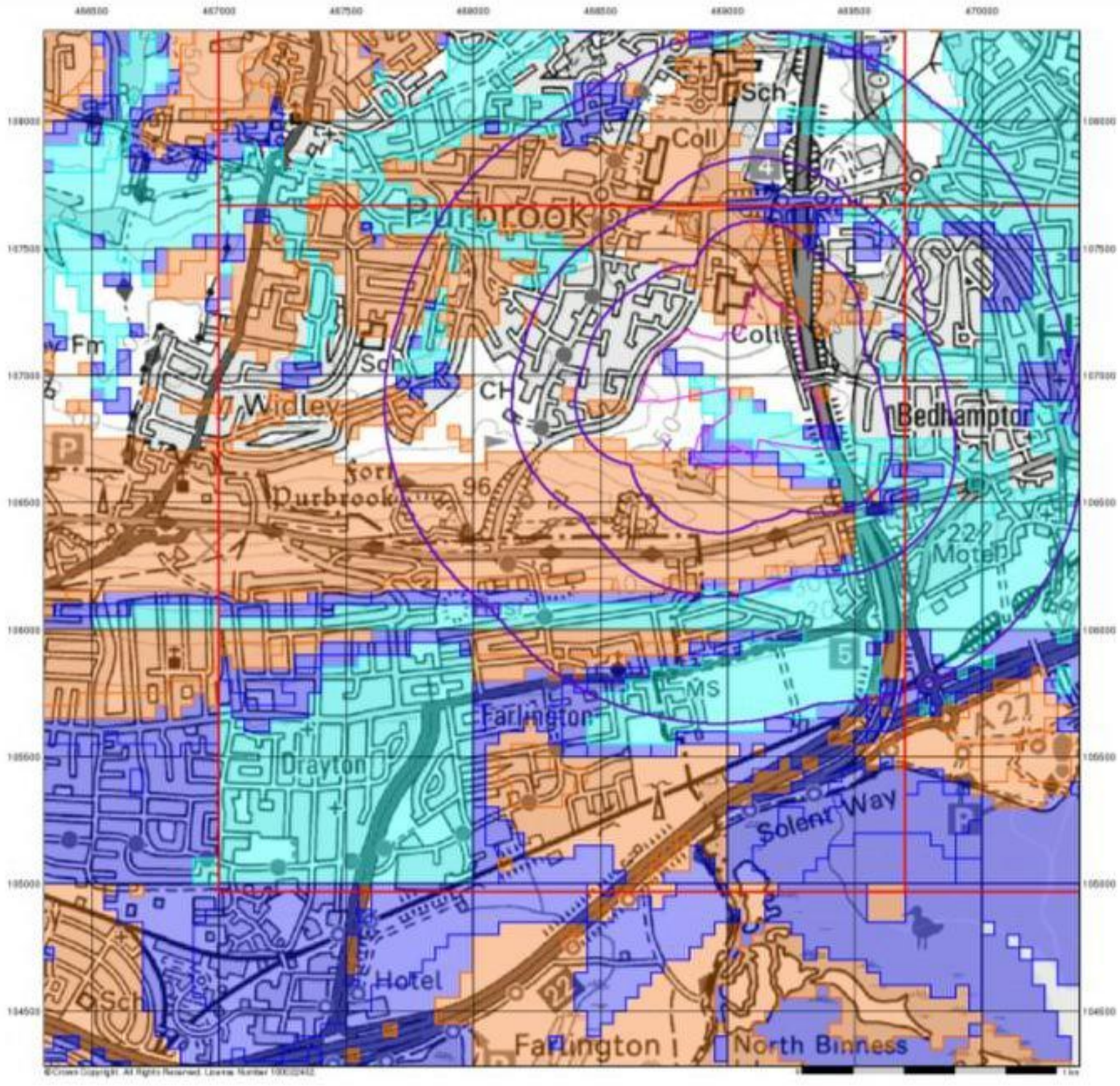
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BGS Flood GFS Data

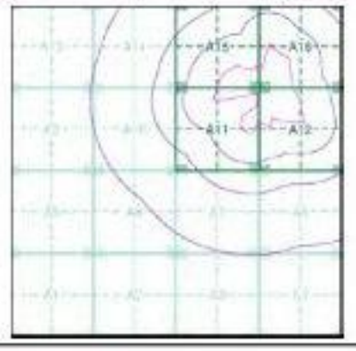
General

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

Agency and Hydrological (Flood)

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

Site Sensitivity Context Map - Slice A



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Geology 1:10,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	MGR	Made Ground (Undivided)	Artificial Deposit	Holocene - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	SUPNM	Superficial Theme Not Mapped [For Digital Map Use Only]	Unknown/Unclassified Entry	Not Supplied - Not Supplied
	HEAD	Head	Clay, Silt, Sand and Gravel	Quaternary - Ryazanian
	RTDU	River Terrace Deposits (Undifferentiated)	Sand, Silt and Clay	Quaternary - Ryazanian
	RMD	Raised Marine Deposits	Clay, Silty [Unlithified Deposits Coding Scheme]	Quaternary - Ryazanian
	RMD	Raised Marine Deposits	Clay, Silt and Sand	Quaternary - Ryazanian
	BTFU	Beach and Tidal Flat Deposits (Undifferentiated)	Clay, Silt, Sand and Gravel	Quaternary - Ryazanian

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	WTT	Wittering Formation	Sand, Silt and Clay	Lutetian - Ypresian
	BOSA	Bognor Sand Member	Sand	Eocene - Eocene
	LC	London Clay Formation	Clay, Silt and Sand	Eocene - Eocene
	LMBE	Lambeth Group	Clay	Paleocene - Paleocene
	PCK	Portsdown Chalk Formation	Chalk	Campanian - Campanian
	SPCH	Spetisbury Chalk Member	Chalk	Campanian - Campanian
	TACH	Tarrant Chalk Member	Chalk	Campanian - Campanian
	NCK	Newhaven Chalk Formation	Chalk	Campanian - Santonian
	LPCK	Lewes Nodular Chalk Formation, Seaford Chalk Formation, Newhaven Chalk Formation, Culver Chalk Formation and Portsdown Chalk Formation (Undifferentiated)	Chalk	Campanian - Turonian

Envirocheck Geology

Geology 1:10,000 Maps

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

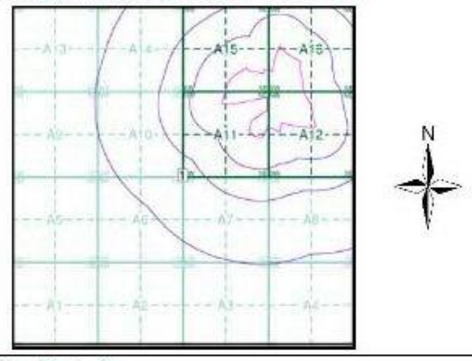
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page.

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

Geology 1:10,000 Maps Coverage

Map ID:		**Map ID:**	1
Map Name:	SU60SE	**Map Name:**	SU60NE
Map Date:	1984	**Map Date:**	1984
Bedrock Geology:	Available	**Bedrock Geology:**	Available
Superficial Geology:	Available	**Superficial Geology:**	Available
Artificial Geology:	Available	**Artificial Geology:**	Available
Faults:	Not Supplied	**Faults:**	Not Supplied
Landslip:	Not Available	**Landslip:**	Not Available
Rock Segments:	Not Supplied	**Rock Segments:**	Not Supplied

Geology 1:10,000 Maps - Slice A



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Envirocheck® Geology

Artificial Ground and Landslip

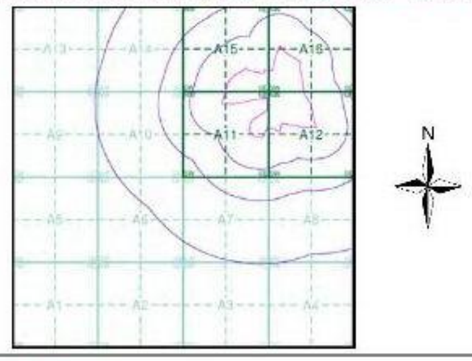
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions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

Artificial ground includes:

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

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

Artificial Ground and Landslip Map - Slice A

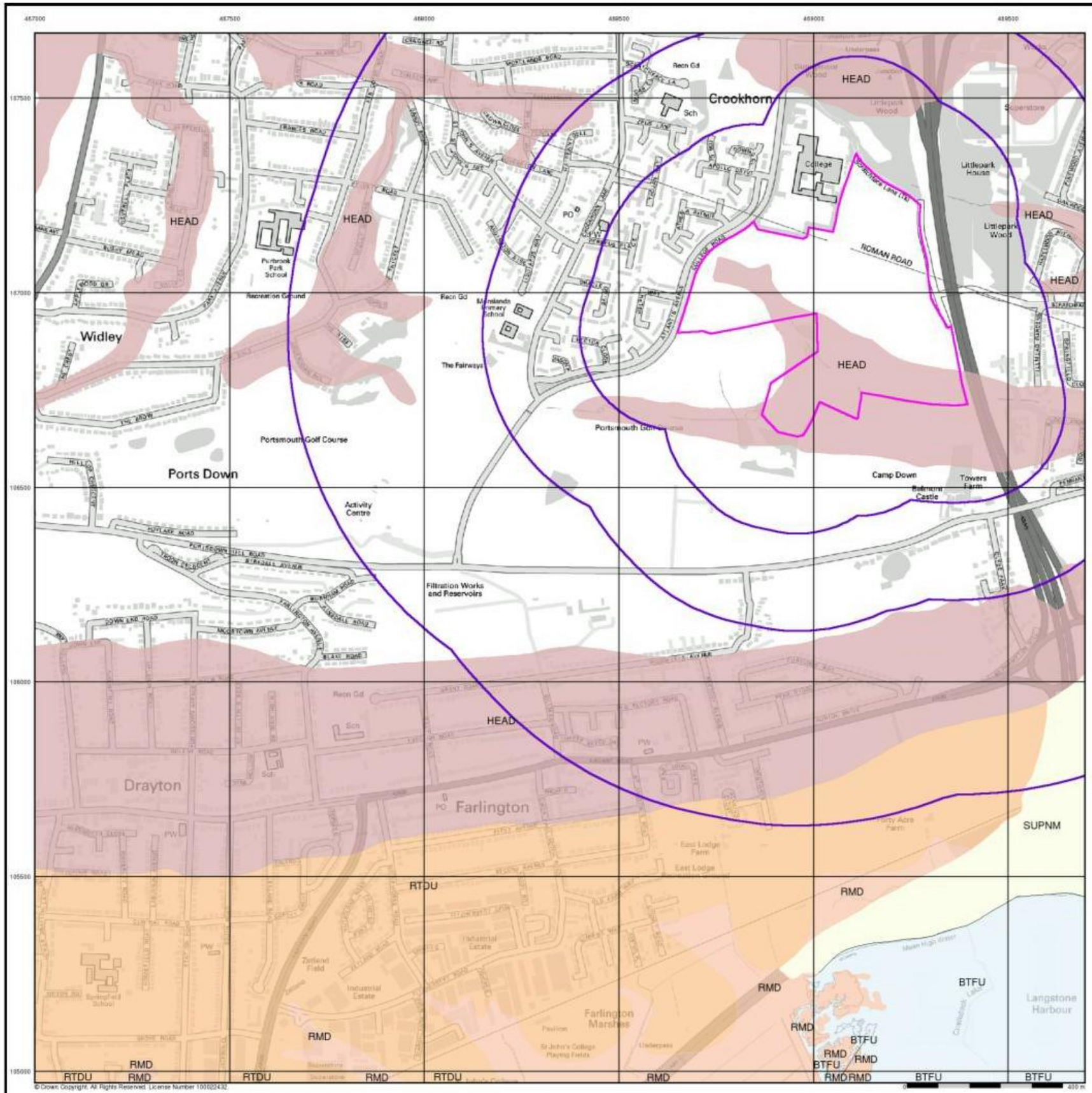


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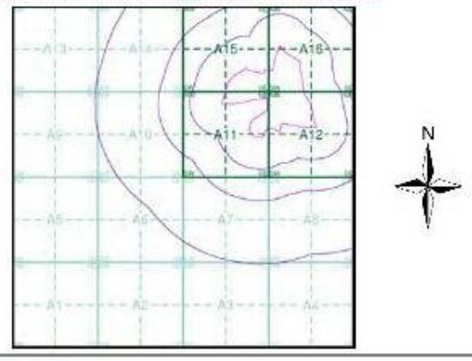
Superficial Geology

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

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

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

Superficial Geology Map - Slice A



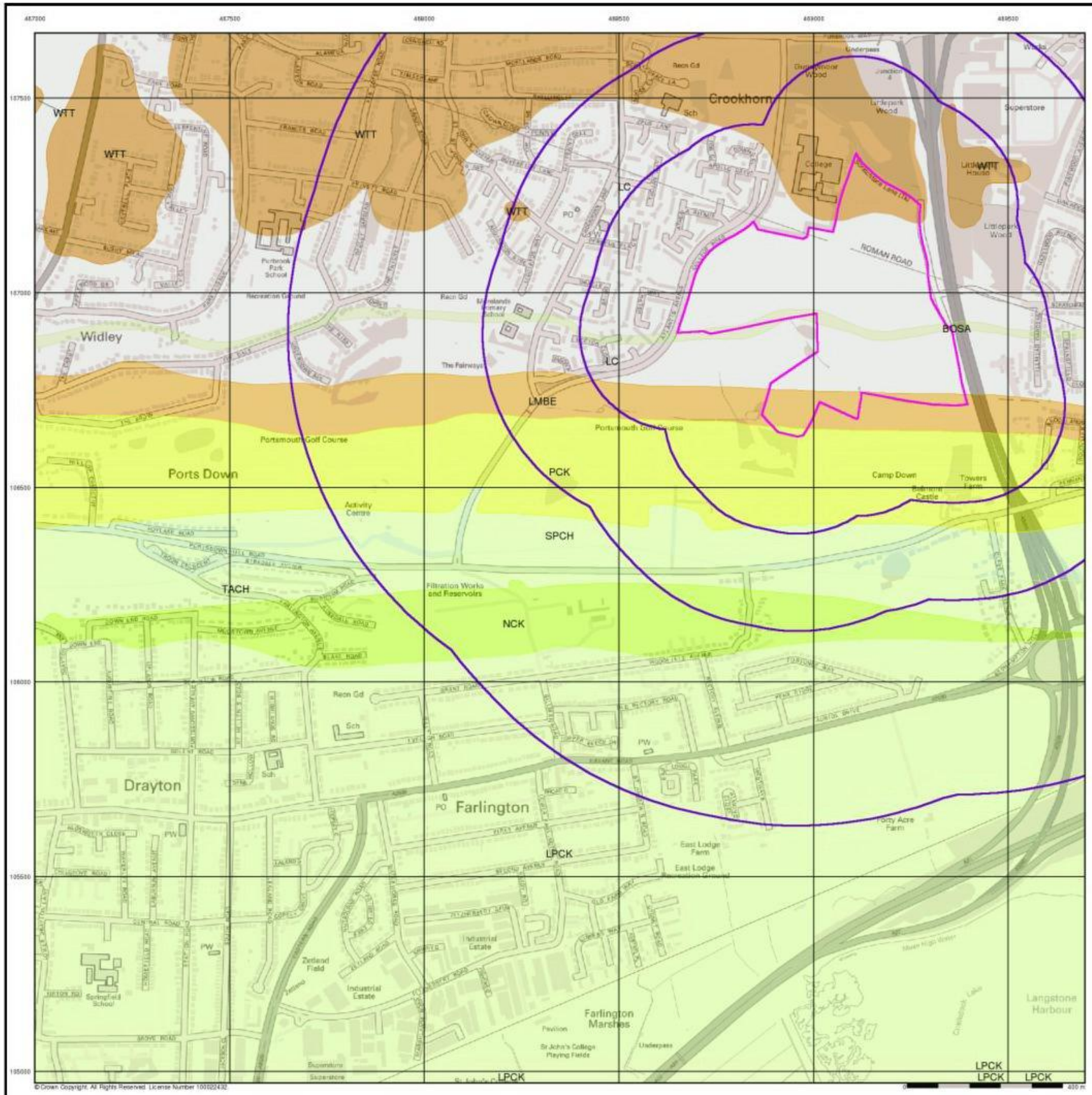
Order Details

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Envirocheck® Geology

Bedrock and Faults

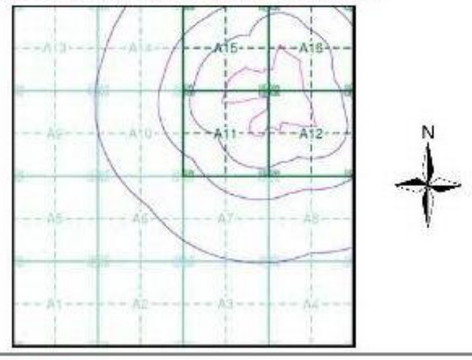
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

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

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

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

Bedrock and Faults Map - Slice A

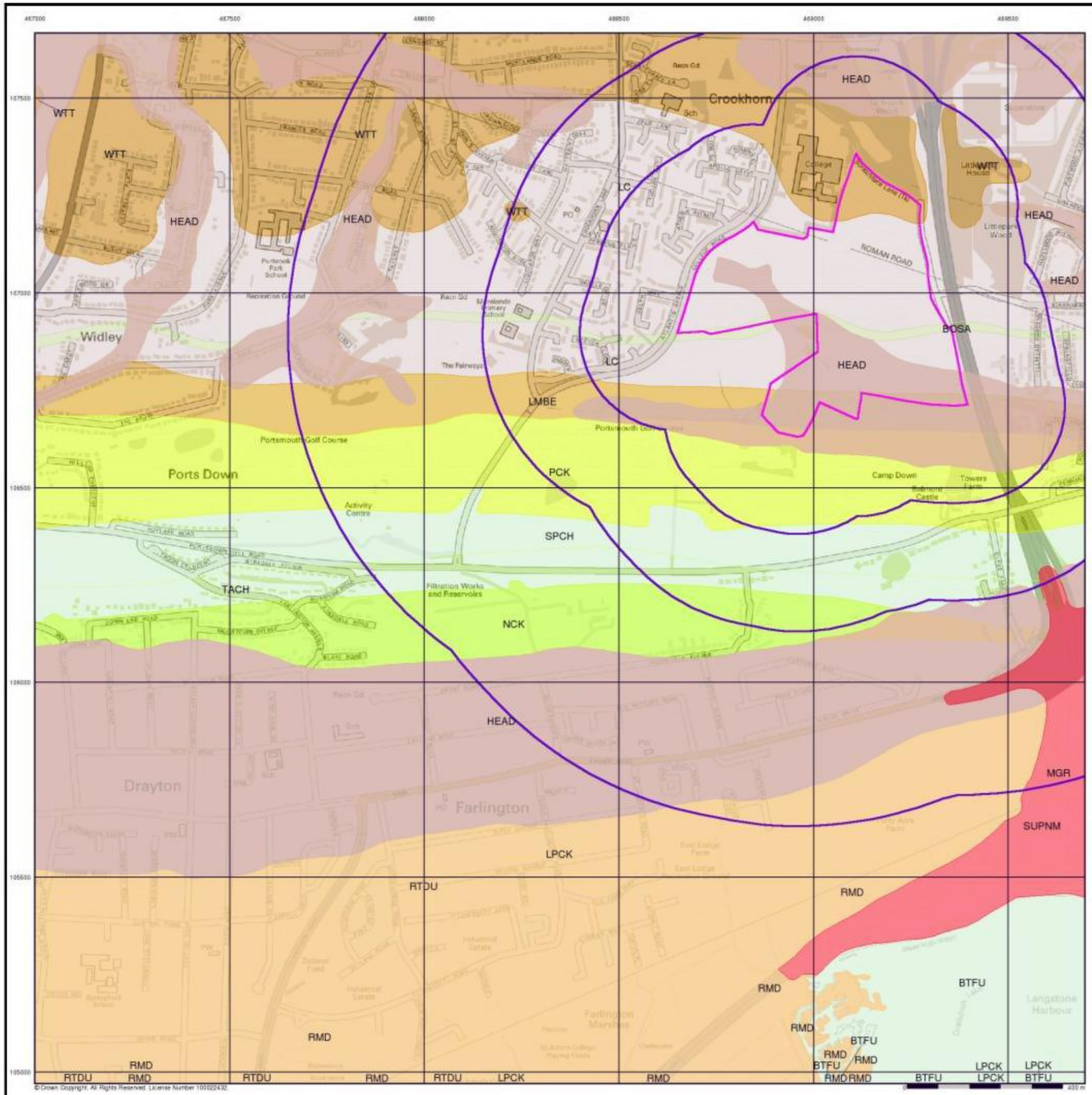


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Envirocheck Geology

Combined Surface Geology

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

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

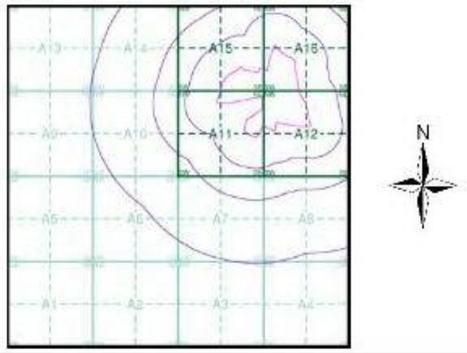
Additional Information

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

Contact

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

Combined Geology Map - Slice A



Order Details

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APPENDIX M
PRELIMINARY UNEXPLODED ORDNANCE RISK ASSESSMENT

PRELIMINARY UNEXPLODED ORDNANCE RISK ASSESSMENT

Waterlooville
PO7 8AA

Prepared for: RSK Environment Ltd

Project Number: 4453

Version: 1.0

Dated: 01/08/2016

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Registered in England Company Registration Number 3014471

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Environmental Impact from UXO	3
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Assessment Findings	4
Recommendations for Risk Mitigation	5
Intent	6

Annexes:

A. Site Drawing

REFERENCES

Publications

Sources of information used in the compilation of this assessment included:

German Air Raids on Britain 1914-18. Morris 1925

Unexploded Ordnance (UXO) – A guide for the Construction Industry. CIRIA C681

Dangerous Energy. Cocroft 2000

The Blitz Then and Now Volumes 1 to 3. Ramsey 1987

Advanced German Weapons WW2. Ford 2000

Dealing with Munitions in Marine Aggregates. UMA 2008

United Nations International Mine Action Standards (IMAS). UN 2010

Military Engineering Volume XII. War Office 1956

German Bomb Fuzes. USN 1945

Fields of Deception & Anti Aircraft Command. Dobinson 1988

Target Reconnaissance Photography. Luftwaffe 1939-44

Internet Information

Additional information was provided through the following credible internet sites, their assistance is credited where appropriate:

Army EOD Incidents

RAF EOD Incidents & Air Situation Reports 1939-45

Luftwaffe Strategy & Tactics

Luftwaffe Bomber Specifications

WO Defence Arrangements 1939-45

News Reports Witness Accounts 1939-45

Latest News Reports

Project Information

Site and project information was provided by RSK Environment Ltd

TERMS AND DEFINITIONS

Anti Aircraft Ammunition (AAA)
High Explosive shells ranging from 30mm to 155mm used by air defence batteries to attack or deter enemy air attack.

Air Dropped Munition
A bomb or container dropped from an aircraft which is designed to detonate at a pre determined altitude, on impact or using a delay mechanism; after impact.

Air Dropped Sub-Munitions (Bomblet)
Small sub-munitions dispensed from a larger carrier which may be fixed to the aircraft or dropped as a single container munition which was designed to open above the target spreading its contents over a large area. Some designs are extremely dangerous and fitted with anti-handling devices.

Area Clearance
This is the term used for the systematic clearance of explosive ordnance from land, including military property, firing and bombing ranges, airfields and training areas. When the land is a former wartime battle ground, the term used is Battle Area Clearance (BAC)

Blast Zone
This term refers to the area around an explosive detonation where the explosive overpressure (Blast) can cause damage, injury or death.

Explosive Ordnance (EO)
All manufactured or improvised items designed to contain explosive, propellant, pyrotechnic and fissionable material or biological or chemical agents or pre-cursers which when coupled with an initiation or dispersal system are designed to cause damage, injury or death.

Explosive Ordnance Disposal (EOD)
A series of recognised procedures and protocols which are used by specialists in the detection, identification, evaluation, risk assessment, render safe, recovery and disposal of any item of explosive ordnance or improvised explosive device.

Fragmentation Zone
This is the term which refers to the danger area in which a piece of an item of explosive ordnance will travel on detonation. This zone is normally greater than the blast zone.

Geophysical Survey
The use of magnetometers, ground penetrating radar or other geophysical data gathering systems, which is then used for evaluation, risk assessment and to quantify further mitigation requirements.

High Explosive (HE)
High explosives react/detonate at a rate of around 9,000 metres per second, to all intents and purposes, instantaneously.

Incendiary Bomb (IB)
Incendiary bombs ranged from 1kg in size to 500kg the larger sizes were designated as Oil Bombs. Fills range from Thermite mixtures, Phosphorus, Kerosene or other pyrotechnic mixtures.

Intrusive Search

This term refers to the process of introducing a specialist magnetometer by pushing or drilling the sensor in to the ground to a pre determined depth, thus allowing construction activities such as: piling, soil testing and deep intrusive ground works to be conducted safety.

Land Service Ammunition (LSA)

LSA is a term that refers to all items containing explosives, pyrotechnic or noxious compounds which are placed, thrown or projected during land battles.

Oil Bomb (OB)

Large airdropped bomb or modified ordnance container containing flammable material and accelerant, these weapons normally range in weight from 250 – 500kg.

Parachute Mine (PM)

Air-dropped mine designed to detonate at a pre set altitude above the ground. Essentially a large blast bomb with an explosive content of 1600 kg commonly fitted with anti-handling or anti-removal fuzes.

Unexploded Bomb (UXB)

Any air dropped bomb that has failed to function as designed.

Unexploded Ordnance (UXO)

Explosive ordnance that has been primed, fused, armed or otherwise prepared for use or used. It may have been fired, dropped, launched or projected yet remains unexploded either through malfunction or design or for any other cause.

War Office (WO)

This was the United Kingdom Government department responsible for defence of the realm, forerunner of the Ministry of Defence (MoD).

White Phosphorus (WP)

Munitions filled with WP are designed for signalling, screening and incendiary purposes. They achieve their effect by dispersing WP, which burns on contact with the air.

1 INTRODUCTION

1.1 Instruction & Scope

MACC International Ltd was commissioned by RSK Environment Ltd to conduct a Preliminary Unexploded Ordnance (UXO) Risk Assessment for a plot of land in Waterlooville PO7 8AA (See Annex 'A'). The scope of the assessment is to determine the likelihood of an uncontrolled encounter with UXO within the context of the execution of geo-environmental investigations and subsequent ground works.

1.2 Methodology & Purpose

The methodology used in the assessment complies with the United Nations (IMAS) standards, the CIRIA C681 "Unexploded Ordnance (UXO) – A guide for the Construction Industry" and the recognised best practice advocated by the Health and Safety Executive (HSE). The quality and environmental aspects of the assessment comply with UKAS Accredited ISO 9001:2008 and ISO 14001:2004 standards. The purpose of the assessment is that of evaluation and to provide an aid in decision making by our client.

2 DETERMINING THE LIKELIHOOD OF ENCOUNTER

2.1 Aim, Research Restrictions & Indemnity

This assessment has drawn upon archive records which are within the public domain; however these are acknowledged to be incomplete. Consequently, some incidents may have occurred where the records no longer exist or could not be located. The Secretary of State of the United Kingdom and MACC International Ltd does not accept responsibility for the accuracy or completeness of the information contained within the records. Some records regarding the UXO situation on some sites may not yet be within the public domain. Consequently such information was not available for evaluation by MACC International Ltd.

2.2 Relevant Publications & Credible Internet Information

Published sources of information used in the compilation of this assessment are listed within the reference section of this assessment including those provided by the client. Additional information was provided through credible internet sites, their assistance is credited where appropriate and details are listed within the reference section of this assessment.

3 FUTURE DEVELOPMENT

The future intention for the land was not disclosed. It is however understood that Geoenvironmental investigations will be undertaken prior to any subsequent ground works.

4 HISTORICAL INFORMATION

4.1 British Archives

Prior to 1942 the United Kingdom did not operate a national recording system for EO/UXO incidents or military use of land. The records compiled during 1939-1942 were conducted under local arrangements and were only as detailed and accurate as the availability of time, personnel and the ease of access to information would allow. In April 1942 the Ministry of Home Security instigated a training programme for all personnel maintaining bomb census records, these standardised national records and greatly improved the accuracy of the information.

4.2 Manned Air Raids & Unmanned Rocket Attack Reports

Although records were not found to confirm a strike within the site footprint, the Waterlooville area suffered heavy bombing during WWII with many HE bombs falling near to the site. There are also reports of items of UXO being recovered from the local area. Given the history of the immediate area and limited post war development, this source of UXO contamination must be considered credible.

5 DETERMINING THE NATURE OF RISK

5.1 General

While HE bombs are very unlikely to detonate if left undisturbed it remains inherently dangerous and may function if subjected to suitable stimuli. The most common of these stimuli is shock, friction or heat which may cause the fuze to function or unstable explosive materials (Picrate Acid) to explode. However, in the case of incendiary bombs containing White Phosphorus (WP) exposure of the WP to the air will result in its violent ignition and combustion.

5.2 Bomb Trajectory & Ground Penetration

During WWII the Ministry of Home Security undertook a major assessment on bomb penetration depths using 1,328 actual bomb impact events to provide statistical analysis of penetration potential. As a result they determined the expected behaviour of a range of bomb weights through different geological strata around the Capital. Their findings remain the only empirical gained figures to have been gathered to date for England. A number of factors will influence the behaviour of a bomb on impact with the target and its trajectory through the ground. Relevant factors include: Height and speed of release of the bomb, aerodynamic qualities of the bomb, the angle of flight and impact and the nature of impact surface and sub soil. In determining the potential bomb penetration depths into the ground, historic geotechnical information and typical bomb characteristics were used. The maximum bomb penetration depth is estimated at 8.5 metres from the 1941 ground levels. The expected offset from impact point is estimated to be 3.0 metres.

6 ENVIRONMENTAL IMPACT FROM UXO

6.1 Ground Contamination & Health Risk vectors

While it is acknowledged that there is a potential risk of ground contamination arising from explosive fillings which may leach from a damaged bomb casing into the surrounding soil. The amount of explosive material within the most common bombs is not considered sufficient to pose a significant environmental risk. Nevertheless it should be noted that the following components are commonly used in the manufacture of a high explosive bomb and may pose a localised contamination risk to health: metals including; Lead, Zinc, Brass, Copper, Steel, Mercury, Silver Fulminate and Aluminium. Other chemical Compounds including; Trinitrophenol, Trinitrotolulene, Trimethylene Trinitramine, Ammonium, Sodium Nitrate, Nitro-glycerine and White Phosphorus. It is recommended that specialist medical advice be sought to identify specific risks to health posed by these chemical compounds.

7 RISK ASSESSMENT

7.1 Risk Source

The surrounding area suffered extensive bombing, however records were not found to confirm a strike within the site footprint. Records are acknowledged to be incomplete and may include omissions and errors. The possibility that a bomb struck, failed to explode and was never reported or that UXO was imported onto the site from neighbouring bomb sites is considered credible.

7.2 Risk Pathway

The risk pathway is considered to be ground intruding investigations and other earth works.

7.3 Consequence

The consequences of a UXB detonation on site during construction works are considered to be a factor of the size of the blast and the proximity of assets and individuals to the point of detonation. These will include potential to kill or seriously injure personnel destroy or damage high value site assets, nearby public and private property and infrastructure.

7.4 Risk Rating

Table 1 Risk Level

PRELIMINARY UXO RISK RATING			
Activity	Likelihood (H x W = L)	Consequence (S x P = C)	Risk Rating (L x C = R)
Hand Dug Excavations	3 x 1 = 3	1 x 5 = 5	3 x 5 = 15
Mechanical Trenching and General Excavations	3 x 2 = 6	2 x 5 = 10	6 x 10 = 60
Bulk Excavations, Sampling, Drilling or Piling	3 x 3 = 9	3 x 5 = 15	9 x 15 = 135

1= Minimal 5=significant	LOW 0-100	MEDIUM 100-200	HIGH 200+

8 ASSESSMENT FINDINGS

8.1 Risk Levels

The assessment has determined the UXO risk within the plot. The UXO risk is considered to be lowest in post war worked ground increasing for some processes in post war un-worked ground. When viewed from likelihood versus consequence standpoint; it is considered prudent to recommend a suitable degree of UXO mitigation to permit the work to proceed in the safest "acceptable" manner in compliance with current legislation and best practices.

9 RECOMMENDATIONS FOR RISK MITIGATION

9.1 Overview

The following Risk Mitigation Strategy has been designed to reduce the level of UXO risk to an acceptable level (ALARP) in the most efficient and cost effective manner. The Risk Mitigation Strategy will be required to be considered at all levels within the project planning to ensure it has minimum impact to the project's critical path. Advice should be sought from MACC International Ltd to measure and scope individual mitigation requirements.

9.2 General Mitigation Requirements

It is recommended detailed UXO Desk Top study is conducted to confirm the UXO risk levels. Alternatively the risk levels are accepted and the following mitigation measures are carried out to ensure the work can be carried out safely.

- Risk Communication & Safety Planning: Stakeholders should be made aware that the risk of encounter is considered to be significant and the possible impact it may have on the project. Additionally a UXO site safety and emergency procedures plan should be produced.

- Safety Training: UXO Safety Induction Training should be provided to everyone working or visiting the site. The training should be commensurate with the individual's responsibilities and duties on site. The training should be provided by a competent individual and delivered as separate module of the Site Safety Induction Course.

Additional Mitigation Requirements for medium risk activities:

- Excavations, Drilling or Sampling: UXO Safety supervision and monitoring; this should be conducted by a qualified EOD Engineer using a specialist magnetometer to clear the ground/borehole ahead of the excavator bucket/drill bit.

- Piling: Pile positions should be pre-checked using a CPT/Magcone or similar technology employing a safe "look ahead" capability.

10 POST MITIGATION RISK

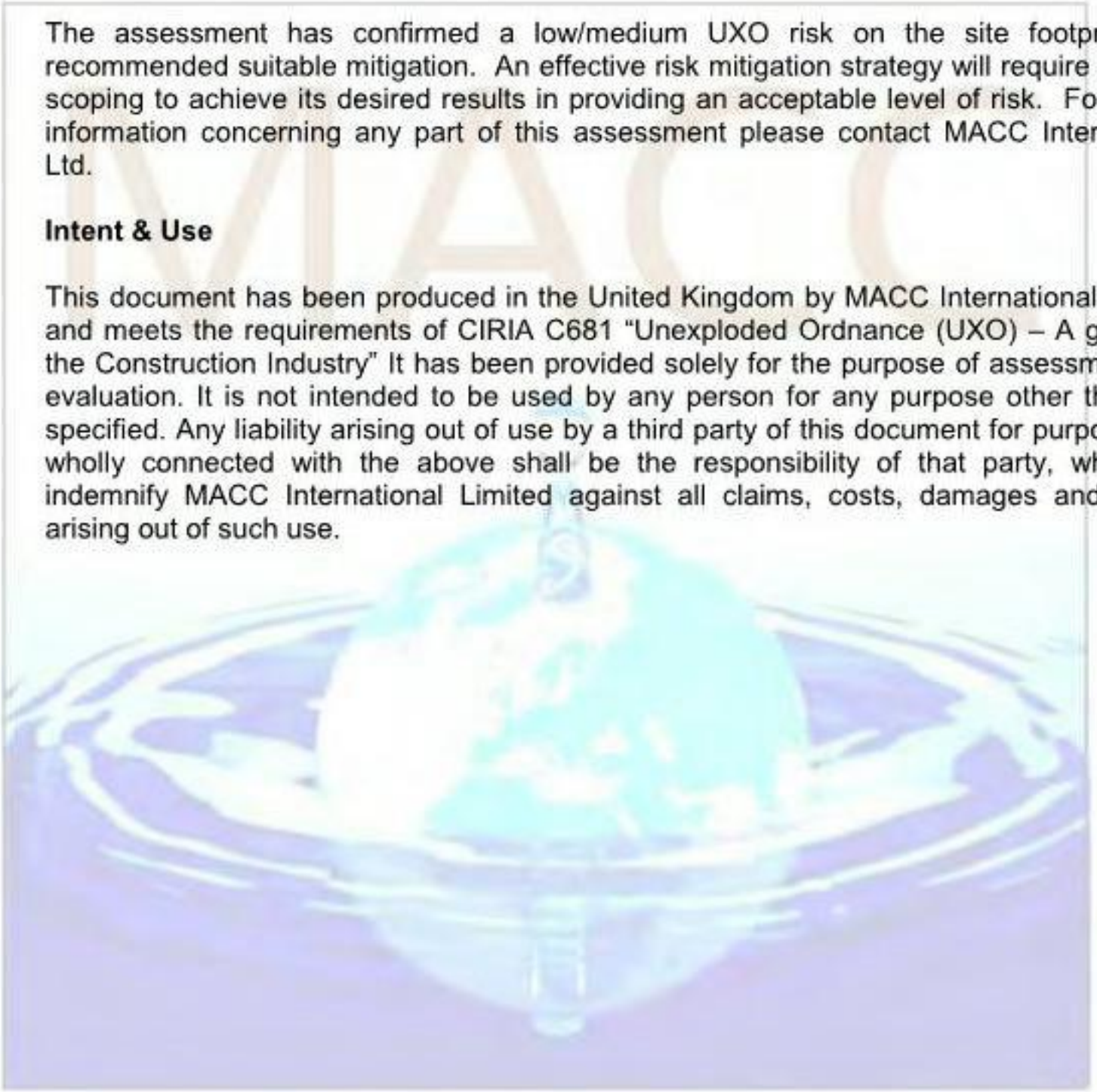
10.1 Overview

Prudent execution of the recommended risk mitigation strategy will reduce the risk, however it is emphasised that zero risk is not achievable given the possible variables.

The assessment has confirmed a low/medium UXO risk on the site footprint and recommended suitable mitigation. An effective risk mitigation strategy will require detailed scoping to achieve its desired results in providing an acceptable level of risk. For further information concerning any part of this assessment please contact MACC International Ltd.

10.2 Intent & Use

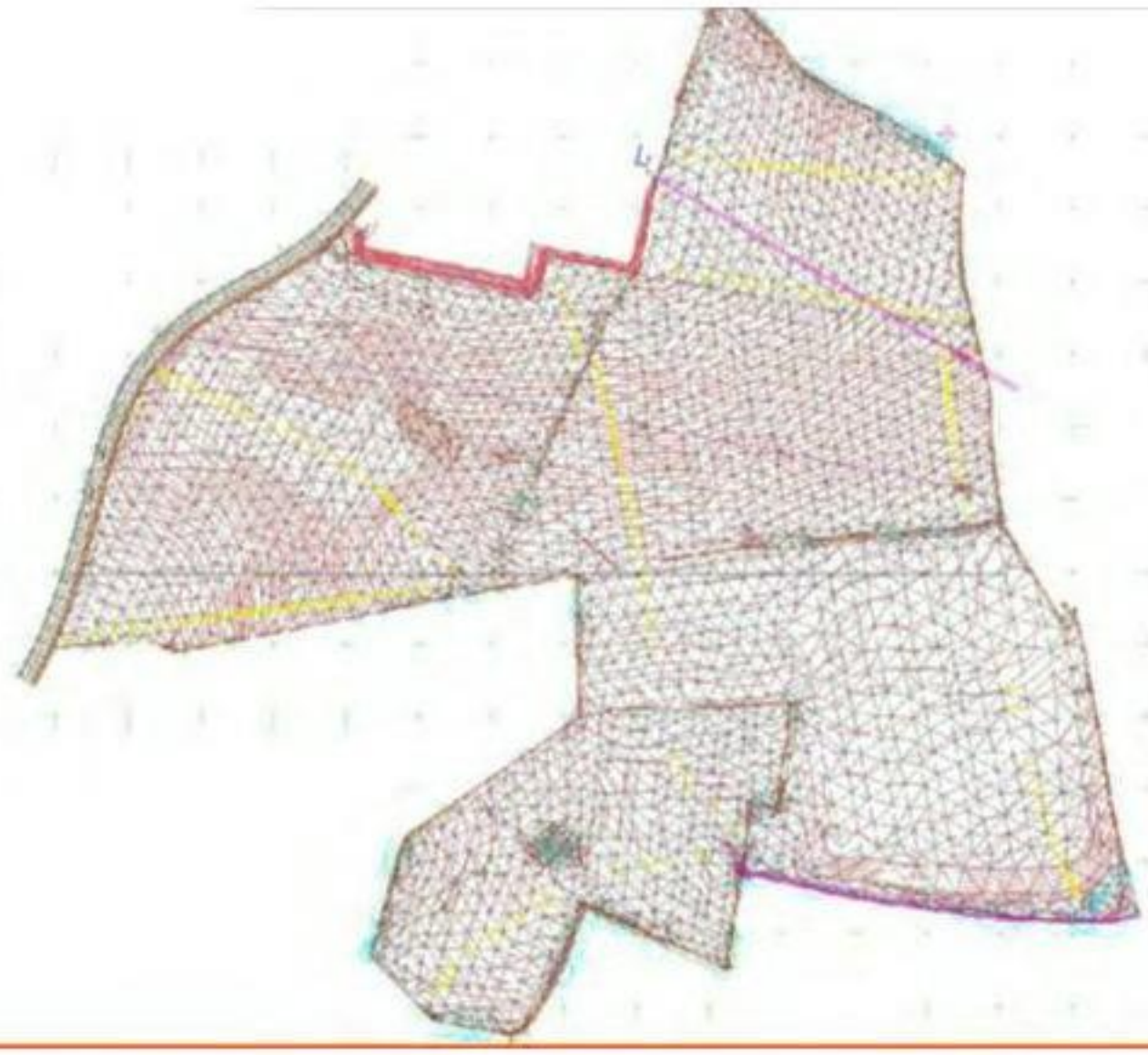
This document has been produced in the United Kingdom by MACC International Limited and meets the requirements of CIRIA C681 "Unexploded Ordnance (UXO) – A guide for the Construction Industry" It has been provided solely for the purpose of assessment and evaluation. It is not intended to be used by any person for any purpose other than that specified. Any liability arising out of use by a third party of this document for purposes not wholly connected with the above shall be the responsibility of that party, who shall indemnify MACC International Limited against all claims, costs, damages and losses arising out of such use.



Annex A

SITE MAPPING

Site Footprint



APPENDIX N
BOREHOLE SOAKAGE TEST RESULTS

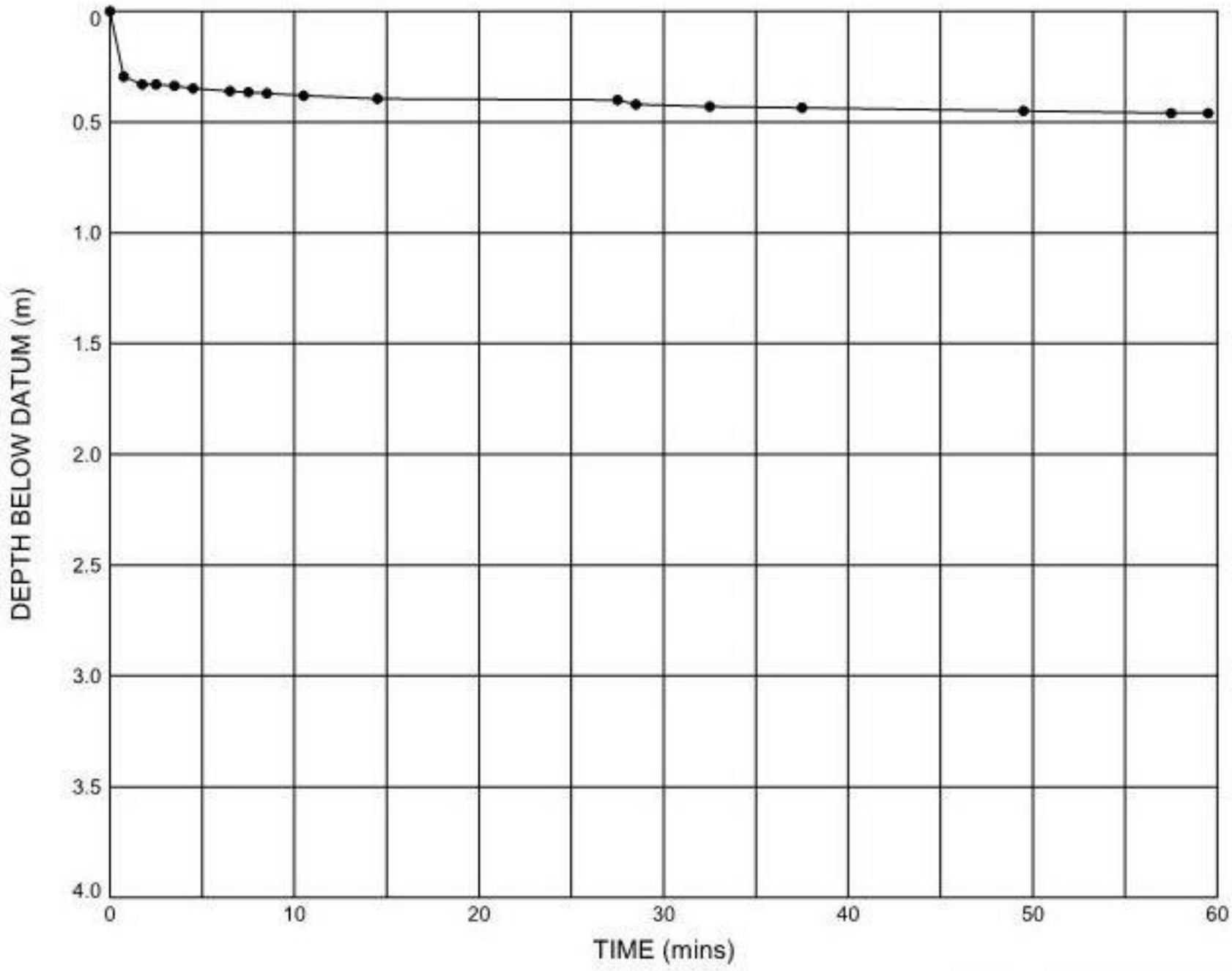
BOREHOLE SOAKAWAY TEST

Test position: BH1

Ground Level: ---

Co-ordinates: ---

PLOT OF DEPTH OF WATER BELOW DATUM AGAINST TIME



Effective depth, De	=	**3.45**	m
Effective storage volume, V_{p75-25}	=	**0.003387**	m^3
Surface area, a_{p50}	=	**0.272926**	m^2
Time, t_{p75-25}	=	**75272**	secs
Infiltration coefficient, f	=	**1.65×10^{-7}**	m/s

Test hole details:

Measurement datum was **GL**
Hole depth at start of test: **3.45**mBGL
Borehole diameter: **50**mm

Legend:

● Test 1 (02/09/2016)

RSK Environment Ltd
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Compiled By	Date	Checked By	Date
[redacted]	09/09/16		09/09/16

Contract: **Campdown**

Contract Ref: **28720**

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_013 PrjVersion: v8_06 - Core+Logs - 001 | Graph I - BH SOAKAWAY - A4P | 28720 CAMPDOWN.GPJ - v8_06. | 09/09/16 - 16.55 | MS4 |

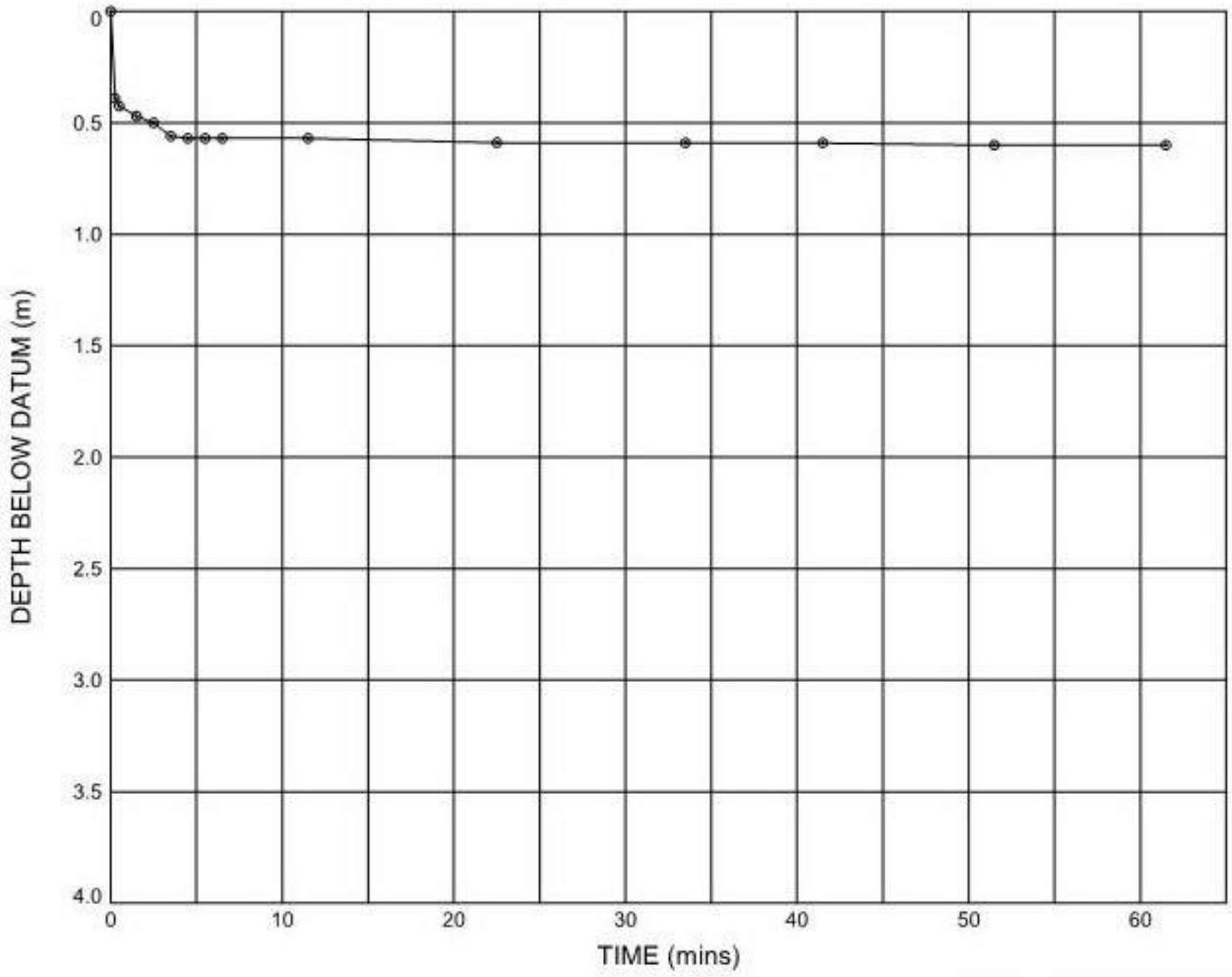
BOREHOLE SOAKAWAY TEST

Test position: BH5

Ground Level: ---

Co-ordinates: ---

PLOT OF DEPTH OF WATER BELOW DATUM AGAINST TIME



Effective depth, De	=	**3.45**	m
Effective storage volume, V_{p75-25}	=	**0.003387**	m^3
Surface area, a_{p50}	=	**0.272926**	m^2
Time, t_{p75-25}	=	**103500**	secs
Infiltration coefficient, f	=	**1.20×10^{-7}**	m/s

Test hole details:

Measurement datum was **GL**
Hole depth at start of test: **3.45**mBGL
Borehole diameter: **50**mm

Legend:

⊙ Test 1 (02/09/2016)

RSK Environment Ltd
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Compiled By	Date	Checked By	Date
[redacted]	09/09/16		09/09/16

Contract: **Campdown**

Contract Ref: **28720**

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_013 PrjVersion: v8_06 - Core+Logs - 001 | Graph I - BH SOAKAWAY - A4P | 28720 CAMPDOWN.GPJ - v8_06. | 09/09/16 - 16.55 | MS4 |

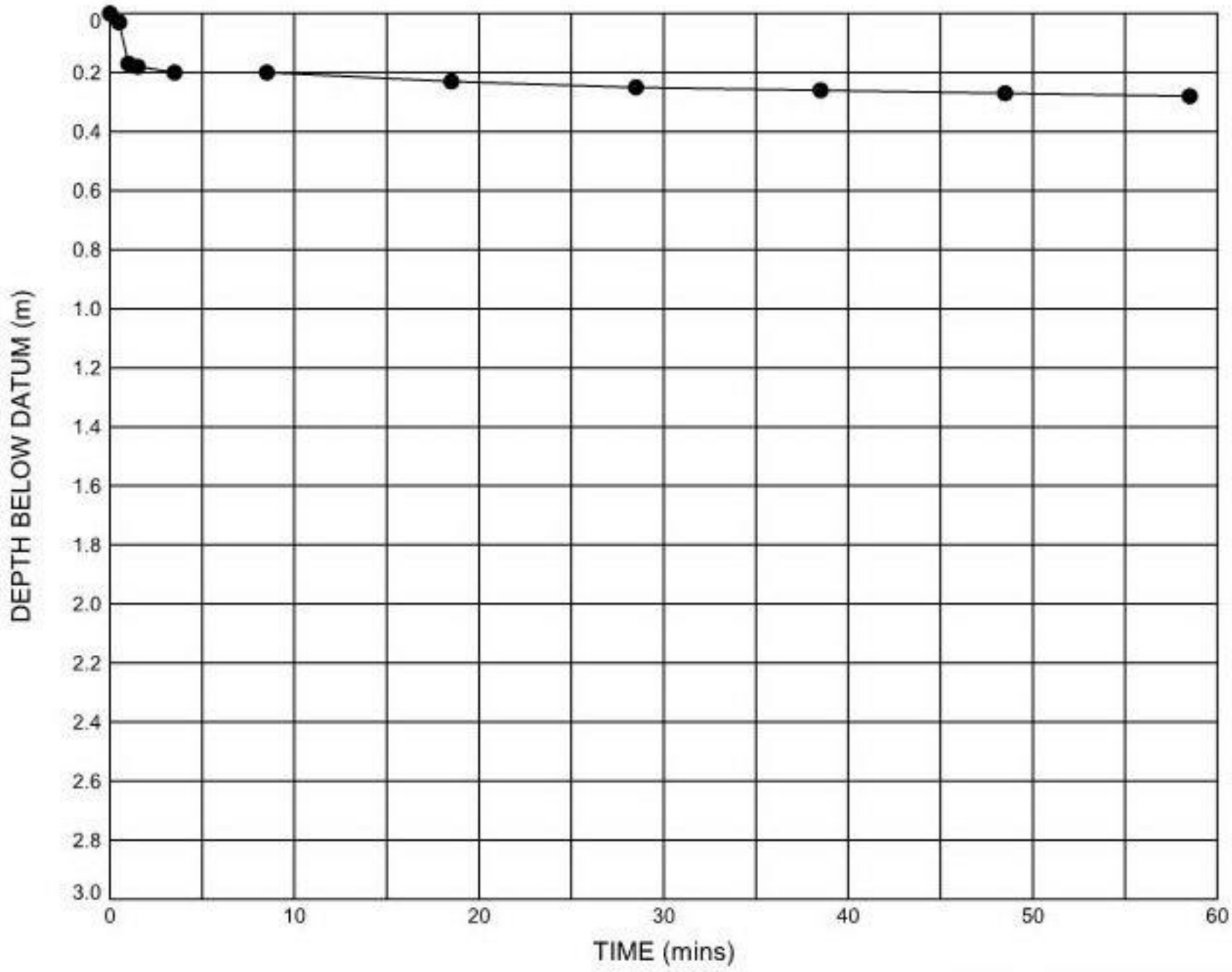
BOREHOLE SOAKAWAY TEST

Test position: BH7

Ground Level: ---

Co-ordinates: ---

PLOT OF DEPTH OF WATER BELOW DATUM AGAINST TIME



Effective depth, De	=	**3**	m
Effective storage volume, V_{p75-25}	=	**0.002945**	m^3
Surface area, a_{p50}	=	**0.237583**	m^2
Time, t_{p75-25}	=	**90000**	secs
Infiltration coefficient, f	=	**1.38×10^{-7}**	m/s

Test hole details:

Measurement datum was **GL**
Hole depth at start of test: **3.00**mBGL
Borehole diameter: **50**mm

Legend:

Test 1 (02/09/2016)

RSK Environment Ltd
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Compiled By	Date	Checked By	Date
MDStrevens	09/09/16		09/09/16

Contract: **Campdown**

Contract Ref: **28720**

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_013 PrjVersion: v8_06 - Core+Logs - 001 | Graph I - BH SOAKAWAY - A4P | 28720 CAMPDOWN.GPJ - v8_06. | 09/09/16 - 16.55 | MS4 |

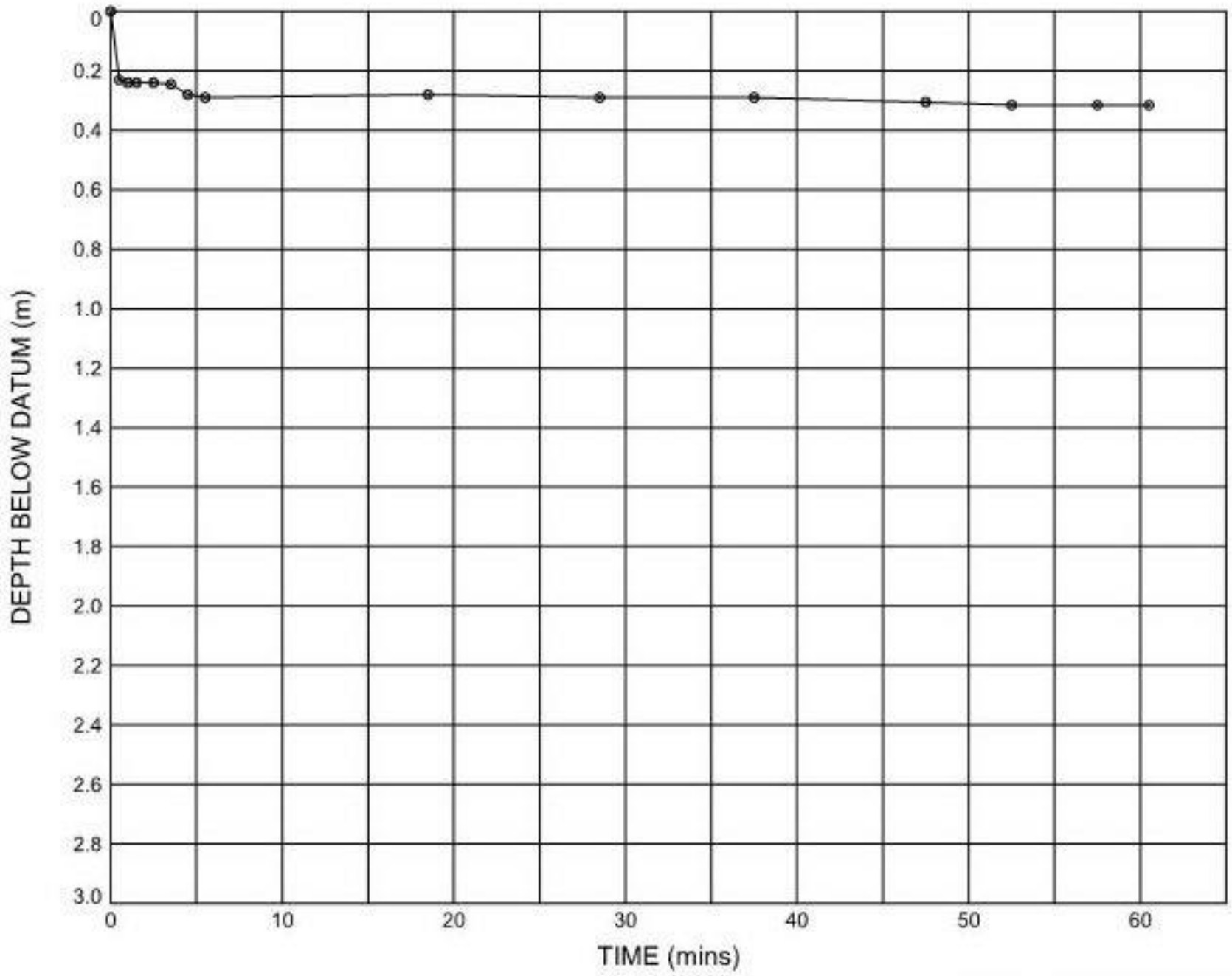
BOREHOLE SOAKAWAY TEST

Test position: BH9

Ground Level: ---

Co-ordinates: ---

PLOT OF DEPTH OF WATER BELOW DATUM AGAINST TIME



Effective depth, De	=	**2.93**	m
Effective storage volume, V_{p75-25}	=	**0.002872**	m^3
Surface area, a_{p50}	=	**0.231692**	m^2
Time, t_{p75-25}	=	**43875**	secs
Infiltration coefficient, f	=	**2.82×10^{-7}**	m/s

Test hole details:

Measurement datum was **GL**
Hole depth at start of test: **2.93**mBGL
Borehole diameter: **50**mm

Legend:

⊗ Test 1 (02/09/2016)

RSK Environment Ltd
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Compiled By	Date	Checked By	Date
[redacted]	09/09/16		09/09/16

Contract: **Campdown**

Contract Ref: **28720**

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_013 PrjVersion: v8_06 - Core+Logs - 001 | Graph I - BH SOAKAWAY - A4P | 28720 CAMPDOWN.GPJ - v8_06. | 09/09/16 - 16.55 | MS4 |

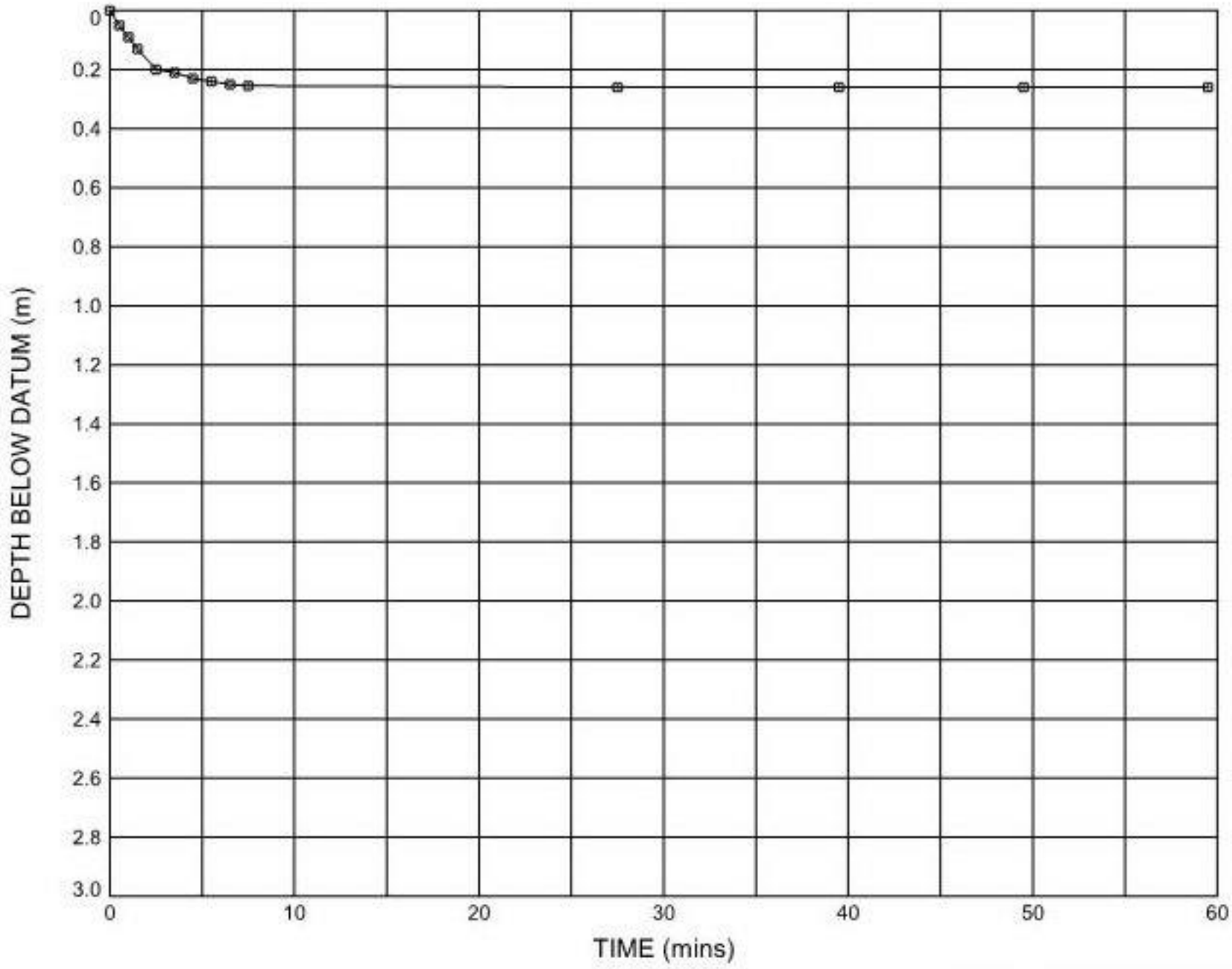
BOREHOLE SOAKAWAY TEST

Test position: BH15

Ground Level: ---

Co-ordinates: ---

PLOT OF DEPTH OF WATER BELOW DATUM AGAINST TIME



Effective depth, De	=	**2.55**	m
Effective storage volume, V_{p75-25}	=	**0.002503**	m^3
Surface area, a_{p50}	=	**0.202240**	m^2
Time, t_{p75-25}	=	**306000**	secs
Infiltration coefficient, f	=	**4.05x10^{-8}**	m/s

Test hole details:

Measurement datum was **GL**
Hole depth at start of test: **2.55**mBGL
Borehole diameter: **50**mm

Legend:

Test 1 (02/09/2016)

RSK Environment Ltd
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Compiled By	Date	Checked By	Date
[redacted]	09/09/16		09/09/16

Contract: **Campdown**

Contract Ref: **28720**

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_013 PrjVersion: v8_06 - Core+Logs - 001 | Graph I - BH SOAKAWAY - A4P | 28720 CAMPDOWN.GPJ - v8_06. | 09/09/16 - 16.55 | MS4 |

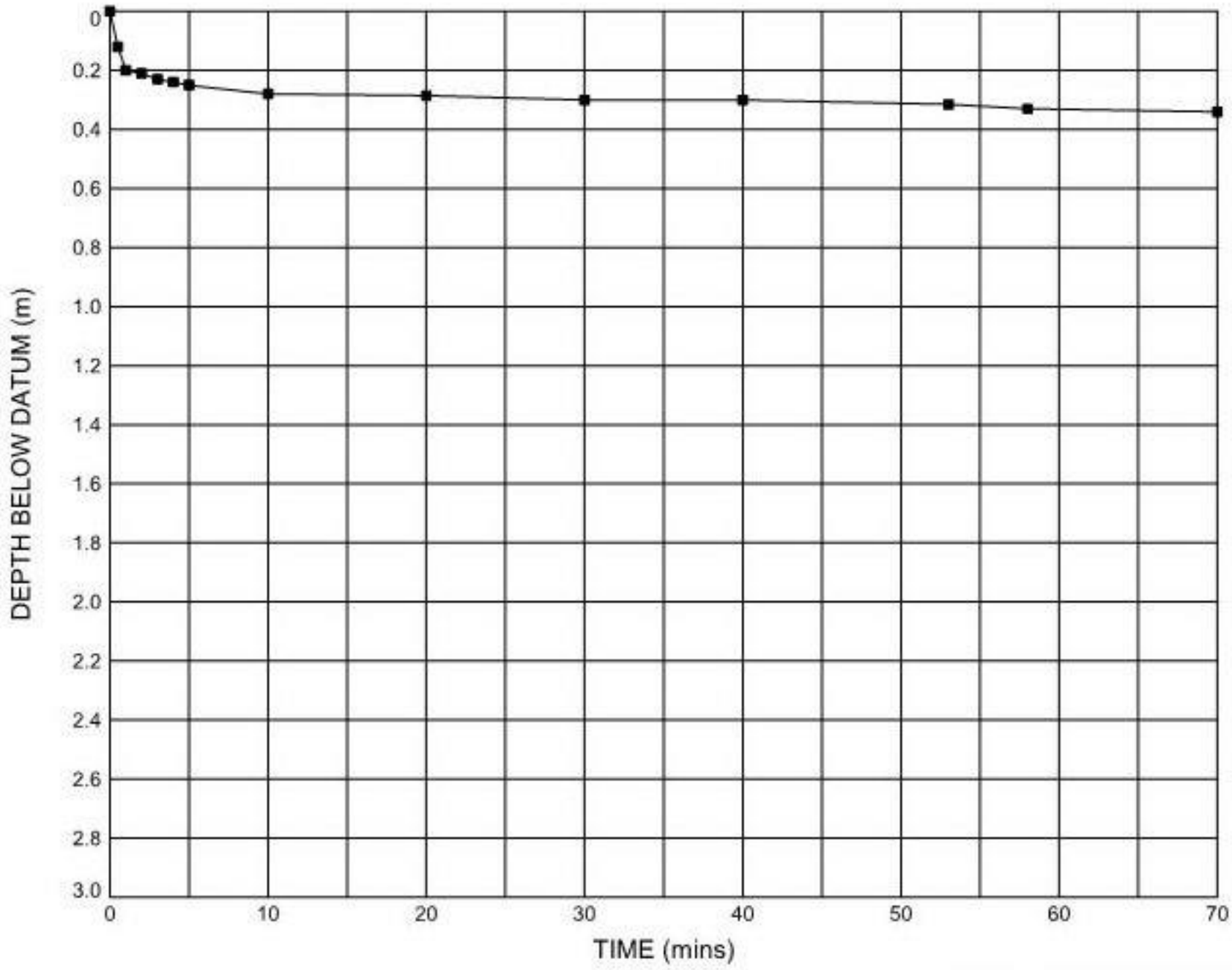
BOREHOLE SOAKAWAY TEST

Test position: BH16

Ground Level: ---

Co-ordinates: ---

PLOT OF DEPTH OF WATER BELOW DATUM AGAINST TIME



Effective depth, De	=	**2.78**	m
Effective storage volume, V_{p75-25}	=	**0.002729**	m^3
Surface area, a_{p50}	=	**0.220304**	m^2
Time, t_{p75-25}	=	**100080**	secs
Infiltration coefficient, f	=	**1.24×10^{-7}**	m/s

Test hole details:

Measurement datum was **GL**
Hole depth at start of test: **2.78**mBGL
Borehole diameter: **50**mm

Legend:

■ Test 1 (02/09/2016)

RSK Environment Ltd
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Compiled By	Date	Checked By	Date
[redacted]	09/09/16		09/09/16

Contract: **Campdown**

Contract Ref: **28720**

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_013 PrjVersion: v8_06 - Core+Logs - 001 | Graph I - BH SOAKAWAY - A4P | 28720 CAMPDOWN.GPJ - v8_06. | 09/09/16 - 16.55 | MS4 |

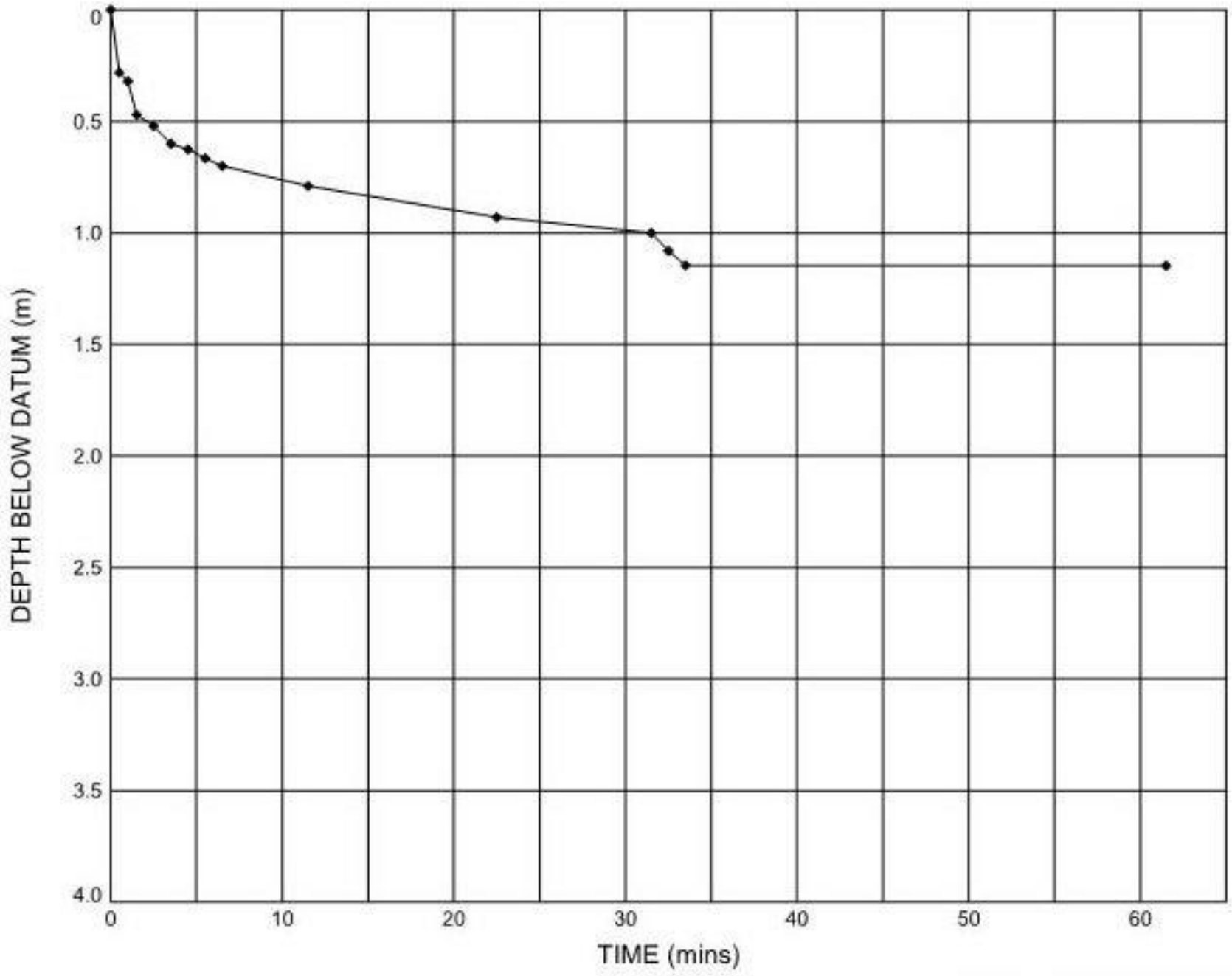
BOREHOLE SOAKAWAY TEST

Test position: BH17a

Ground Level: ---

Co-ordinates: ---

PLOT OF DEPTH OF WATER BELOW DATUM AGAINST TIME



Effective depth, De	=	**3.45**	m
Effective storage volume, V_{p75-25}	=	**0.003387**	m^3
Surface area, a_{p50}	=	**0.272926**	m^2
Time, t_{p75-25}	=	**2310**	secs
Infiltration coefficient, f	=	**5.37×10^{-6}**	m/s

Test hole details:

Measurement datum was **GL**
Hole depth at start of test: **3.45**mBGL
Borehole diameter: **50**mm

Legend:

◆ Test 1 (02/09/2016)

RSK Environment Ltd
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Compiled By	Date	Checked By	Date
[redacted]	09/09/16		09/09/16

Contract: **Campdown**

Contract Ref: **28720**

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_013 PrjVersion: v8_06 - Core+Logs - 001 | Graph I - BH SOAKAWAY - A4P | 28720 CAMPDOWN.GPJ - v8_06. | 09/09/16 - 16.56 | MS4 |

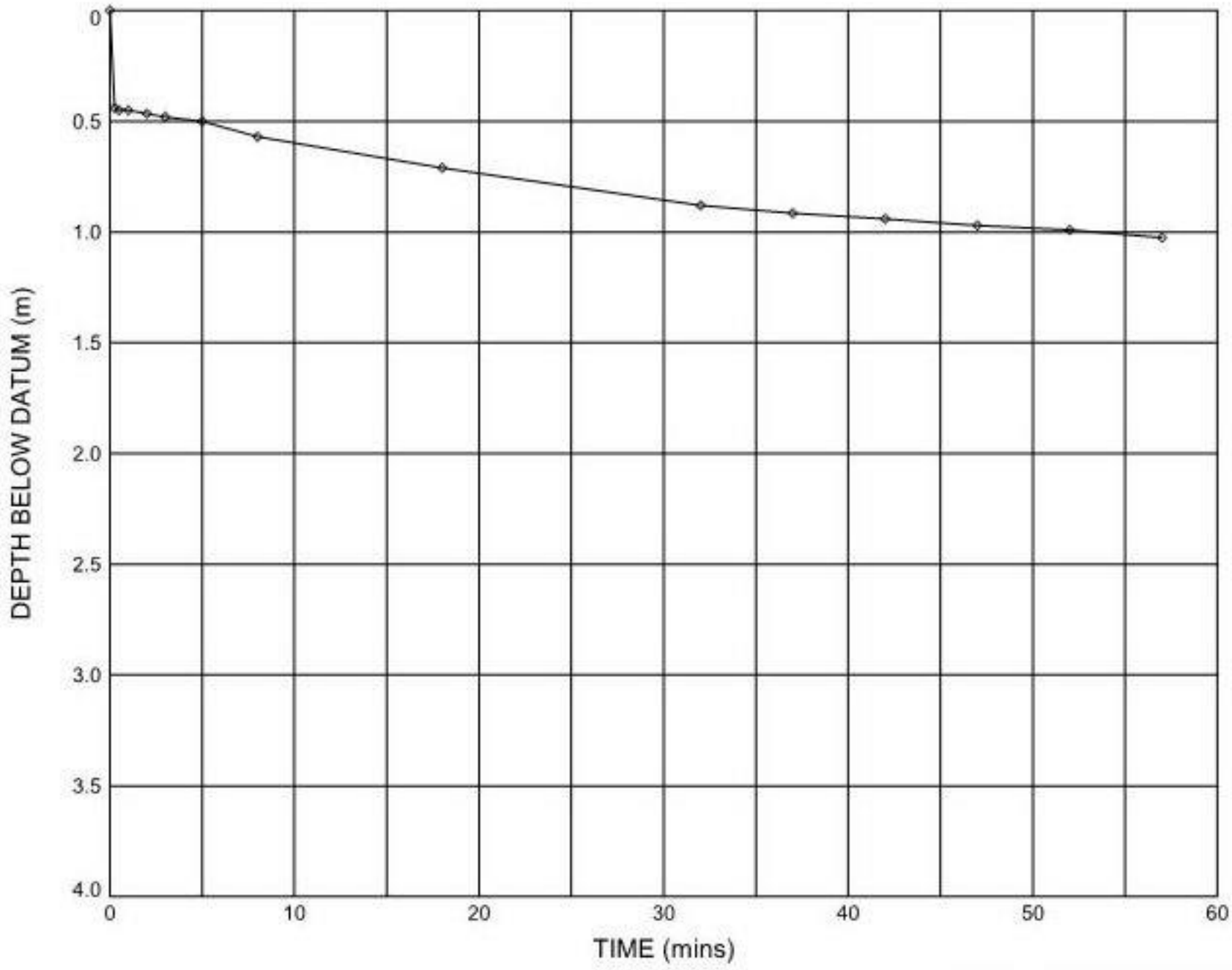
BOREHOLE SOAKAWAY TEST

Test position: BH17b

Ground Level: ---

Co-ordinates: ---

PLOT OF DEPTH OF WATER BELOW DATUM AGAINST TIME



Effective depth, De	=	**3.45**	m
Effective storage volume, V_{p75-25}	=	**0.003387**	m^3
Surface area, a_{p50}	=	**0.272926**	m^2
Time, t_{p75-25}	=	**14979**	secs
Infiltration coefficient, f	=	**8.28×10^{-7}**	m/s

Test hole details:

Measurement datum was **GL**
Hole depth at start of test: **3.45**mBGL
Borehole diameter: **50**mm

Legend:

◇ Test 1 (02/09/2016)

RSK Environment Ltd
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Compiled By	Date	Checked By	Date
[redacted]	09/16		09/09/16

Contract: **Campdown**

Contract Ref: **28720**

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_013 PrjVersion: v8_06 - Core+Logs - 001 | Graph I - BH SOAKAWAY - A4P | 28720 CAMPDOWN.GPJ - v8_06. | 09/09/16 - 16.56 | MS4 |

APPENDIX O
HASWASTE

envirolab

Haswaste, developed by Dr. Iain Haslock.

25720, Campdown

TP/WS/BH			BH1	BH3	BH7	BH8	BH10	BH5	BH12	BH14	BH15	BH16	BH17
Depth (m)			0.10-0.2	0.10-0.2	1.10-1.20	0.00-0.20	0.10-0.20	0.50	0.10-0.20	0.10-0.20	0.10-0.20	0.10-0.20	0.10-0.20
Envirolab reference			16/04804/1	16/04804/2	16/04804/3	16/04804/4	16/04804/5	16/04804/6	16/04804/7	16/04804/8	16/04804/9	16/04804/10	16/04804/11
% Moisture		%											
pH (soil)			8.01	5.71	6.98	5.31	7.75	6.02	5.42	6.3	5.56	5.31	6.69
pH (leachate)													
Arsenic		mg/kg	2	3	7	4	5	2	5	2	3	4	5
Cadmium		mg/kg	0.9	0.5	1.4	0.9	1.2	0.9	1.1	0.3	0.9	1.1	1.3
Copper		mg/kg	3	3	8	6	6	4	1	7	3	3	9
Cr VI or Chromium		mg/kg	18	17	30	21	24	24	20	34	14	23	31
Lead		mg/kg	15	18	21	28	23	27	21	29	21	22	36
Mercury		mg/kg	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Nickel		mg/kg	8	8	14	9	12	11	7	19	9	10	16
Selenium		mg/kg	1	1	1	1	1	1	1	1	1	1	1
Zinc		mg/kg	31	26	51	35	37	26	27	72	28	34	46
Boron		mg/kg											
Beryllium		mg/kg											
Vanadium		mg/kg											
Cobalt		mg/kg											
Manganese		mg/kg											
Molybdenum		mg/kg											
Antimony		mg/kg											
Aluminium		mg/kg											
Bismuth		mg/kg											
Chill		mg/kg											
Iron		mg/kg											
Strontium		mg/kg											
Tellurium		mg/kg											
Thallium		mg/kg											
Tibanium		mg/kg											
Tungsten		mg/kg											
Ammoniacal N as Boron		mg/kg											

PAH (input Total PAH OR individual PAH results)

Acenaphthene	mg/kg	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Acenaphthylene	mg/kg	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Anthracene	mg/kg	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Benzo(a)anthracene	mg/kg	0.04	0.07	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Benzo(a)pyrene	mg/kg	0.04	0.11	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Benzo(b)fluoranthene	mg/kg	0.05	0.13	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Benzo(ghi)perylene	mg/kg	0.05	0.07	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Benzo(k)fluoranthene	mg/kg	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Chrysene	mg/kg	0.06	0.13	0.09	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Dibenz(ah)anthracene	mg/kg	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Fluoranthene	mg/kg	0.08	0.13	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Fluorene	mg/kg	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Indeno(123cd)pyrene	mg/kg	0.03	0.06	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Naphthalene	mg/kg	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Phenanthrene	mg/kg	0.03	0.09	0.03	0.02	0.03	0.03	0.02	0.03	0.02	0.02	0.03
Pyrene	mg/kg	0.07	0.13	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Coronene	mg/kg											
Total PAHs (16 or 17)	mg/kg											

TPH

Petrol	mg/kg											
Diesel	mg/kg											
Lube Oil	mg/kg											
White Spirit / Kerosene	mg/kg											
Creosote	mg/kg											
Unknown TPH with IS	mg/kg											
Unknown TPH(CW2)	mg/kg	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Total Sulphide	mg/kg											
Complex Cyanide	mg/kg											
Free (or Total) Cyanide	mg/kg											
Thiocyanate	mg/kg											
Elemental Free Sulphur	mg/kg											

Phenols Input Total Phenols HPLC **OR** individual Phenol results

Phenol	mg/kg											
Cresols	mg/kg											
Xylenols	mg/kg											
Polyaromatics	mg/kg											
Phenols Total by HPLC	mg/kg											

BTEX Input Total BTEX **OR** individual BTEX results

Benzene	mg/kg	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Toluene	mg/kg	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Ethylbenzene	mg/kg	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Xylenes	mg/kg	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total BTEX	mg/kg											

PCBs (POPs)

PCBs Total (eg ECT/WHO12)	mg/kg											

PBBs (POPs)

Hexabromobiphenyl (Total or PBB153: 2,2',4,4',5,5'- if only available)	mg/kg											

POPs Dioxins and Furans Input Total Dioxins and Furans **OR** individual Dioxin and Furan results

2,3,7,8-TeCDD	mg/kg											
1,2,3,7,8-PeCDD	mg/kg											
1,2,3,4,7,8-HxCDD	mg/kg											
1,2,3,6,7,8-HxCDD	mg/kg											
1,2,3,7,8,9-HxCDD	mg/kg											
1,2,3,4,6,7,8-HpCDD	mg/kg											
OCDD	mg/kg											
2,3,7,8-TeCDF	mg/kg											
1,2,3,7,8-PeCDF	mg/kg											
2,3,4,7,8-PeCDF	mg/kg											
1,2,3,4,7,8-HxCDF	mg/kg											
1,2,3,6,7,8-HxCDF	mg/kg											
2,3,4,6,7,8-HxCDF	mg/kg											
1,2,3,7,8,9-HxCDF	mg/kg											
1,2,3,4,6,7,8-HpCDF	mg/kg											
1,2,3,4,7,8,9-HpCDF	mg/kg											
OCDF	mg/kg											
Total Dioxins and Furans	mg/kg											

Some Pesticides (POPs unless otherwise stated)

Aldrin	mg/kg											
α Hexachlorocyclohexane (alpha-HCH) *(leave empty if total HCH results used)*	mg/kg											
β Hexachlorocyclohexane (beta-HCH) *(leave empty if total HCH results used)*	mg/kg											
α Cis-Chlordane (alpha) **OR** Total Chlordane	mg/kg											
δ Hexachlorocyclohexane (delta-HCH) *(leave empty if total HCH results used)*	mg/kg											
Dieldrin	mg/kg											
Endrin	mg/kg											
γ Hexachlorocyclohexane (gamma-HCH) (lindane) **OR** Total HCH	mg/kg											
Heptachlor	mg/kg											
Hexachlorobenzene	mg/kg											
o,p'-DDT *(leave empty if total DDT results used)*	mg/kg											
p,p'-DDT **OR** Total DDT	mg/kg											
γ Trans-Chlordane (gamma) *(leave empty if total Chlordane results used)*	mg/kg											
Chlordecone (kepone)	mg/kg											
Pentachlorobenzene	mg/kg											
Mirex	mg/kg											
Toxaphene (camphechlor)	mg/kg											

Tin

Tin *(leave empty if Organotin and Tin and/ Organotin results used)*	mg/kg											

Organotin

envirolab

Haswaste, developed by Dr. Val Hasloek.

28720, Campdown

TP/WS/BH		BH1	BH2	BH7	BH8	BH10	BH6	BH12	BH14	BH15	BH16	BH17
Depth (m)		0.10-0.2	0.10-0.2	1.10-1.20	3.00-3.20	0.10-0.20	0.50	0.10-0.20	0.10-0.20	0.10-0.20	0.10-0.20	0.10-0.20
Envirolab reference		16/04564/1	16/04564/2	16/04564/3	16/04564/4	16/04564/5	16/04564/6	16/04564/7	16/04564/8	16/04564/9	16/04564/10	16/04564/11
Dibutyltin; DBT	None of Det	mg/kg										
Tributyltin; TBT	None of Det	mg/kg										
Triphenyltin; TePT	None of Det	mg/kg										
Tetrabutyltin; TeBT	None of Det	mg/kg										
Tin excluding Organotin												
Tin excl Organotin	None of Det	mg/kg										
Asbestos in Soil	Threshold											
Asbestos detected in Soil (enter Y or N)	Y			N	N	N	N		N		N	N	N
Asbestos in Soil above is "Y", the soil is Hazardous Waste HP5 and HP7													
Asbestos % Composition in Soil (Matrix Loose Fibres or Microscopic Identifiable Pieces only)	see 'Guru HP7 % Asbestos in Soil (Fibres)' below	%											
Carcinogenic HP7 % Asbestos in Soil (fibres or micro pieces)	0.1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
If Asbestos in Soil above is "Y", but Asbestos % above is "<0.1%", the soil is Non Hazardous Waste. You can only use Asbestos % results where loose fibres or micro pieces are only present. You cannot use if Asbestos in Soil above is "Y", but Asbestos % results where visual identifiable pieces are present.													
Asbestos Identifiable Pieces visible with the naked eye detected in the Soil (enter Y or N)	Y												
If visual identifiable pieces of asbestos are present, you cannot use Asbestos % results and the whole soil sample is Hazardous Waste HP5 and HP7 Construction material containing Asbestos 1 to 5%. Therefore, if Asbestos in Soil above is "Y", the Asbestos % above is "<0.1%", but the Asbestos identifiable Pieces visible with the naked eye is "Y", the soil is Hazardous Waste.													If visual identifiable pieces of asbestos are Therefore, if Asbestos in Soil
Identifiable Pieces are Cement, Fragments, Mixed, Rope etc., or anything NOT that is not Loose Fibres.													
All visual asbestos pieces need to be removed leaving only fibres (or micro pieces) with an Asbestos % Composition in Soil result of <0.1% for the soil to become non-hazardous waste.													All visual asbestos pieces need to

Hazardous Property	Threshold	Det Of Value										
Corrosive HP8	>8%	<1%	0.00572	0.00395	0.00784	0.00476	0.00521	0.00467	0.00450	0.00479	0.00538	0.00491	0.00541
Irritant HP4	>20%	<1%	0.00008	0.00043	0.00083	0.00043	0.00085	0.00009	0.00005	0.00008	0.00043	0.00053	0.00009
Irritant HP4	>50%	<1%	0.00187	0.00198	0.00376	0.00281	0.00213	0.00099	0.00104	0.00088	0.00217	0.00238	0.00436
Specific Target Organ Toxicity HP5	>1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specific Target Organ Toxicity HP5	>10%		0.00000	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specific Target Organ Toxicity HP5	>1%		0.00348	0.00235	0.00491	0.00420	0.00481	0.00481	0.00356	0.00462	0.00358	0.00467	0.00496
Specific Target Organ Toxicity HPG	>1%		0.00389	0.00228	0.00528	0.00438	0.00463	0.00228	0.00228	0.00362	0.00478	0.00429	0.00462
Aspiration Toxicity HP3	>10%		0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00007	0.00001	0.00001
Acute Toxicity HP6	>0.1%	>0.1%	0.00009	0.00003	0.00008	0.00000	0.00000	0.00009	0.00003	0.00003	0.00009	0.00009	0.00009
Acute Toxicity HP6	>0.25%	>0.1%	0.00008	0.00001	0.00004	0.00000	0.00008	0.00008	0.00000	0.00008	0.00007	0.00008	0.00008
Acute Toxicity HP6	>1%	>0.1%	0.00048	0.00011	0.00018	0.00017	0.00019	0.00018	0.00008	0.00018	0.00018	0.00019	0.00014
Acute Toxicity HP6	>25%	<1%	0.00196	0.00711	0.01324	0.00968	0.01016	0.00673	0.00713	0.01427	0.00911	0.00853	0.01343
Acute Toxicity HP6	>0.25%	>0.1%	0.00002	0.00002	0.00002	0.00002	0.00003	0.00002	0.00002	0.00002	0.00002	0.00003	0.00002
Acute Toxicity HP6	>2.5%	>0.1%	0.00046	0.00028	0.00081	0.00043	0.00046	0.00046	0.00039	0.00053	0.00029	0.00043	0.00049
Acute Toxicity HP6	>1%	>0.1%	0.00008	0.00003	0.00008	0.00002	0.00008	0.00008	0.00003	0.00003	0.00008	0.00008	0.00008
Acute Toxicity HP6	>10%	>1%	0.00038	0.00005	0.00018	0.00008	0.00013	0.00014	0.00003	0.00013	0.00008	0.00011	0.00014
Acute Toxicity HP6	>0.1%	>0.1%	0.00008	0.00003	0.00008	0.00005	0.00003	0.00008	0.00003	0.00003	0.00008	0.00008	0.00008
Acute Toxicity HP6	>0.5%	>0.1%	0.00008	0.00003	0.00007	0.00014	0.00015	0.00007	0.00007	0.00008	0.00008	0.00004	0.00013
Acute Toxicity HP6	>1.5%	>0.1%	0.00014	0.00001	0.00014	0.00014	0.00014	0.00014	0.00014	0.00014	0.00014	0.00014	0.00014
Acute Toxicity HP6	>25.5%	>1%	0.00048	0.00007	0.00121	0.00073	0.00085	0.00017	0.00009	0.00154	0.00007	0.00007	0.00126
Carcinogenic HP7	>0.1%		0.00348	0.00236	0.00491	0.00420	0.00481	0.00481	0.00356	0.00462	0.00369	0.00462	0.00496
Carcinogenic HP7	>0.1%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000
Carcinogenic HP7	>1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7 Unknown TPH with ID	>1000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carcinogenic HP7 Assay matrix test (Unknown TPH with ID only)	>0.1%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
pH Corrosive HP8 pH (soil or leachate)	>11 or <3		6.01	5.71	6.08	5.31	7.75	6.02	5.42	6.38	5.80	5.31	6.69
pH Corrosive HP8 pH (soil or leachate)	>12 or <2		6.01	5.71	6.08	5.31	7.75	6.02	5.42	6.38	5.80	5.31	6.69
Toxic for Reproduction HP10	>0.3%		0.00348	0.00235	0.00491	0.00420	0.00481	0.00481	0.00356	0.00462	0.00415	0.00462	0.00543
Toxic for Reproduction HP10	>3%		0.00348	0.00235	0.00491	0.00420	0.00481	0.00481	0.00356	0.00462	0.00369	0.00462	0.00496
Mutagenic HP11	>0.1%		0.00348	0.00235	0.00491	0.00420	0.00481	0.00481	0.00356	0.00462	0.00369	0.00462	0.00496
Mutagenic HP11 Unknown TPH with ID	>1000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mutagenic HP11 Assay matrix test (Unknown TPH with ID only)	>0.1%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Mutagenic HP11	>1%		0.00133	0.00162	0.00263	0.00182	0.00223	0.00133	0.00184	0.00182	0.00263	0.00263	0.00333
Produces Toxic Gases HP12 Sulphide	>1.4mg/g/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Cyanide	>1.2mg/g/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Thiocyanate	>5.0mg/g/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HP13 Sensitising	>10%		0.00348	0.00235	0.00491	0.00420	0.00481	0.00481	0.00356	0.00462	0.00369	0.00462	0.00496

Ecotoxic HP14	>1 t	>0.1% present Comp/Cat + Thiocyanate + Xylenc + BTEX 1%t	0.04542	0.04099	0.08166	0.06946	0.06251	0.06521	0.04731	0.05947	0.04959	0.05432	0.08382
Ecotoxic HP14	>20%	>0.1%	0.01139	0.01150	0.02045	0.01424	0.01560	0.01388	0.01183	0.02337	0.01349	0.01468	0.02073
Ecotoxic HP14	>20%	>0.1% present Comp/Cat + Thiocyanate + Xylenc + BTEX 1%t	0.01137	0.01151	0.02041	0.01425	0.01564	0.01391	0.01184	0.02338	0.01341	0.01469	0.02074
Ecotoxic HP14 Individual substance specific thresholds (Benzo(a)anthracene, Dibenz(a,h)anthracene, Benzo(a)pyrene (or Total PAH if any used), Sn, TePT)	>0.004%		0.000084	0.000037	0.000084	0.000036	0.000024	0.000084	0.000004	0.000084	0.000036	0.000024	0.000084
Ecotoxic HP14 Individual substance specific thresholds (Cu, Ni, HCN, DBT, TeBT)	>0.01%		0.00008	0.00003	0.00008	0.00002	0.00008	0.00008	0.00003	0.00002	0.00008	0.00008	0.00008

Persistent Organic Pollutant (POP) (PCB, PBB or POP Pesticides)	>0.05%		0.00000000	0.00000008	0.00000001	0.00000000	0.00000010	0.00000000	0.00000008	0.00000000	0.00000000	0.00000010	0.00000000
Persistent Organic Pollutant (Total Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000039	0.0000000000	0.0000000039	0.0000000000	0.0000000000	0.0000000039	0.0000000000	0.0000000039	0.0000000000
Persistent Organic Pollutant (individual Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000039	0.0000000000	0.0000000039	0.0000000000	0.0000000000	0.0000000039	0.0000000000	0.0000000039	0.0000000000

If other contaminants need adding to Haswaste, please contact Envirolab.