Applegarth Farm, Grayshott

Phase 1 Ground Condition Assessment

(Contamination and Stability)

On behalf of **Applegarth Farm**

Project Ref: 32939/001 | Rev: 00 | Date: December 2014

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1 Introduction

1.1 Background Information

Peter Brett Associates LLP (PBA) has been instructed by Applegarth Farm (The Client), to carry out a Phase 1 Ground Condition Assessment in support of a planning application for the proposed redevelopment of land located at Applegarth Farm, Headley Road, Grayshott, Surrey, GU26 6JJ.

The purpose of this study is to inform the master planning process and support a planning application for the redevelopment of the site for commercial and retail use. The assessment reviews readily available information in order to assess the existing ground conditions on the site and the potential for contamination to be present associated with previous and present uses of the site and the surrounding areas. Thereby to enable a qualitative assessment to be made of the geoenvironmental and geotechnical constraints such that informed decisions on the design of the proposed development can be made and the risk and hazards associated with existing or potential future contamination and land instability of the ground identified.

1.2 Objectives

The objective of this report is to assess readily available information to identify the likely ground conditions and to assess whether there are any potential geoenvironmental or geotechnical hazards and constraints to the proposed development.

1.3 Scope of Work / Terms of Reference

Guidance on ground condition assessment is given in CLR 11 Model Procedures for the Management of Contaminated Land (EA, 2004), which sets out a process based on a tiered risk assessment with increasing level of detail required to progress through the tiers.

The scope of work undertaken by PBA comprises:

- A review of readily available geological, hydrogeological and aquifer vulnerability maps; and historical Ordnance Survey maps.
- A walkover survey to examine the existing condition of the site and surrounding area.
- A qualitative Tier 1 risk assessment utilising a Conceptual site Model to identify ‘source – pathway – receptor’ linkages to assess the potential risk and hazards, if any, associated with existing or potential future contamination in the ground.
- A ground stability assessment of the risk of subsidence arising from artificial cavities; natural cavities; and potential adverse foundation conditions.

The primary aim of this assessment is to meet the requirements of the National Planning Policy Framework (NPPF) Clauses 120, 121, and 122. Under the definition ‘Site Investigation Information’ given in the NPPF glossary page 56, the Phase 1 Desk Study and contamination risk assessment is the minimum requirement under the NPPF to support any planning application on a site that might be potentially affected by contamination. Similarly, a desk study and site reconnaissance is the minimum information that should be provided for a site potentially at risk from ground instability.

This report presents the findings of the study together with a qualitative assessment of identified hazards and constraints posed by the existing ground conditions to the proposed development.

Attention is drawn to the Guidance Note included after the text of this report which provides advice for readers of this report.

1.4 Site Location and Setting

The site is located approximately 1.6km west of Grayshott Village Centre and comprises the existing Applegarth Farm Shop and Restaurant with associated outbuildings and adjacent agricultural land. The B3002 Headley Road forms the south western boundary of the site, and Grayshott Golf Centre forms the north western boundary. The north eastern and south eastern boundaries of the site are formed predominantly by agricultural land. The site is centred at approximate National Grid Reference (NGR) SU 858 358.

A site location plan is present as **Figure1**.

A site layout plan, annotated with features discussed in this report is presented as **Figure 2**.

1.5 Proposed Development

It is understood that the existing retail uses at the site will be expanded to incorporate a Rural Enterprise Centre, a Soft Play Facility and a Cooking School, together with an expanded farm shop and restaurant.

A conceptual landscape masterplan is presented as **Appendix 7**.

1.6 Methodology and Report Format

The PBA methodology for assessment of potentially contaminated land is presented in **Appendix 1**.

The underlying principle is the evaluation of pollutant linkages in order to assess whether the presence of a source of contamination could potentially lead to harmful consequences. A pollutant linkage consists of the following three elements:

- A source of contamination or hazard that has the potential to cause harm or pollution;
- A pathway for the hazard to move along / generate exposure; and
- A receptor which is affected by the hazard

For each potential pollutant linkage the risk is estimated through consideration of the magnitude of the potential consequences and the likelihood or probability of an event occurring.

This report is divided into chapters identifying potential sources (hazard identification), potential pathway and receptor identification and risk estimation and assessment.

1.7 Sources of Information

The following sources of information were used in the preparation of this report:

- Walkover inspection – photographs presented in **Appendix 2** and the locations of which shown on **Figure 2.**
- Landmark Information Group were commissioned to provide historical maps and environmental setting data searches (Envirocheck Report), and this information is presented in **Appendix 3** and **Appendix 4** respectively.
- British Geological Survey (BGS) Geology Map held by PBA.
- PBA Cavity Database (non-coal mining and natural cavities).

- Borehole Logs held by the British Geological Society (BGS) as accessed via their website, www.bgs.ac.uk/data/boreholescans/home.html. Where logs have been referred to they have been included in their entirety in **Appendix 5**.
- Environment Agency web site “What’s in Your Back Yard?” http://maps.environment-agency.gov.uk.
- Magic.gov website.
- Google Earth (2014).

2 Land Use Information

2.1 Introduction

This section presents a summary of current and historical land uses on and immediately adjacent to the site. Land use is used to inform the hazard identification element of the Tier 1 Risk Assessment.

The current land use information is based on a walkover inspection undertaken by PBA on the 4th December 2014. Photographs taken during the site walkover (Plates 1 to 20) are presented in **Appendix 2**. The main features noted during the site walkover are marked on the site Layout Plan including the locations of the Plates (**Figure 2**).

The historical land use information is based on Ordnance Survey maps and aerial photography provided by Landmark presented in **Appendix 3**. Particular attention is given to potentially contaminative land uses within or adjacent to the site boundary.

2.2 Current Land Use

2.2.1 On-Site

The site is currently split between commercial and retail buildings in the eastern/southern part of the site; and agricultural fields and grazing paddocks in the northern and western parts of the site.

The southern area of the site is currently occupied by the Applegarth Farm shop, which comprises a restaurant and retail shops (Plates 1 and 2) for food and gardening. The buildings are single storey and appear to be of a wooden timber frame construction, with one small prefabricated structure connected on the south east side of the main building, housing the toilet facilities.

Behind the main farm shop building there is a two storey building currently used for storage of mixed purpose items, eg, kitchen equipment and restaurant furniture. The surface around the storage building is predominantly concrete hard standing with smaller areas or tarmacadam and at the time of the walkover was predominantly being used for the storage of unused materials such as shelf racking, gas bottles, scrap metal, wooden pallets and other miscellaneous items (see Plate 7 - 8).

There are two soil mounds on the hard standing adjacent to the storage building and anecdotal evidence from the Client indicates that these are stockpiled topsoil from previous use of the land by a building merchant. There is an above ground propane tank (Plate 17) located in the centre of the site that is used to supply gas to the restaurant kitchens. The surface area in the vicinity of the main buildings is made of tarmacadam and used for access and parking, the majority of the tarmacadam was intact across the site although some small areas had been repaired where pot holes had occurred. At the time of the walkover there was no surface water evident and the drainage for the buildings consisted of metal drainage trenches around the perimeter of the buildings linked to soakaways (see Plate 1).

An outdoor children's play area (Plate 19) is present to the north west of the restaurant and chickens are currently kept in a pen within the play area. The surface of the play area is predominantly covered by wood chippings with pathways of concrete paving slabs.

The northern and western parts of the site are used primarily for agricultural purposes and as grazing for horses and goats (see Plate 16). A fertiliser storage and mobile distribution tank (see Plate13) was located in the central part of the site. The Client indicated that the tank was previously towed by a tractor and used to fertilise the site, however the fertiliser tank has not been used for a number of years. A small poly tunnel green house is located near the centre of the site. There are a number of mature deciduous trees approximately 15-20m in height, present along the south western boundary of the site, adjacent to Headley Road.

The main access into the site off Headley Road is shared by the adjacent golf centre and a further separate track to the golf centre crosses south western part of the site.

2.2.2 Off-Site

The current off site land use immediately surrounding the site is summarised below:

- West – Tri-Golf practice centre
- Southwest – Headely Road is present, with Grayshott Hall Spa and Ludshott Common beyond.
- Southeast – Agricultural land.
- Northeast – Agricultural land.

2.3 Historical Land Use

2.3.1 On-Site

The earliest Ordnance Survey (OS) map available of the site (dated 1870) indicates the site to be undeveloped, comprising multiple plots of several fields assumed to be in agricultural use by the adjacent Greyshott Farm.

With the exception of field boundary (trees and hedgerows) changes, the site remains undeveloped until approximately 1994 when a small building has been built in the south eastern part of the site. The 2006 OS map indicates that there has been further development in the eastern part of the site, corresponding to the current development layout. The latest OS map (2014) shows the current Applegarth Farm Shop and Garden Centre in the south eastern part of the site.

Google Earth images from 2001 show a large vegetable patch occupying the field to the north of the main building. The only buildings present on the site appear to be the Applegarth Farm shop and the storage warehouse at this time.

By 2005 the vegetable patch has been removed and instead the majority of the field to the north east of the site appears to be being used for vegetable growing. The poly tunnel (see Plate12) is situated in to the north of the site. A large compost heap is situated to the north east of the site, and the golf driving range has been developed to the west of the site.

During the walkover, a worker on the site indicated that the hard standing areas in the eastern part of the site were previously used as storage areas for a building merchant.

2.3.2 Off-Site

The earliest available OS map (1870) shows Greyshott Farm located approximately 100m to the south west of the site and Bulls Farm located approximately 200m to the west of the site. The Headley Road is shown as being present to the south and Hammer Lane is shown to the west of the site.

In the wider area surrounding the site, Ludshott Common is located approximately 400m to the south west of the site and Whitmoor Bottom is located approximately 400m to the north east of the site.

By 1897 Greyshott Farm has expanded and developed and is now labelled as Grayshott Hall. A spring is identified approximately 500m to the north east of the site.

The 1937 OS map indicates further dwellings built approximately 150m north of the site. After this time there is little significant change in the area surrounding the site until the early 1970's when the

residential development off Waggoners Way is built, approximately 400m to the south east of the site. The 1994 OS map shows an electrical substation situated approximately 50m south west of the site on the opposite side of Headley Road.

The latest OS map from 2014 shows the development of the Grayshott Golf Centre adjacent to the western boundary of the site.

3 Environmental Setting

3.1 Introduction

Information about the environment setting is used in the Hazard Assessment section of the risk assessment to identify potential pathways and receptors.

3.2 Geology

3.2.1 Published Geology

According to the British Geological Survey (BGS) 1:50,000 scale geological map (Sheet 301, Haslemere, BGS 1981) and the online British Geological Society (BGS) Geology Viewer, the indicated geological sequence is as follows:

- The site and surrounding land is underlain by the Hythe Formation overlying the Atherfield Clay (Cretaceous Period). The Hythe Formation comprises fine to medium grained sands, calcareous sands, sandstones and limestones with some clays. These often form alternate interbedded layers of hard grey or blue grey sandy fissured and fractured limestone and weathered argillaceous sandstone, sands and clays. The limestone layers may often include widened fissures and fractures, terms 'gulls' which are infilled with either overlying weathered sand/clay materials or any other superficial deposits.

- With the exception of the narrow strip of Alluvium associated with the unnamed stream to the north east of the site, there are no superficial deposits identified within the site boundary or in the near vicinity of the site.

An extract of the geological map is presented in **Figure 3**.

3.2.2 BGS Borehole Records

There are two borehole records (SU83NE54) located approximately 240m and (SU83NE74) 420m north west of the site respectively. The boreholes are indicated to have been drilled to depths of 36.8m and 41.61m below ground level (mbgl) in material described as the Hythe Beds. There are no strata records of the geological sequence available. Groundwater is recorded in SU83NE54 as 35m bgl or 145m AOD in 1880. A further record from 1965 indicated the base of the hole at 37m bgl or 143m AOD. Groundwater is recorded in SU83NE74 as 39m bgl or 133m AOD in 1880. A further record from 1965 indicated the base of the hole at 41m bgl or 132m AOD. A copy of the borehole logs are reproduced in **Appendix 5**.

3.3 Naturally Occurring Geological Hazards

An assessment of potential geological hazards that may give rise to instability or adverse foundation or construction conditions is supplied by Landmark (based on information from the BGS) in their Envirocheck report, reproduced in **Appendix 4**. The assessment is generated automatically based on digital geological maps and the scope and the accuracy is limited by the methods used to create the dataset and is therefore only indicative for the search area.

The information contained in the Landmark Envirocheck report has been reviewed and where considered necessary reassessed considering the specific information available for the site. The modified assessment of the potential for geological hazards to be present on the site is summarised in **Table 3.1** below.

Table 3.1 Summary of Geological Hazards from Landmark Envirocheck Report

Hazard	Assessed Hazard Potential	PBA Opinion/Comment
Coal Mining Affected Areas	Not affected	PBA agrees with this assessment.
Non Coal Mining Areas	Rare	PBA agrees with this assessment.
Compressible ground stability hazards	No Hazards	PBA agrees with this assessment.
Ground Dissolution Stability Hazards	No Hazards	PBA agrees with this assessment.
Collapsible Ground Stability Hazards	Very Low	PBA does not agree with this designation. We consider the hazard potential to be Moderately Low based on the potential for gulls and fissures to be present.
Landslide Ground Stability Hazards	Very Low	PBA does not agree with this designation. We consider the hazard potential to be Low – based on the potential for cambering and the presence of Atherfield Clay.
Running Sand Ground Stability Hazards	Low	PBA agrees with this assessment.
Shrinking or Swelling Clay Ground Stability Hazards	No Hazards	PBA agrees with this assessment.

PBA would generally agree with the above assessments indicating that the site is at a low or very low risk of being affected by geological hazards, with the exception of Collapsible Ground where the risk is assessed as **Moderately Low** due to the potential for gulls and fissures to be present. The topography of the site would not suggest that Landslides are of a particular risk but the underlying geology and effects of cambering would increase this risk to **Low**

Identified ground stability hazards are further discussed in **Section 5**.

3.3.1 Radon

The Envirocheck Report indicates the site is not located in a radon affected area or where 'radon protection measures are necessary' for new properties. This is supported by the BRE (2007) Radon Guidance on Protective Measures for New Buildings, which indicates that there are no areas in the local vicinity which require radon protection.

3.3.2 Natural and Non-Coal Mining Cavity Records – Cavity Searches

A search of the PBA Natural and Non-Coal Mining Cavities Database indicated that there are no recorded cavity locations within 2km of the site boundary.

3.4 Landfill Records

According to the Landmark Envirocheck report and EA website, there are no current landfills, historical landfills or waste management sites within 2km of the site boundary.

3.5 Substantiated Pollution Incidents

There is one recorded pollution incident to controlled waters within 500m of the site. The incident occurred in 1989 and was approximately 350m north of the site, recorded as a category 3 – minor incident. No further details are given. It is not considered that this is a significant issue for the redevelopment of the site.

3.6 Controlled Waters – Groundwater

The following table summarises information recorded in the Landmark Envirocheck Report regarding hydrogeology and groundwater vulnerability.

Table 3.2 Summary of Hydrogeology and Groundwater Vulnerability Related Information

Item	Details
Aquifer Classification	Bedrock – Principle Aquifer
Depth to Groundwater	Borehole SU83NE54 records the water level as being 35m bgl or 15m AOD. Borehole SU83NE74 records the water level at 39m bgl or 133.32m AOD.
Groundwater Flow Direction	Unknown – possibly north east towards Whitmoor Vale
Source Protection Zone (SPZ)	None on Site – SPZ 3 located adjacent to the southern site boundary.
Groundwater Abstraction	No water abstraction license within 1km of the site boundary.

3.7 Controlled Waters – Surface Water

The following table summarises the information recorded in the Landmark Envirocheck Report regarding hydrology.

Table 3.3 Summary of Surface Water Related Information

Item	Details
Name	Surface Water Feature – approximately 200m south west of the site. Unnamed Lake/Reservoir – approximately 330m north east of the site. Unnamed Secondary River – approximately 340m north east of the site.
Quality	Unknown
Abstraction	None within 1km of the site boundary.
Pollution Incidents	One pollution incident recorded approximately 350m north of the site boundary. Registered as a category 3 – minor incident. Two further pollution incidents located within 1km of the Site. Both category 3 – minor incidents.
Discharge Consents	Two discharge consents within 500m of the site boundary. The first is located approximately 310m east of the site, is from a single domestic property and allows final/treated effluent sewage to be discharged to the groundwater. The second is located 460m north east of the site, is from a single domestic property and allows final/treated effluent sewage to be discharged into the Whitmoor Vale Stream.

River Flood Risk *	Not within a flood zone.
Groundwater Flood Risk *	Unknown.
* The scope of this report does not include a flood risk assessment.	

3.7.1 Directories not listed in the Enivrocheck Report

The Grayshott golf centre which bounds the site to the north west was not listed as a trade directory in the Envirocheck Report. The golf centre is a commercial recreational property and given the nature of the use is not considered to pose a significant geoenvironmental risk to the site or proposed development.

An electrical substation is located approximately 30m south west of the site on the south side of the Headley Road, in the Grayshott Spa area. Assuming the substation is maintained it would not be considered to pose a significant geoenvironmental risk to the site or proposed development.

3.8 Environmentally Sensitive Sites

The Landmark Envirocheck report indicates that there are four areas within 1km of the site that are classed as environmentally sensitive sites. The Surrey Hills, located approximately 310m north east of the site is designated an Area of Outstanding Natural Beauty. The Bramshott and Ludshott Commons located approximately 340m south west of the site are classed as Sites of Special Scientific Interest (SSSI). Wealden Heaths Phase II located 340m south west of the site is classified as a Special Protection Area. The Whitmoor Hanger located 550m north east of the site is recorded as an Ancient Woodland and an Area of Adopted Green Belt.

The land bordering the site to the south east has been designated as SANG (Suitable Alternative Natural Green Space), and is proposed to be retained as such during any redevelopment.

The Magic website (magic.gov) confirms the environmentally sensitive sites detailed in the Envirocheck report.

4 Tier 1 Preliminary Risk Assessment

4.1 Introduction

The methodology developed and adopted by PBA for the assessment of ground conditions is presented in **Appendix 1.** In accordance with guidance presented in CLR 11 (EA Model Procedures for the Management of Land Contamination) we adopt a staged approach risk assessment and this report presents a Tier 1 assessment or first stage.

The underlying principle to ground condition assessment is the identification of pollutant linkages in order to evaluate whether the presence of a source of contamination could potentially lead to harmful consequences.

4.2 Conceptual Site Model

The Tier 1 Preliminary Risk Assessment includes the development of a conceptual site model (CSM). The CSM describes the types and locations of potential contamination sources, the identification of potential receptors and the identification of potential transport/migration pathways.

For a pollutant linkage to be identified a connection between all three elements (source-pathway-receptor) is required.

4.3 Geoenvironmental Hazard Identification

4.3.1 On Site

Based on the known current and historical land uses the potential for significant widespread ground contamination to be present is considered to be **Low**, however there may be localised sources present;

- An area of the site has been used for a small bonfire and ash is present within this area (Plate 9).
- An above ground propane tank is retained on the site for energy supply to the restaurant kitchen. Whilst this does not necessarily represent a potential source of contamination (due to volatilisation of any leaks or spills) – it could represent a potential explosion hazard and the assessment of such is outside the scope of this report. At the time of the walkover the tank and associated pipework appeared to be in good repair (Plate 17).
- The waste materials storage area (Plates 7 - 8).
- The mounds of soil at the rear of the storage building appeared to be naturally occuring topsoil but could potentially contain made ground (Plate 6 & 10).
- The former fertiliser distribution tank (Plate 13) and use of agricultural plant could have resulted in localised spills of oils, fuels or agricultural chemicals.

No further on-site current or historical potential sources of contamination have been identified at the site.

The potential for contamination to be present based on the past and present site use is assessed as classification score ‘1’; **Very Low**. (see Table 1, **Appendix 1**)

4.3.2 Off Site

Based on the known current land use (agricultural and residential) and historical land use (agricultural) adjacent to the Site, the potential for widespread contamination to be present in the area surrounding the site is **Very Low** and is assessed as classification score '1'. (see Table 1, **Appendix 1**)

4.3.3 Summary of Potential Sources of Contamination

The potential sources of contamination on the site are the small areas used for bonfires, the fertiliser tank, the waste area and the stockpiled soil.

4.3.4 Potential Contaminants of Concern

- Polycyclic Aromatic Hydrocarbons (localised)
- Metals (localised)
- Hydrocarbons (localised)
- Agrochemicals (localised)

4.4 Hazard Assessment

4.4.1 Identification of Potential Receptors

It is understood that it is intended to redevelop the site for commercial and retail end use. Details of the potential receptors considered and whether or not the receptor is plausible are presented in the following table:

Table 4.1 Potential Receptors

Receptor Type	Comment	Potential Receptor? (Y/N)
Human	End User Current = Commercial, retail, agriculture, children play area. End User Future = Commercial, retail, agriculture, children play area. Service/Maintenance = Commercial/Retail Off Site = Residential Construction workers	Y Y Y N Y
Surface Waters	None within 200m of the site	N
Groundwater	Principle Aquifer	Y
Buildings / Materials	Existing structures and proposed	Y
Property – Including crops, livestock, buildings etc.	Farm currently growing crops and small amount of livestock.	Y
Ecological Systems	Present in the wider local areas.	Y

4.4.2 Identification of Potential Pathways

Table 2 in the PBA methodology describes possible pathways for each receptor type. Each of these possible pathways is then considered when assessing the possible pollutant linkage (see below).

4.4.3 Potential Pollutant Linkages

Potential pollutant linkages have been identified using the information on potential sources (contamination types), receptors and exposure pathways. The table in **Appendix 6** identifies which pollutant linkages are considered to potentially exist.

4.5 Risk Estimation

When there is a pollutant linkage (and therefore some measure of risk) it is necessary to determine whether the risk matters and therefore whether further action is required. Risk estimation involves predicting the likely consequences (what degree of harm might result) and the probability that the consequences will arise (how likely the outcome is).

The table in **Appendix 6** presents an assessment of consequences and probability for each potential pollutant linkage identified. Based on the information available, and assuming worst case scenario, the estimated risks have been designated as follows:

- Human Health Current Users – **Very Low**
- Human Health Future Users – **Very Low**
- Human Health Off Site – **Very Low**
- Human Health Construction Workers – **Very Low**
- Groundwater – **Very Low**
- Surface water – **Very Low**
- Buildings – **Very Low**
- Ecological Systems – **Very Low**
- Animal & Crops – **Very Low**

The estimated risk of Very Low is defined as:

'There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.'

4.6 Risk Evaluation

Possible pollutant linkages are determined using professional judgement. If a linkage is considered possible, it is considered that this represents a potentially 'unacceptable risk' and therefore requires further consideration. This may be through remediation or mitigation or through further tiers of assessment.

Whilst an intrusive investigation would be required to positively define the extent and nature of the ground conditions, it is considered likely that due to the nature and/or scale of the land use activity viable risk management options are available. For human health it is considered that any residual risks can be managed through localised mitigation measures or remediation if necessary, and adoption of good practise measures during construction/demolition.

On this basis, there is no reason that the Site would be designated as Contaminated Land under Part IIa of the Environmental Protection Act 1990.

4.7 Uncertainties and Data Gaps

The available ground condition data is preliminary in nature. Further site specific data from an intrusive ground investigation would ultimately be required to confirm the ground conditions and verify the very low risk.

5 Preliminary Ground Stability Risk Assessment

5.1 Introduction

National Planning Policy Framework (NPPF) Clause 121 requires an assessment for a site potentially at risk from ground instability. The aspects considered with regards to ground instability are related to:

- Artificial Cavities
- Natural Cavities
- Foundation Conditions

Consideration is given below to the risk of these potential causes of instability arising from existing ground conditions across the site, as identified by the data review.

5.2 Cavities

5.2.1 Natural Cavities

There are no records of natural cavity occurrence in the National Cavity Database, (see **Section 3.3**) within 2 km of the site, and the BGS NGIS assess the risk of ground dissolution stability hazards as **Negligible** and landslide ground stability hazards as **Very Low**.

The Hythe Formation is potentially susceptible to the development of natural cavities in the form of gulls/fissures and the process of cambering and underlying geology could result in mass movement (landslides) where topographical conditions are conducive to such mechanisms being present.

Cambering and gull/fissure (vertical fractures) development can occur where the topography is conducive to downward block movement of the relatively rigid and brittle sandstones and limestones of the Hythe Formation overlying more plastic formations such as any silt or clay/mudstone layers within the Hythe beds or the Atherfield Clay below. The combination of geological succession and topography at the site indicates that the potential for cambering and gull/fissure development within the site boundary is considered to be **Moderately Low**.

5.2.2 Artificial Cavities

A search of the PBA Non-Coal Mining Cavities Database indicates that there are no recorded cavity locations within 2km of the site boundary.

The database and published records reviewed during the desk study have identified no known records of coal or non-coal mining activity in this general locality.

The risk to the site from artificial cavities is expected to be **Very Low.**

5.2.3 BGS Recorded Mineral Sites

The Envirocheck report indicates that there are two records of BGS recorded mineral sites identified within 1km of the site (Grayshott Court Gravel Pits and Headley Common). These are identified as ‘Opencast’ gravel pits, and both locations are indicated to have ‘ceased’ activities.

5.3 Potential Adverse Foundation Conditions

This study had indicated that the site is directly underlain by the Hythe Formation overlying the Atherfield Clay, with no Superficial deposits present. The full extent, thickness and nature of the strata

at the site have not been determined at the current time. In due course this information will be required to inform detailed foundation and infrastructure design.

This Ground Condition Assessment has identified that there is a **Moderately Low** potential for gulls and fissures to be present within the site boundary due to the combination of geology and topography present. If such features are confirmed to be present, it is unlikely that conventional shallow spread strip and pad foundations will be suitable for the proposed development. In this situation, reinforced strip or trench fill or grillage foundations with minimum widths and cantilever spans are likely to be required. Depending on the size and load of the proposed buildings, piled foundations may be a possible option, the specific details and design of which would be determined following ground investigation and testing, and with reference to the proposed masterplan.

The presence of such features could also affect the surface water drainage solution for any proposed development as infiltration drainage is unlikely to be suitable close to proposed buildings, without an unacceptable risk of triggering collapse of loose in-filled materials within gulls or fissures. Consideration may have to be given to siting of any soakaways a minimum 10m from any structures or primary infrastructure, and/or the adoption of deep bored soakaways discharging to the more competent materials. It should be recognised that the infiltration rate of the Hythe Beds, due to its interbedded nature will be highly variable across short distances and site based infiltration tests will need to be undertaken at the location of each infiltration device to confirm its design.

Notwithstanding the above, this Ground Condition Assessment has not revealed any other significant, difficult or unusual geotechnical problems or constraints that would lead to abnormal foundation or infrastructure development costs.

If during development, any areas of Made Ground or filled ground are encountered, bespoke foundations may be required depending on the material properties and thickness. These may include trench fill or piled foundations into the more competent underlying natural strata.

It is recommended that structure/ plot specific ground investigations are carried out once the masterplan is finalised to determine the actual ground conditions beneath the proposed structures/plots, and that during development a geotechnical specialist inspect footing excavations to determine the presence of any localised gulls or fissures that may require affirmative remedial action or incorporation of mitigation measures.

6 Conclusions and Recommendations

6.1 Conclusions

The site was predominantly in use for agricultural purposes from the first available map dated 1870, until around 1994 when the first building was developed on the site. Since 1994 subsequent development has occurred at the site until the current layout was established.

From a review of the desk based information and a site walkover there are not considered to be any significant current or historic on-site or off-site potential sources of contamination at the site or in the immediate surrounding area. There may be some localised areas of elevated concentrations of potential contaminants, related to the waste storage area, the small bonfire area, localised spillages associated with the fertiliser tank/use of agricultural plant and the mounds of stockpiled soil.

The on and off-site contaminants of concern based on the identified land use are therefore hydrocarbons, PAH's, metals and agrochemicals.

Potential pollutant linkages have been identified on the site using the information on potential sources, receptors and exposure pathways. The estimated risk for the identified pollutant linkages is **Very Low**.

Possible pollutant linkages have been identified but it is considered that any risks identified can be managed and reduced to an acceptable level through a combination of mitigation, remediation, design and adoption of good practice measures during construction.

The potential for adverse foundation conditions (gulls and fissures) to be present at the site has been assessed as **Moderately Low**, and further research and a ground investigation will be required as part of the work to inform detailed design, post consent. Otherwise there are no significant, difficult or unusual geotechnical problems or constraints that would lead to abnormal foundation or infrastructure costs.

6.2 Recommendations

A Phase 2 intrusive ground investigation will be required prior to commencement of any development, to fully characterise the ground conditions at the site, and to inform the detailed design process.

7 Essential Guidance for Report Readers

This report has been prepared within an agreed timeframe and to an agreed budget that will necessarily apply some constraints on its content and usage. The remarks below are presented to assist the reader in understanding the context of this report and any general limitations or constraints. If there are any specific limitations and constraints they are described in the report text.

The opinions and recommendations expressed in this report are based on statute, guidance, and best practice current at the time of its publication. Peter Brett Associates LLP (PBA) does not accept any liability whatsoever for the consequences of any future legislative changes or the release of subsequent guidance documentation, etc. Such changes may render some of the opinions and advice in this report inappropriate or incorrect and the report should be returned to us and reassessed if required for re-use after one year from date of publication. Following delivery of the report PBA has no obligation to advise the Client or any other party of such changes or their repercussions.

Some of the conclusions in this report may be based on third party data. No guarantee can be given for the accuracy or completeness of any of the third party data used. Historical maps and aerial photographs provide a “snap shot” in time about conditions or activities at the site and cannot be relied upon as indicators of any events or activities that may have taken place at other times.

The conclusions and recommendations made in this report and the opinions expressed are based on the information reviewed and/or the ground conditions encountered in exploratory holes and the results of any field or laboratory testing undertaken. There may be ground conditions at the site that have not been disclosed by the information reviewed or by the investigative work undertaken. Such undisclosed conditions cannot be taken into account in any analysis and reporting.

This report has been written for the sole use of the Client stated at the front of the report in relation to a specific development or scheme. The conclusions and recommendations presented herein are only relevant to the scheme or the phase of project under consideration. This report shall not be relied upon or transferred to any other party without the express written authorisation of PBA. Any such party relies upon the report at its own risk.

The interpretation carried out in this report is based on scientific and engineering appraisal carried out by suitably experienced and qualified technical consultants based on the scope of our engagement. We have not taken into account the perceptions of, for example, banks, insurers, other funders, lay people, etc, unless the report has been prepared specifically for that purpose. Advice from other specialists may be required such as the legal, planning and architecture professions, whether specifically recommended in our report or not.

Public or legal consultations or enquiries, or consultation with any Regulatory Bodies (such as the Environment Agency, Natural England or Local Authority) have taken place only as part of this work where specifically stated.

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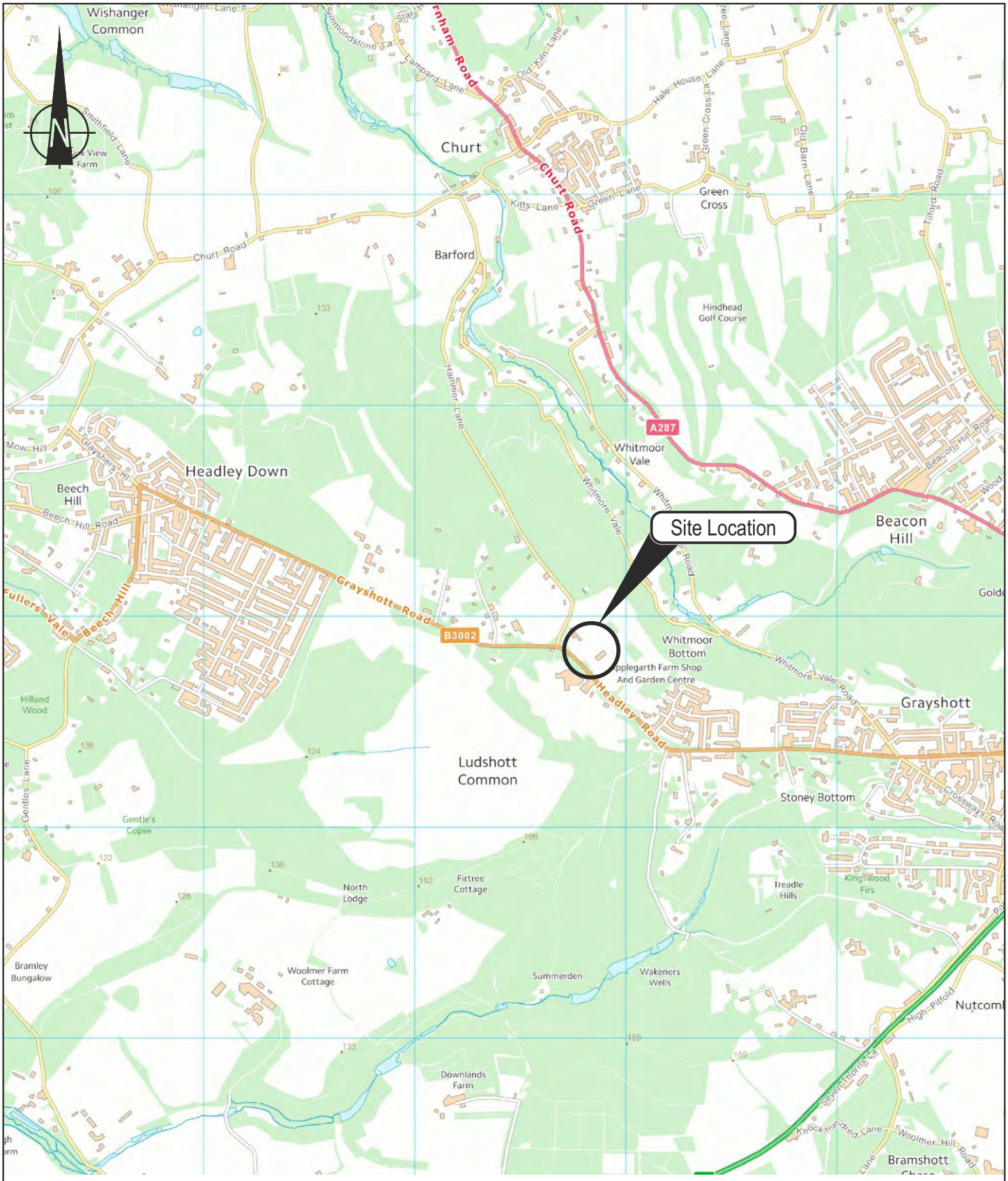
Figures



Site Grid Ref: SU 858 358

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Applegarth Farm

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APPLEGARTH FARM, GRAYSHOTT

SITE LOCATION PLAN

Date	04.12..2014
Scale	1:25 000
Drawn by	davco
Checked by	AJ
Revision	0

FIGURE 1

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Applegarth Farm

Google Earth

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Image Date: June 2013

APPLEGARTH FARM, GRAYSHOTT

SITE LAYOUT PLAN

Date	10.12.2014
Scale	1:1250
Drawn by	davco
Checked by	AJ
Revision	0

FIGURE 2

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J:\32939 Applegarth Farm\3501 Geo\04 CAD & Graphics\Corel

Approximate Site Boundary

Alluvium (Superficial)

Hy — Hythe Beds (Bedrock)

AC — Atherfield Clay (Bedrock)

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Applegarth Farm

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APPLEGARTH FARM, GRAYSHOTT

EXTRACT OF PUBLISHED GEOLOGY

Date	10.12.2014
Scale	1:50 000
Drawn by	davco
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Revision	0

FIGURE 3

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Appendix 1 PBA Methodology for Assessment of Potentially Contaminated Land – December 2014

PBA Methodology for Assessing Land Contamination in England

1 Introduction

This document defines the approach adopted by PBA in relation to the assessment of land contamination in England. The aim is for the approach to (i) be systematic and objective, (ii) provide for the assessment of uncertainty and (iii) provide a rational, consistent, transparent framework.

When preparing our methodology we have made reference to various technical guidance documents and legislation referenced in Section 7 of which the principal documents are (i) Contaminated Land Statutory Guidance (Defra 2012), (ii) the Model Procedures for the Management of Contamination (CLR 11) (EA 2004), (iii) Contaminated land risk assessment: A guide to good practice (C552) (CIRIA 2001) and (iv) National Planning Policy Framework (DCLG 2012).

2 Dealing with Land Contamination

Government policy on land contamination aims to prevent new contaminated land from being created and promotes a risk based approach to addressing historical contamination. With regard to historical contamination, regulatory intervention is held in reserve for land that meets the legal definition and cannot be dealt with through any other means, including through planning. Land is only considered to be "contaminated land" in the legal sense if it poses an unacceptable risk.

UK legislation on contaminated land is principally contained in Part 2A of the Environmental Protection Act, 1990 (which was inserted into the 1990 Act by section 57 of the Environment Act 1995). Part 2A was introduced in England on 1 April 2000 and provides a risk-based approach to the identification and remediation of land where contamination poses an unacceptable risk to human health or the environment. In 2004 the Model Procedures for the Management of Contamination (CLR 11) were published providing guidance on how the statutory requirements were to be delivery. The approach, concepts and principles for land contamination management promoted by CLR 11 are applied to the determination of planning applications.

Other legislative regimes may also provide a means of dealing with land contamination issues, such as the regimes for waste, water, environmental permitting, and environmental damage. Further, the law of statutory nuisance may result in contaminants being unacceptable to third parties whilst not attracting action under Part 2A or other environmental legislation.

2.1 Part 2A

The Regulations and Statutory Guidance that accompanied the Act, including the Contaminated Land (England) Regulations 2006, has been revised with the issue of The Contaminated Land (England) (Amendment) Regulations 2012 (SI 2012/263) and the Contaminated Land Statutory Guidance for England 2012.

Part 2A defines contaminated land as "*land which appears to the Local Authority in whose area it is situated to be in such a condition that, by reason of substances in, on or under the land that significant harm is being caused, or there is a significant possibility that such harm could be caused, or pollution of controlled waters is being, or likely to be, caused*".

Harm is defined as "*harm to the health of living organisms or other interference with the ecological systems of which they form part, and in the case of man, includes harm to his property*".

For the purposes of Part 2A, land is contaminated if it poses a significant possibility of significant harm (SPOSH).

Part 2A provides a means of dealing with unacceptable risks posed by land contamination to human health and the environment, and under the guidance enforcing authorities should seek to find and deal with such land. It states that "*under Part 2A the starting point should be that land is not contaminated land unless there is reason to consider otherwise. Only land where unacceptable risks are clearly identified, after a risk assessment has been undertaken in accordance with the Guidance, should be considered as meeting the Part 2A definition of contaminated land*". Further the guidance makes it clear that *"regulatory decisions should be based on what is reasonably likely, not what is hypothetically possible".*

The overarching objectives of the Government's policy on contaminated land and the Part 2A regime are:

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

The enforcing authority may need to decide whether and how to act in situations where decisions are not straight forward, and where there is uncertainty. "*In so doing, the authority should use its judgement to strike a reasonable balance between: (a) dealing with risks raised by contaminants in land and the benefits of remediating land to remove or reduce those risks; and (b) the potential impacts of regulatory intervention including financial costs to whoever will pay for remediation, health and environmental impacts of taking action, property blight, and burdens on affected people".* The authority is required to "*take a precautionary approach to the risks raised by contamination, whilst avoiding a disproportionate approach given the circumstances of each case".* The aim is "*that the regime produces net benefits, taking account of local circumstances*".

The guidance recognises that *"normal levels of contaminants in soils should not be considered to cause land to qualify as contaminated land, unless there is a particular reason to consider otherwise".*

Normal levels are quoted as:
"a) natural presence of contaminants' such as from underlying geology *'that have not been shown to pose an unacceptable risk to health and the environment*
b) …low level diffuse pollution, and common human activity…"

Similarly the guidance states that significant pollution of controlled waters is required for land to be considered contaminated and the "*fact that substances are merely entering water"* or "*where discharge from land is not discernible at a location immediately downstream"* does not constitute contaminated land.

To help achieve a more targeted approach to identifying and managing contaminated land in relation to the risk (or possibility) of harm to human health, the revised Statutory Guidance presented a new four category system for considering land under Part 2A, ranging from Category 4, where there is no risk that land poses a significant possibility of significant harm (SPOSH), or the level of risk is low, to Category 1, where the risk that land poses a significant possibility of significant harm (SPOSH) is unacceptably high.

For land that cannot be readily placed into Categories 1 or 4 further assessment is required. If there is a sufficiently strong case that the risks are of sufficient concern to cause significant harm/pollution or have the significant possibility of significant harm/pollution the land is to be placed into Category 2. If the concern is not met land is considered Category 3.

The technical guidance clearly states that the currently published SGV and GAC's represent *"cautious estimates of level of contaminants in soils"* which should be considered *"no risk to health or, at most, a minimal risk"*. These values do not represent the boundary between categories 3 and 4 and "*should be considered to be comfortably within Category 4".*

At the end of 2013 technical guidance in support of Defra's revised Statutory Guidance (SG) was published (CL:AIRE 2013) which provided:

- A methodology for deriving C4SLs for four generic land-uses comprising residential, commercial, allotments and public open space; and
- A demonstration of the methodology, via the derivation of C4SLs for six substances – arsenic, benzene, benzo(a)pyrene, cadmium, chromium (VI) and lead.

2.2 Planning

The Local Planning Authority (LPA) is responsible for the control of development, and in doing so it has a duty to take account of all material considerations, including contamination.

Section 11, Paragraph 109 of the National Planning Policy Framework (NPPF) (DCLG 2012) states the planning system should contribute to and enhance the natural and local environment by *"preventing both new and existing developments from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water pollution"* and *"remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate"*. Paragraphs 120 and 121 describe the policy considerations the Government expects LPA to have in regard to land affected by contamination when preparing policies for development plans and in taking decisions on applications.

For planning purposes, the NPPF requires that the assessment of risks arising from contamination and remediation requirements should be considered on the basis of the current environmental setting, the current land use, and the circumstances of its proposed new use The NPPF stipulates that planning policies and decisions should 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 from previous uses and any proposals for mitigation including land remediation or impacts on the natural environment arising from that remediation"; and that "after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990; and adequate site investigation information, prepared by a competent person, is presented."

The level at which contamination is deemed to be unacceptable, or, gives rise to adverse effects under a planning context has not been identified but is envisaged to be more precautionary than the level required to detrmine land as contaminated under Part 2A.

In paragraph 121 the developer is required to ensure that land, after development, is not capable of being determined as contaminated land under Part 2A of the EPA 1990.

The principal planning objective is to ensure that any unacceptable risks to human health, buildings and other property and the natural and historical environment from the contaminated condition of the land are identified so that appropriate action can be considered and taken to address those risks. In order to grant a planning permission the Local Planning Authority (LPA) has to be satisfied that there is sufficient information about the condition of the land, its impacts and the availability of viable remedial options. NPPF Paragraph 21 states that *"planning policies and decisions should also ensure that adequate site investigation information, prepared by a competent person, is presented".* Site investigation information is further defined in the NPPF Glossary page 56 and that also states that investigations should be carried out in accordance with established procedures, including BS10175 (BSI 2011) that in turn links procedure to the requirements of CLR11.

A key distinction between the Soil Guideline Values (SGVs) and the C4SLs is the level of risk that they describe. As described by the Environment Agency (2009a):

"SGVs are guidelines on the level of long-term human exposure to individual chemicals in soil that, unless stated otherwise, are tolerable or pose a minimal risk to human health."

A letter from Lord de Mauley dated 3rd September 2014 provides more explicit direction to local authorities on the use of the C4SL in a planning context. The letter identifies four key points:

1) that the screening values were developed expressly with the planning regime in mind
2) their use is recommended in DCLG's planning guidance
3) soil concentrations below a C4SL limit are considered to be 'definitely not contaminated' under Part llA of the 1990 Environmental Protection Act and pose at most a 'low level of toxicological concern' and
4) exceedance of a C4SL screening value does not mean that land is definitely contaminated, just that further investigation may be warranted.

2.3 Building Control

The building control department of the local authority or private sector approved inspectors are responsible for the operation and enforcement of the Building Regulations (DCLG 2010) to protect the health, safety and welfare of people in and around buildings. Approved Document C requires the protection of buildings and associated land from the effects of contamination, to be applied (non-exclusively) in all changes of use from commercial or industrial premises, to residential property.

3 Approach

CLR 11 recommends a phased or tiered approach to risk assessment with the three tiers being:-

- Tier 1 - preliminary – a qualitative assessment forming part of a Phase 1 report,
- Tier 2 - generic - a quantitative assessment using published criteria to screen site specific ground condition data forming part of a Phase 2 report
- Tier 3 - detailed – a quantitative assessment involving the generation of site specific assessment criteria

Each tier of risk assessment comprises the following four stages:-

1. Hazard Identification – identifying potential contaminant sources on and off site;
2. Hazard Assessment – assessing the potential for unacceptable risks by identifying what pathways and receptors could be present, and what pollutant linkages could result (forming the Conceptual Site Model (CSM));
3. Risk Estimation – estimating the magnitude and probability of the possible consequences (what degree of harm might result to a defined receptor and how likely); and
4. Risk Evaluation – evaluating whether the risk needs to be, and can be, managed.

A PBA Phase 1 report normally comprises a desk study, walkover and Tier 1 risk assessment (the project specific offer defines the actual scope of work). This is the minimum requirement as defined by the NPPF, pp56. At Tier 1 the PBA approach to risk estimation involves identifying the magnitude of the potential consequence (taking into account both the potential severity of the hazard and the sensitivity of the receptor) and the magnitude of the likelihood i.e. the probability (taking into account the presence of the hazard and the receptor and the integrity of the pathway). This approach is promoted in current guidance such as R&D 66 (NHBC 2008).

The PBA approach is that if a pollution linkage is identified then it represents a potential risk which requires further consideration and either (1) remediation / direct risk management or (2) further tiers of assessment.

A PBA preliminary Phase 2 report comprises an intrusive investigation to collect site specific information, a Tier 2 quantitative generic risk assessment and a refinement of the CSM using the site specific data. Depending on the findings further investigation and/or progression to Tier 3 risk assessment and the generation of site specific assessment criteria may be required.

The PBA methodology provides an estimate of the level of risk, it does not identify a risk level at which the risk is considered “significant” and/or “unacceptable” as this is dependant on the view of the individual / stakeholder. For example; to a risk adverse stakeholder even a risk level of “very low” may be considered unacceptable and as such this stakeholder may require risk management options to be implemented.

4 Identification of Pollutant Linkages and Conceptual Site Model (CSM)

For all Tiers the underlying principle to ground condition assessment is the identification of *pollutant linkages* in order to evaluate whether the presence of a source of contamination could potentially lead to harmful consequences. A pollutant linkage consists of the following three elements:-

- A source/hazard – a substance or situation which has the potential to cause harm or pollution;
- A pathway – a means by which the hazard moves along / generates exposure; and
- A receptor/target – an entity which is vulnerable to the potential adverse effects of the hazard.

The *Conceptual Site Model* identifies the types and locations of potential contaminant sources/hazards and potential receptors and potential migration/transportation pathway(s). The CSM is refined as the assessment progresses through the Tiers.

4.1 Hazard Identification

A hazard is a substance or situation that has the potential to cause harm. Hazards may be chemical, biological or physical (e.g. explosive gases).

At Tier 1 the potential for hazards to be present is determined from consideration of the previous or ongoing activities on or near to the site in accordance with the criteria presented in the **Table 1**.

Based on the land use information Potential Contaminants of Concern (PCOC) are identified. The PCOC direct the scope of the collection of site specific data and the analytical testing selected for subsequent Tiers.

At Tier 2 the site specific data is screened using published assessment criteria (refer to PBA document entitled Rationale for the Selection of Tier 2 Assessment Criteria). In general, published criteria have been developed using highly conservative assumptions and therefore if the screening criterion is not exceeded then the PCOC is eliminated as a potential Hazard. It should be noted that exceedance does not necessarily indicate that a site is contaminated and/or unsuitable for use only that the PCOC is retained as a potential Hazard. Published criteria are generated using models based on numerous and complex assumptions. Whether or not these assumptions are appropriate in a site-specific context requires confirmation on a project by project basis and would form part of a Tier 3 assessment.

When reviewing or assessing site specific data PBA utilise published guidance on comparing contamination

data with a critical concentration (CL:AIRE/CIEH 2008) which presents a structured process for employing statistical techniques for data assessment purposes. The benefit of the statistical tool is uncertainty is quantified and decisions are made knowing the strength of the evidence. Correct decision probability is a function of sample size, difference in the mean and the critical concentration, variation in measured values and the significance level.

4.2 Receptor and Pathway Identification

For all Tiers the potential receptors (for both on site and adjoining land) that will be considered are:

- Human Health – including current and future occupiers, construction and future maintenance workers, and neighbouring properties/third parties;
- Ecological systems; *[1]
- Controlled waters *[2] – including surface water and groundwater;
- Property, Animal or Crop (existing or proposed) - including buildings, service lines and pipes, crops, livestock, pets, woodland; and
- Archaeological sites and ancient monuments.

*[1] International or nationally designated sites (as defined in the statutory guidance (Defra Circular 04/12)) "in the local area" will be identified as potential ecological receptors. A search radius of 1, 2 or 5km will be utilised depending on the site specific circumstances (see also pathway identification). The Environment Agency has published an ecological risk assessment framework (EA 2008) which promotes (as opposed to statutorily enforces) consideration of additional receptors to include locally protected sites and protected or notable species. These additional potential receptors will only be considered if a Phase 1 habitat survey, undertaken in accordance with guidance (JNCC 1993), is commissioned and the data provided to PBA. It should be noted that without such a survey the Tier 1 risk assessment may conclude that the identification of potential ecological receptors is inconclusive (refer to PBA Specification for Phase 1).

*[2] the definition of "pollution of controlled water" was amended by the introduction of Section 86 of the Water Act 2003. For the purposes of Part 2A groundwater does not include waters above the saturated zone and our assessment does not therefore address perched water other than where development causes a pathway to develop.

If a receptor is taken forward for further assessment it will be classified in terms of its sensitivity, the criteria for which are presented in **Table 2**. Table 2 has been generated using descriptions of environmental receptor importance/value given in various guidance documents including R&D 66 (NHBC 2008) and Transport Analysis Guidance (based on DETR 2000). Human health and buildings classifications have been generated by PBA using the attribute description for each class.

The exposure pathway and modes of transport that will be considered are presented in **Table 3**.

4.3 Note regarding Ecological Systems

The Environment Agency (EA) has developed an ecological risk assessment framework which aims to provide a structured approach for assessing the risks to ecology from chemical contaminants in soils (EA 2008). In circumstances where contaminants in water represent a potential risk to aquatic ecosystems then risk assessors will need to consider this separately.

The framework consists of a three tiered process:-

- Tier 1 is a screening step where the site soils chemical data is compared to a soil screening value (SSV)
- Tier 2 uses various tools (including surveys and biological testing) to gather evidence for any harm to the ecological receptors
- Tier 3 seeks to attribute the harm to the chemical contamination

Tier 1 is preceded by a desk study to collate information about the site and the nature of the contamination to assess whether pollutant linkages are feasible. The framework presents ten steps for ecological desk studies and development of a conceptual site model as follows.

1 Establish Regulatory Context
2 Collate and Assess Documentary Information
3 Summarise Documentary Information
4 Identify Potential Contaminants of Concern
5 Identify Likely Fate Transport of Contaminants
6 Identify Potential Receptors of Concern
7 Identify Potential Pathways of Concern
8 Create a Conceptual Site Model
9 Identify Assessment and Measurement Endpoints
10 Identify Gaps and Uncertainties

The information in a standard PBA Phase 1 report covers Steps 1 to 4 inclusive. Step 5 considers fate and transport of contaminants and it should be noted that our standard report adopts a simplified approach considering only transport mechanisms. A simplified approach has also been adopted in respect of Steps 6 and 7 receptors (a detailed review of the ecological attributes has not been undertaken) and pathways (a food chain assessment has not been undertaken).
Step 9 is outside the scope of our standard Phase 1 report.

It should be noted that the Tier 1 assessment for ecological systems (i.e. where designated sites are identified) as part of a Phase 1 report will assess the viability of the mode of transport given the site specific circumstances not specific pathways.

The Tier 1 risk assessment may conclude that the risk to potential ecological receptors is inconclusive (see PBA Specification for Phase 1).

4.4 Note regarding Controlled Waters

Controlled Waters are rivers, estuaries, coastal waters, lakes and groundwaters, but not perched waters.

The Water Framework Directive (WFD) (2000) aims to protect and enhance the quality of surface freshwater, groundwaters and dependent eco systems, estuaries and coastal waters. The WFD was transposed into UK law in 2003 (Statutory Instruments 2003). Member states must aim to reach good chemical and ecological status as defined in the Directive by 2015.

The Ground Water Daughter Directive (GWDD) was enacted by the Groundwater Regulations (2009), which were subsumed by the Environmental Permitting Regulations (2010) which provide essential clarification including on the four objectives specifically for groundwater quality in the WFD:-

- Achieve 'Good' groundwater chemical status by 2015, commonly referred to as 'status objective';
- Achieve Drinking Water Protected Area Objectives;
- Implement measures to reverse any significant and sustained upward trend in groundwater quality, referred to as 'trend objective'; and
- Prevent or limit the inputs of pollutants into groundwater, commonly referred to as 'prevent or limit' objectives

The Water Act 2003 (Commencement No.11) Order 2012 amends the test for 'contaminated land' which relates to water pollution so that pollution of controlled waters must now be "significant" to meet the definition of contaminated land.

River Basin Management Plans (RBMP) have been developed for the 11 River Basin Districts in England and Wales. These were released by Defra in 2009 (Defra 2009).

These RBMP's establish the current status of waters within the catchments of the respective Districts and the current status of adjoining waters identified. As part of a Tier 2 risk assessment water quality data is screened against the WFD assessment criteria. Compare to the RBMP's current status of waters for the catchment under consideration would form part of a Tier 3 assessment.

5 Risk Estimation

Risk estimation classifies what degree of harm might result to a receptor (defined as consequence) and how likely it is that such harm might arise (probability).

At Tier 1 the consequence classification is generated by multiplying the hazard classification score and the receptor sensitivity score. This approach follows that presented in the republished R&D 66 (NHBC 2008).

The criteria for classifying probability are set out in **Table 4** and have been taken directly from Table 6.4 CIRIA C552 (CIRIA 2001). Probability considers the integrity of the exposure pathway.

The consequence classifications detailed in **Table 5** have been adapted from Table 6.3 presented in C552 and R&D 66 (Annex 4 Table A4.3).

The Tier 1 risk classification is estimated for each pollutant linkage using the matrix given in **Table 6** which is taken directly from C552 (Table 6.5). Subsequent Tiers refine the CSM through retention or elimination of potential hazards and pollutant linkages.

6 Risk Evaluation

In order to put the Tier 1 risk classification into context the likely actions are described in **Table 7** which is taken directly from C552 (Table 6.6). Subsequent Tiers identify potential risk management options through remediation and/or mitigation measures.

Unless the initial assessment clearly demonstrates that the risk from contamination can be satisfactorily reduced to an acceptable level, further site investigations and risk assessment will be needed before the application can be determined.

7 References

BSI 2007 BS 8485 Code of Practice for characterisation and remediation from ground gas in affected developments.
BSI 2011 BS 10175 (2011) Code of practice - Investigation of potentially contaminated sites

CIRIA 2001: Contaminated land risk assessment – a guide to good practice C552.

CIRIA 2008: Assessing risks posed by hazardous ground gases to buildings C655

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EA 2004: The Model Procedures for the Management of Land Contamination CRL 11 published by the Environment Agency (EA).

EA 2008 Ecological Risk Assessment Science Report Series SC070009 published by the Environment Agency (EA).

European Community 2000 Water Framework Directive (2000/60/EC)

JNCC 1993 Handbook for Phase 1 Habitat Survey – A Technical for Environmental Audit prepared by the Joint Nature Conservancy Council (JNCC)

NHBC/EA/CIEH 2008: R&D Publication 66 Guidance for the safe development of housing on land affected by contamination.

Statutory Instrument 2003 No. 3242 Water Resources, England and Wales. The Water Environment (Water Framework Directive) Regulations 2003.

Table 1: Criteria for Classifying Hazards / Potential for Generating Contamination

Classification/Score	Potential for generating contamination/gas based on land use
Very Low 1	Land Use: greenfield Contamination: None. Gas generation potential : Inert Made Ground
Low 2	Land Use: residential, retail or office use, recent small scale industrial. Contamination: None or locally slightly elevated concentrations. Gas generation potential : Shallow thickness of Alluvium
Moderate 3	Land Use: railway yards, collieries, scrap yards, light industry, engineering works. Contamination: Locally elevated concentrations. Gas generation potential : Dock silt and substantial thickness of organic alluvium/peat
High 4	Land Use: gas works, chemical works, heavy industry, non-hazardous landfills. Contamination: Possible widespread elevated concentrations. Gas generation potential : Shallow mine workings Pre 1960's landfill
Very High 5	Land Use: hazardous waste landfills. Contamination: Likely widespread elevated concentrations. Gas generation potential : Domestic landfill post 1960

"Greenfield" is land which has not been developed including not used for crop production or animal husbandry and no contamination source therefore no pollutant linkages.

Table 2: Criteria for Classifying Receptor Sensitivity/Value

Classification/Score	Definition
Very Low 1	Receptor of limited importance Groundwater: Non aquifer Surface water: GQA Grade F Ecology: No local designation Buildings: Replaceable Human health: Unoccupied/limited access
Low 2	Receptor of local or county importance with potential for replacement Groundwater: Secondary aquifer Surface water: GQA Grade D/E Ecology: local habitat resources Buildings: Local value Human health: Minimum score 4 where human health identified as potential receptor
Moderate 3	Receptor of local or county importance with potential for replacement Groundwater: Principal aquifer Surface water: GQA Grade B/C Ecology: County wildlife sites, Areas of Outstanding Natural Beauty (AONB) Buildings: Area of Historic Character Human health: Minimum score 4 where human health identified as potential receptor
High 4	Receptor of county or regional importance with limited potential for replacement Groundwater: Source Protection Zone 2 Surface water: GQA Grade A Ecology: SSSI, National or Marine Nature Reserve (NNR or MNR) Buildings: Conservation Area Human health: Minimum score 4 where human health identified as potential receptor
Very High 5	Receptor of national or international importance Groundwater: Source Protection Zone 1 Surface water: GQA Grade A Ecology: Special Areas of Conservation (SAC and candidates), Special Protection Areas (SPA and potentials) or wetlands of international importance (RAMSAR) Buildings: World Heritage site Human health: Residential, open spaces and uses where children are present

Table 3: Exposure Pathway and Modes of Transport

Receptor	Pathway	Mode of transport
Human health	Ingestion	Fruit or vegetable leaf or roots
		Contaminated water
		Soil/dust indoors
		Soil/dust outdoors
	Inhalation	Particles (dust / soil) – outdoor
		Particles (dust / soil) - indoor
		Vapours – outdoor - migration via natural or anthropogenic pathways
		Vapours - indoor - migration via natural or anthropogenic pathways
	Dermal absorption	Direct contact with soil
		Direct contact with waters (swimming / showering)
		Irradiation
Groundwater	Leaching	Gravity / permeation
	Migration	Natural – groundwater as pathway Anthropogenic (e.g. boreholes, culverts, pipelines etc.)
Surface Water	Direct	Runoff or discharges from pipes
	Indirect	Recharge from groundwater
	Indirect	Deposition of wind blown dust
Buildings	Direct contact	Sulphate attack on concrete, hydrocarbon corrosion of plastics
	Gas ingress	Migration via natural or anthropogenic paths
Ecological systems	See Notes	Runoff/discharge to surface water body
	See Notes	Windblown dust
	See Notes	Groundwater migration
	See Notes	At point of contaminant source
Animal and crop	Direct	Wind blown or flood deposited particles / dust / sediments
	Indirect	Plants via root up take or irrigation. Animals through watering
	Inhalation	By livestock / fish - gas / vapour / particulates / dust
	Ingestion	Consumption of vegetation / water / soil by animals

Table 4: Classification of Probability

Classification	Definition
High likelihood	There is a pollution linkage and an event either appears very likely in the short-term and almost inevitable over the long-term, or there is already evidence at the receptor of harm / pollution.
Likely	There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short-term and likely over the long-term.
Low likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place, and is less likely in the shorter-term.
Unlikely	There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long-term.

Table 5: Classification of Consequence (score = magnitude of hazard Table 1 and sensitivity of receptor Table 2)

Classification / Score	Examples
Severe **20-25**	Human health effect - exposure likely to result in "significant harm". Significant harm to humans is defined in circular 01/2006 as death, disease, serious injury, genetic mutation, birth defects or impairment of reproductive function. Controlled water effect - short-term risk of pollution (note: Water Resources Act contains no scope for considering significance of pollution) of sensitive water resource. Equivalent to EA Category 1 incident (persistent and/or extensive effects on water quality leading to closure of potable abstraction point or loss of amenity, agriculture or commercial value. Major fish kill. Ecological effect - short-term exposure likely to result in a substantial adverse effect. Catastrophic damage to crops, buildings or property
Medium **13-19**	Human health effect - exposure could result in "significant harm". Significant harm to humans is defined in circular 01/2006 as death, disease, serious injury, genetic mutation, birth defects or impairment of reproductive function. Controlled water effect - equivalent to EA Category 2 incident requiring notification of abstractor Ecological effect - short-term exposure may result in a substantial adverse effect. Damage to crops, buildings or property
Mild **6-12**	Human health effect - exposure may result in "significant harm". Significant harm to humans is defined in circular 01/2006 as death, disease, serious injury, genetic mutation, birth defects or impairment of reproductive function. Controlled water effect - equivalent to EA Category 3 incident (short lived and/or minimal effects on water quality). Ecological effect - unlikely to result in a substantial adverse effect. Minor damage to crops, buildings or property. Damage to building rendering it unsafe to occupy (for example foundation damage resulting in instability).
Minor **1-5**	No measurable effect on humans. Protective equipment is not required during site works. Equivalent to insubstantial pollution incident with no observed effect on water quality or ecosystems. Repairable effects to crops, buildings or property. The loss of plants in a landscaping scheme. Discolouration of concrete.

Table 6: Classification of Risk (Combination of Consequence Table 5 and Probability Table 4)

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

Table 7: Description of Risks and Likely Action Required

Risk Classification	Description
Very high risk	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation is likely to be required in the short term.
High risk	Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short-term and are likely over the longer-term.
Moderate risk	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer-term.
Low risk	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.
Very low risk	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.

Plate 1: Main building

Plate 2: Prefab building

Plate 3: Drainage system

Plate 4: Mound of hardstanding

Plate 5: Bonfire stack

Plate 6: Waste plastic and soil mound

Plate 7: Scrap storage area

Plate 8: Scrap storage area

Plate 9: Bonfire stack

Plate 10: Mound of hardstanding and soil mound

Plate 11: Storage warehouse

Plate 12: Poly-tunnel

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Client

Applegarth Farm

APPLEGARTH FARM, GRAYSHOTT

SITE PHOTOGRAPHS

Date	04.12.2014
Scale	na
Drawn by	davco
Checked by	AJ
Revision	0

APPENDIX 2

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Plate 13: Fertiliser tank

Plate 14: Pumpkin Patch

Plate 15: Agricultural land

Plate 16: Horse paddock

Plate 17: Propane tank

Plate 18 : Agricultural land

Plate 19: Childrens Play park

Plate 20: Stables and adjacent land

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APPENDIX 2

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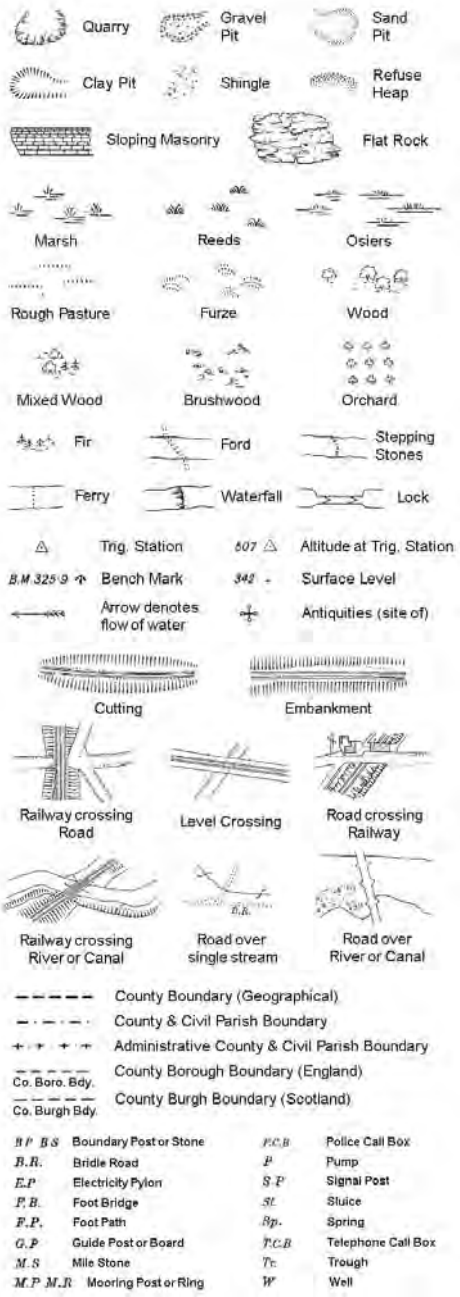
Appendix 3 Historical Maps supplied by Landmark

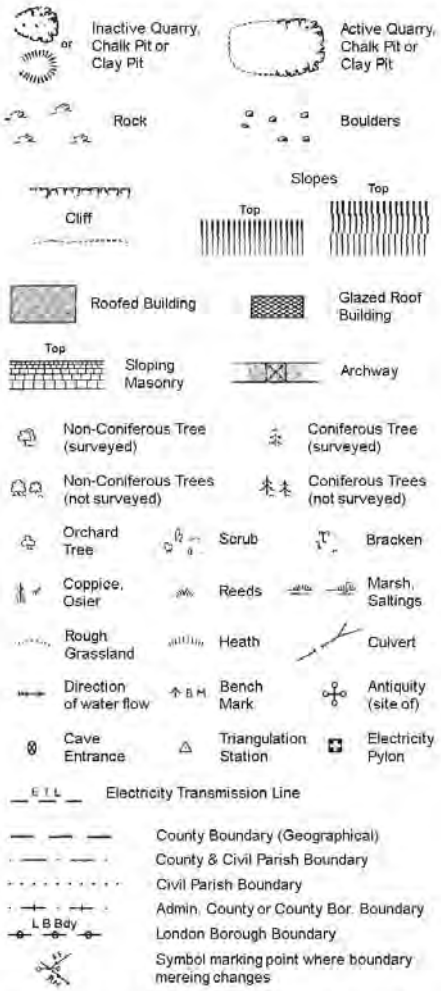
Historical Mapping Legends

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



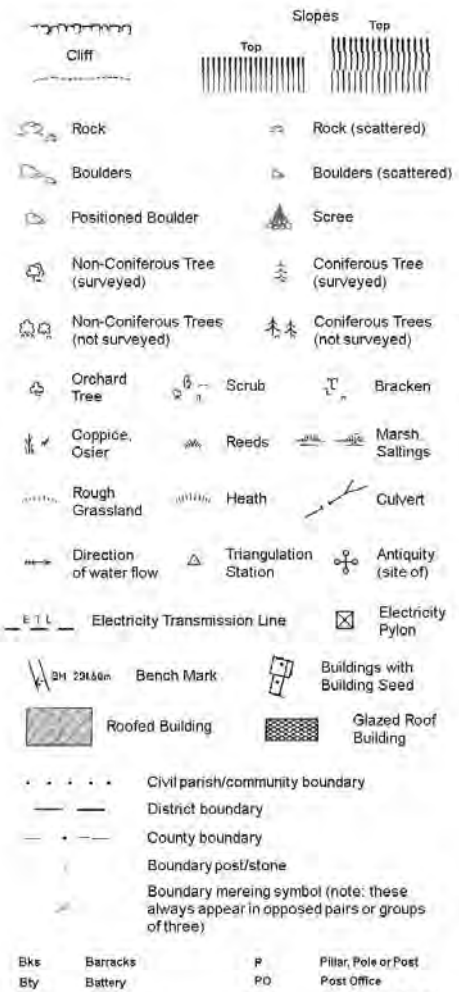
B P B S	Boundary Post or Stone	*P.C.B*	Police Call Box
B.R.	Bridle Road	*P*	Pump
E.P	Electricity Pylon	*S.P*	Signal Post
F.B.	Foot Bridge	*Sl.*	Sluice
F.P.	Foot Path	*Sp.*	Spring
G.P	Guide Post or Board	*T.C.B*	Telephone Call Box
M.S	Mile Stone	*Tr.*	Trough
M.P M.R	Mooring Post or Ring	*W*	Well

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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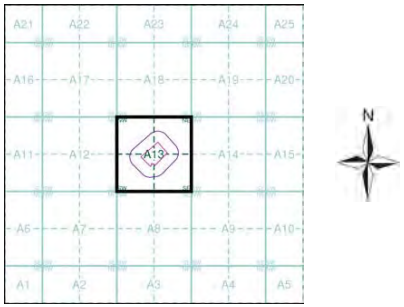
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Hampshire & Isle Of Wight	1:2,500	1869	2
Hampshire & Isle Of Wight	1:2,500	1870	3
Surrey	1:2,500	1871 - 1889	4
Hampshire & Isle Of Wight	1:2,500	1897	5
Surrey	1:2,500	1898	6
Hampshire & Isle Of Wight	1:2,500	1910	7
Surrey	1:2,500	1913 - 1915	8
Hampshire & Isle Of Wight	1:2,500	1937	9
Ordnance Survey Plan	1:2,500	1970 - 1971	10
Additional SIMs	1:2,500	1972 - 1977	11
Large-Scale National Grid Data	1:2,500	1994	12
Large-Scale National Grid Data	1:1,250	1994	13

Historical Map - Segment A13



Order Details

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National Grid Reference: 485850, 135850
Slice: A
Site Area (Ha): 2.66
Search Buffer (m): 100

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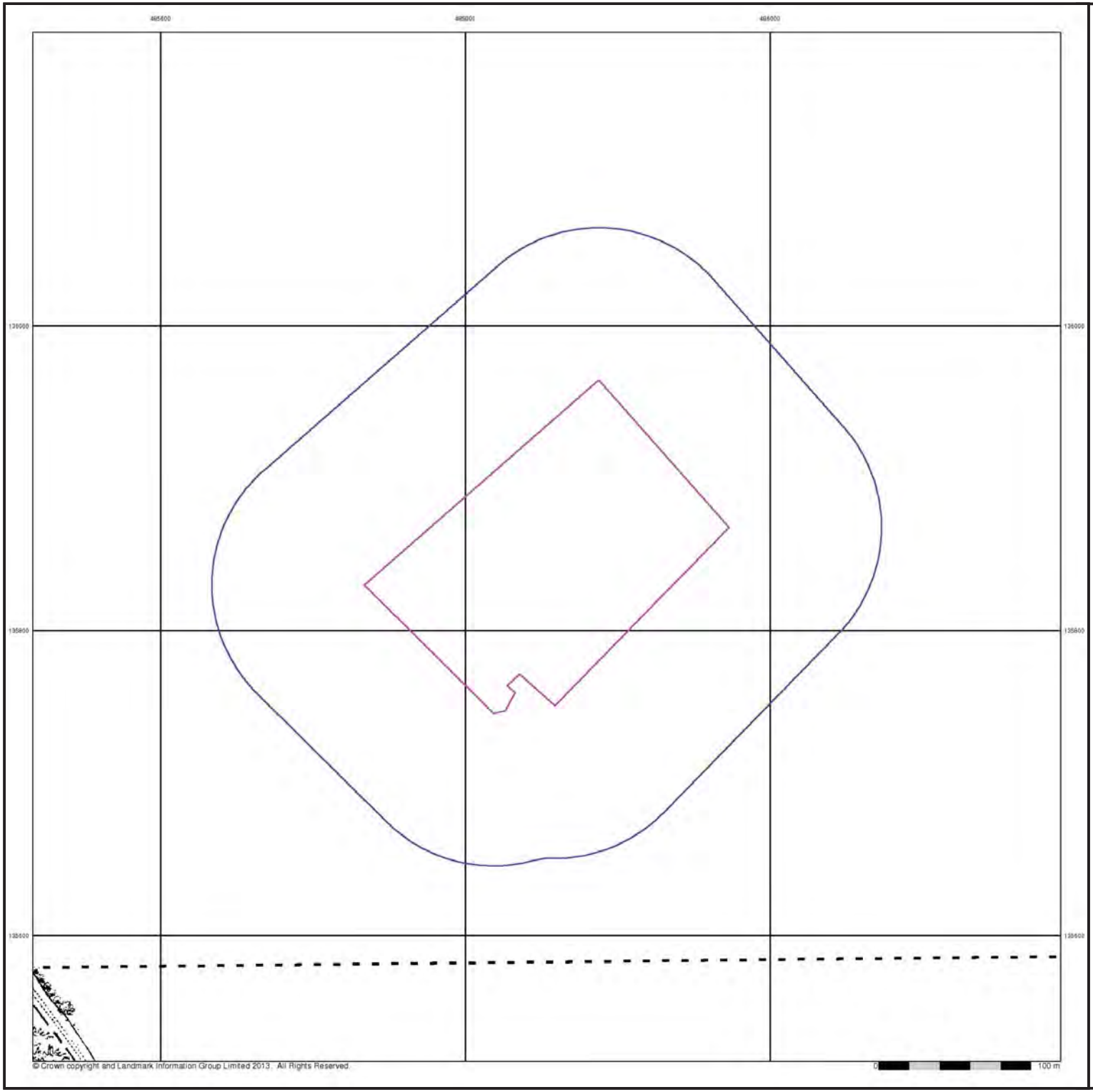

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Hampshire & Isle Of Wight

Published 1869

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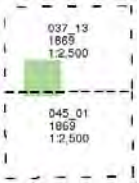

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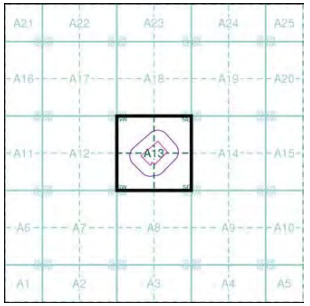

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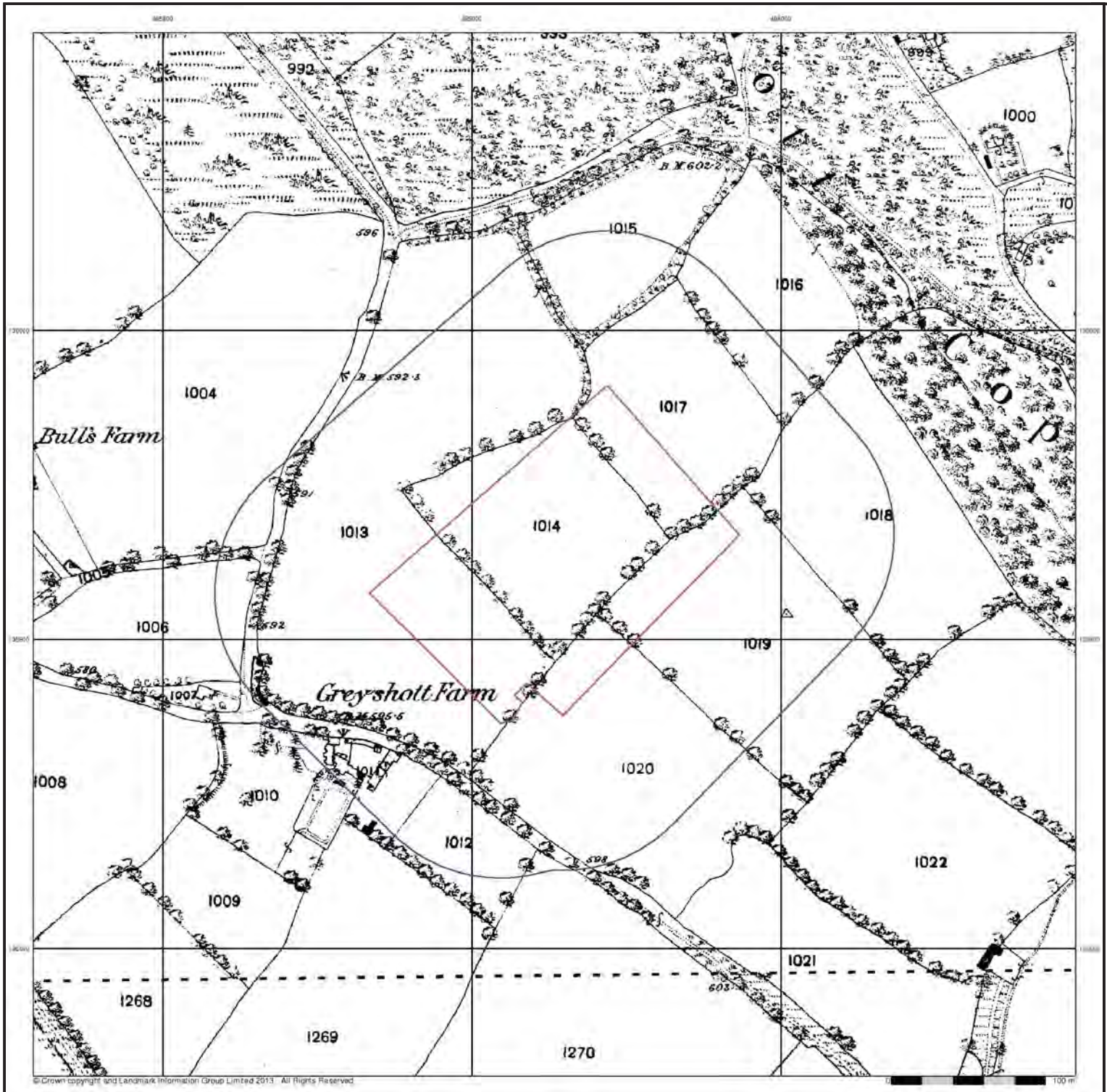

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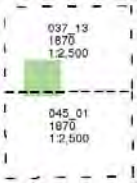

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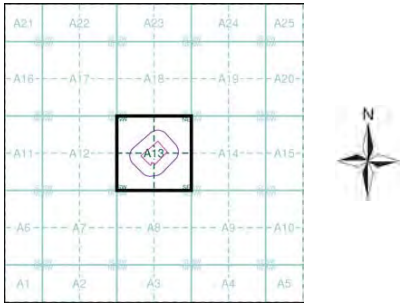

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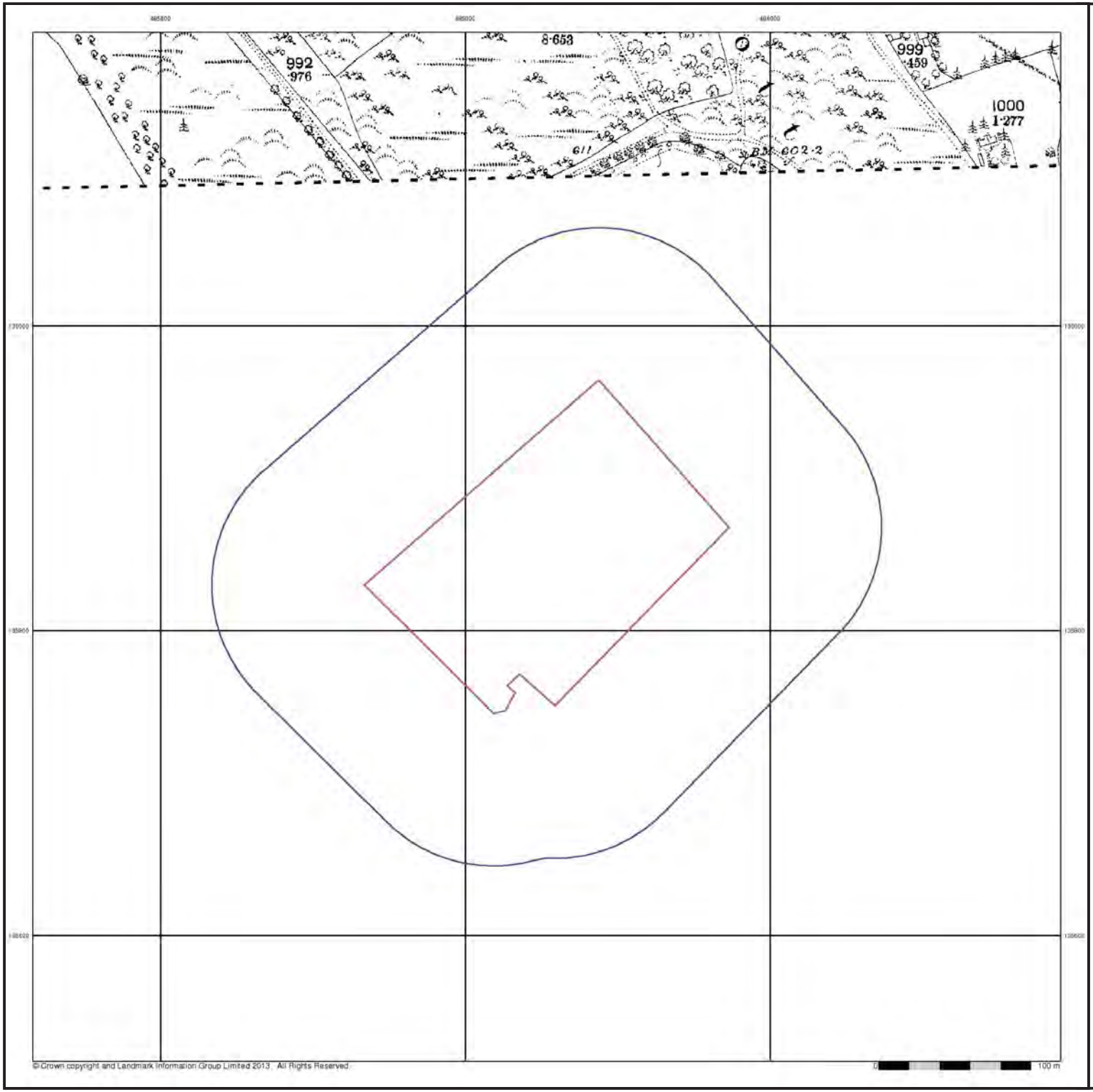

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Surrey

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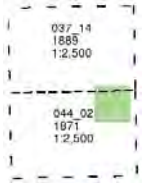

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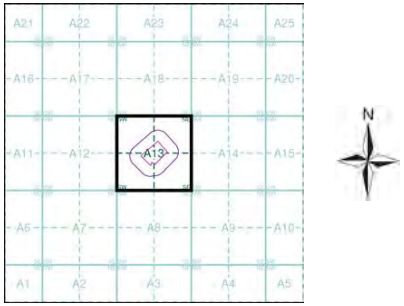

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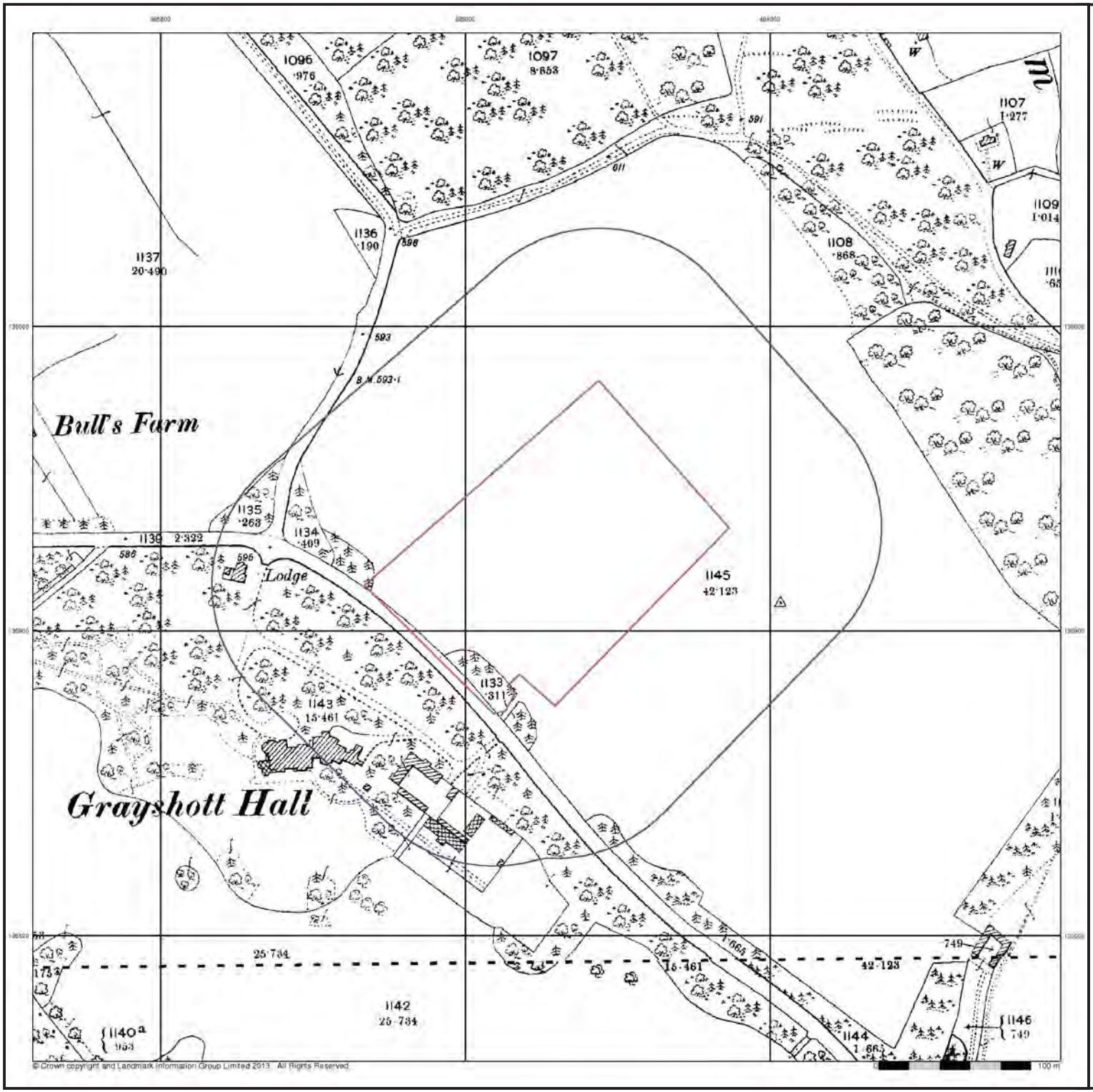

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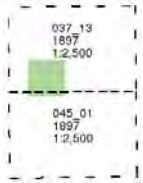

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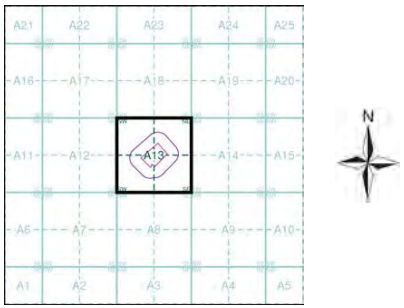

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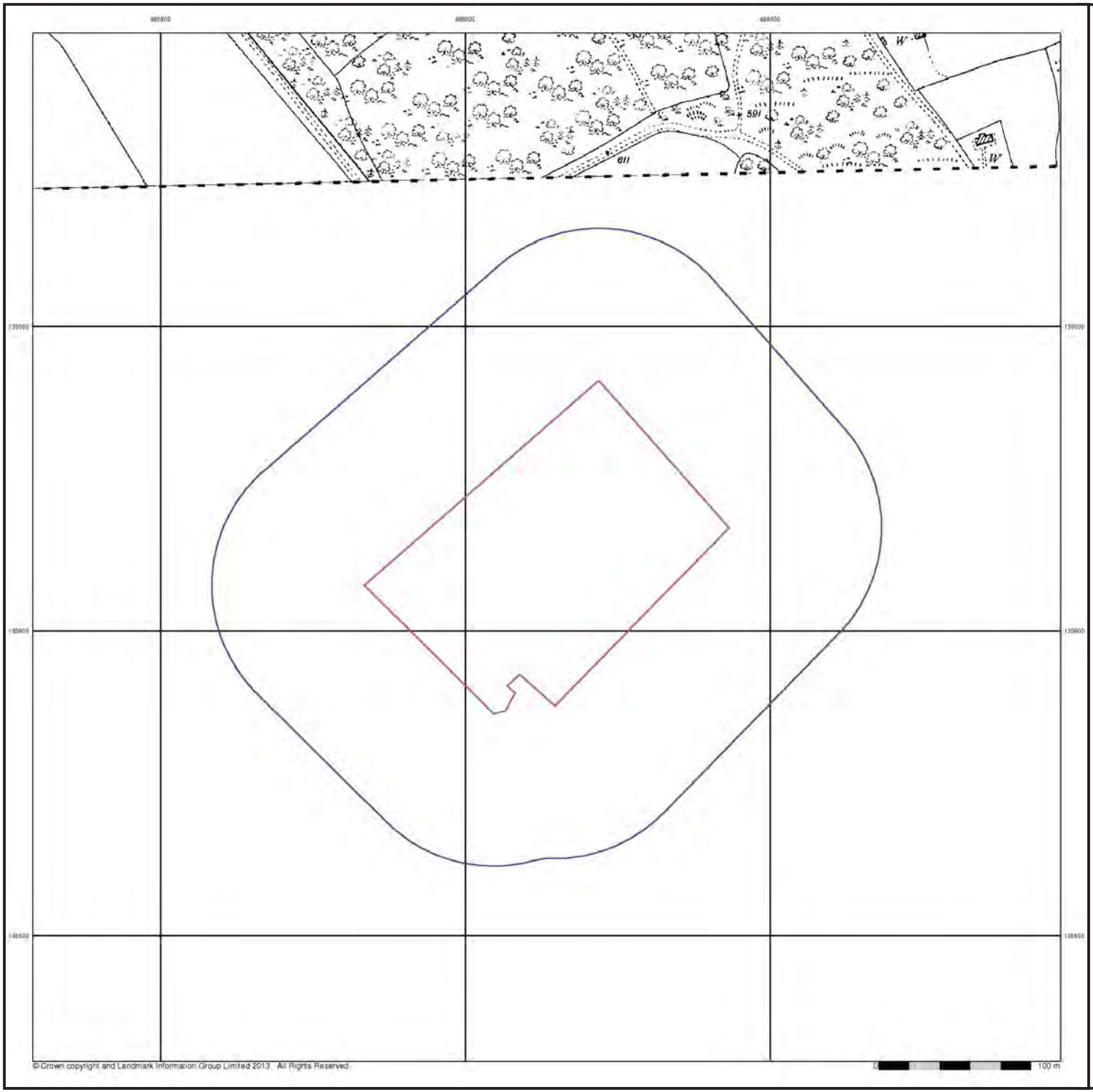

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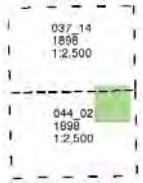

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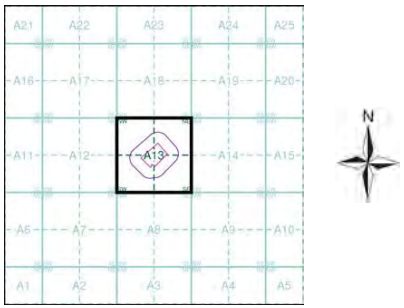

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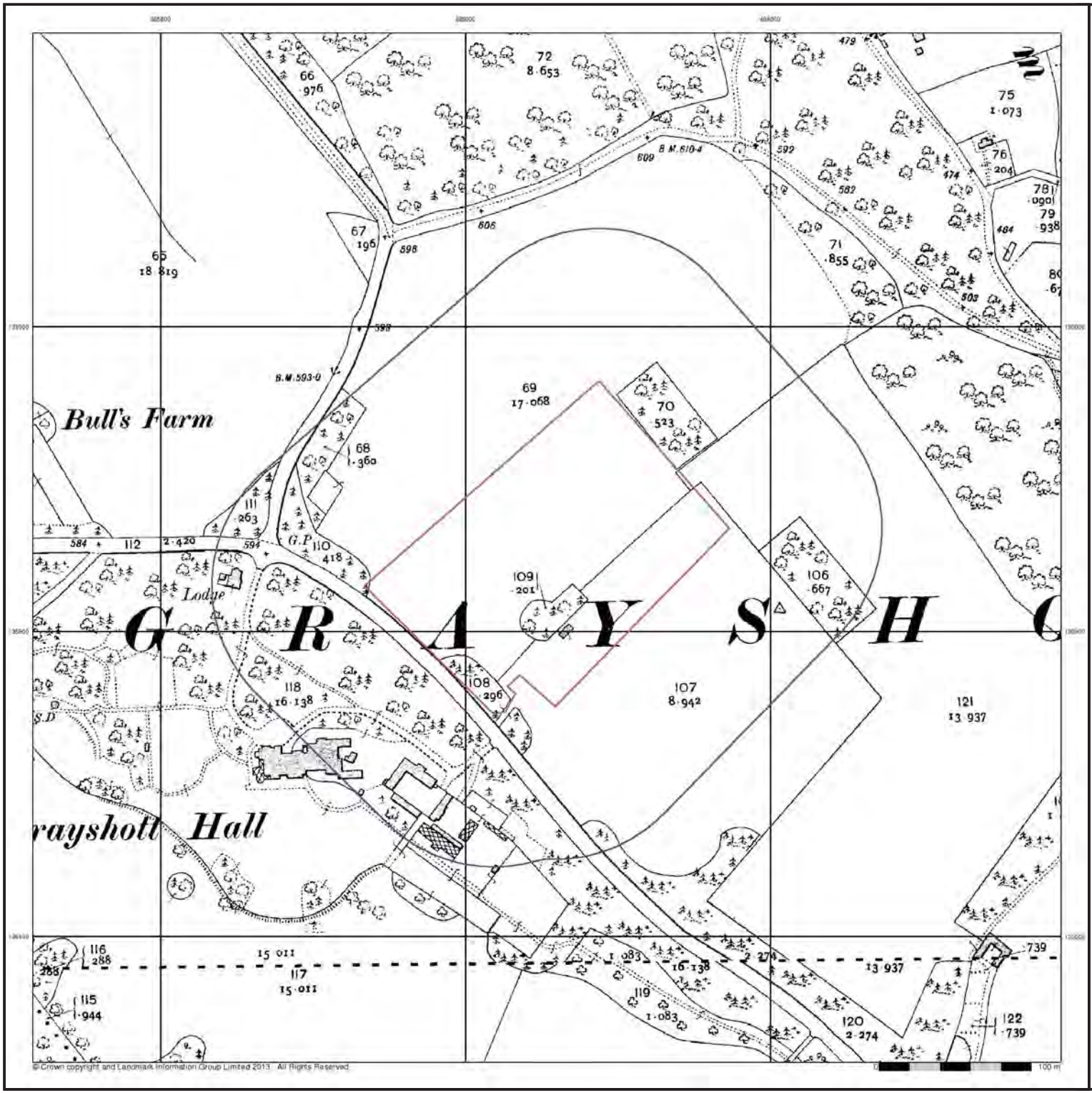

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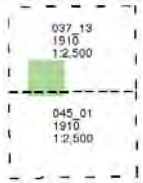

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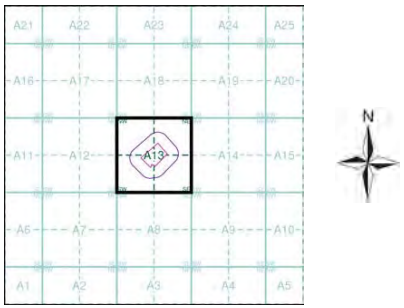

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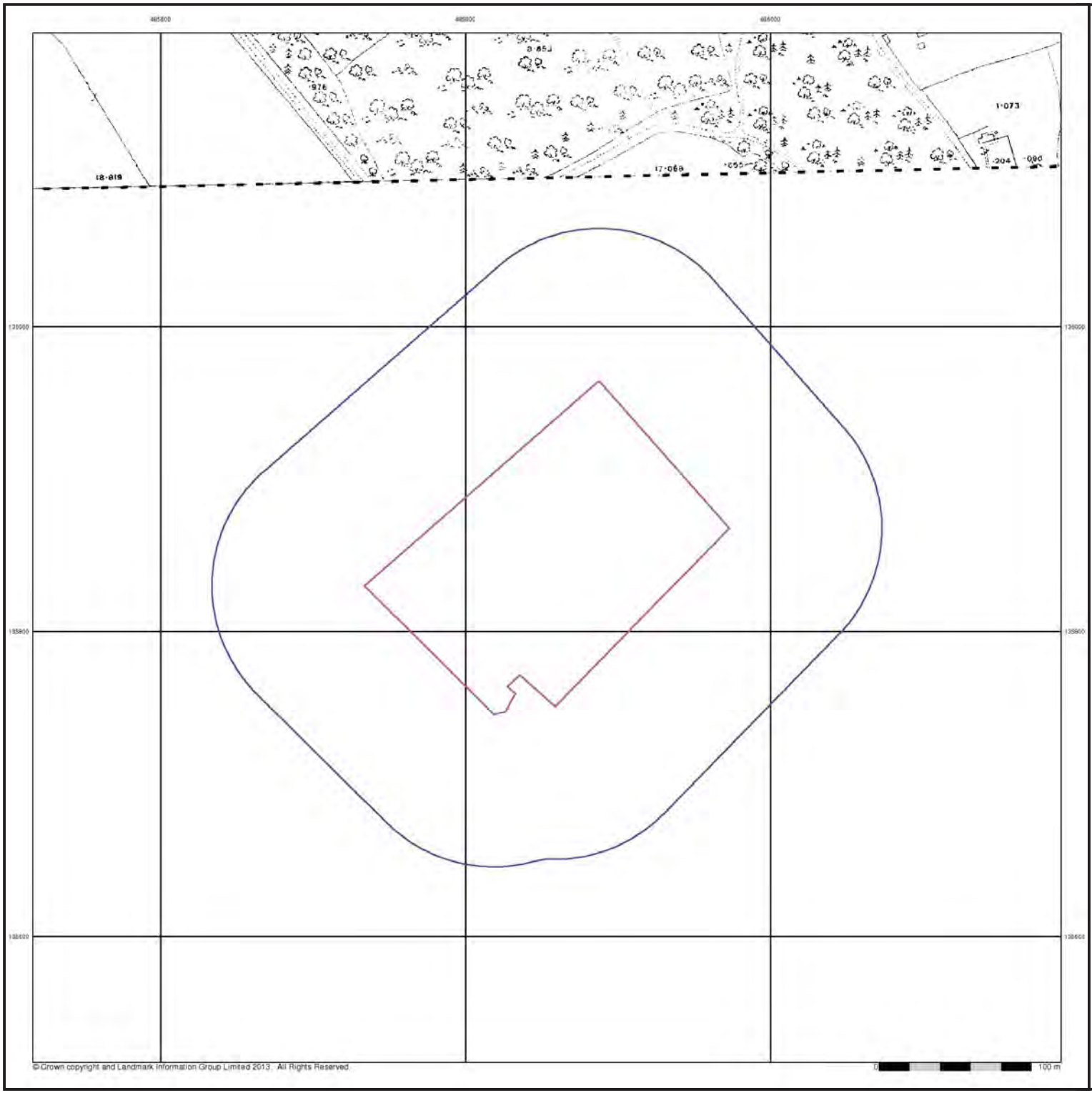


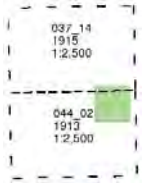
Surrey

Published 1913 - 1915

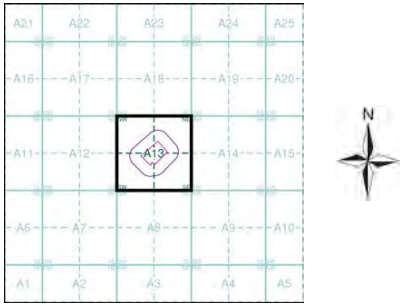
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



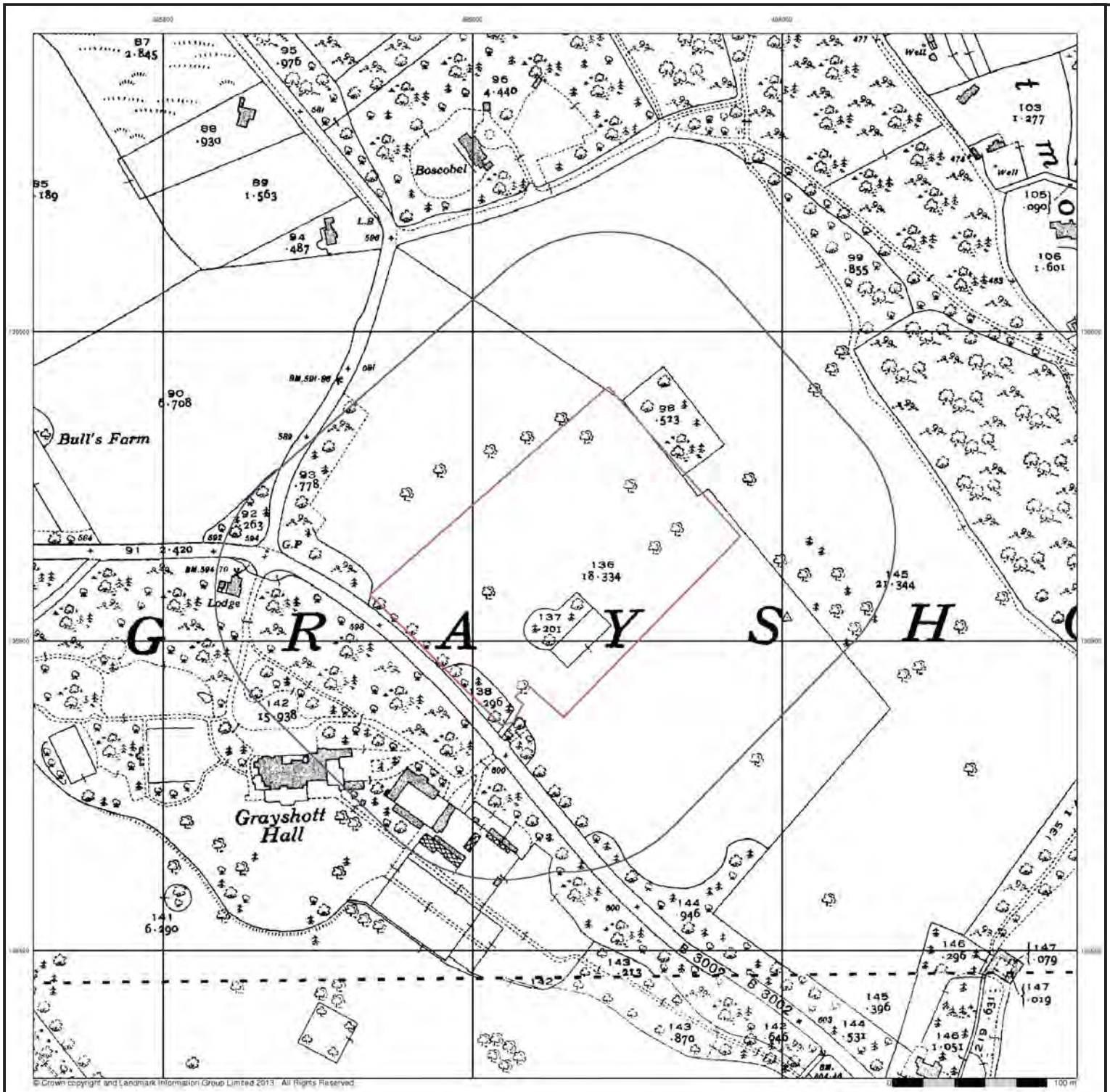
Order Details

Order Number:	62569421_1_1
Customer Ref:	32939
National Grid Reference:	485850, 135850
Slice:	A
Site Area (Ha):	2.66
Search Buffer (m):	100

Site Details

Applegarth Farm, Headley Road, Grayshott, Hindhead, GU26 6JL

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



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Hampshire & Isle Of Wight

Published 1937

Source map scale - 1:2,500

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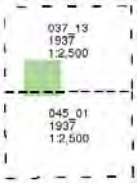

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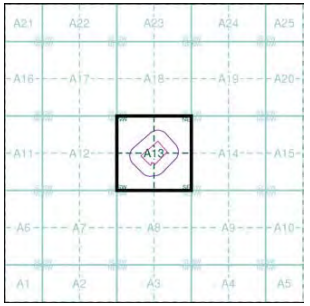

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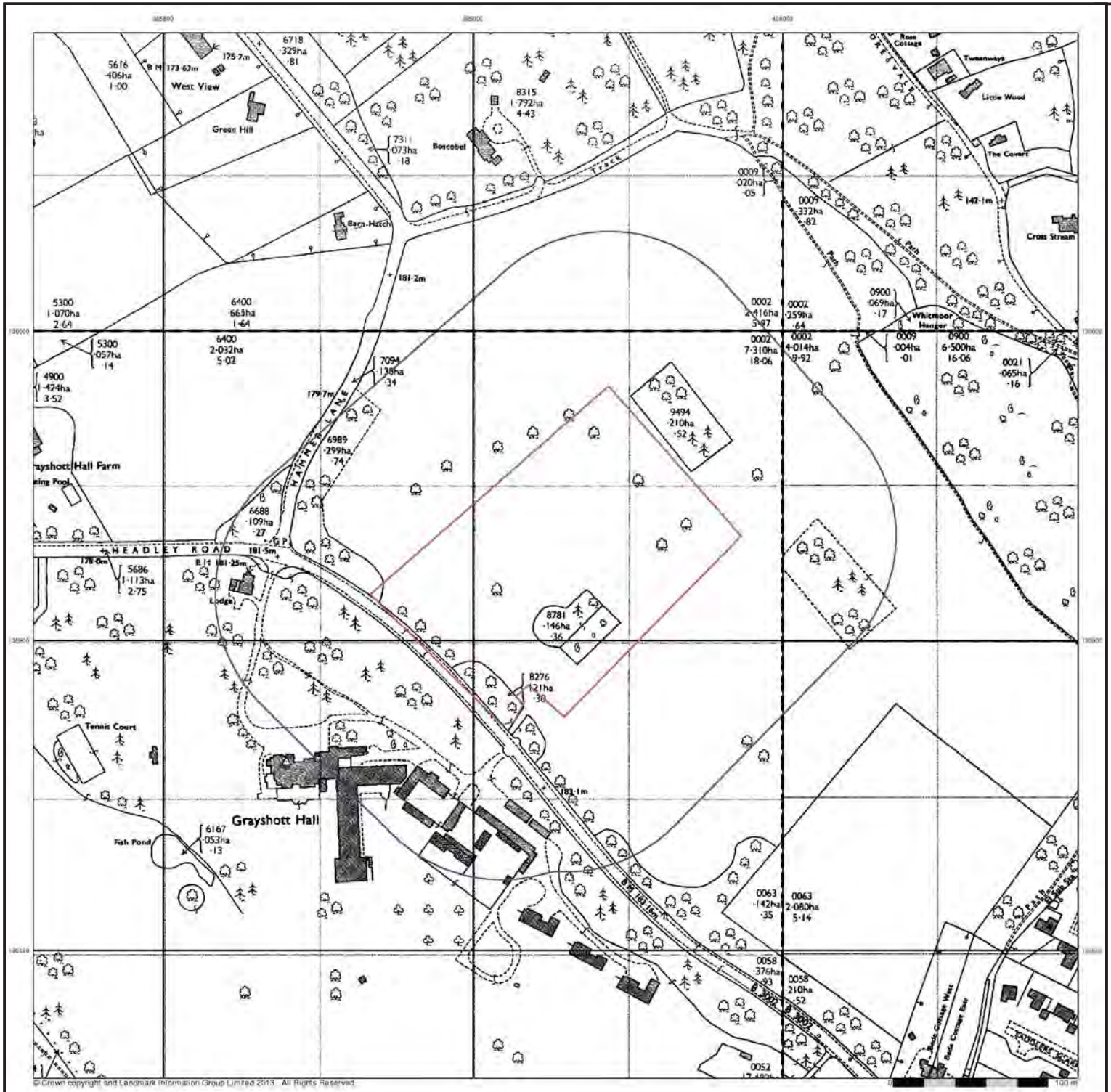

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Ordnance Survey Plan

Published 1970 - 1971

Source map scale - 1:2,500

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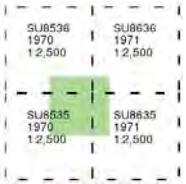
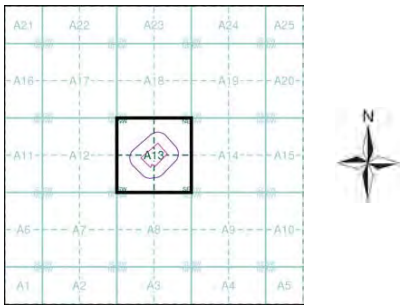


Historical Map - Segment A13



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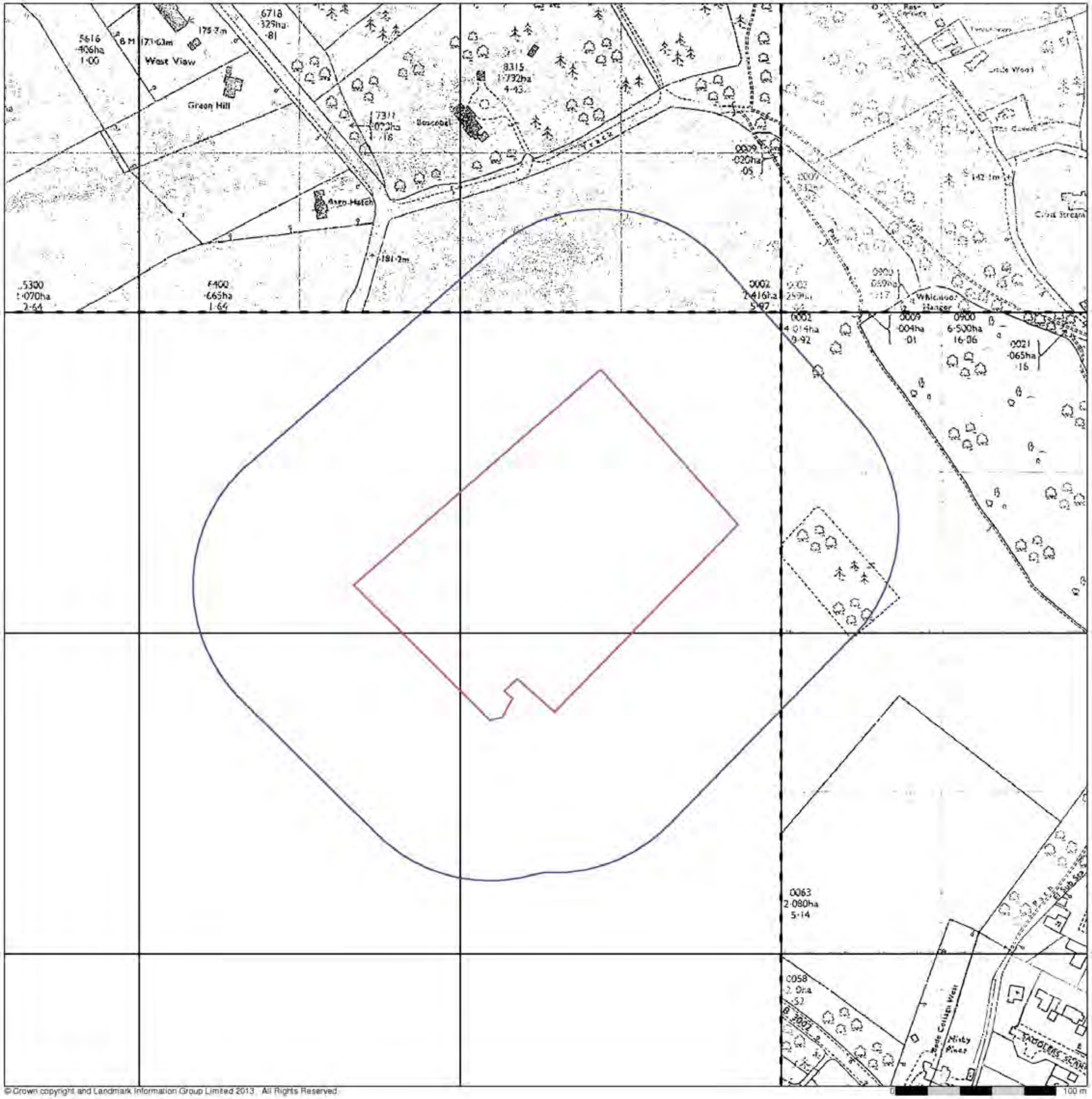

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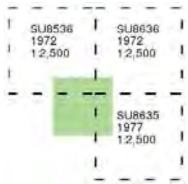
Additional SIMs

Published 1972 - 1977

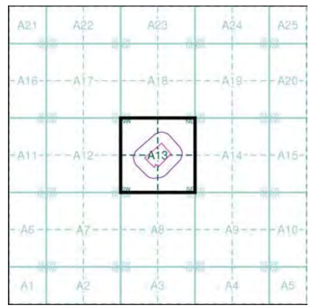
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



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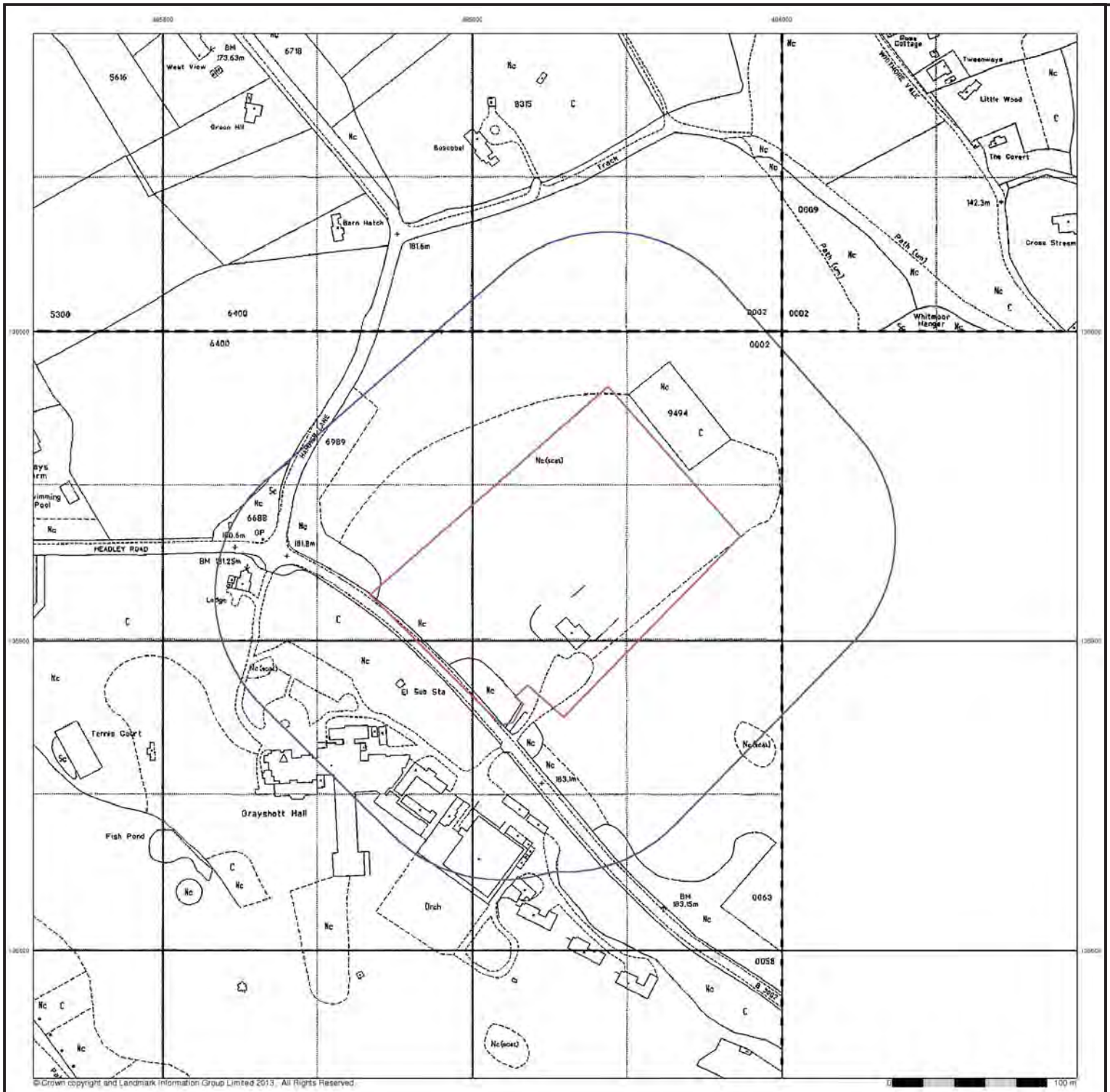

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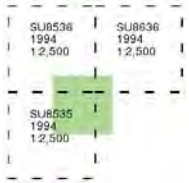
Large-Scale National Grid Data

Published 1994

Source map scale - 1:2,500

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

Map Name(s) and Date(s)



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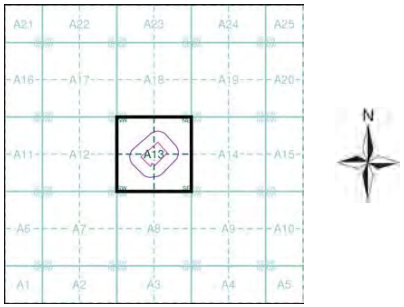

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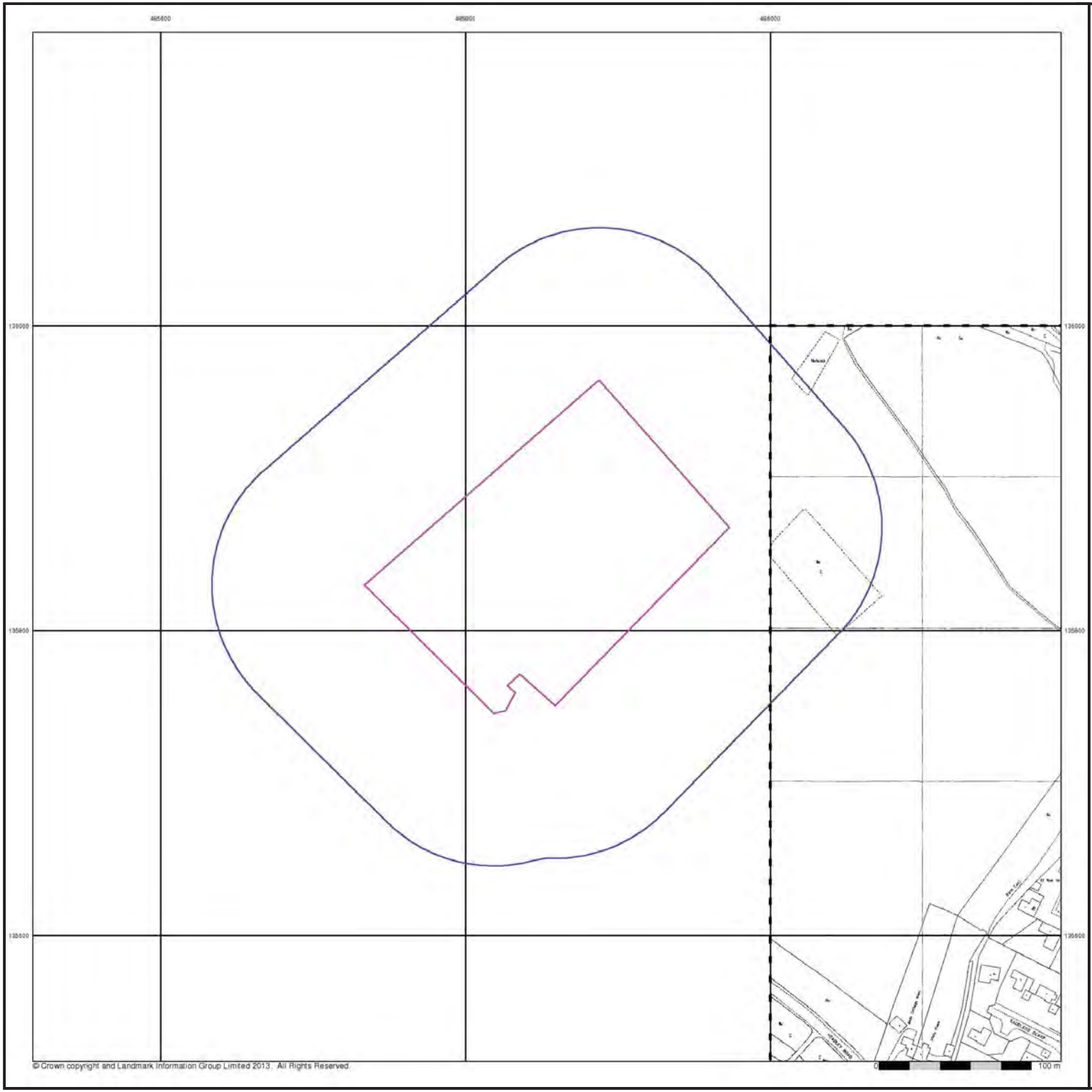


pba peterbrett

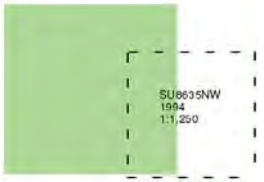
Large-Scale National Grid Data

Published 1994

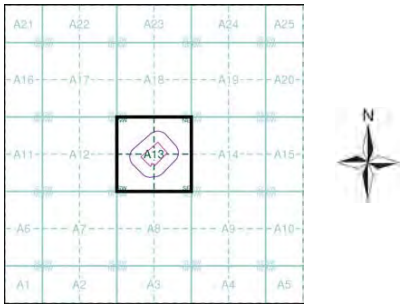
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



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Historical Mapping Legends

Ordnance Survey County Series 1:10,560

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

Ordnance Survey Plan 1:10,000

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

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

1:10,000 Raster Mapping

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

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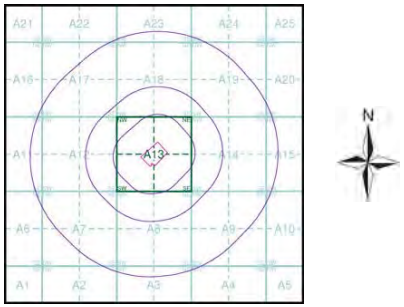
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Hampshire & Isle Of Wight	1:10,560	1872	2
Surrey	1:10,560	1873 - 1874	3
Hampshire & Isle Of Wight	1:10,560	1898 - 1899	4
Surrey	1:10,560	1898 - 1899	5
Hampshire & Isle Of Wight	1:10,560	1910	6
Surrey	1:10,560	1920	7
Surrey	1:10,560	1920	8
Surrey	1:10,560	1938	9
Historical Aerial Photography	1:10,560	1948 - 1949	10
Ordnance Survey Plan	1:10,000	1961 - 1962	11
Ordnance Survey Plan	1:10,000	1974 - 1976	12
Ordnance Survey Plan	1:10,000	1981	13
10K Raster Mapping	1:10,000	2006	14
VectorMap Local	1:10,000	2014	15

Historical Map - Slice A



Order Details

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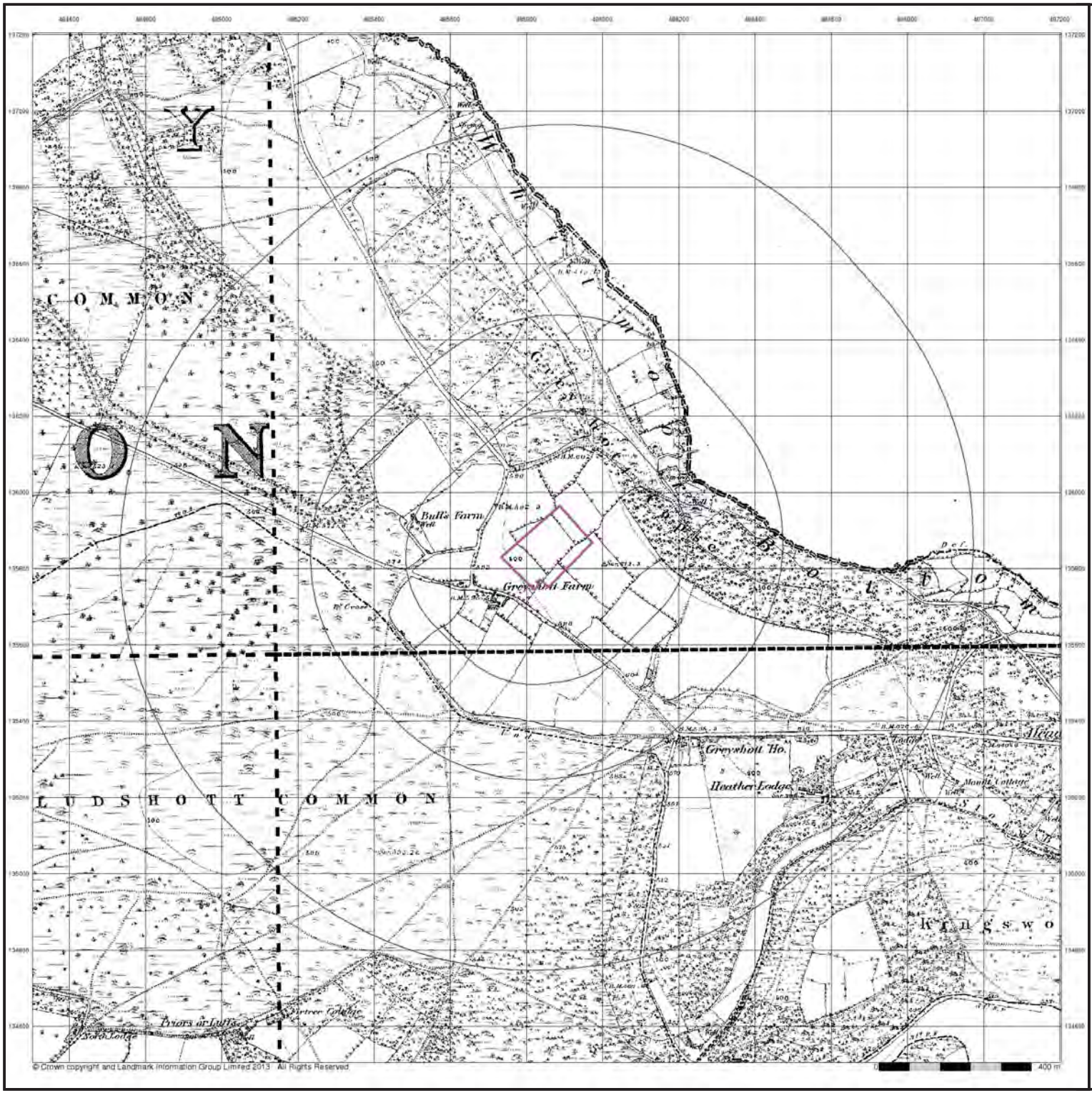

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Hampshire & Isle Of Wight

Published 1872

Source map scale - 1:10,560

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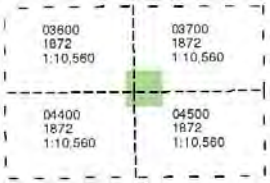
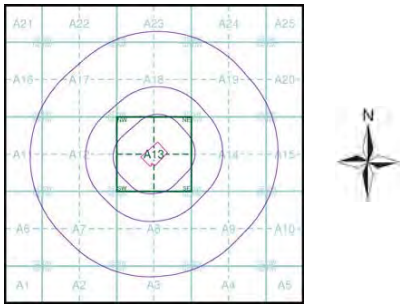
Map Name(s) and Date(s)



Historical Map - Slice A



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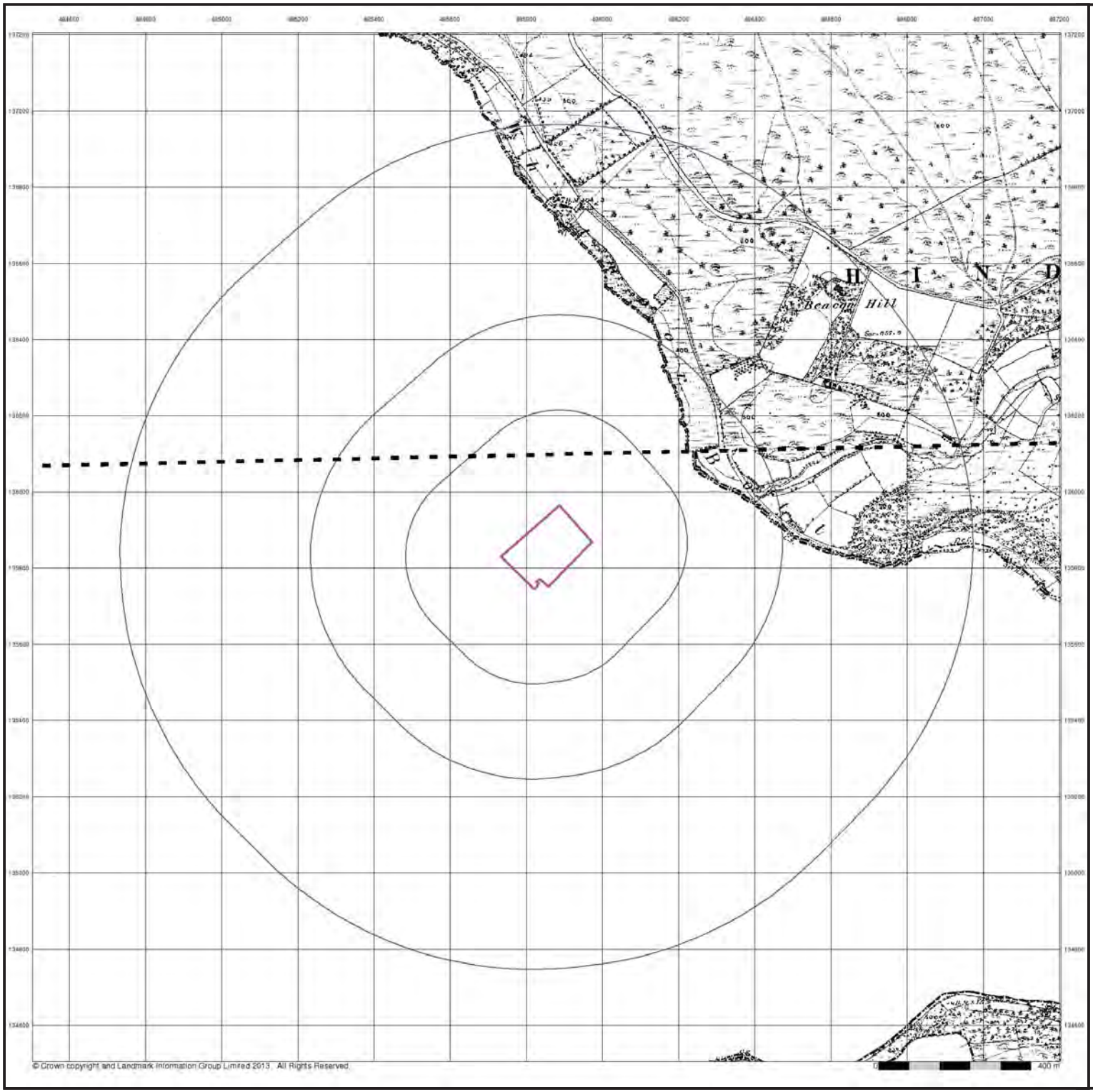

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Surrey

Published 1873 - 1874

Source map scale - 1:10,560

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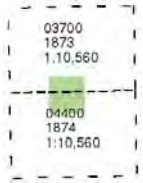
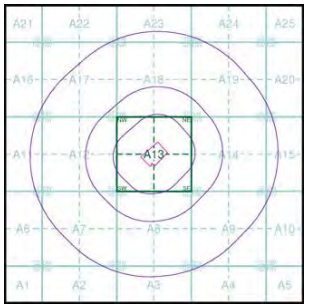


Historical Map - Slice A



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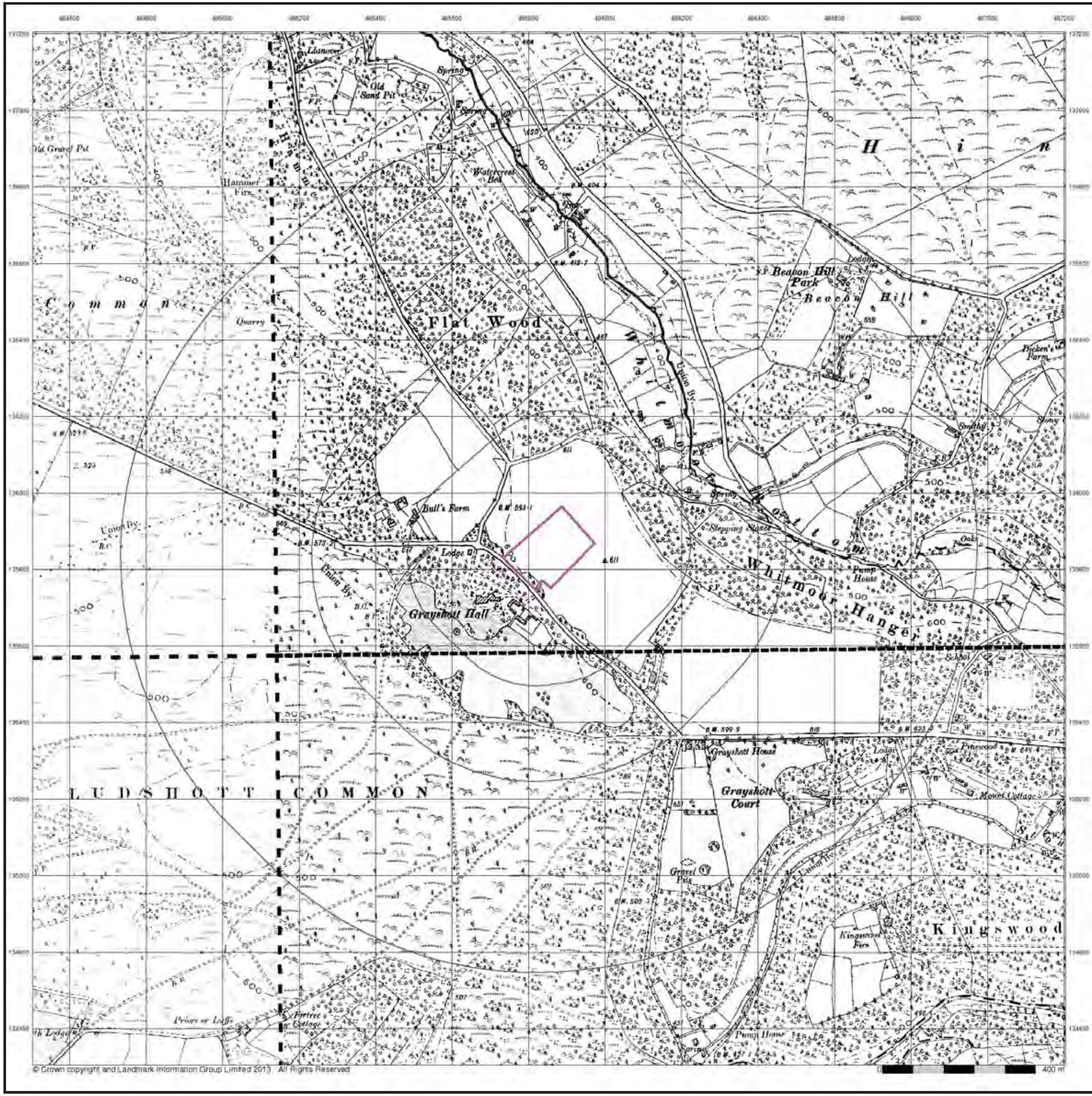

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Hampshire & Isle Of Wight

Published 1898 - 1899

Source map scale - 1:10,560

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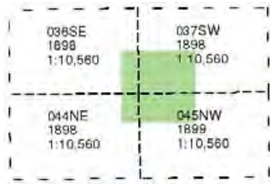
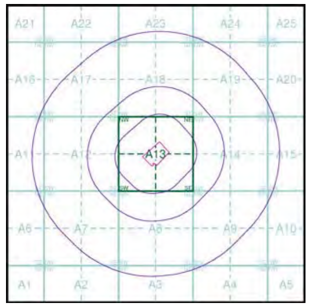
Map Name(s) and Date(s)



Historical Map - Slice A



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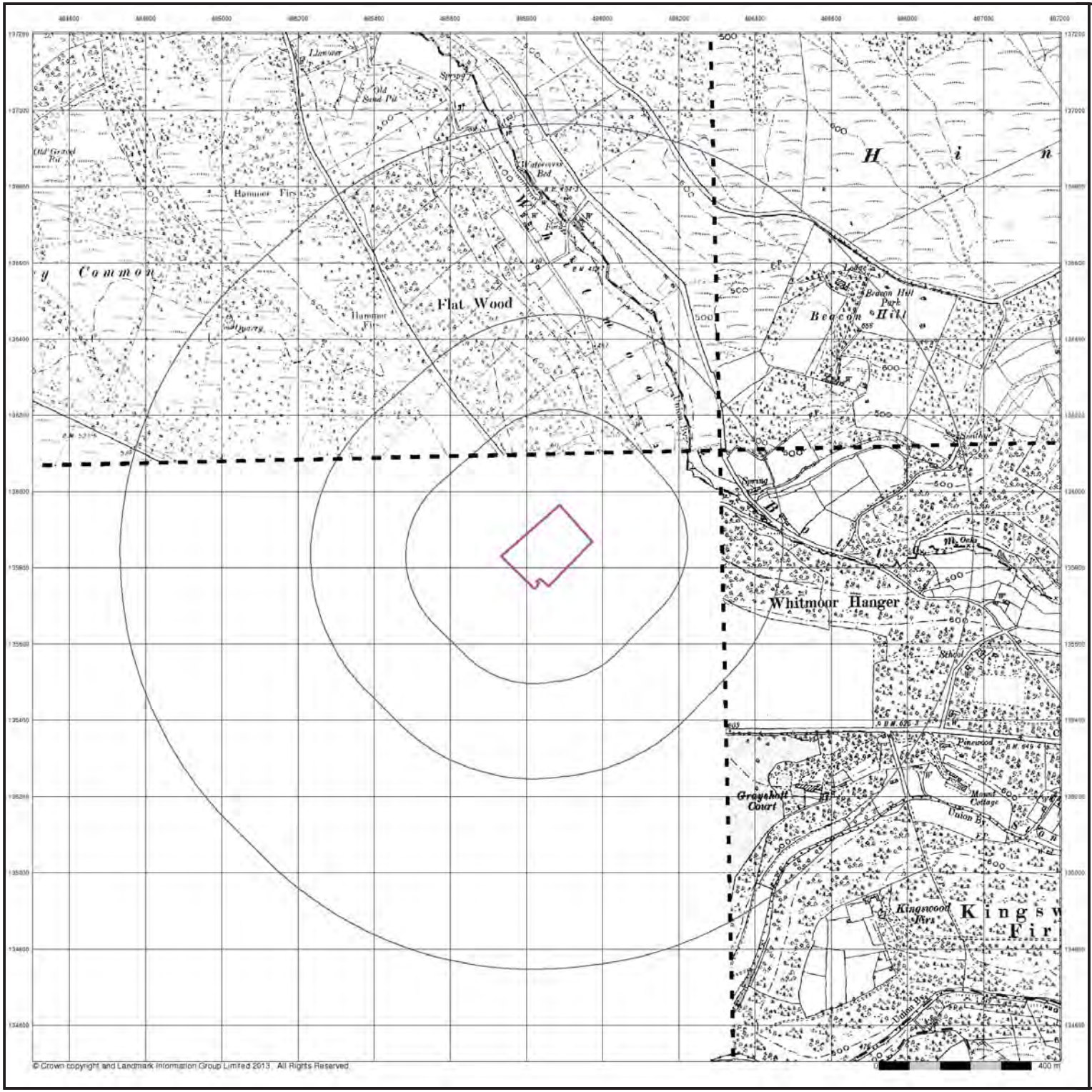

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Surrey

Published 1898 - 1899

Source map scale - 1:10,560

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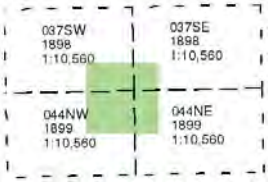
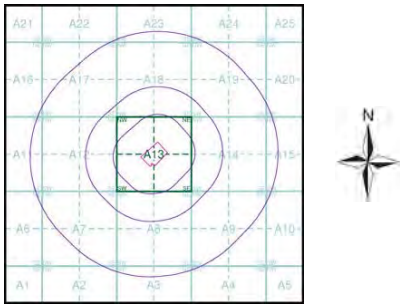


Historical Map - Slice A



Order Details

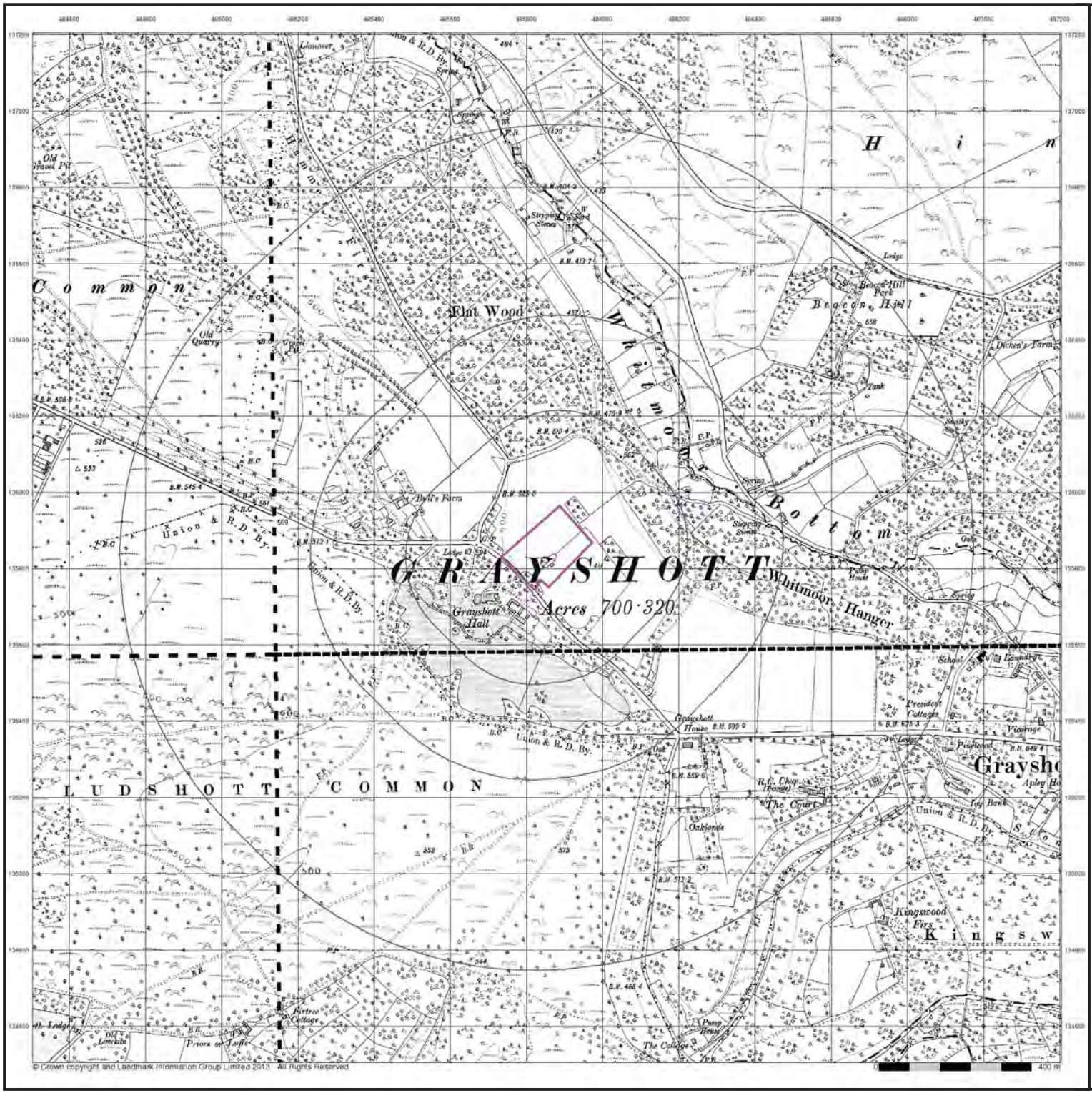
Order Number:	62569421_1_1
Customer Ref:	32939
National Grid Reference:	485850, 135850
Slice:	A
Site Area (Ha):	2.66
Search Buffer (m):	1000

Site Details

Applegarth Farm, Headley Road, Grayshott, Hindhead, GU26 6JL

Landmark Information Group

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



pba peterbrett

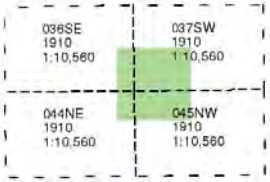
Hampshire & Isle Of Wight

Published 1910

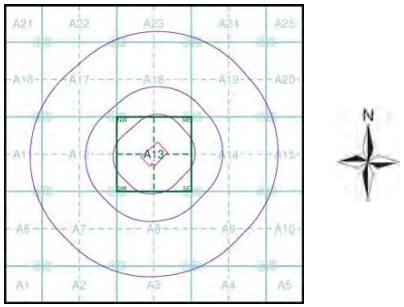
Source map scale - 1:10,560

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 A



Order Details

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Site Area (Ha):	2.66
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Site Details

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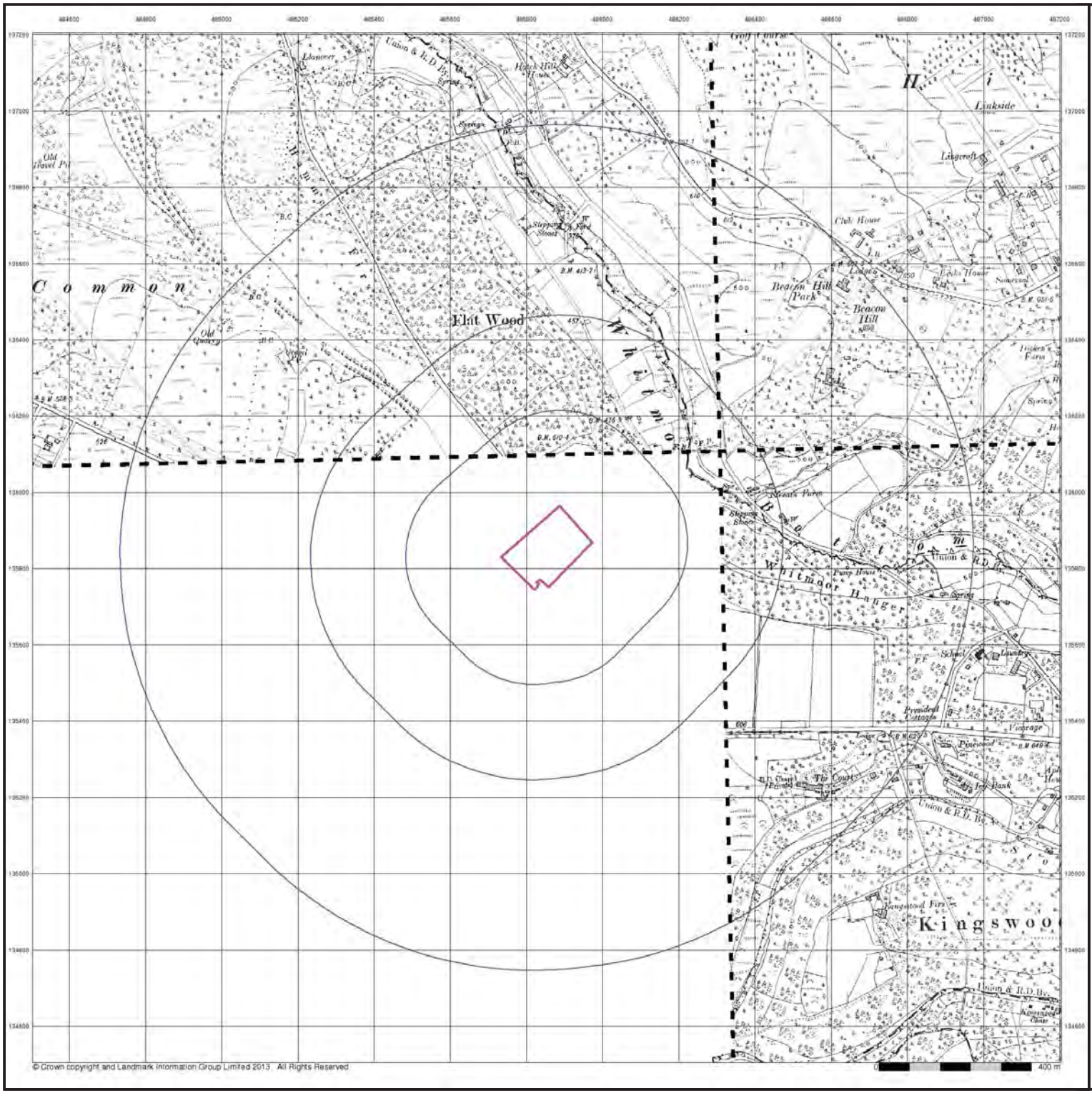


pba peterbrett

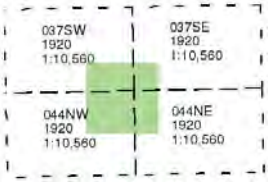
Surrey

Published 1920

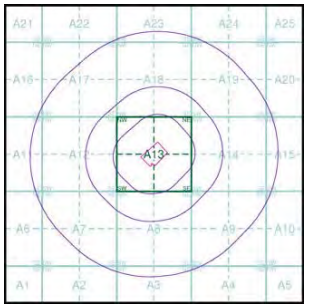
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	62569421_1_1
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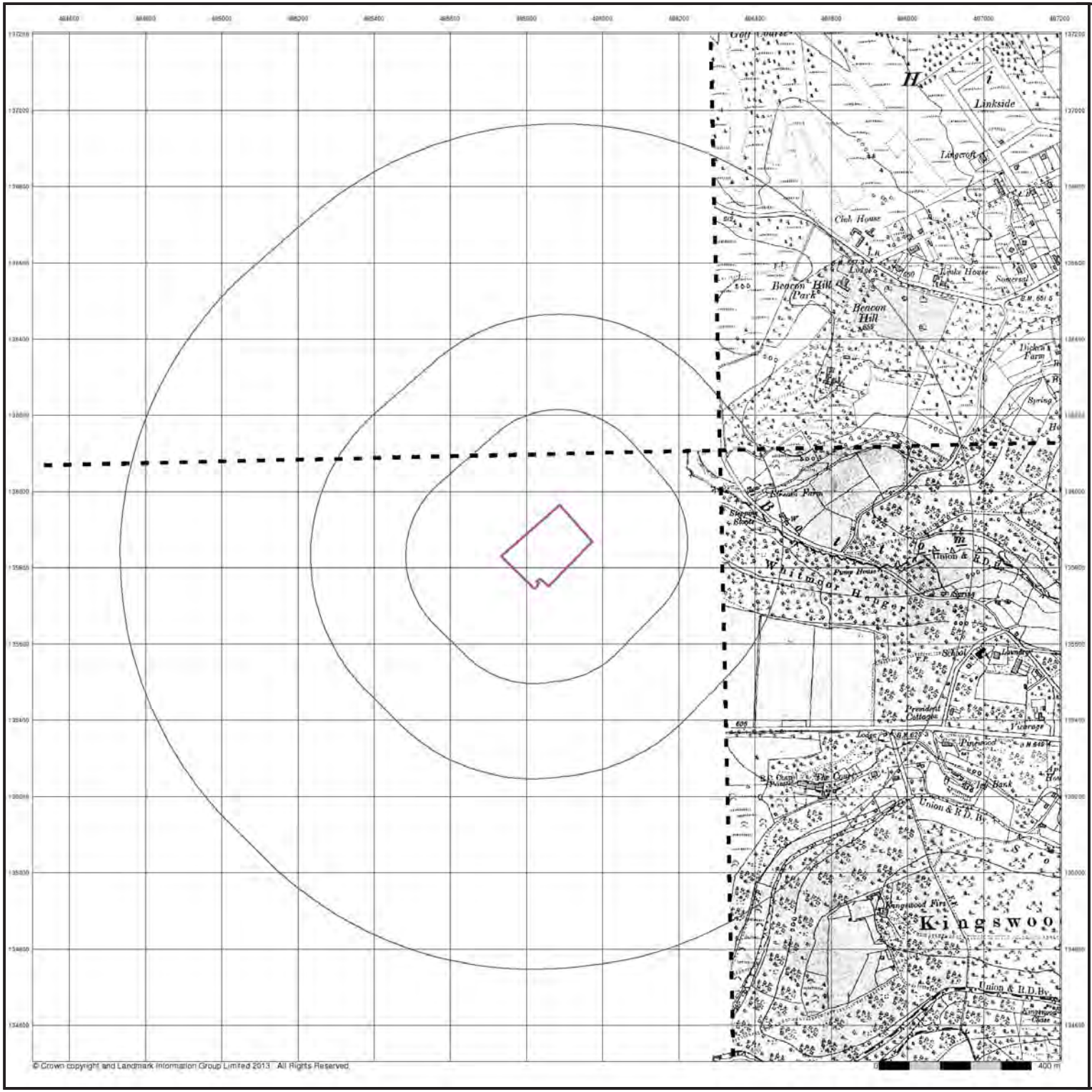

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pba peterbrett

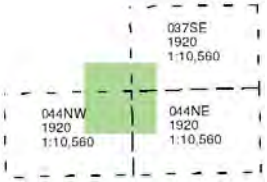
Surrey

Published 1920

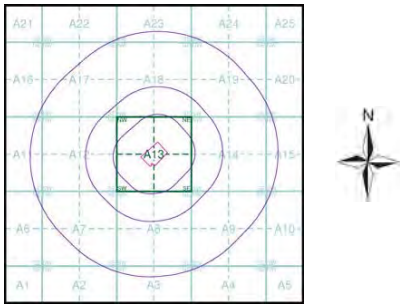
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



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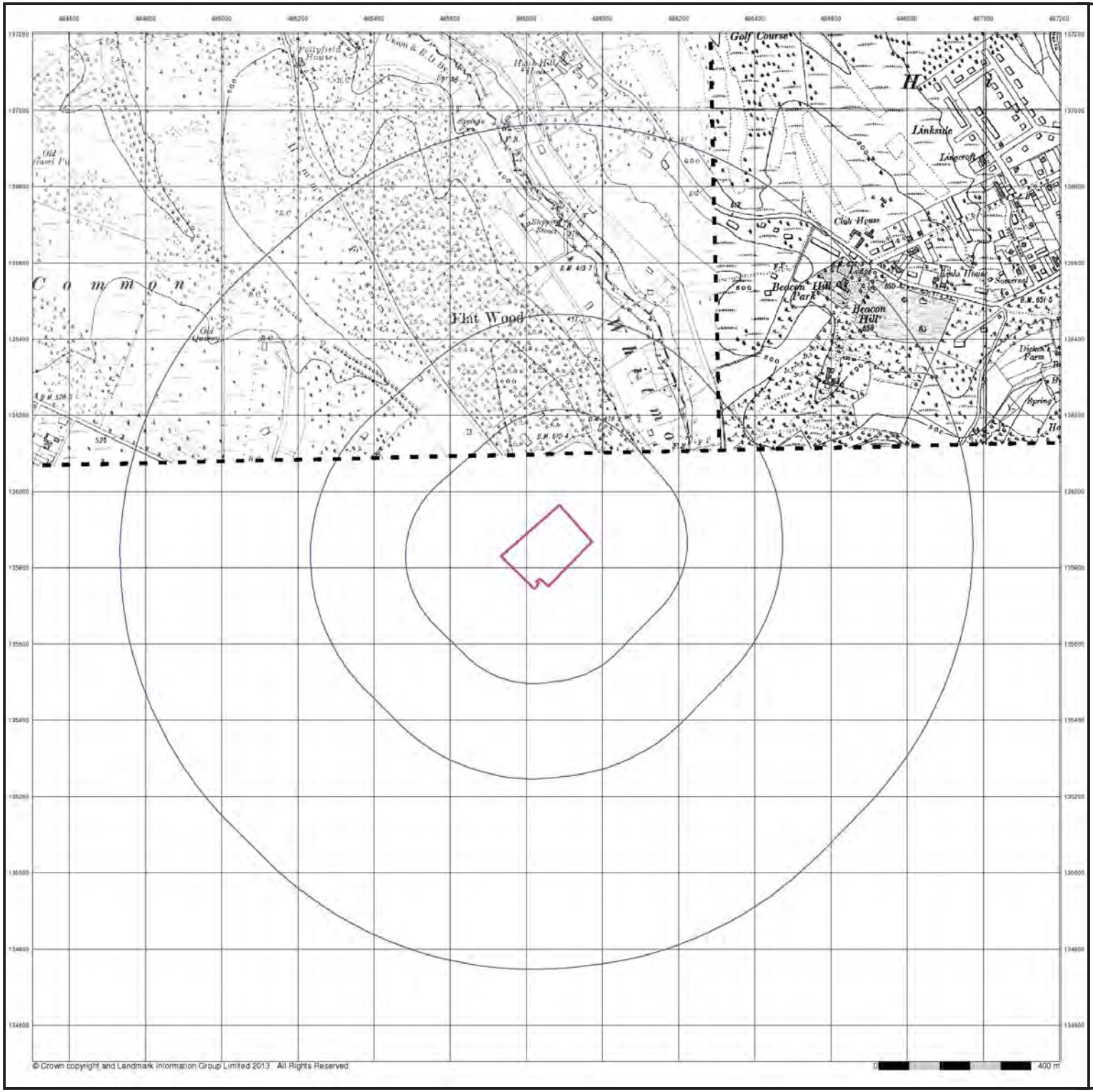
Site Details

Applegarth Farm, Headley Road, Grayshott, Hindhead, GU26 6JL



pba peterbrett

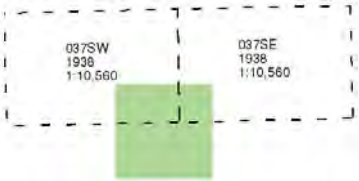
Surrey

Published 1938

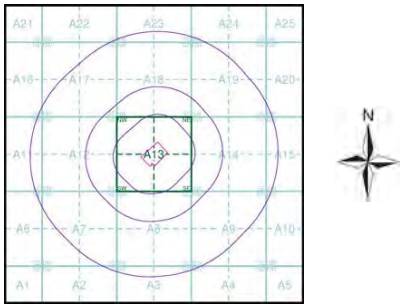
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



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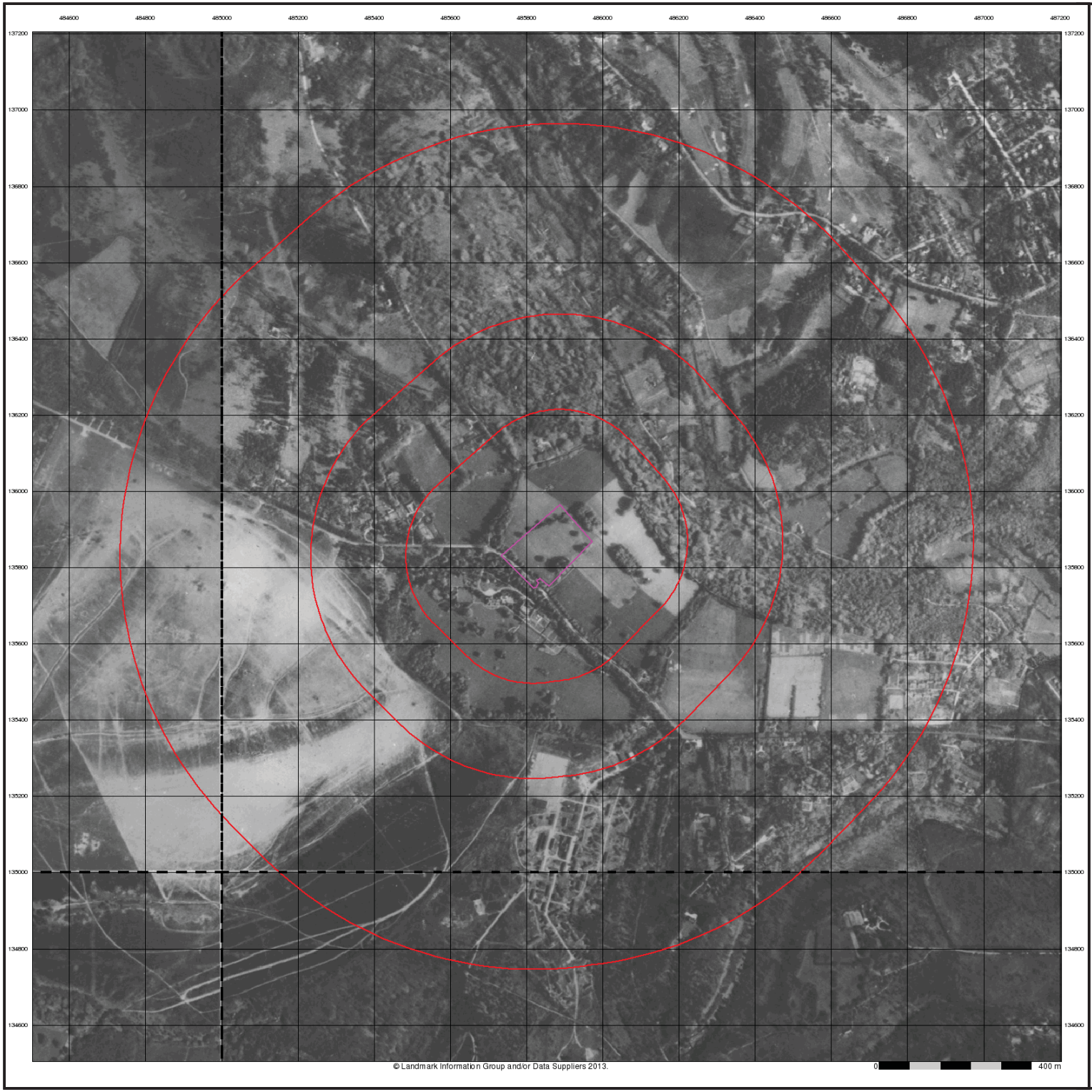
Search Buffer (m):	1000

Site Details

Applegarth Farm, Headley Road, Grayshott, Hindhead, GU26 6JL



Historical Aerial Photography

Published 1948 - 1949

Source map scale - 1:10,560

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

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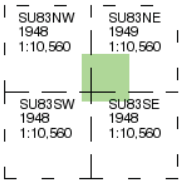
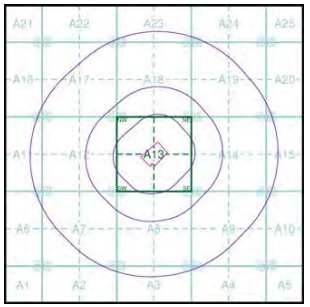
Map Name(s) and Date(s)



Historical Aerial Photography - Slice A



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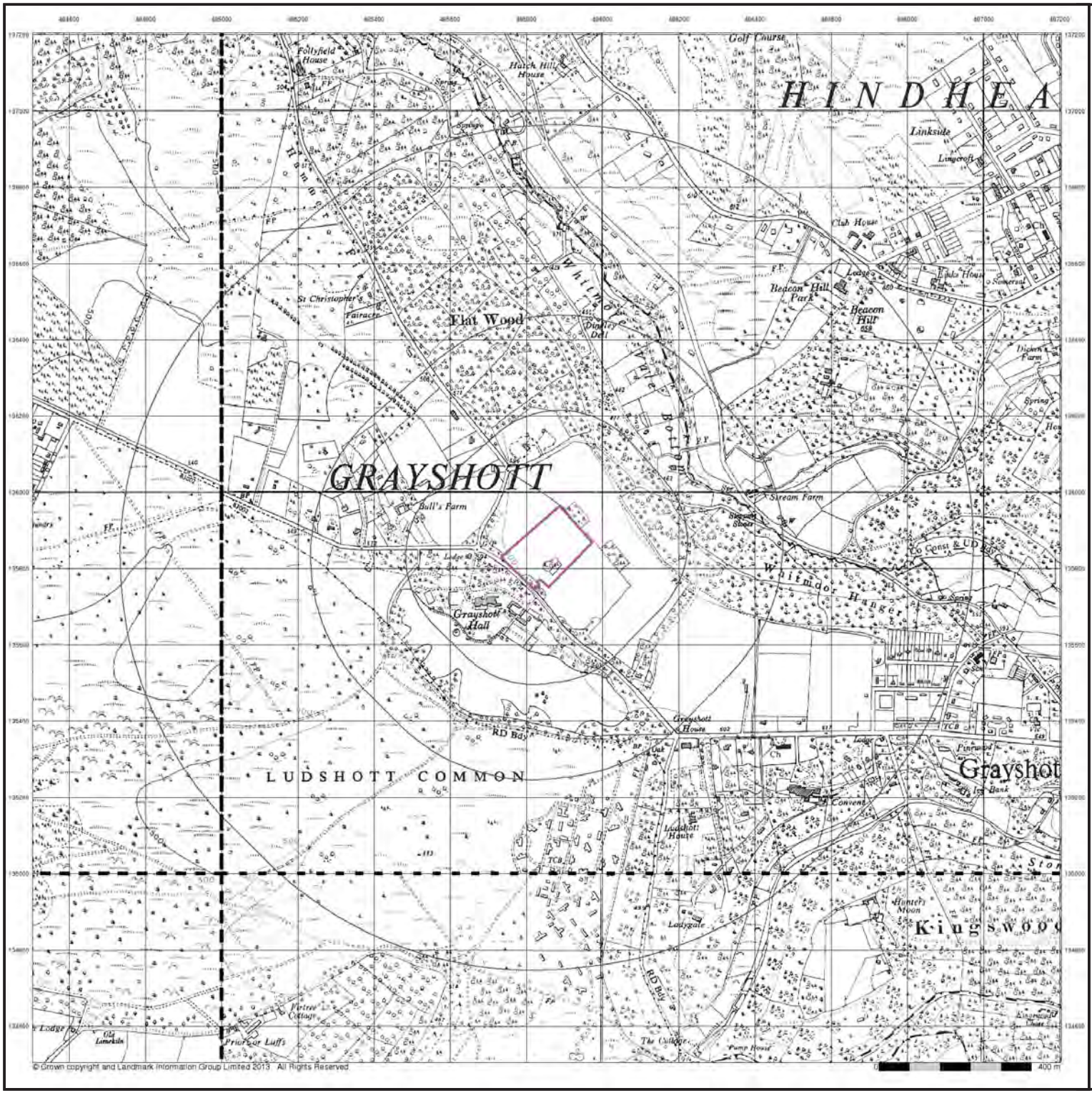

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pba peterbrett

Ordnance Survey Plan

Published 1961 - 1962

Source map scale - 1:10,000

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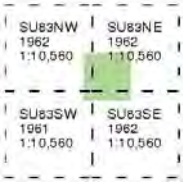
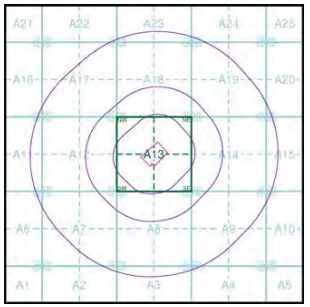
Map Name(s) and Date(s)



Historical Map - Slice A



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National Grid Reference:	485850, 135850
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Site Area (Ha):	2.66
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Site Details

Applegarth Farm, Headley Road, Grayshott, Hindhead, GU26 6JL

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

Appendix 4 Envirocheck Report supplied by Landmark

Envirocheck® Report:

Datasheet

Order Details:

Order Number:
62569421_1_1

Customer Reference:
32939

National Grid Reference:
485850, 135850

Slice:
A

Site Area (Ha):
2.66

Search Buffer (m):
1000

Site Details:

Applegarth Farm, Headley Road
Grayshott
Hindhead
GU26 6JL

Client Details:

Ms K Riley
Brett Consulting Ltd
Caversham Bridge House
Waterman Place
Reading
Berkshire
RG1 8DN

Contents

Introduction

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

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

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Peter Brett Associates Copyright Notice

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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 v49.0

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1			2	3
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	2
Prosecutions Relating to Authorised Processes					
Prosecutions Relating to Controlled Waters					
Registered Radioactive Substances					
River Quality					
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions	pg 2				(*1)
Water Industry Act Referrals					
Groundwater Vulnerability	pg 3	Yes	n/a	n/a	n/a
Bedrock Aquifer Designations	pg 3	Yes	n/a	n/a	n/a
Superficial Aquifer Designations			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

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 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 Estimated Soil Chemistry	pg 6	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 8				4
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
Brine Compensation Area			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
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				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 9	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 9	Yes		n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards				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

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 10	1			1
Fuel Station Entries					
Sensitive Land Use					
Areas of Adopted Green Belt	pg 11				1
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty	pg 11			1	
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones					
Ramsar Sites					
Sites of Special Scientific Interest	pg 11			1	
Special Areas of Conservation					
Special Protection Areas	pg 11			1	

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**Discharge Consents** Operator: Dr Tilsley Peck Property Type: Domestic Property (Single) Location: Laurel Cottage, Whitmore Vale, Grayshott, Hindhead, Surrey Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CNTW.0671 Permit Version: 1 Effective Date: 14th September 1990 Issued Date: 14th September 1990 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Irrigation Area Receiving Water: Hythe Beds **Status: Transferred from Water Act 1989** Positional Accuracy: Located by supplier to within 100m	A14NW (E)	308	2	486260 135980
2	**Discharge Consents** Operator: Mr. P.J. Green Property Type: Domestic Property (Single) Location: Five Oaks, Whitmore Vale Road, Grayshott, Surrey Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CNTM.1411 Permit Version: 1 Effective Date: 8th June 1994 Issued Date: 8th June 1994 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Onto Land/Into Watercourse Receiving Water: Whitmoor Vale Stream **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A19SW (NE)	459	2	486200 136300
3	**Discharge Consents** Operator: Edward Murray Property Type: Domestic Property (Single) Location: Heather Ridge Whitmore Vale Road Hindhead Surrey Gu26 6ja Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Casm.1409 Permit Version: 1 Effective Date: 10th November 2005 Issued Date: 11th November 2005 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Whitmore Vale Stream **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 100m	A18SE (N)	548	2	486000 136500
4	**Discharge Consents** Operator: Mr. A.J. & Mrs. R. Paynter Property Type: Domestic Property (Single) Location: Moorhaven, Whitmoor Vale Road, Grayshott, Surrey Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CNTM.0857 Permit Version: 1 Effective Date: 30th April 1993 Issued Date: 30th April 1993 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Irrigation Area Receiving Water: Hythe Beds **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A18NE (N)	758	2	485940 136720

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Discharge Consents** Operator: Mr. M.F. Jenkins Property Type: Domestic Property (Single) Location: Meadow Cottage, Whitmore Vale, Grayshott, Near Hindhead, Hants Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CTWC.1243 Permit Version: 1 Effective Date: 14th October 1986 Issued Date: 14th October 1986 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Irrigation Area Receiving Water: Hythe Beds **Status: Transferred from COPA 1974** Positional Accuracy: Located by supplier to within 100m	A23SW (N)	979	2	485600 136900
	Nearest Surface Water Feature	A13SW (SW)	198	-	485632 135653
6	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: HINDHEAD Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Unknown Note: Yes Incident Date: 3rd March 1989 Incident Reference: S1890101 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18SE (N)	354	2	486000 136300
7	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Grayshot Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Unknown Note: Confirmed As A Pollution Incident Incident Date: 13th February 1989 Incident Reference: S1890093 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14SW (E)	532	2	486500 135800
8	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: CHURT Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Unknown Note: Confirmed As A Pollution Incident Incident Date: 11th April 1991 Incident Reference: S1910135 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18NE (N)	646	2	486000 136600
	Water Abstractions Operator: Hindhead Golf Club Licence Number: 28/39/30/0412 Permit Version: 1 Location: Hindhead Golf Club, Churt Road, Hindhead Authority: Environment Agency, Thames Region Abstraction: Golf Courses: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Hindhead Golf Club, Hindhead Authorised Start: 01 April Authorised End: 31 October Permit Start Date: 1st April 2012 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(N)	1812	2	486470 137680

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Groundwater Vulnerability Soil Classification: Soils of High Leaching Potential (H3)- Coarse textured or moderately shallow soils which readily transmit non-absorbed pollutants and liquid discharges but which have some ability to attenuate absorbed pollutants because of their large clay or organic matter contents Map Sheet: Sheet 45 West Sussex and Surrey Scale: 1:100,000	A13SE (E)	0	2	485855 135852
	Drift Deposits None				
	Bedrock Aquifer Designations Aquifer Designation: Principal Aquifer	A13SE (E)	0	3	485855 135852
	Superficial Aquifer Designations No Data Available				
9	**Source Protection Zones** Name: Headley Park Source: Environment Agency, Head Office Reference: Th117 Type: Zone III (Total Catchment): The total area needed to support the discharge from the protected groundwater source.	A13SW (S)	26	2	485840 135718
	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				
10	**Detailed River Network Lines** River Type: Lake/Reservoir River Name: Not Supplied Hydrographic Area: D006 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	A14NW (NE)	330	2	486242 136059
11	**Detailed River Network Lines** River Type: Secondary River River Name: Not Supplied Hydrographic Area: D006 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	A14NW (NE)	338	2	486229 136088
12	**Detailed River Network Lines** River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D006 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	A14NW (E)	412	2	486373 135965

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
13	**Detailed River Network Lines** River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D006 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	A14NW (E)	424	2	486386 135962
14	**Detailed River Network Lines** River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D006 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	A14NW (E)	424	2	486386 135960
	Detailed River Network Offline Drainage None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Local Authority Landfill Coverage Name: East Hampshire District Council - Has no landfill data to supply		0	7	485855 135852
	Local Authority Landfill Coverage Name: Hampshire County Council - Had landfill data but passed it to the relevant environment agency		0	8	485855 135852
	Local Authority Landfill Coverage Name: Waverley Borough Council - Has supplied landfill data		314	10	486226 136054
	Local Authority Landfill Coverage Name: Surrey County Council - Has supplied landfill data		314	9	486226 136054

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Lower Greensand	A13SE (E)	0	3	485855 135852
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SE (E)	0	4	485855 135852
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SE (E)	27	4	486000 135852
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NE (N)	36	4	485855 136000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NE (NE)	108	4	486000 136000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14NW (NE)	312	4	486227 136049
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14NW (E)	336	4	486281 136000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14NW (NE)	341	4	486254 136061
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14NW (E)	372	4	486320 136000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A18NE (N)	586	4	486000 136539
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A18NE (N)	665	4	486000 136620
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12SW (W)	734	4	485000 135852
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8SE (S)	746	4	485855 135000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12NW (W)	754	4	485000 136000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8SE (S)	764	4	486000 135000
15	**BGS Recorded Mineral Sites** Site Name: Bull'S Farm Gravel Pit Location: , Headley, Bordon, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 150022 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Hythe Formation Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A17SW (NW)	797	3	485155 136377
16	**BGS Recorded Mineral Sites** Site Name: Grayshott Court Gravel Pits Location: , Grayshott, Haslemere, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 159243 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Hythe Formation Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A9SW (SE)	801	3	486218 135036
17	**BGS Recorded Mineral Sites** Site Name: Grayshott Court Gravel Pits Location: , Grayshott, Haslemere, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 159244 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Hythe Formation Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A9SW (SE)	867	3	486230 134968
18	**BGS Recorded Mineral Sites** Site Name: Headley Common Location: , Arford, Bordon, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 150011 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Hythe Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A17SW (NW)	941	3	485010 136431
	BGS Measured Urban Soil Chemistry No data available				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Urban Soil Chemistry Averages No data available				
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Non Coal Mining Areas of Great Britain Risk: Rare Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	3	485855 135852
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	3	485855 135852
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	3	485855 135852
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	3	485855 135852
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	3	485855 135852
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	3	485855 135852
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	3	485855 135852
	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	A13SE (E)	0	3	485855 135852
	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	A13SE (E)	0	3	485855 135852

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
19	**Contemporary Trade Directory Entries** Name: 0800 Sports Location: Applegarth Farm, Headley Road, Grayshott, Hindhead, Surrey, GU26 6JL Classification: Sports Equipment Manufacturers & Distributors **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (S)	0	-	485865 135804
20	**Contemporary Trade Directory Entries** Name: Iron For You Location: Ludshott House Cottage, Ladygate Drive, Grayshott, Hindhead, Surrey, GU26 6DR Classification: Ironing & Home Laundry Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9SW (SE)	843	-	486294 135029

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
21	**Areas of Adopted Green Belt** Authority: Waverley Borough Council Plan Name: Waverley Borough Local Plan 2002 **Status: Adopted** Plan Date: 23rd April 2002	A18SE (NE)	553	5	486123 136464
22	**Areas of Outstanding Natural Beauty** Name: Surrey Hills Multiple Areas: Y Total Area (m2): 422462391.65 Designation Date: 30th May 1958 Source: Natural England	A14NW (NE)	314	6	486226 136054
23	**Sites of Special Scientific Interest** Name: Bramshott And Ludshott Commons Multiple Areas: N Total Area (m2): 3711377.39 Source: Natural England Reference: 1003749 Designation Details: EC Special Protection Area Designation Date: 26th October 1984 Date Type: Notified	A12SE (SW)	342	6	485504 135570
24	**Special Protection Areas** Name: Wealden Heaths Phase Ii Multiple Areas: Y Total Area (m2): 20565031.76 Source: Natural England Reference: UK9012132 Designation Date: Not Supplied	A12SE (SW)	342	6	485504 135570

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
East Hampshire District Council - Environmental Health Department	April 2013	Annual Rolling Update
Chichester District Council - Environmental Health Department	July 2013	Annual Rolling Update
Waverley Borough Council - Environmental Health Department	June 2013	Annual Rolling Update
Discharge Consents		
Environment Agency - Southern Region	November 2014	Quarterly
Environment Agency - Thames Region	November 2014	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Southern Region	March 2013	As notified
Environment Agency - Thames Region	March 2013	As notified
Integrated Pollution Controls		
Environment Agency - Southern Region	October 2008	Not Applicable
Environment Agency - Thames Region	October 2008	Not Applicable
Integrated Pollution Prevention And Control		
Environment Agency - Southern Region	November 2014	Quarterly
Environment Agency - Thames Region	November 2014	Quarterly
Local Authority Integrated Pollution Prevention And Control		
East Hampshire District Council - Environmental Health Department	March 2013	Annual Rolling Update
Chichester District Council - Environmental Health Department	October 2014	Annual Rolling Update
Waverley Borough Council - Environmental Health Department	September 2013	Annual Rolling Update
Local Authority Pollution Prevention and Controls		
East Hampshire District Council - Environmental Health Department	March 2013	Annual Rolling Update
Chichester District Council - Environmental Health Department	October 2014	Annual Rolling Update
Waverley Borough Council - Environmental Health Department	September 2013	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
East Hampshire District Council - Environmental Health Department	March 2013	Annual Rolling Update
Chichester District Council - Environmental Health Department	October 2014	Annual Rolling Update
Waverley Borough Council - Environmental Health Department	September 2013	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
Environment Agency - Thames Region	September 1999	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - Southern Region	March 2013	As notified
Environment Agency - Thames Region	March 2013	As notified
Prosecutions Relating to Controlled Waters		
Environment Agency - Southern Region	March 2013	As notified
Environment Agency - Thames Region	March 2013	As notified
Registered Radioactive Substances		
Environment Agency - Southern Region	November 2014	Quarterly
Environment Agency - Thames Region	November 2014	Quarterly
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	July 2012	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	July 2012	Annually
Substantiated Pollution Incident Register		
Environment Agency - Southern Region - Hampshire and Isle of Wight Area Office	November 2014	Quarterly
Environment Agency - Southern Region - Solent and South Downs	November 2014	Quarterly
Environment Agency - Southern Region - Sussex Area	November 2014	Quarterly
Environment Agency - Thames Region - South East Area	November 2014	Quarterly

Data Currency

Agency & Hydrological	Version	Update Cycle
Water Abstractions		
Environment Agency - Southern Region	October 2014	Quarterly
Environment Agency - Thames Region	October 2014	Quarterly
Water Industry Act Referrals		
Environment Agency - Southern Region	November 2014	Quarterly
Environment Agency - Thames Region	November 2014	Quarterly
Groundwater Vulnerability		
Environment Agency - Head Office	January 2011	Not Applicable
Drift Deposits		
Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations		
British Geological Survey - National Geoscience Information Service	October 2012	Annually
Superficial Aquifer Designations		
British Geological Survey - National Geoscience Information Service	October 2012	Annually
Source Protection Zones		
Environment Agency - Head Office	August 2014	Quarterly
Extreme Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	August 2014	Quarterly
Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	August 2014	Quarterly
Areas Benefiting from Flood Defences		
Environment Agency - Head Office	August 2014	Quarterly
Flood Water Storage Areas		
Environment Agency - Head Office	August 2014	Quarterly
Flood Defences		
Environment Agency - Head Office	August 2014	Quarterly
Detailed River Network Lines		
Environment Agency - Head Office	March 2012	Annually
Detailed River Network Offline Drainage		
Environment Agency - Head Office	March 2012	Annually

Data Currency

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites		
Environment Agency - Southern Region - Hampshire and Isle of Wight Area Office	August 2014	Quarterly
Environment Agency - Southern Region - Solent and South Downs	August 2014	Quarterly
Environment Agency - Southern Region - Sussex Area	August 2014	Quarterly
Environment Agency - Thames Region - South East Area	August 2014	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Southern Region	October 2008	Not Applicable
Environment Agency - Thames Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - Southern Region - Hampshire and Isle of Wight Area Office	August 2014	Quarterly
Environment Agency - Southern Region - Solent and South Downs	August 2014	Quarterly
Environment Agency - Southern Region - Sussex Area	August 2014	Quarterly
Environment Agency - Thames Region - South East Area	August 2014	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - Southern Region - Hampshire and Isle of Wight Area Office	November 2014	Quarterly
Environment Agency - Southern Region - Solent and South Downs	November 2014	Quarterly
Environment Agency - Southern Region - Sussex Area	November 2014	Quarterly
Environment Agency - Thames Region - South East Area	November 2014	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
Surrey County Council	May 2000	Not Applicable
Waverley Borough Council - Environmental Health Department	May 2000	Not Applicable
West Sussex County Council - Environment & Development	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Waverley Borough Council - Environmental Health Department	April 2003	Not Applicable
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
West Sussex County Council - Environment & Development	May 2000	Not Applicable
Surrey County Council	September 2003	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
Environment Agency - Thames Region - South East 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
Environment Agency - Thames Region - South East 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
Environment Agency - Thames Region - South East Area	March 2003	Not Applicable

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	August 2014	Bi-Annually
Explosive Sites		
Health and Safety Executive	October 2014	Bi-Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
Surrey County Council	April 2013	Annual Rolling Update
West Sussex County Council - Environment & Development	October 2006	Annual Rolling Update
Hampshire County Council - Minerals and Waste Planning	September 2013	Annual Rolling Update
Chichester District Council - Planning Department	September 2014	Annual Rolling Update
East Hampshire District Council	September 2014	Annual Rolling Update
Waverley Borough Council	September 2014	Annual Rolling Update
Planning Hazardous Substance Consents		
Surrey County Council	April 2013	Annual Rolling Update
West Sussex County Council - Environment & Development	October 2006	Annual Rolling Update
Hampshire County Council - Minerals and Waste Planning	September 2013	Annual Rolling Update
Chichester District Council - Planning Department	September 2014	Annual Rolling Update
East Hampshire District Council	September 2014	Annual Rolling Update
Waverley Borough Council	September 2014	Annual Rolling Update

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology		
British Geological Survey - National Geoscience Information Service	August 1996	Not Applicable
BGS Estimated Soil Chemistry		
British Geological Survey - National Geoscience Information Service	January 2010	Annually
BGS Recorded Mineral Sites		
British Geological Survey - National Geoscience Information Service	October 2014	Bi-Annually
Brine Compensation Area		
Cheshire Brine Subsidence Compensation Board	August 2011	Not Applicable
Coal Mining Affected Areas		
The Coal Authority - Mining Report Service	December 2013	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	July 2014	Not Applicable
Potential for Collapsible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2014	Annually
Potential for Compressible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2014	Annually
Potential for Ground Dissolution Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2014	Annually
Potential for Landslide Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2014	Annually
Potential for Running Sand Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2014	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2014	Annually
Radon Potential - Radon Affected Areas		
British Geological Survey - National Geoscience Information Service	July 2011	Annually
Radon Potential - Radon Protection Measures		
British Geological Survey - National Geoscience Information Service	July 2011	Annually

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	August 2014	Quarterly
Fuel Station Entries Catalist Ltd - Experian	November 2014	Quarterly
Sensitive Land Use	**Version**	**Update Cycle**
Areas of Adopted Green Belt Waverley Borough Council	November 2014	As notified
Areas of Unadopted Green Belt Waverley Borough Council	November 2014	As notified
Areas of Outstanding Natural Beauty Natural England	August 2014	Bi-Annually
Environmentally Sensitive Areas Natural England	August 2014	Annually
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Natural England	October 2014	Bi-Annually
Marine Nature Reserves Natural England	July 2013	Bi-Annually
National Nature Reserves Natural England	September 2014	Bi-Annually
National Parks Natural England	August 2014	Bi-Annually
Nitrate Sensitive Areas Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	February 2012	Not Applicable
Nitrate Vulnerable Zones Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	July 2014	Annually
Ramsar Sites Natural England	March 2014	Bi-Annually
Sites of Special Scientific Interest Natural England	September 2014	Bi-Annually
Special Areas of Conservation Natural England	March 2014	Bi-Annually
Special Protection Areas Natural England	September 2014	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
2	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 08708 506 506 Email: enquiries@environment-agency.gov.uk
3	**British Geological Survey - Enquiry Service** British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
4	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmark.co.uk Website: www.landmarkinfo.co.uk
5	**Waverley Borough Council** Council Offices, The Burys, Godalming, Surrey, GU7 1HR	Telephone: 01483 523333 Fax: 01483 426337 Website: www.waverley.gov.uk
6	**Natural England** Suite D, Unex House, Bourges Boulevard, Peterborough, Cambridgeshire, PE1 1NG	Telephone: 0845 600 3078 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
7	**East Hampshire District Council** Penns Place, Petersfield, Hampshire, GU31 4EX	Telephone: 01730 266551 Fax: 01730 267366 Website: www.easthants.gov.uk
8	**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
9	**Surrey County Council** Penrhyn Road, Kingston-upon-Thames, Surrey, KT1 2DN	Telephone: 020 8541 8800 Fax: 020 8541 9005 Website: www.surreycc.gov.uk
10	**Waverley Borough Council - Environmental Health Department** Council Offices, The Burys, Godalming, Surrey, GU7 1HR	Telephone: 01483 523333 Fax: 01483 869118 Website: www.waverley.gov.uk
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

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

Envirocheck® Report:

BGS Boreholes Datasheet

Order Details:

Order Number:
62569421_1_1

Customer Reference:
32939

National Grid Reference:
485850, 135850

Slice:
A

Site Area (Ha):
2.66

Borehole Search Buffer (m):
1000

Site Details:

Applegarth Farm, Headley Road
Grayshott
Hindhead
GU26 6JL

Client Details:

Ms K Riley
Brett Consulting Ltd
Caversham Bridge House
Waterman Place
Reading
Berkshire
RG1 8DN

BGS Boreholes Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m
BGS Boreholes	pg 1	None	3	1	None

Introduction

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

In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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

Report Version v49.0

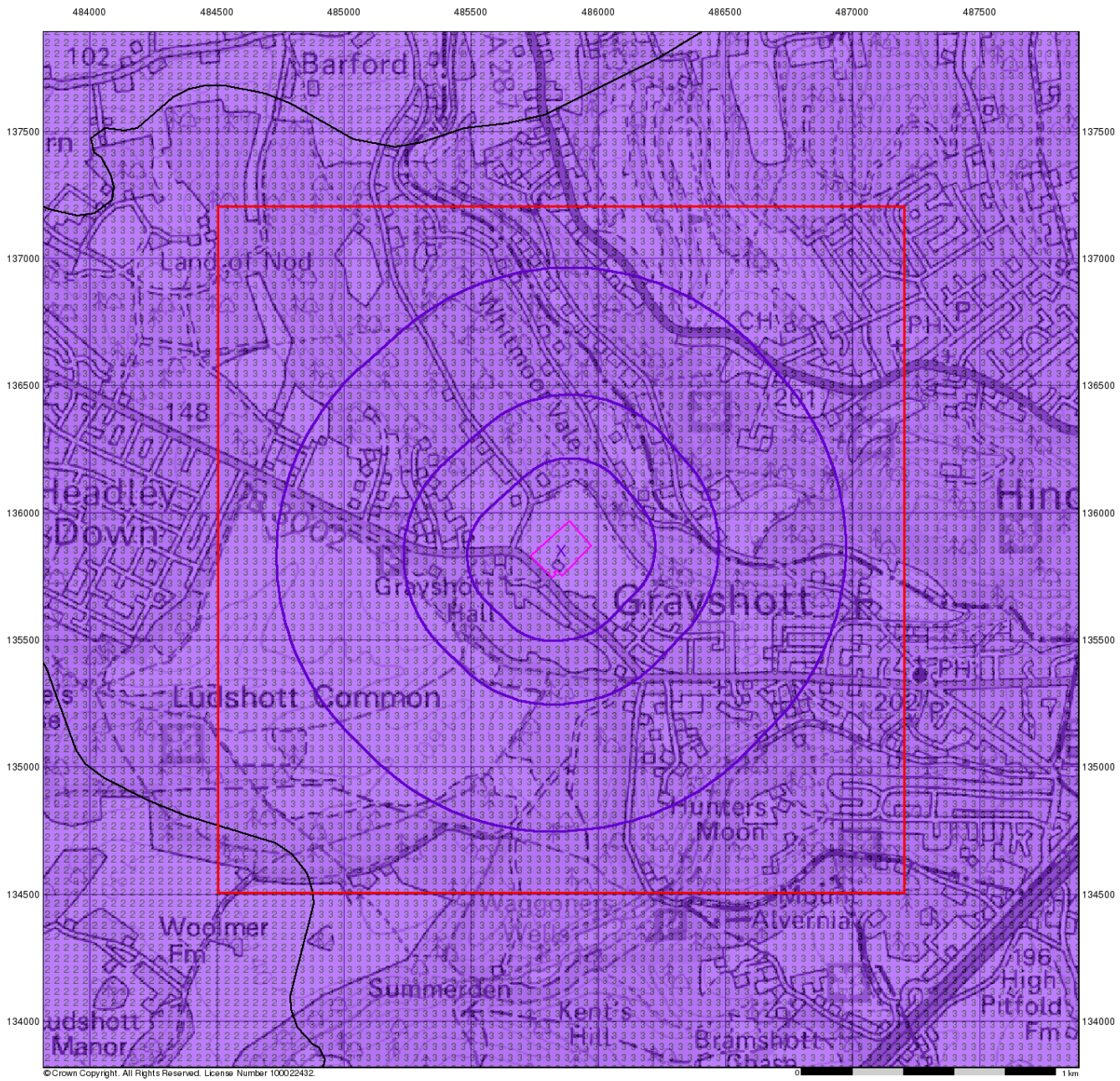
BGS Boreholes Detail

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
25	**BGS Boreholes** BGS Reference: Su83ne53 Drilled Length (m): 33.68 Borehole Name: Grayshott House Link to Borehole Scan: http://scans.bgs.ac.uk/sobi_scans/boreholes/430444/	A12NE (W)	244	3	485500 135900
25	**BGS Boreholes** BGS Reference: Su83ne54 Drilled Length (m): 36.88 Borehole Name: Grayshott House Link to Borehole Scan: http://scans.bgs.ac.uk/sobi_scans/boreholes/430445/	A12NE (W)	244	3	485500 135900
25	**BGS Boreholes** BGS Reference: Su83ne12 Drilled Length (m): 33 Borehole Name: Grayshott Down Bramshott Link to Borehole Scan: http://scans.bgs.ac.uk/sobi_scans/boreholes/430403/	A12NE (W)	244	3	485500 135900
26	**BGS Boreholes** BGS Reference: Su83ne74 Drilled Length (m): 41.61 Borehole Name: Bulls Farm Grayshott Link to Borehole Scan: http://scans.bgs.ac.uk/sobi_scans/boreholes/430465/	A12NE (W)	375	3	485400 136000

Data Currency and Contact Details

BGS Boreholes	Version	Update Cycle
BGS Boreholes British Geological Survey - National Geoscience Information Service	October 2014	Quarterly

Contact Details	Contact Logo
3 **British Geological Survey - Enquiry Service** British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk	
- **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	



Groundwater Vulnerability

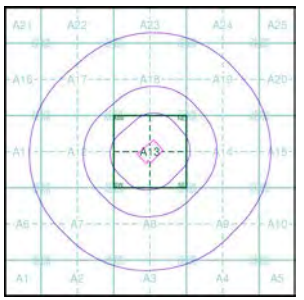
General

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



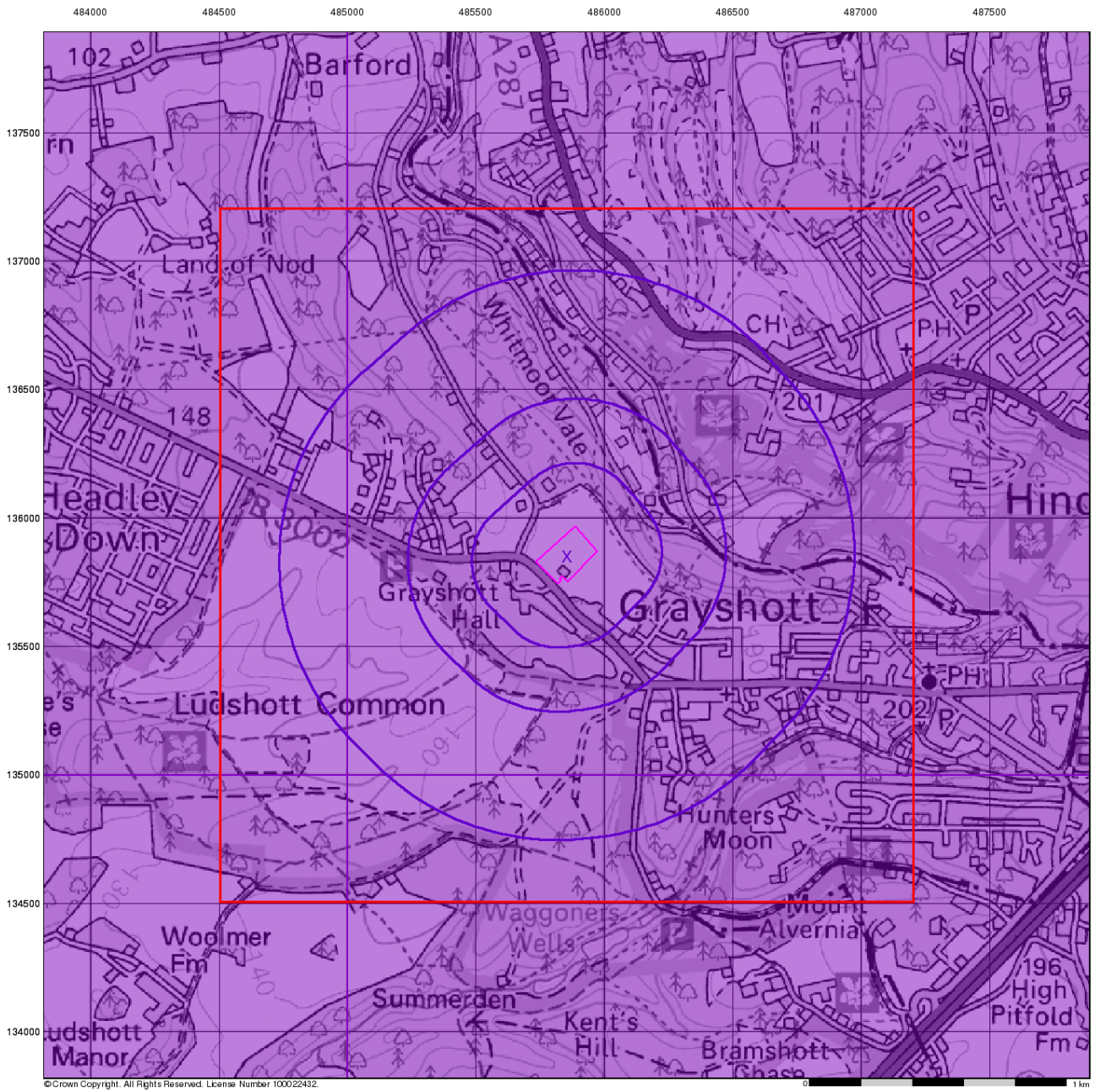
Order Details

Order Number:	62569421_1_1
Customer Ref:	32939
National Grid Reference:	485850, 135850
Slice:	A
Site Area (Ha):	2.66
Search Buffer (m):	1000

Site Details

Applegarth Farm, Headley Road, Grayshott, Hindhead, GU26 6JL

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



Bedrock Aquifer Designation

General

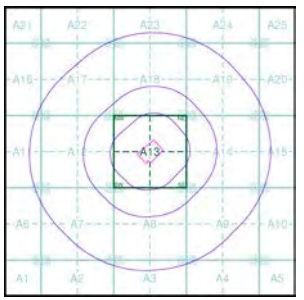
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice A



Order Details

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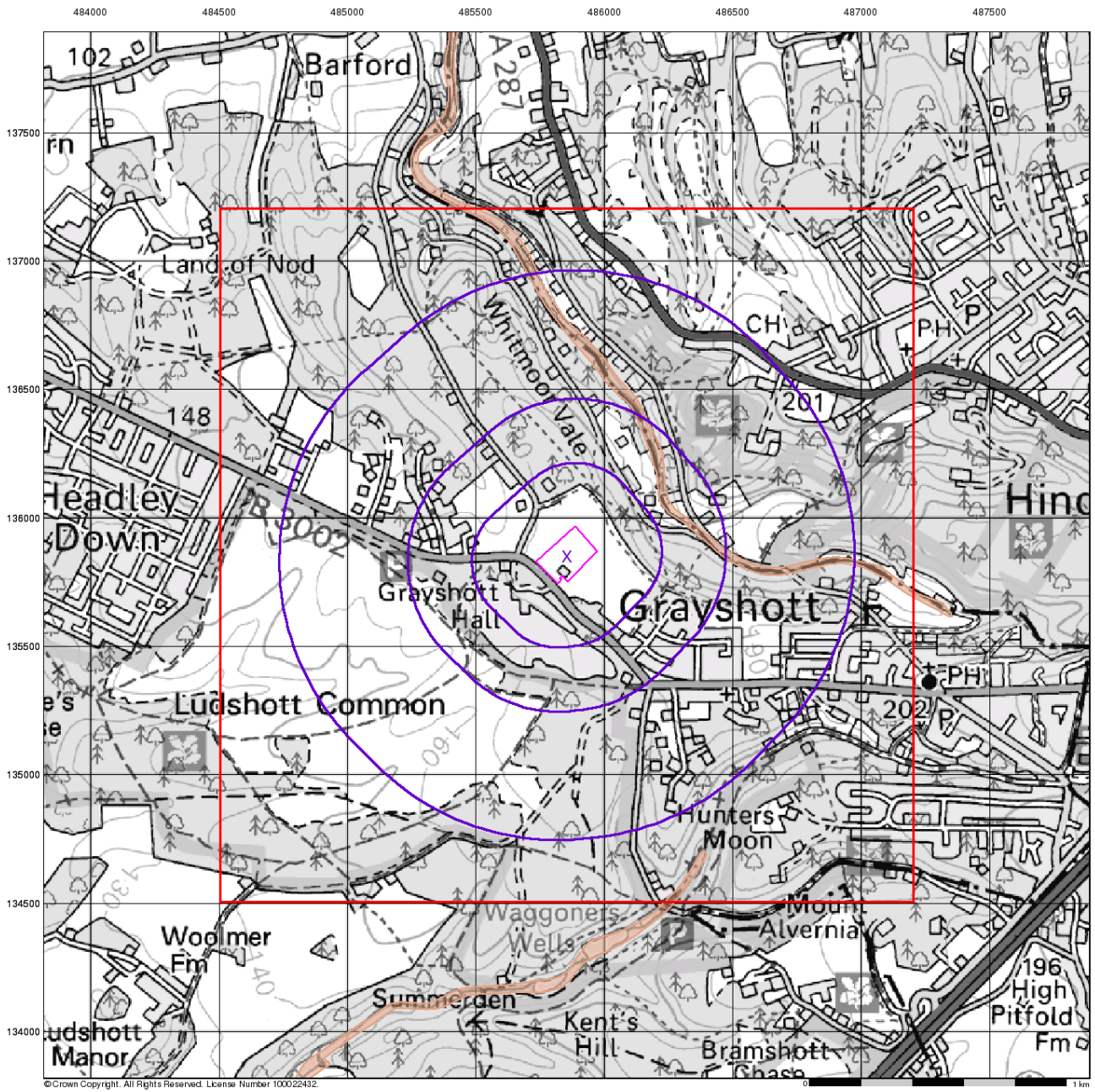


Superficial Aquifer Designation

General

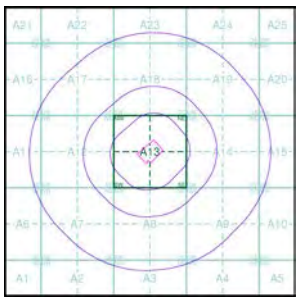
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice A



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Applegarth Farm, Headley Road, Grayshott, Hindhead, GU26 6JL

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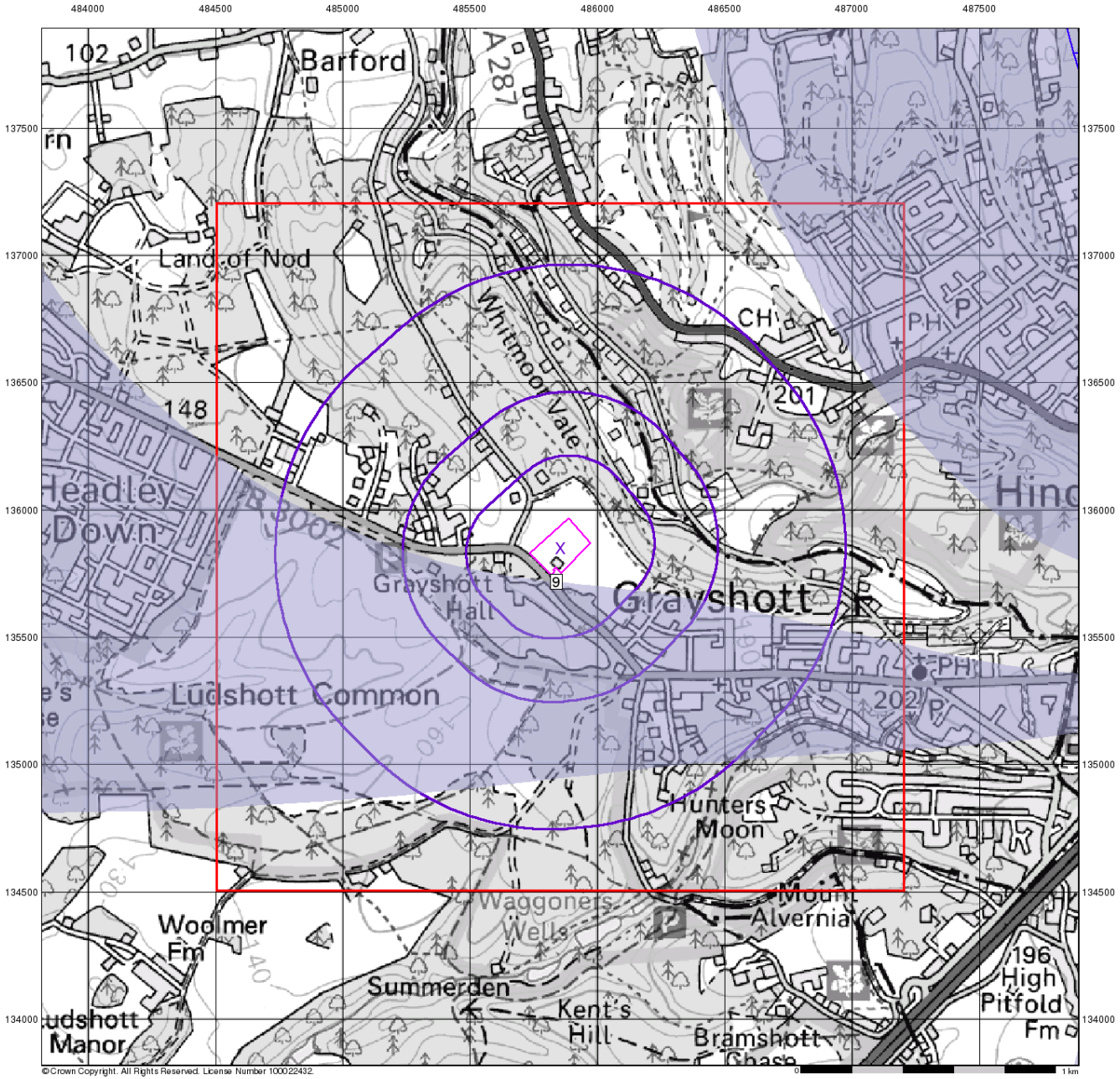

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Source Protection Zones

General

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

Slice | Map ID

Agency and Hydrological

Source Protection Zone I

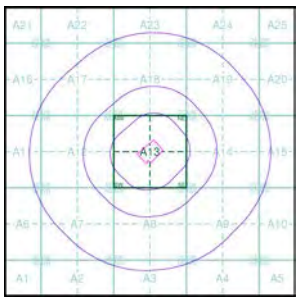
Source Protection Zone II

Source Protection Zone III

Zone of Special Interest

Source Protection Zone Borehole

Site Sensitivity Context Map - Slice A



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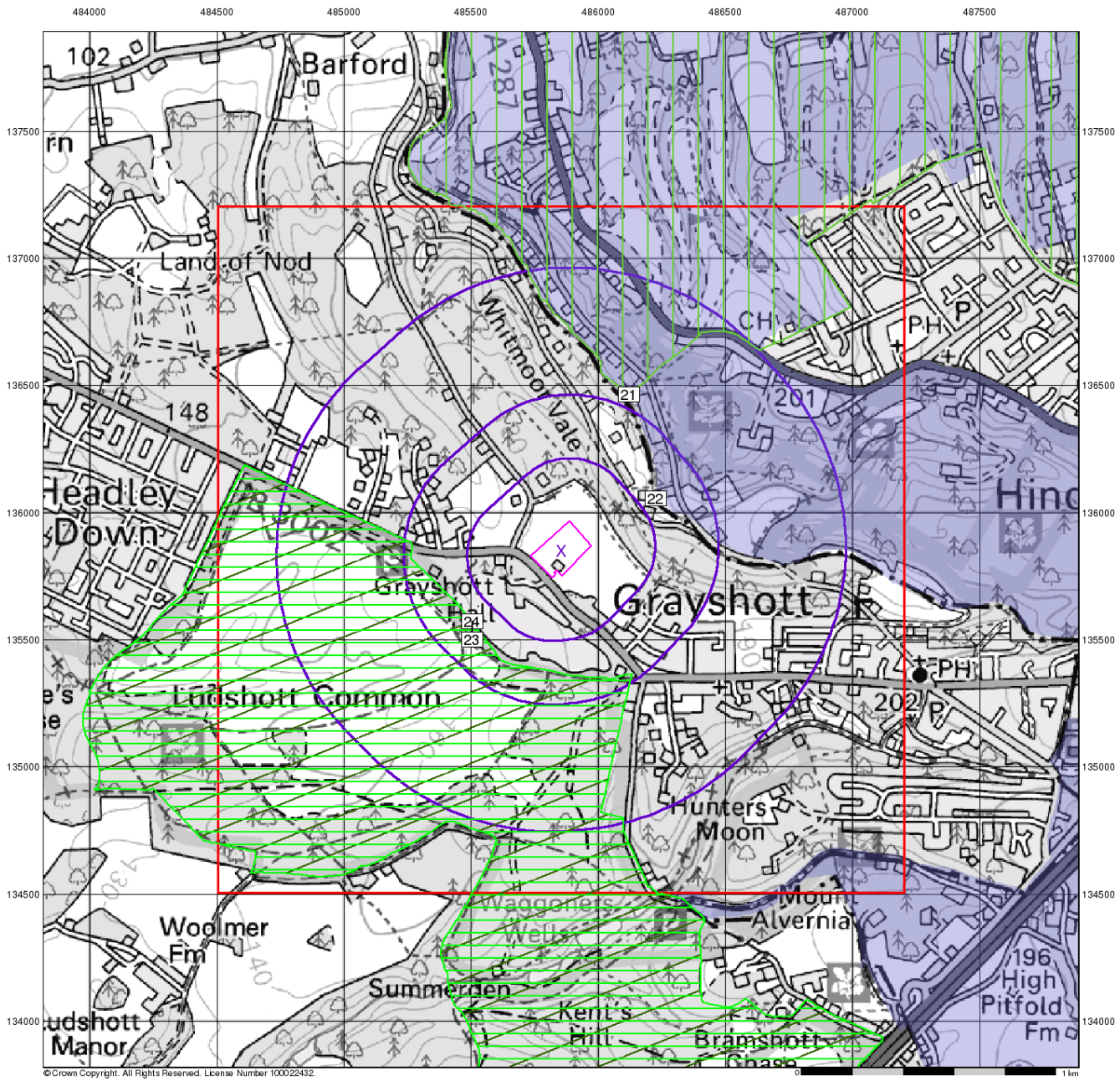

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Sensitive Land Uses

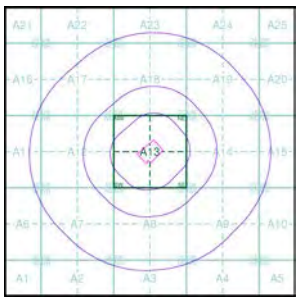
General

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

Sensitive Land Uses

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

Site Sensitivity Context Map - Slice A



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Slice:	A
Site Area (Ha):	2.66
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Web: www.envirocheck.co.uk

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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

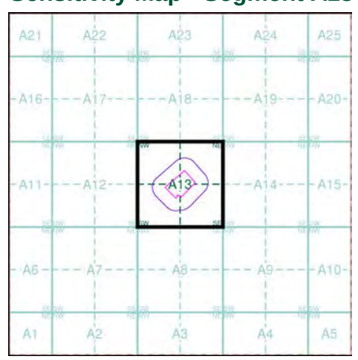
Waste

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

Hazardous Substances

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

Site Sensitivity Map - Segment A13



Order Details

Order Number:	62569421_1_1
Customer Ref:	32939
National Grid Reference:	485850, 135850
Slice:	A
Site Area (Ha):	2.66

Site Details

Applegarth Farm, Headley Road, Grayshott, Hindhead, GU26 6JL

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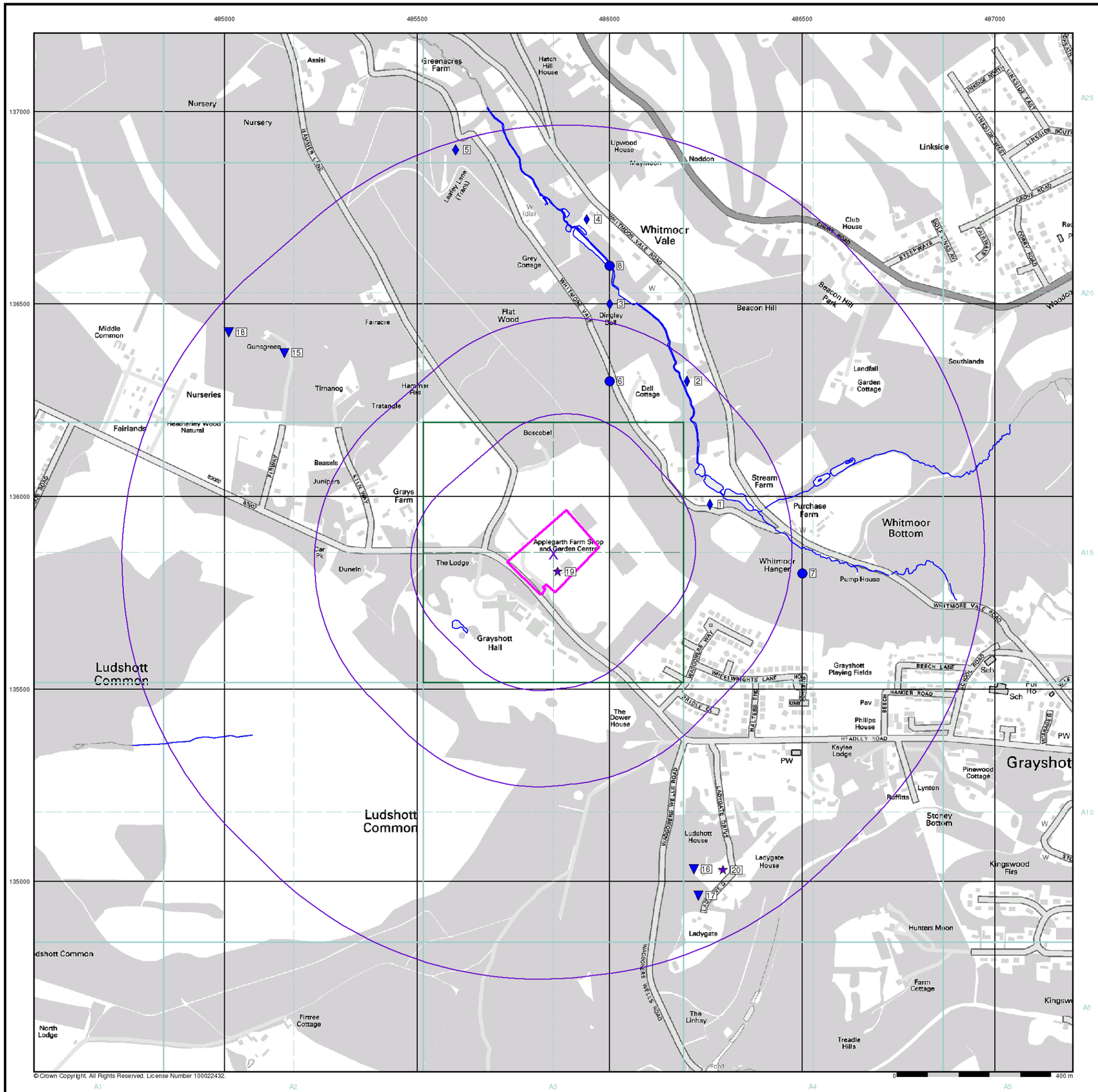
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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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

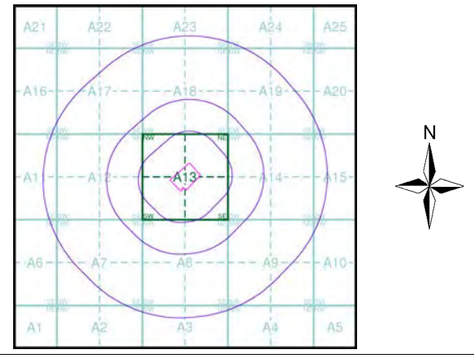
Waste

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

Hazardous Substances

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

Site Sensitivity Map - Slice A



Order Details

Order Number:	62569421_1_1
Customer Ref:	32939
National Grid Reference:	485850, 135850
Slice:	A
Site Area (Ha):	2.66
Search Buffer (m):	1000

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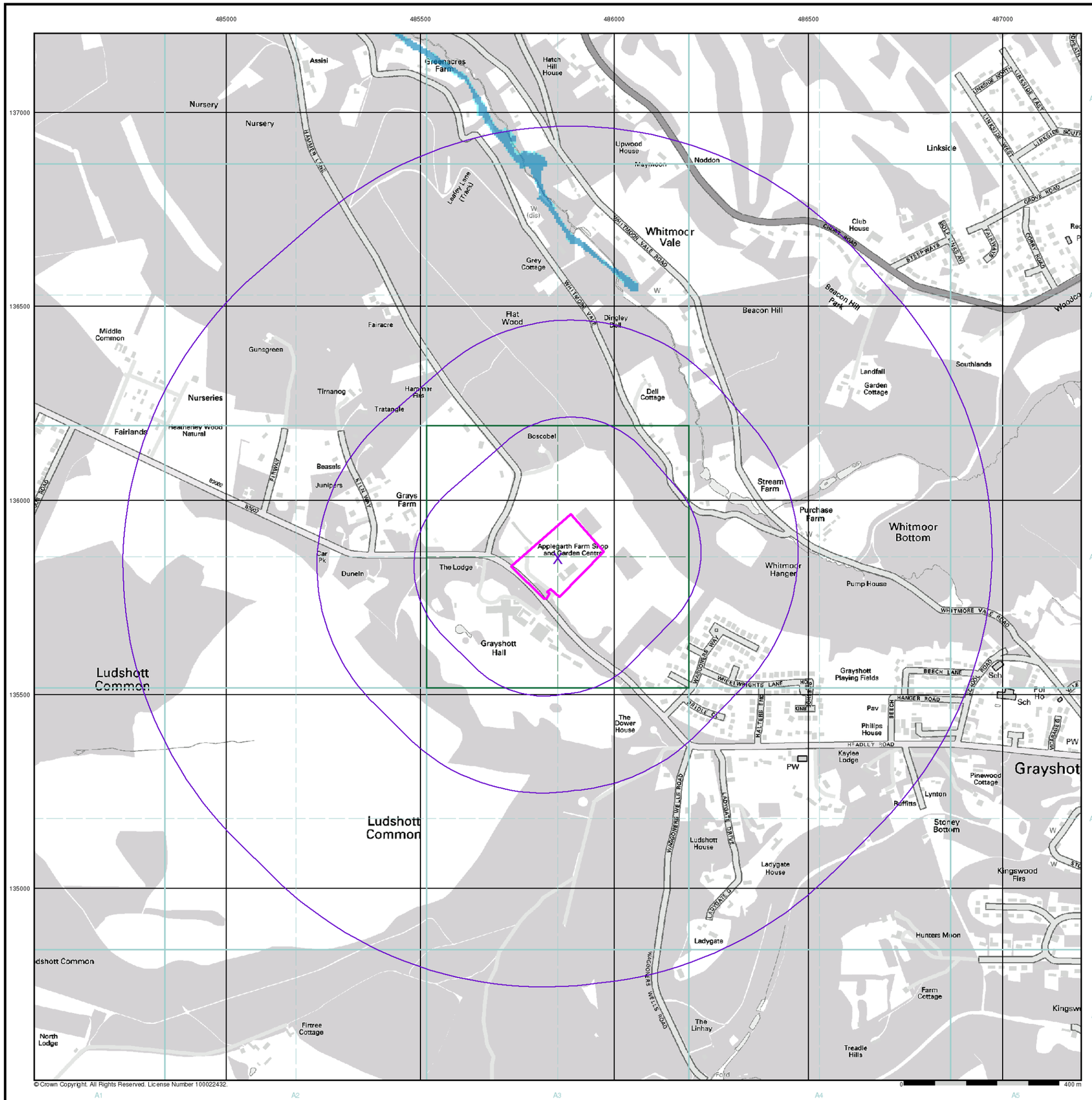

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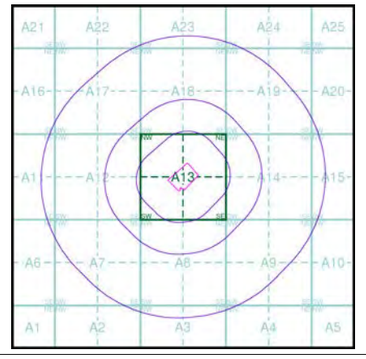
General

- 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



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National Grid Reference:	485850, 135850
Slice:	A
Site Area (Ha):	2.66
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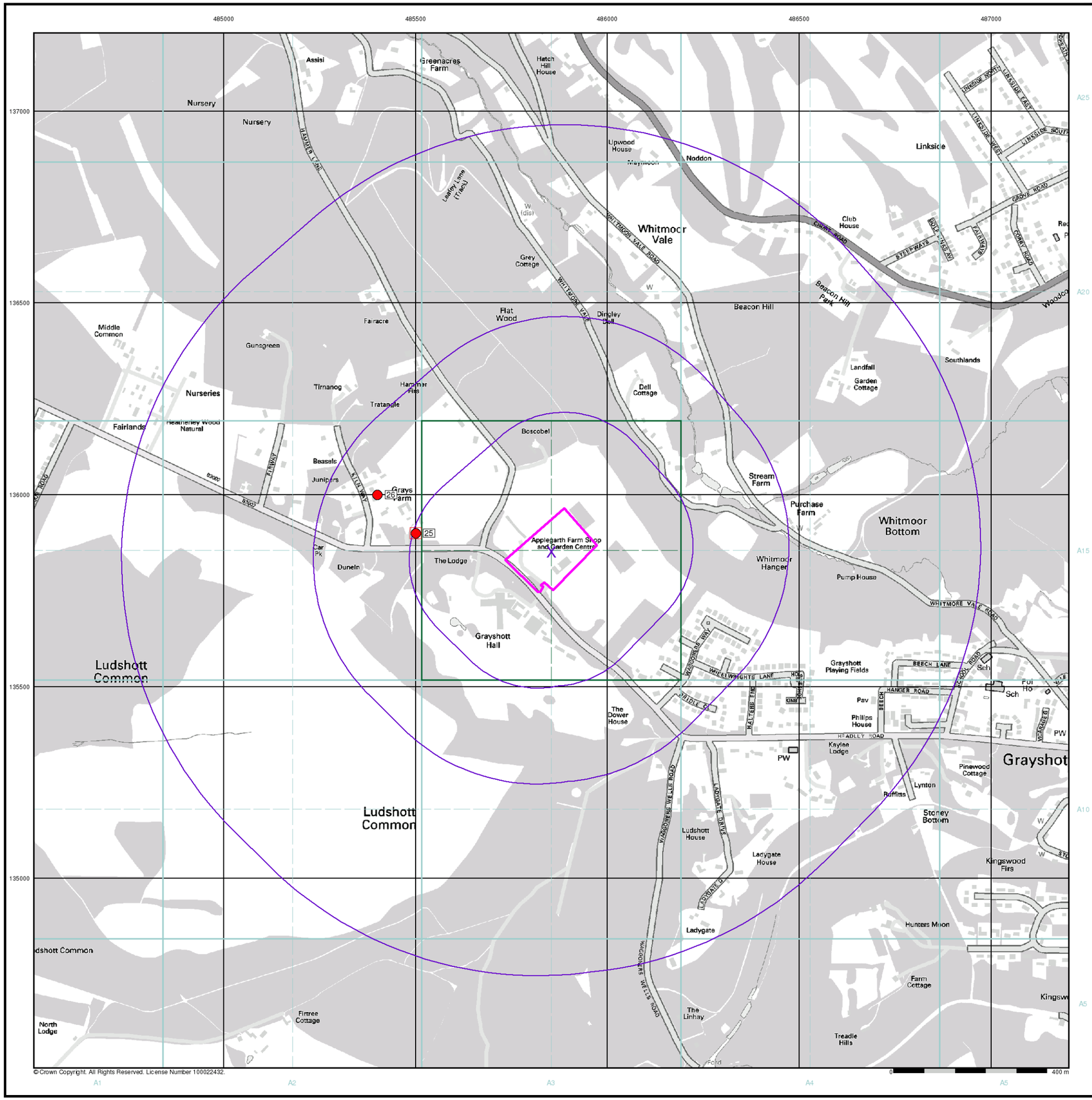

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General

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

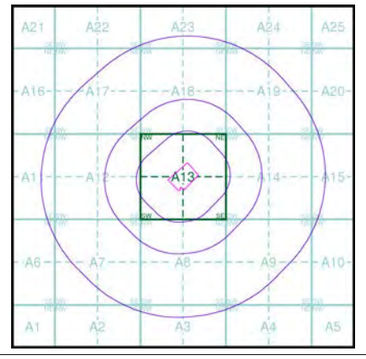
Agency and Hydrological (Boreholes)

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

For Borehole information please refer to the Borehole datasheet 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

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Slice:	A
Site Area (Ha):	2.66
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Site Details

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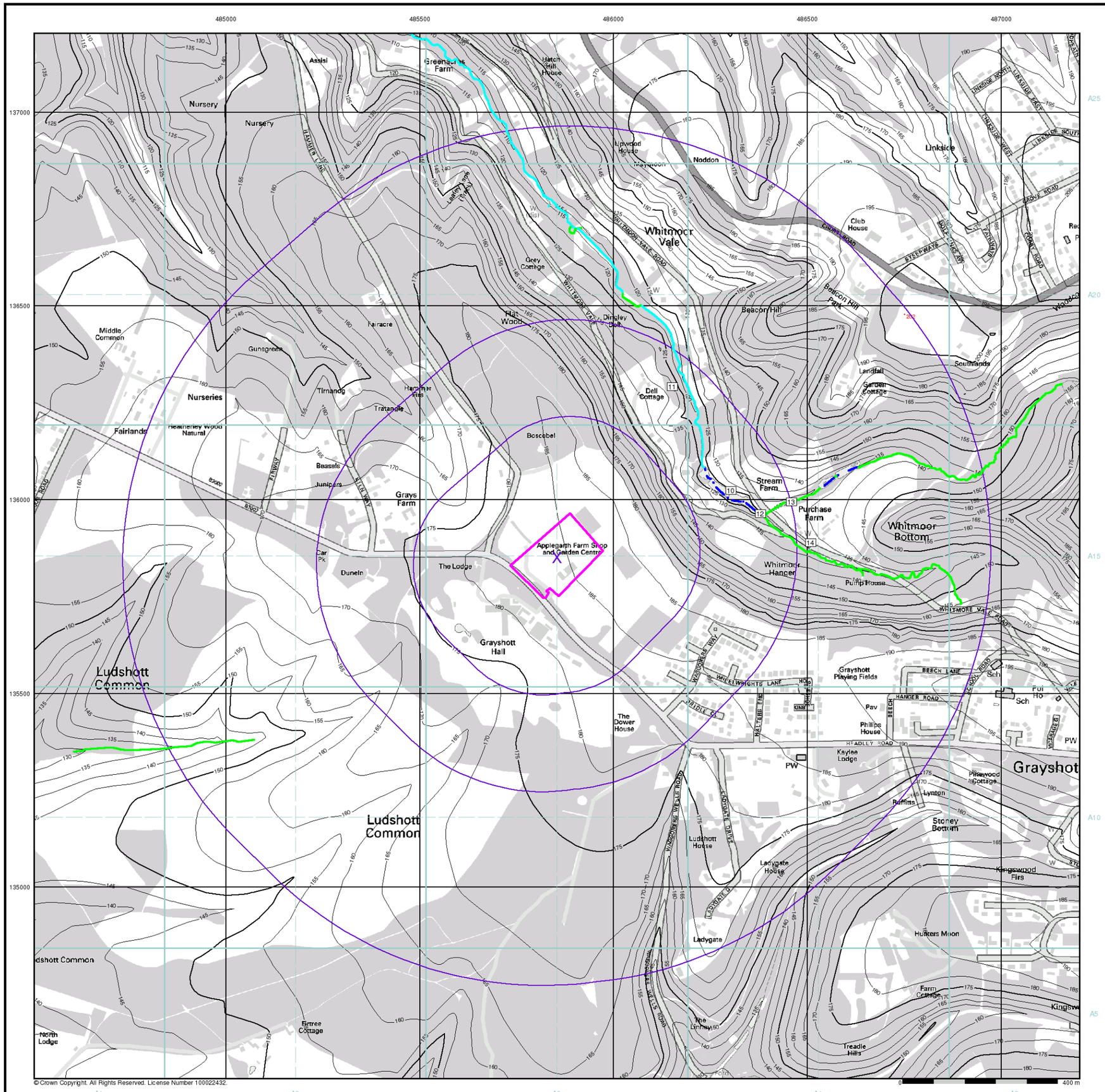

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General

- 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

Contours (height in metres)

Standard Contour 105 100 95

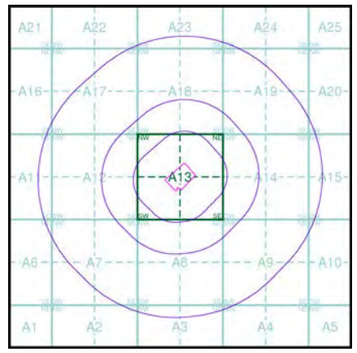
Master Contour

Spot Height *167.3

MLW Mean Low Water

MHW Mean High Water

EA/NRW Detailed River Network Map - Slice A



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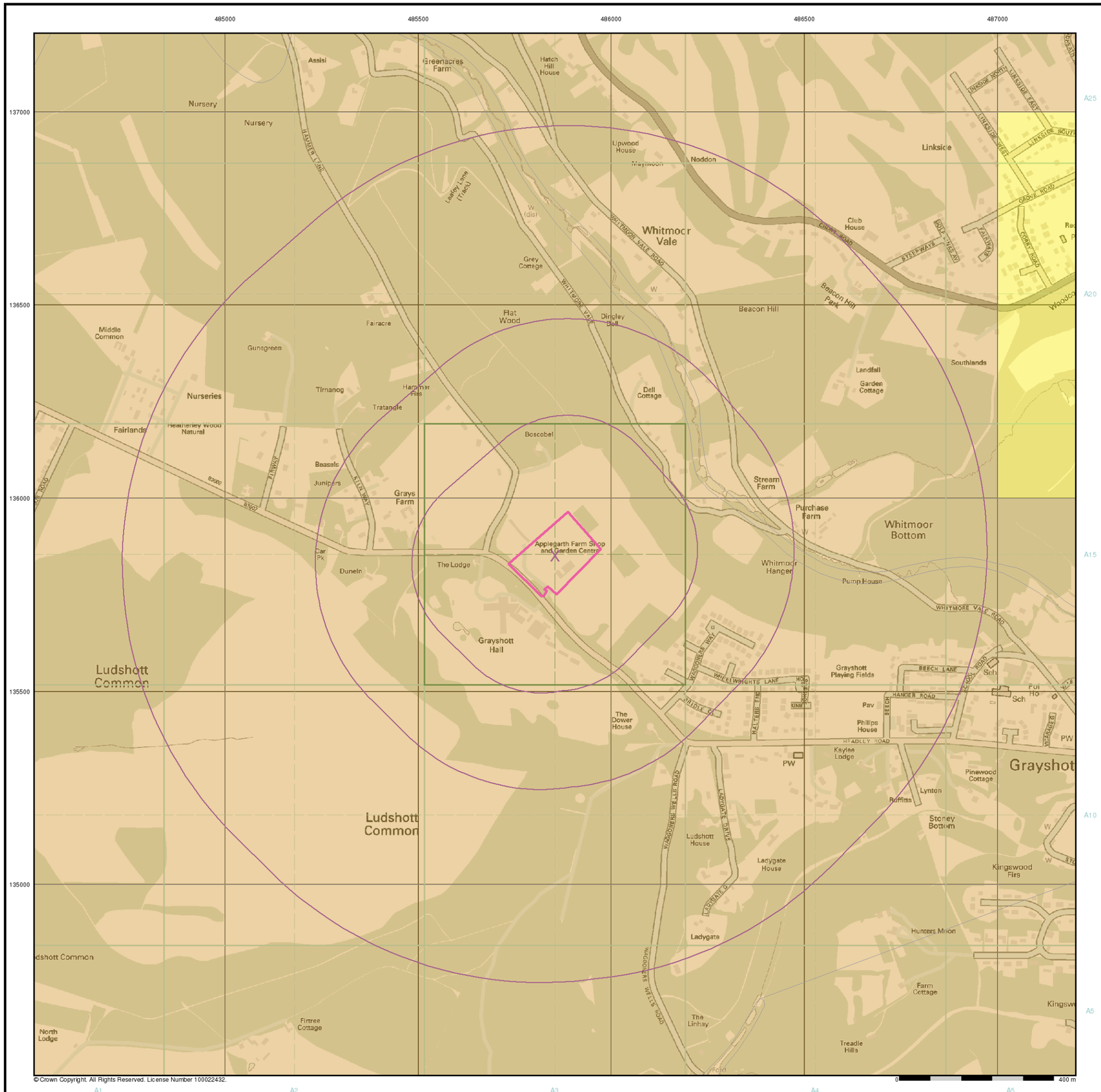


pba peterbrett

General

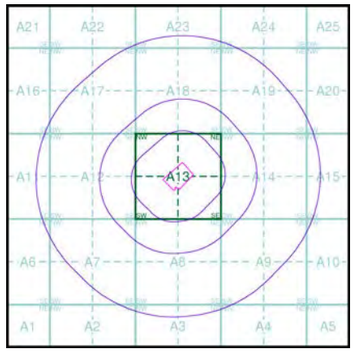
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg

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

Estimated Soil Chemistry Arsenic - Slice A



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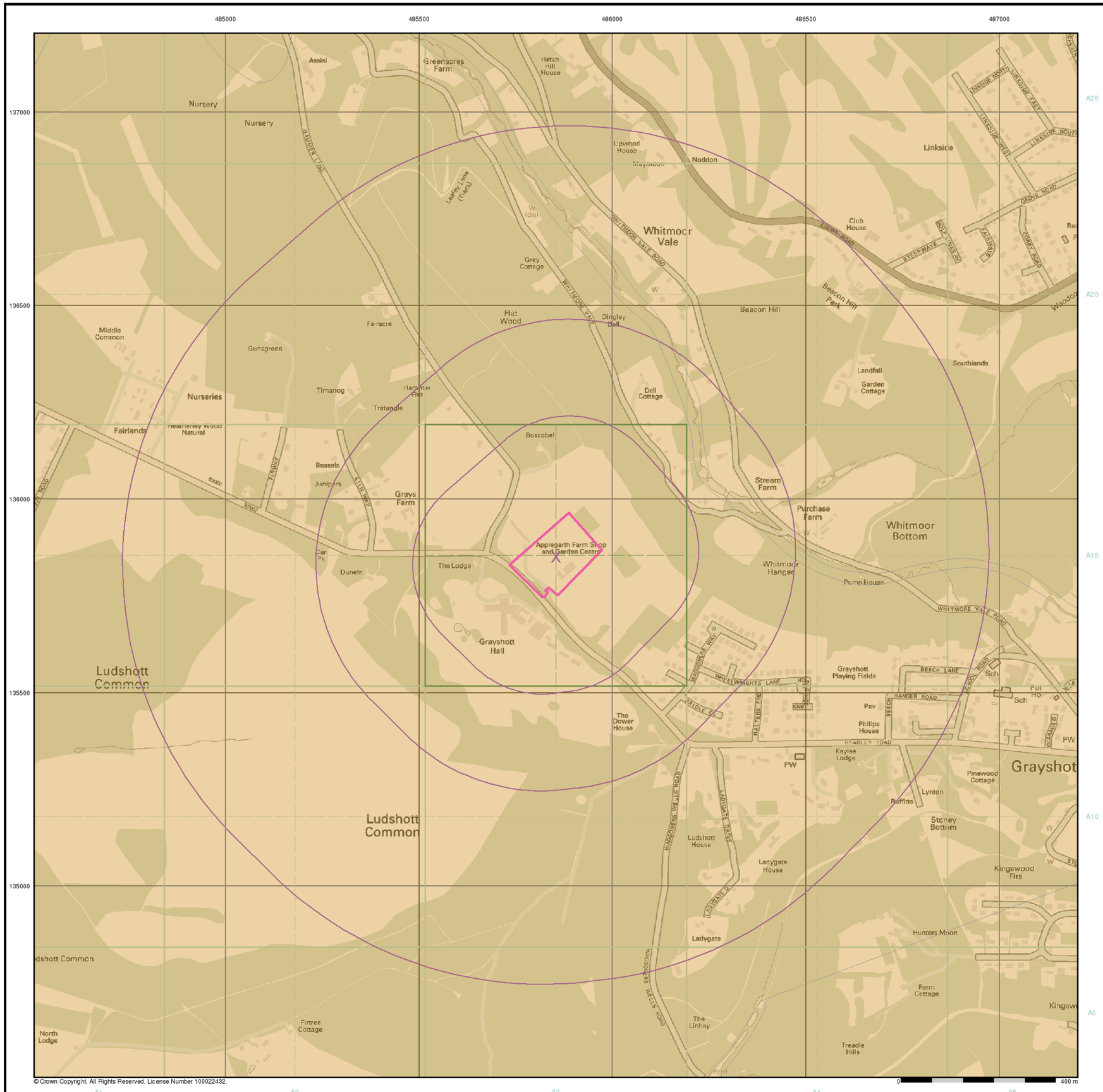
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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General

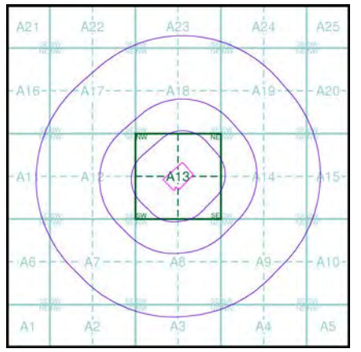
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg

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

Estimated Soil Chemistry Cadmium - Slice A



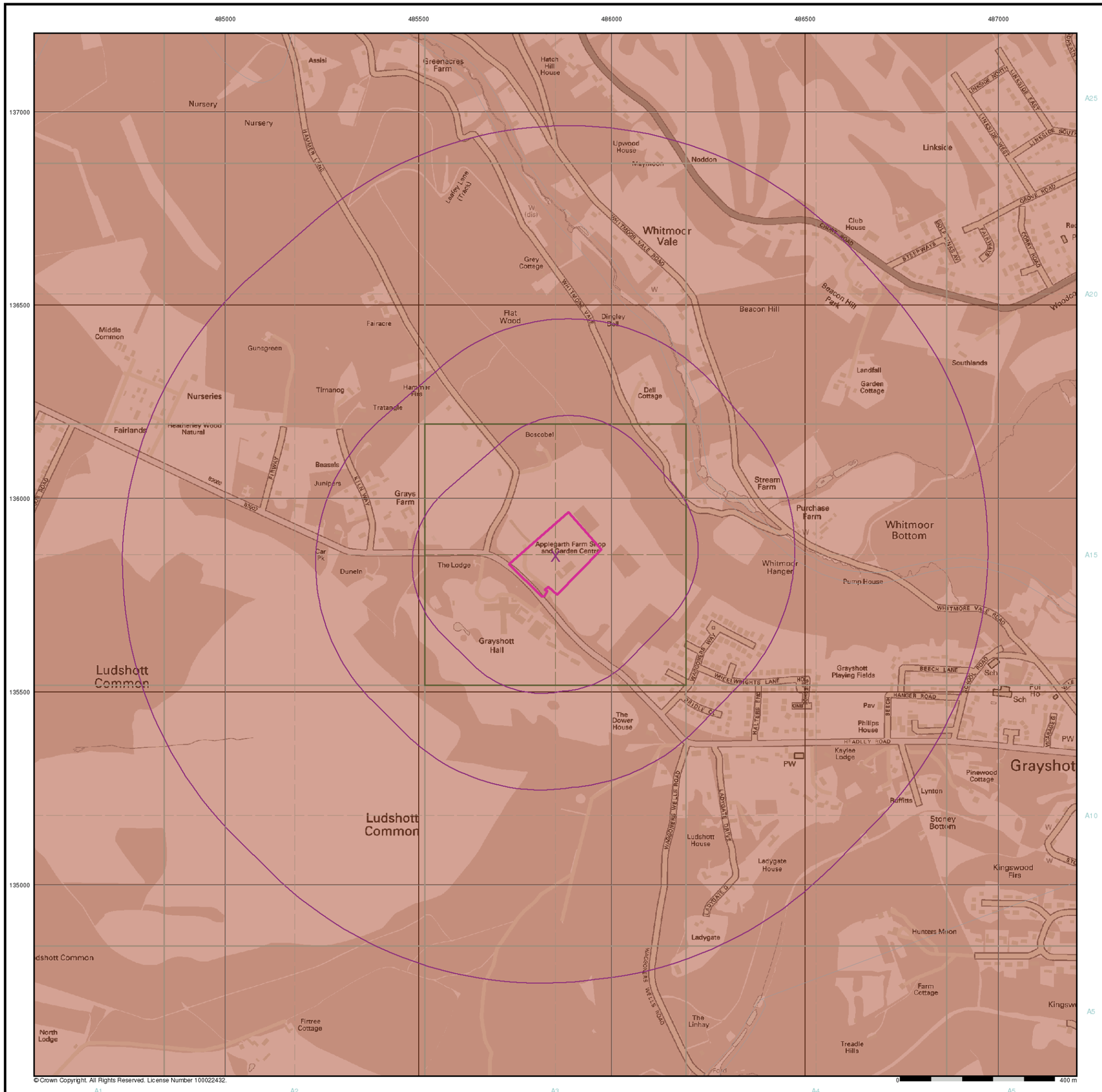
Order Details

Order Details:	62569421_1_1
Customer Ref:	32939
National Grid Reference:	485850, 135850
Slice:	A
Site Area (Ha):	2.66
Search Buffer (m):	1000

Site Details

Applegarth Farm, Headley Road, Grayshott, Hindhead, GU26 6JL

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



pba peterbrett

General

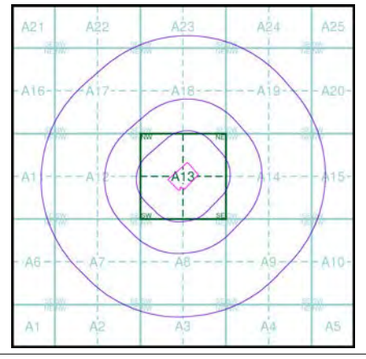
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg

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

Estimated Soil Chemistry Chromium - Slice A



Order Details

Order Details:	62569421_1_1
Customer Ref:	32939
National Grid Reference:	485850, 135850
Slice:	A
Site Area (Ha):	2.66
Search Buffer (m):	1000

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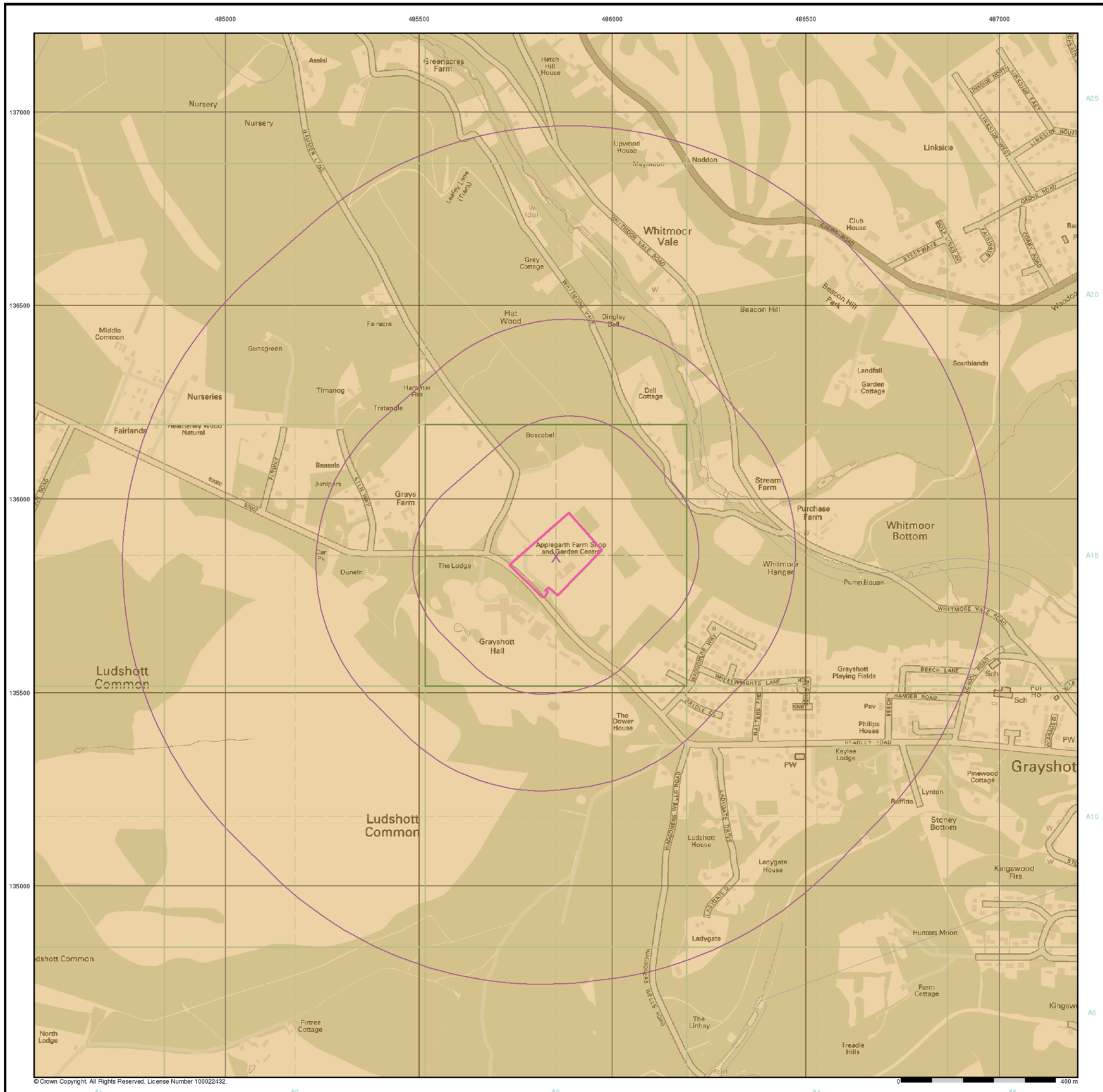

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pba peterbrett

General

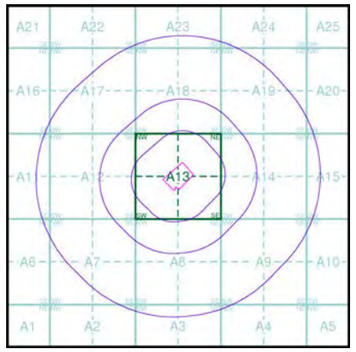
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg

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

Estimated Soil Chemistry Lead - Slice A



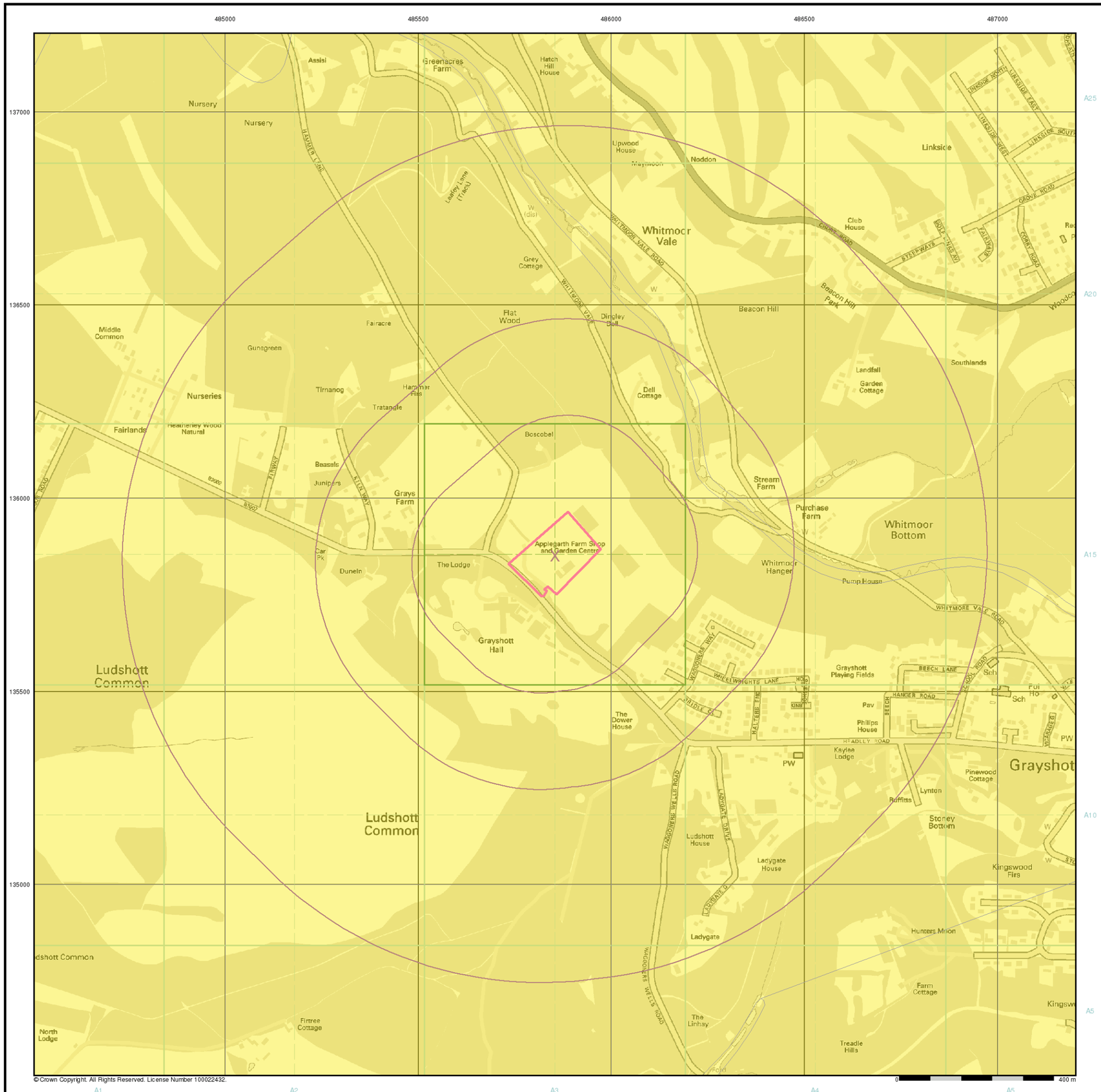
Order Details

Order Details:	62569421_1_1
Customer Ref:	32939
National Grid Reference:	485850, 135850
Slice:	A
Site Area (Ha):	2.66
Search Buffer (m):	1000

Site Details

Applegarth Farm, Headley Road, Grayshott, Hindhead, GU26 6JL

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



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General

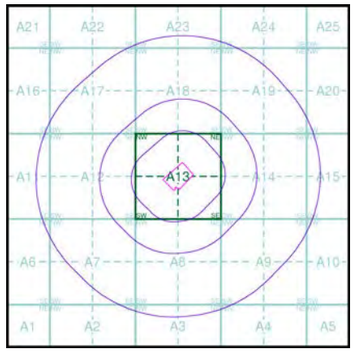
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg

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

Estimated Soil Chemistry Nickel - Slice A



Order Details

Order Details:	62569421_1_1
Customer Ref:	32939
National Grid Reference:	485850, 135850
Slice:	A
Site Area (Ha):	2.66
Search Buffer (m):	1000

Site Details

Applegarth Farm, Headley Road, Grayshott, Hindhead, GU26 6JL

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

Appendix 5 BGS Borehole Records

RECORD OF WELL

For Survey use only Licence No.

SU83/32B N.....

301 / 79B

At Greyshott House

Town or Village P: Greyshott

County Hants

EXACT SITE OF WELL

Six-inch sheet 37 SW/W Six-inch National Grid sheet.....

For ..... State whether owner, tenant, builder, contractor, consultant, etc. :— .....

Address (if different from above) SU 855 359

* DELETE WHICHEVER IS INAPPLICABLE

Level of ground surface 594' 5" above sea level (O.D.) ..... ft.

If well top is not at ground level, state how far ..... above:* / below:* ..... ft.

SHAFT 12ft ..... ft.; diameter ..... ft.; HEADINGS (please attach details—dimensions and directions)

BORE ..... ft.; diameter of bore: at top ..... in.; at bottom ..... in.

Full details of permanent lining tubes (position, length, diameter, plain, slotted etc.) .....

.....

.....

Water struck at depths of ..... ft. below well top.

TEST CONDITIONS

Rest level of water ..... ft. above*/below* well top. Suction at ..... ft. Yield on ..... hours'*/days'* test pumping at ..... galls. per ..... with depression to ..... ft. below well top.

Recovery to rest level in ..... mins.*/hours* Capacity of pump ..... g.p.h. Date of measurements .....

NORMAL CONDITIONS

DESCRIPTION OF PERMANENT PUMPING EQUIPMENT:

Make and/or type ..... Motive power .....

Capacity ..... galls. per hour. Suction at ..... ft. below well top.

Amount pumped ..... galls. per day. Estimated consumption ..... galls. per week.

Well made by ..... Date of sinking: .....

Information from J. Lucas. 1880. Proc. Ind. Civ. Eng. 61, III 200-227.

ADDITIONAL NOTES ANALYSIS (please attach copy if available)

R.W.L. 114' 5" b.s Oct 1879

Visited. No trace.
Area being developed as Nature Cure centre.
Several old wells.
VAM 21.9.65.

LOG OF STRATA OVERLEAF.

For Survey use only

Date Received .....

Section 6 .....

Pumping test .....

Observ. well .....

Recorder .....

E.R. log .....

Site marked on
1" map .....
6" map .....
(use symbol)

Record forwarded
to .....
date .....

GEOLOGICAL SURVEY, WATER DIVISION, SOUTH KENSINGTON, LONDON, S.W.7.

23/11/59 (3697) Wt.54188—P.S.47 10M 1/60 M.P.Ltd. G.722

(For Survey use only) GEOLOGICAL CLASSIFICATION	NATURE OF STRATA If measurements start below ground surface, state how far	THICKNESS Feet	 Inches	DEPTH Feet	 Inches
Hythe Beds EAE 965				121	—
	DATA Bank				

British Geological Survey

SU 83/60

301/181 **Bulls Farm, Grayshott.** (Disused)

Min. Proc. Instn Civ. Eng., 1880, *61*, III, p. 216. Surface +570. Shaft. *Date unknown.*
R.W.L. +440. *Oct. 1879.*

H	...	...	136½	136½

NO DETAILS KNOWN

British Geological Survey

For Survey use only Licence No. N.

SU 83/60

301/181

RECORD OF WELL

At Bulls Farm

Town or Village P: Grayshott

County Hants

EXACT SITE OF WELL

Six-inch sheet 37 SW/W Six-inch National Grid sheet SU 854 360

For .... State whether owner, tenant, builder, contractor, consultant, etc.:—

Address (if different from above)

Level of ground surface above sea level (O.D.) 570 ft. If well top is not at ground level, state how far above:* below; ft.

* DELETE WHICHEVER IS INAPPLICABLE

SHAFT 136 1/2 ft.; diameter ft.; HEADINGS (please attach details—dimensions and directions)

BORE ft.; diameter of bore: at top in.; at bottom in.

Full details of permanent lining tubes (position, length, diameter, plain, slotted etc.)

Water struck at depths of ft. below well top.

TEST CONDITIONS

Rest level of water ft. above* below well top. Suction at ft. Yield on hours'* days' test pumping at galls. per with depression to ft. below well top.

Recovery to rest level in mins.* hours Capacity of pump g.p.h. Date of measurements

NORMAL CONDITIONS

DESCRIPTION OF PERMANENT PUMPING EQUIPMENT:

Make and/or type Motive power

Capacity galls. per hour. Suction at ft. below well top.

Amount pumped galls. per day. Estimated consumption galls. per week.

Well made by Date of sinking

Information from J. Lucas 1880. Proc. Inst Civ. Eng. 61, III. 200 - 227 (216)

ADDITIONAL NOTES ANALYSIS (please attach copy if available)

R.W.L 130' b.s Oct 1879

Visited. Inf. from Mr. Chadwick who said only deep well on Estate now stabled over but exact position lost. 9.7.58. A.S.R.

Visited: no trace
VAM 21.9.65

For Survey use only

Date Received

Section 6

Pumping test

Observ. well

Recorder

E.R. log

Site marked on

1" map Δ

6" map Δ (use symbol)

Record forwarded

to

date

GEOLOGICAL SURVEY, WATER DIVISION, SOUTH KENSINGTON, LONDON, S.W.7.

LOG OF STRATA OVERLEAF.

23/11/59 (3697) Wt.54188—P.S.47 10M 1/60 M.P.Ltd. G.722

British Geological Survey

(For Survey use only) GEOLOGICAL CLASSIFICATION	NATURE OF STRATA If measurements start below ground surface, state how far	THICKNESS Feet	THICKNESS Inches	DEPTH Feet	DEPTH Inches
Hythe Beds EAE 1965				136 ft	6
	DAIL Bar				

British Geological Survey

Appendix 6 Table of Estimated Risk

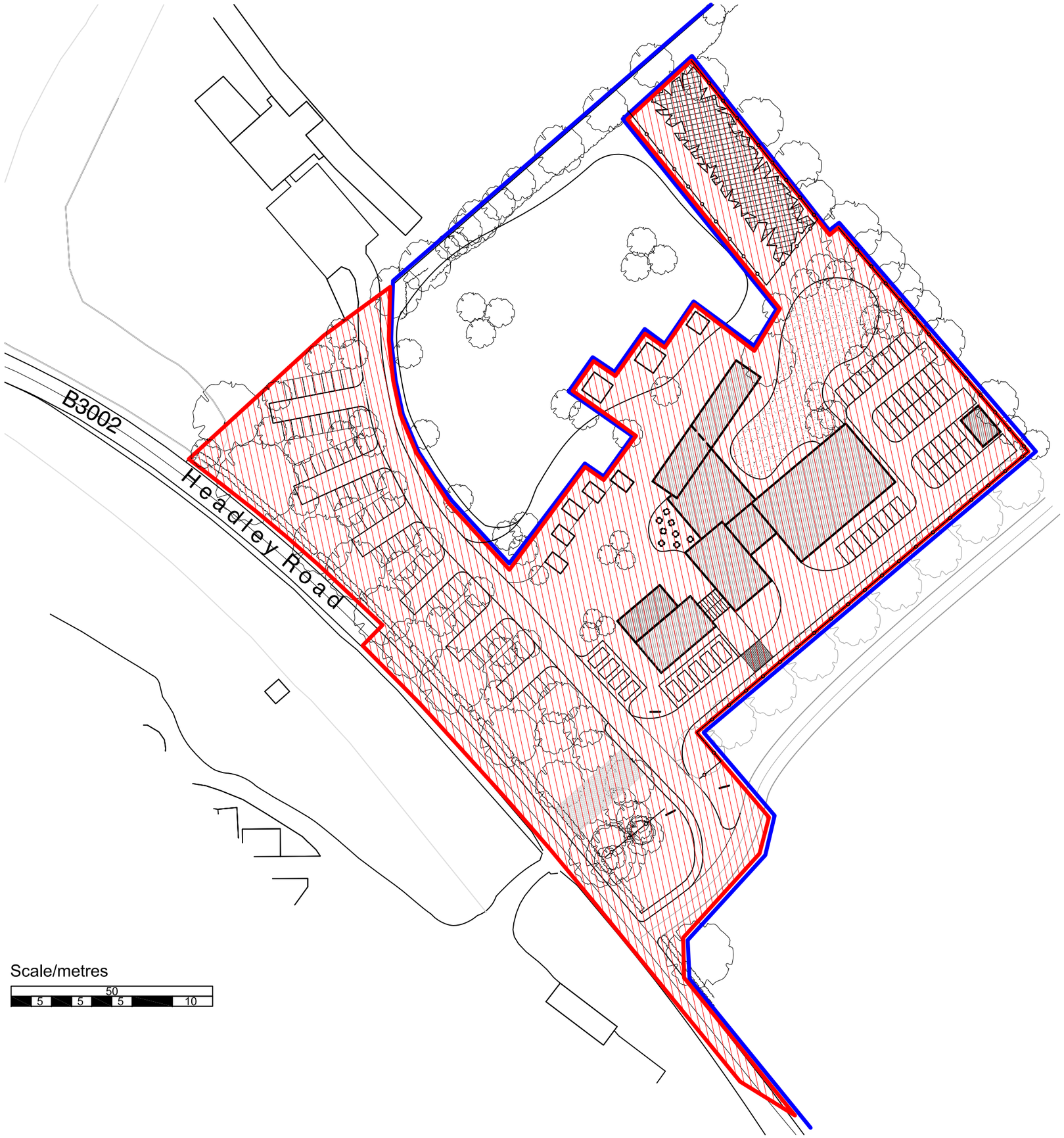
Applegarth Farm, Grayshott
Phase 1 Ground Condition Assessment
Table Summarising Pollutant Linkages and Risk Estimation
PSC Reference and Hazard Classification

Hazard Classification 1

Receptor	Present (Y/N) & Sensitivity Value	Pathway	Present (Y/N)	EPH & Solvent	PAH	Metals	Inorganic	Biocides	Radioactivity	Ground Gas	Consequence (Hazard Classification x Sensitivity)	Probability	Estimated Risk
Human Health - On-Site Current Users	Y (4)	Ingestion of fruit or vegetable leaf or roots	Y	x	x	√	x	√	√	x	4 (Minor)	Low Likelihood	Very Low
		Ingestion of contaminated drinking water	N	√	√	x	x	√	√	x			
		Ingestion of water / sediments when swimming	N	√	√	√	√	√	√	x			
		Ingestion of soil/dust indoors	Y	√	√	√	√	√	√	x	4 (Minor)	Unlikely	Very Low
		Ingestion of soil/dust outdoors	Y	√	√	√	√	√	√	x	4 (Minor)	Unlikely	Very Low
		Inhalation of particles (dust / soil) indoor and outdoor	Y	√	√	√	√	√	√	x	4 (Minor)	Unlikely	Very Low
		Inhalation of vapours/gases – outdoor	Y	√	x	x	x	x	√	√	4 (Minor)	Unlikely	Very Low
		Inhalation of vapours/gases - indoor	Y	√	x	x	x	x	√	√	4 (Minor)	Unlikely	Very Low
		Dermal absorption via direct contact with soil	Y	√	√	√	√	√	√	x	4 (Minor)	Low Likelihood	Very Low
		Dermal absorption via waters (swimming / showering)	N	√	√	√	√	√	√	x			
Human Health - On-Site Future User	Y (4)	Ingestion of fruit or vegetable leaf or roots	Y	x	x	√	x	√	√	x	4 (Minor)	Low Likelihood	Very Low
		Ingestion of contaminated drinking water	N	√	√	x	x	√	√	x			
		Ingestion of water / sediments when swimming	N	√	√	x	x	√	√	x			
		Ingestion of soil/dust indoors	Y	√	√	√	√	√	√	x	4 (Minor)	Unlikely	Very Low
		Ingestion of soil/dust outdoors	Y	√	√	√	√	√	√	x	4 (Minor)	Unlikely	Very Low
		Inhalation of particles (dust / soil) indoor and outdoor	Y	√	√	√	√	√	√	x	4 (Minor)	Unlikely	Very Low
		Inhalation of vapours – outdoor	Y	√	x	x	x	x	√	√	4 (Minor)	Unlikely	Very Low
		Inhalation of vapours - indoor	Y	√	x	x	x	x	√	√	4 (Minor)	Unlikely	Very Low
		Dermal absorption via direct contact with soil	Y	√	√	√	√	√	√	x	4 (Minor)	Low Likelihood	Very Low
		Dermal absorption via waters (swimming / showering)	N	√	√	√	√	√	√	x			
Human Health - Off-Site	Y (3)	Ingestion of fruit or vegetable leaf or roots	N	x	x	√	x	√	√	x			
		Ingestion of contaminated drinking water	N	√	√	x	x	√	√	x			
		Ingestion of water / sediments when swimming	N	√	√	x	x	√	√	x			
		Ingestion of soil/dust indoors	Y	√	√	√	√	√	√	x	3 (Minor)	Unlikely	Very Low
		Ingestion of soil/dust outdoors	Y	√	√	√	√	√	√	x	3 (Minor)	Unlikely	Very Low
		Inhalation of particles (dust / soil) indoor and outdoor	Y	√	√	√	√	√	√	x	3 (Minor)	Unlikely	Very Low
		Inhalation of vapours – outdoor	Y	√	x	x	x	x	√	√	3 (Minor)	Unlikely	Very Low
		Inhalation of vapours - indoor	Y	√	x	x	x	x	√	√	3 (Minor)	Unlikely	Very Low
		Dermal absorption via direct contact with soil	N	√	√	√	√	√	√	x			
		Dermal absorption via waters (swimming / showering)	N	√	√	√	√	√	√	x			
Human Health - Construction/ Maintenance Workers*	Y (2)	Ingestion of soil/dust indoors	Y	√	√	√	√	√	√	x	2 (Minor)	Unlikely	Very Low
		Ingestion of soil/dust outdoors	Y	√	√	√	√	√	√	x	2 (Minor)	Unlikely	Very Low
		Inhalation of particles (dust / soil) outdoor	Y	√	√	√	√	√	√	x	2 (Minor)	Unlikely	Very Low
		Inhalation of vapours – outdoor	Y	√	x	x	x	x	√	√	2 (Minor)	Unlikely	Very Low
		Inhalation of vapours - indoor	Y	√	x	x	x	x	√	√	2 (Minor)	Unlikely	Very Low
		Dermal absorption via direct contact with soil	Y	√	√	√	√	√	√	x	2 (Minor)	Unlikely	Very Low
Groundwater	Y (3)	Leaching	Y	√	√	√	√	√	√	x	3 (Minor)	Unlikely	Very Low
		Migration via natural or anthropogenic	Y	√	√	√	√	√	√	√	3 (Minor)	Unlikely	Very Low
Surface Water	N	Direct runoff or discharges from pipes		√	√	√	√	√	√	x			
		Indirect via recharge from groundwater (hydraulic flow)		√	√	√	√	√	√	x			
		Deposition of wind blown dust		√	√	√	√	√	√	x			
Buildings	Y (2)	Direct contact	Y	√	√	x	x	x	x	x	2 (Minor)	Unlikely	Very Low
		Explosion due to gas migration via natural or anthropogenic	Y	√	x	x	x	x	x	√	2 (Minor)	Unlikely	Very Low
Ecological Systems	Y (5)	Direct deposition of particles / dust - wind blown or flood	Y	√	√	√	√	√	√	x	5 (Minor)	Low Likelihood	Very Low
		Indirect - through watering	N	√	√	√	x	x	√	x			
		Inhalation of gases/vapours or particulates/dust by animals	N	√	√	√	x	x	√	√			
		Ingestion of of vegetation / water / soil by animals	N	√	√	√	√	√	√	x			
Animal & Crops	Y (3)	Direct deposition via wind or flood	Y	√	√	√	√	√	√	x	3 (Minor)	Low Likelihood	Very Low
		Indirect through watering	Y	√	√	√	x	x	√	x	3 (Minor)	Low Likelihood	Very Low
		Inhalation of gas / vapour / particulates / dust	Y	√	x	x	x	x	√	√	3 (Minor)	Low Likelihood	Very Low
		Ingestion of vegetation / water / soil by animals	Y	√	√	√	√	√	√	x	3 (Minor)	Low Likelihood	Very Low

* It is assumed that construction workers will undergo appropriate heath and safety training and wear personal protective equipment in conjunction with appropriate hygene facilities.
Risk estimation establishes the magnitude and probability of the possible consequences (what degree of harm might result and how likely).
The criteria for classifying probability and consequence are set out in Tables 3 and 4 of the PBA methodology.
Green text highlights one or more elements of the Pollutant Linkage are missing and therefore eliminated

Appendix 7 Conceptual Landscape Masterplan



N

Key

Red Line Boundary
Showing extent of
Planning Application

Blue Line Boundary
Showing area of wider
land ownership by
applicant

Note on Area Calculations

Area hatched in red :

17,038m² or 1.7ha

Rev	Details	Date
C	Change in client name to 'Applegarth Farm'	15/12/14
B	Red line revised following masterplan revisions and engineering advice	9/12/14
A	Red line boundary revised down to reflect permitted development & revised eastern boundary with Applegarth Vale	5/12/14

urban wilderness
landscape architecture

The Bungalow, Water Lane, South Stainley,
Harrogate, HG3 3NB
www.urbanwilderness.co.uk
info@urbanwilderness.co.uk
01765 677813
registered in Scotland SC371979

client
Applegarth Farm

project
Applegarth Farm

drawing title
Red Line Boundary

drawing status
Outline Planning

drawn by	checked by	date
SDJ	*TBR*	*26 Nov 14*

scale	paper size
1:1000	*A3*

job/dwg no.	rev.
142/004	*C*