



Soiltec Laboratories Limited
Soiltec House, Langley Park
Sutton Road, Langley,
Maidstone, Kent ME17 3NQ

Telephone: 01622 862138
Two Lines 01622 862904
E-mail: info@soiltec.net
Web: www.soiltec.net

20170919

- 5 OCT 2017

**PHASE I ENVIRONMENTAL ASSESSMENT
(DESK STUDY REPORT)**

Site: Parsonage Barn, Parsonage Farm, The Street, Cobham, near Gravesend, Kent DA12 3DG



Prepared for: Adrian Scripps Limited

Date: 13th June 2017

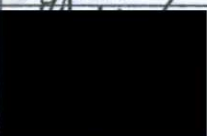
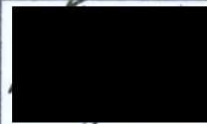


CLIENT: Adrian Scripps Limited

SITE: Parsonage Barn, Parsonage Farm, The Street, Cobham, near Gravesend,
Kent DA12 3DG

JOB NUMBER: 07573/23

DATE: 13th June 2017

	Name	Position	Signature	Date
Prepared by	Keith Huxley	Head of Environmental Division		13/06/17
Checked by	Martin King	Managing Director		13/6/2017
On behalf of Soiltec Laboratories Limited				

Soiltec Laboratories disclaims any responsibility to the client and others in respect of matters outside the scope of this report. This report has been prepared within the terms of the contract with the client. This report is confidential to the client and Soiltec Laboratories accepts no responsibility of whatsoever nature to third parties to whom this report or part thereof is made known. Any such party relies upon the report at their own risk.

CONTENTS & EXECUTIVE SUMMARY

	Page No
1. Introduction.....	1
2. The Site and Surrounding Areas.....	1
2.1 Location and Setting.....	1
2.1.1 Walkover Survey.....	2
2.2 Hydrology.....	3
3. Historical Site Use.....	3
3.1 1864 to 1908.....	3
3.2 1933 to 1939.....	3
3.3 1955 to Date.....	3
3.4 Planning and Uses.....	4
4. Environmental Sensitivity.....	4
4.1 Site Sensitivity.....	4
4.2 Potentially Contaminative Use.....	5
4.3 Landfill and Waste Transfer Sites.....	6
4.4 Hydrogeology.....	6
4.5 Geology.....	6
5. Discharge Consents, Water Abstractions and Pollution Incidents.....	7
5.1 Discharge Consents.....	7
5.2. Abstraction Consents.....	7
5.3 Pollution Incidents and Permits.....	7
6. Mining Hazards, Subsidence and Radon.....	8
6.1 Mining.....	8
6.2 Subsidence.....	8
6.3 Radon.....	8

7. Recommendations.....	9
7.1 General.....	9
7.2 On-Site Contamination Impact.....	9
7.3 Off-Site Contamination Impact.....	9
7.4 Conceptual Model.....	10
7.4.1 Source(s).....	10
7.4.2 Pathway(s).....	10
7.4.3 Receptor(s).....	10
7.4.4 Assessment of Risk.....	11
7.5 Investigation Work Recommended.....	13
7.5.1 General.....	13
7.6 Excavated Soils.....	13
7.7 Additional Notes.....	14

APPENDICES

APPENDIX 1 Site Plans (4 pages)

APPENDIX 2 Aerial Photograph (1 page)

APPENDIX 3 Site Photographs (5 pages)

APPENDIX 4 Historical Maps (18 pages)

1864 (1:2500)

1867(1:10560)

1895 (1:10560)

1896-97 (1:2500)

1907 (1:10560)

1908 (1:2500)

1931 (1:10560)

1933-36 (1:2500)

1939 (1:10560)

1939 (1:2500)

1955 (1:10560)

1960 (1:2500)

1966 (1:10560)

1976 (1:2500)

1977 (1:10000)

2002 (1:10000)

2010 (1:10000)

2014 (1:10000)

APPENDIX 5 Environmental Maps (25 pages)

Historical Land Use Map (1 page)
Environmental Permits, Incidents and Registers Maps (1 page)
Landfill and Other Waste Sites Map (1 page)
Current Land Use Map (1 page)
Hydrogeology and Hydrology Maps (5 pages)
Environment Agency Flood Map (2 pages)
Designated Environmentally Sensitive Sites Map (1 page)
Artificial Ground Map (1 page)
Superficial Deposits and Landslips Map (1 page)
Bedrock and Faults Map (1 page)
Ground Workings Map (1 page)
Mining, Extraction and Natural Cavities Map (1 page)
Ground Stability Maps (6 pages)
Borehole Records Map (1 page)
Railway and Tunnels Map (1 page)

APPENDIX 6 Conceptual Model (1 page)

Executive Summary

Soiltec Laboratories Limited was instructed by Adrian Scripps Limited to carry out a Phase I Environmental Assessment (Desk Study) of the site at

**Parsonage Barn, Parsonage Farm, The Street, Cobham, near Gravesend,
Kent DA12 3DG**

A planning application has been submitted to Gravesham Borough Council. A desk study report is required to address condition 8(a) of the granted application (reference 20140557) and also paragraph 121 of the National Planning Policy Framework (NPPF) that came into force in March 2012.

The site is on the south side of The Street and is occupied by two farm buildings, grassed areas and the access drive to the buildings, the farm and the adjacent Parsonage Cottages. It is proposed to convert one of the farm buildings (barn) into two residential houses both with off road parking and private gardens.

From the investigations carried out for this desk study the site has been developed since at least the mid 1860's with the outbuildings that remain on the site to date. The building to be converted had been extended at the south elevation by the late 1800's and was reduced to the current layout during the 2000's. An additional outbuilding was also on the site from at least the mid 1950's to mid 1970's. The site has been used as a commercial farm with the building to be converted currently used for fruit farming general ancillary items.

The immediate surrounding areas have been farmland with a few houses since at least the mid 1860's. The adjacent houses to the north and those just to the southeast have also existed since this date. Additional outbuildings have also been on the nearby farmland associated with Parsonage Farm, some of which remain to date.

The predominant underlying bedrock geology is The Thanet Sand Formation (sand) of high permeability with head drift deposits (clay silt sand and gravel) and thus the site is overlying a secondary 'A' aquifer and is within a groundwater source protection zone (SPZ).

There are no surface water abstractions in the area (within 2km).

There are no current groundwater abstractions for potable water or other uses in the area (within 2km).

The findings of this report indicate that the site represents a **very low environmental risk** and that a detailed phase II intrusive investigation of the site is not required.

Soiltec Laboratories Limited

1. Introduction

Soiltec Laboratories were instructed by Adrian Scripps Limited to carry out a Desk Study of the site at Parsonage Barn, Parsonage Farm, The Street, Cobham, near Gravesend, Kent DA12 3DG (grid reference at the site centre 566665 168571). The site is approximately 99 metres above ordnance datum (AOD) in the village of Cobham, Kent.

The desk study would mainly comprise of a walkover survey of the site, review historical land use, review historical maps, assess the environmental sensitivity of the site and surrounding areas, review geological maps, investigate pollution incident registers, abstraction and discharge consents and liaise with the relevant personnel at the local authority if necessary.

The main sources of the information are, but not limited to; The Environment Agency (EA), Ordnance Survey, The Coal Authority, British Geological Survey, English Nature and The Health Protection Agency.

The site is on the south side of The Street and is occupied by two farm buildings, grassed areas and the access drive to the buildings, the farm and the adjacent Parsonage Cottages. It is proposed to convert one of the farm buildings (barn) into two residential houses both with off road parking and private gardens. The farm building adjacent to the building to be converted is currently used for farm staff toilets and was also previously used for farm staff accommodation and may be converted at a later date.

Site plans showing the existing layout and proposed ground floor plan are shown in appendix 1, site plans (p1 and p2).

2. The Site and Surrounding Areas

2.1 Location and Setting

The site covers an area of approximately 0.13ha (1300m²) and is on the south side of The Street in the small village of Cobham near Gravesend. Gravesend town centre is approximately four miles to the northwest.

It is located in an area of mixed use of agricultural and low density residential use.

An aerial photograph of the site dated August 2015 is shown in appendix 2.

Immediately to the north of the site are Parsonage Cottages and The Street. On the opposite side of The Street are three residential houses, Green Hedges and Owletts Cottages. Beyond the houses is farmland.

Immediately to the west of the site are farm buildings and the farmyard of Parsonage Farm. Beyond the farm buildings approximately 75m from the site is farmland. Further to the west approximately 240m from the site is Sole Street with farmland beyond. Further to the northwest approximately 250m from the site is the junction of The Street, Sole Street and Jeskyns Road, a few houses and farmland.

Immediately to the south of the site is farmland. Approximately 90m from the site are water tanks for Parsonage Farm and agricultural workers caravans.

Immediately to the east of the site is the access drive to the site and the farm with farmland beyond. Approximately 70m to the southeast are a terrace of four cottages, The Terrace. Further to the southeast are a few more residential houses and the village centre, which is approximately 300m from the site with its associated houses, small shop, church, school and pubs.

2.1.1 Walkover Survey

The walkover survey was carried out on the 12th June 2017. At the time of the walkover survey the barn to be converted was being used to store general items associated with the farm, which produces mainly apples with some grapes.

The items stored in the barn were bamboo fencing/support canes, bulk fruit bins, rolls of fabric ground covers (for light reflection) and a few timber weather boards. There was also one 45g drum of wood preservative for the weather boards. There were no spillages or leaks on the floor around the drum.

The barn was timber framed and clad with a tiled roof and concrete slab floor. The lower parts of the walls were either brick or concrete. The southeast area of the barn was an empty garaging area with a wall mounted electric junction box. The adjacent smaller area was being used as domestic shed for one of the adjacent cottages. No access could be gained to this section of the barn.

The adjacent smaller building that may be converted at a later date was of brick construction with a tiled roof. The floors at ground floor level were tiles. The rooms on the upper floor were completely empty. Only the staff toilets were in use in the building.

No visible or olfactory contamination was noted in or around both the buildings.

The access road to the site was a tarmac road off The Street, which became a gravel drive to the buildings. The gravel drive and parking area will remain.

The area immediately to the north and south of the barn to be converted was well kept grass. At the boundary to the access drive to the north and east was an established hedge. All vegetation on and adjacent to the site appeared to be in a very healthy condition. Adjacent to the northwest elevation of the barn was a small concreted area.

No above ground tanks were on or immediately adjacent to the site and there was no evidence of any former above ground tanks. There were no below ground tanks on the site and no evidence of any storage of chemicals in or around the buildings.

Approximately 90m to the south of the site were steel tanks for water storage. Adjacent to these tanks were a few IBC's containing liquid feed for the apple trees.

A site plan showing the existing and proposed layout and the immediate surrounding areas is shown in appendix 1 (p4). Also shown on this site plan are the locations and view direction of the photographs of the site that were taken during the walkover survey. The site photographs are shown in appendix 3.

There are no current or former fuel stations registered within 500m of the site.

There are no high voltage underground electricity transmission cables or high pressure gas pipelines within 500m of the site.

This is shown in appendix 5 (current land use map).

2.2 Hydrology

There are no surface water features on, adjacent or near to the site.

This is shown in appendix 5 (hydrology – detailed river network and river quality map).

3. Historical Site use

3.1 1864 to 1908

The study of the historical maps of the site, some of which can be found in appendix 4, Historical Maps, shows that the site was mainly in 1864 with the outbuildings that remain on the site to date. The site is marked as Pickles.

All the roads in the area were constructed including The Street immediately to the north. The terraced houses to the southeast, The Terrace were also built at this date. Immediately to the north of the site the houses Parsonage Cottages were built as well as an outbuilding immediately to the east of the cottages. Further to the east approximately 90m from the site was a small pond and a hop kiln. Further to the northwest approximately 180m from the site was a small chalk pit within an orchard and approximately 250m to the northwest was a farm, Owlets that remains to date. Further to the southeast the village centre was developed.

By 1895 the barn that is to be converted had been extended at the south elevation. The chalk pit is marked as an old chalk pit.

The site and immediate surrounding area remained unchanged until at least 1908 although the land immediately to the west was marked as an orchard and an outbuilding had been built approximately 100m to the southwest by this date.

3.2 1933 to 1939

By 1933 the site remained unchanged. The houses Owlets Cottages on the opposite side of The Street to the north and another small outbuilding approximately 80m to the southwest had been built.

The site and immediate surrounding areas remained unchanged until at least 1939.

3.3 1955 to Date

By 1955 an outbuilding extended onto the site from the outbuilding immediately to the north. Additional farm buildings had also been built to the west and southwest. The larger building just to the west remains to date.

By 1960 another outbuilding immediately beyond the outbuilding at the west boundary had been built as well as additional outbuildings to the south and southwest, some of which remain to date. The orchard immediately to the west is no longer marked and the site is marked as Parsonage Farm.

The site and immediate surrounding areas remained unchanged until at least 1976.

By 2002 the outbuilding immediately to the north that extended onto the site and the outbuilding immediately to the west are no longer marked. Some of the smaller outbuildings to the south and southwest are also no longer marked. The access drive to the site and adjacent buildings is also marked.

By 2010 the building that is to be converted and been reduced to the site/layout that remains to date.

3.4 Planning & Uses

Following an assessment of Gravesham Borough Council planning website there has been six historical planning applications for the site excluding the current granted application (reference 20140557). Council online records for the area date from at least 1954.

Date	Planning Details
1954	Erection of agricultural storage building – granted
1992	Conservation Area consent for the demolition of 2 concrete buildings, single storey timber/corrugated iron building, single storey timber/corrugated iron addition to modern barn, single storey off-ice, single storey front & rear additions to traditional barn & misc. pump/fuel equip./structures – granted
1992	Determination as to whether prior approval is required for alterations to the existing two storey brick built outbuilding to create improved wash-room facilities involving the formation of new window openings – prior approval not required
2004	Conversion of barn into one residential dwelling – granted
2009	Application for renewal of 2004 planning permission for conversion of barn into one residential unit – granted
2013	Conversion of barn to form two residential dwellings with associated parking, access and amenity space – refused

The current land use data indicates that there are a few current 'industrial sites' within 250m of the site.

The nearest (within 100m) is on/adjacent to the site (Parsonage Farm – fruit growers). The next nearest are further to the south/southwest approximately 90m from the site, which are water tanks for irrigation.

The next nearest is a small water pumping station more than 200m from the site.

These 'industrial sites' are unlikely to impact the site.

This is shown in appendix 5, Environmental Maps (current land use map).

4. Environmental Sensitivity

4.1 Site Sensitivity

The site is not within a site of special scientific interest, special protection area, a special area of conservation, RAMSAR (wetlands) site, a nature reserve, environmentally sensitive area, a world heritage site, ancient woodland or a national park.

The site is within an area of outstanding natural beauty, Kent Downs.

The site is also within a designated nitrate vulnerable zone and an area of London Area Greenbelt (Gravesham District B).

This is all shown in appendix 5 (designated environmentally sensitive sites map).

The site is not within an area that is at risk of flooding from rivers or sea without defences.

The risk of flooding from rivers and sea (RoFRaS) map shows that the risk is 'very low'.

"The Environment Agency RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection. RoFRaS data for the study site indicates the property is in an area with a **Very Low** (less than 1 in 1000) chance of flooding in any given year". (Reference EA/Groundsure report)

This is shown in appendix 5 (Environment Agency flood maps).

The site is within an area where there is a limited potential for groundwater flooding. Clearwater flooding (with an unconfined aquifer).

"Where limited potential for groundwater flooding to occur is indicated, this means that although given the geological conditions there may be a groundwater flooding hazard, unless other relevant information, e.g. records of previous flooding, suggests groundwater flooding has occurred before in this area, you need take no further action in relation to groundwater flooding hazard".

4.2 Potentially Contaminative Use

The site is not within an area of potentially contaminative use from industrial uses.

There are areas of potentially infilled land, industrial sites and/or energy features on the site and within 250m of the site.

There are two areas of potentially infilled land in the area. The small pond approximately 60m to the east, which has not been infilled, and the small chalk pit further to the northwest that also has not been infilled/used as landfill (also see section 4.3).

There is also an area of contaminative use in the area (former hop kiln approximately 80m to the east/northeast).

The areas are unlikely to impact the site.

This is all shown in appendix 5 (historical land use map).

There are historic surface ground workings, historic underground workings and/or current ground workings marked within 250m on the ground workings map in appendix 5.

There are two areas of historic surface ground workings in the area, which are the pond and chalk pit as mentioned above.

These groundworkings are unlikely to affect the site.

There are no historic underground workings or current ground workings marked within 250m. The 'current' groundworkings marked is the chalk pit that had ceased by the late 1800's.

The railways and tunnels map in appendix 5 shows that there are no existing railways, former railways, tunnels or proposed railways on the site and within 250m.

There are areas of reclaimed ground, made ground, infilled ground, disturbed ground, worked ground and/or landscaped ground within 500m of the site as shown on the artificial ground map in appendix 5.

There are three areas of worked ground within 500m the nearest of which is 90m from the site. These areas of worked ground are unlikely to impact or affect the site. All are 'unknown/unclassified' entries on the database.

4.3 Landfill and Waste Transfer Sites

There are no current or former EA registered historical licensed landfill sites or local authority registered licensed landfill sites within 500m.

There are no current or former registered waste treatments or other waste sites within 500m.

This is all shown in appendix 5 (landfill and other waste sites map).

4.4 Hydrogeology

The site is classified by the Environment Agency (EA) as overlying a secondary aquifer within the superficial geology on the site.

These include a wide range of rock layers or drift deposits with an equally wide range of water permeability and storage. Secondary aquifers are subdivided into two types:

Secondary A - permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.

Secondary B - predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water bearing parts of the former non aquifers.

The site is classified as overlying a secondary aquifer 'undifferentiated' within the superficial geology. Secondary undifferentiated has been assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non aquifer in different locations due to the variable characteristics of the rock type.

The site is classified by the Environment Agency (EA) as overlying a secondary 'A' aquifer within the bedrock geology.

The site therefore could be classed as overlying a minor (secondary) aquifer.

The site is within a groundwater source protection zone (SPZ). The site is within a SPZ 3, total catchment.

This is all shown in appendix 5 (hydrogeology maps).

4.5 Geology

According to geological information, British Geological Survey sheet 271, Dartford, the site is underlain by Thanet Beds with Head drift deposits.

This is also shown on the superficial deposits and landslips map in appendix 5 which shows that there are superficial deposits on the site and in the area.

Area 1 on the map (on site) is head deposits (Diamicton – clay silt sand and gravel).

There are no landslip deposits within 500m.

The bedrock and faults map in appendix 5 shows that The Thanet Sand Formation (sand) is the bedrock geology on the site of high permeability (area 1 on the map).

Area 2 on the map just to the northwest is The Seaford Chalk Formation.

There are no fault lines marked within 1000m.

There are three previously drilled boreholes marked within 250m of the site.

The nearest was drilled 140m east of the site to a depth of 30m in 1987 through a soakaway chamber. Slightly clayey sandy silt was encountered below the chamber to 4.6m with blocky chalk below the clayey sandy silt. No water was encountered to the depth drilled.

This is shown in appendix 5 (borehole records map).

5. Discharge Consents, Water Abstractions and Pollution Incidents

5.1 Discharge Consents

There are no current or former licensed discharge consent points within 500m of the site.

This is shown in appendix 5 (environmental permits, incidents and registers map).

5.2 Abstraction Consents

There is one current or former groundwater abstraction consent within 2000m of the site.

This is a former consent located 1230m north of the site that was for dust suppression.

There are no current or former surface water abstraction consents within 2000m of the site.

This is shown in appendix 5 (hydrogeology – abstraction licence, SPZ and potable water abstraction maps), which shows up to 500m only.

5.3 Pollution Incidents and Permits

There are no recorded pollution incidents within 500m of the site.

There are no current or former authorised activity enforcements within 500m of the site.

There are no integrated pollution control permits, dangerous substances inventory sites or radioactive substances authorisations within 500m of the site.

There are no sites determined as ‘contaminated land’ under Part 2A of the Environmental Protection Act 1990 within 500m of the site.

This is all shown in appendix 5 (environmental permits, incidents and registers map).

6. Mining Hazards, Subsidence and Radon

6.1 Mining

The site is not within an area that may be affected by historic mining or coal mining hazards.

There are no natural cavities within 500m of the site.

There are no non-coal mining cavities within 500m and the site is within an area where the non coal mining activity is classed as 'rare'.

This is all shown in the mining, extraction and natural cavities map in appendix 5.

6.2 Subsidence

The clay swelling/shrinking subsidence hazard is classed as 'negligible to very low hazard' (soils that are predominantly non plastic to low plasticity) although this will depend on the localised clay content.

The landslides ground stability hazard is classed as 'very low hazard'.

The ground dissolution subsidence hazard is classed as 'low hazard'. Low hazard indicates that "Significant soluble rocks are present. Low possibility of subsidence occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow. Consider implications for stability when changes to drainage or new construction are planned. For new build; site investigation should consider potential for dissolution problems on the site and its surroundings. Care should be taken with local drainage into the bedrock. For existing property; possible increase in insurance risk due to soluble rocks".

The compressible subsidence hazard is classed as 'negligible hazard'.

The collapsible ground stability hazard is classed as 'very low hazard'.

The running sand stability hazard is classed as 'very low to moderate hazard'. Moderate hazard indicates that "Significant potential for running sand problems with relatively small changes in ground conditions. Avoid large amounts of water entering the ground (for example through pipe leakage or soakaways). Do not dig deep holes into saturated ground near the property without technical advice. For new build; consider the consequences of soil and groundwater conditions during and after construction. For existing property; possible increase in insurance risk from running sand, for example, due to water leakage, high rainfall events or flooding".

All the above are shown on the ground stability maps in appendix 5.

6.3 Radon

There are between 1% and 3% of properties in the area that are above the action level for radon and therefore radon protection measures are not necessary in new buildings and/or extensions.

7. Recommendations

7.1 General

From the investigations carried out for this desk study the site has been developed since at least the mid 1860's with the outbuildings that remain on the site to date. The building to be converted had been extended at the south elevation by the late 1800's and was reduced to the current layout during the 2000's. An additional outbuilding was also on the site from at least the mid 1950's to mid 1970's. The site has been used as a commercial farm with the building to be converted currently used for fruit farming general ancillary items.

The immediate surrounding areas have been farmland with a few houses since at least the mid 1860's. The adjacent houses to the north and those just to the southeast have also existed since this date. Additional outbuildings have also been on the nearby farmland associated with Parsonage Farm, some of which remain to date.

There are no surface water features on, adjacent or near to the site.

The site overlies a secondary 'A' aquifer and is within a groundwater source protection zone (SPZ).

The Thanet Sand Formation (sand) is the bedrock geology on the site of high permeability with head drift deposits (clay silt sand and gravel).

There are no current groundwater abstractions for potable water or other uses in the area (within 2km).

There are no surface water abstractions in the area (within 2km).

It is proposed that the surface water drainage for the converted barn will be via the existing local mains system.

The foul drainage for the converted barn also will be via the existing mains.

The site is not within a flood risk area.

7.2 On-Site Contamination Impact

From the investigations carried out for this desk study it is unlikely that the site has been impacted from its current or former uses.

There are no recorded pollution incidents on the site that could have impacted the site.

It is unlikely that landfill gases are impacting the site from on site sources.

7.3 Off-Site Contamination Impact

The findings of this desk study indicate that contamination impact to the site from the immediate surrounding areas is unlikely.

There are no recorded pollution incidents near the site that could have impacted the site.

It is also unlikely that landfill gases are impacting the site from off site sources.

7.4 Conceptual Model

Using the Contaminated Land Exposure Assessment (CLEA) model and associated Contaminated Land Report (CLR11, Model Procedures for the Management of Land Contamination) framework to assess sites, a Source (contaminant) – Pathway – Receptor approach is used.

Source – (contaminant) “a substance that is in, on or under the land and has the potential to cause harm or to cause pollution of controlled waters”

Pathway – e.g. via air, soil or water “route or means by which a receptor can be exposed to, or affected by, a contaminant”

Receptor – e.g. humans, buildings and services, groundwater or surface waters “in general terms, something that could be adversely affected by a contaminant, such as people, an ecological system, property, or a water body”

If any of the above elements are missing i.e. there is no pollution linkage, then it is considered that there is no significant risk associated with contamination. If there is a pollution linkage the potential risks to the identified receptors need to be assessed.

7.4.1 Source(s)

The possible sources of contamination on this site from on site or off site former or current uses are:

There are no expected sources of contamination on the site

7.4.2 Pathway(s)

It is proposed to convert a barn into two residential houses with off road parking and gravelled garden areas

Using the CLEA model the potential pathways for a residential site are:

Ingestion of soils/groundwater/surface water

Ingestion of dusts, gases and vapours (indoors and outdoors)

Dermal contact with soils/groundwater/surface water

Ingestion of contaminated vegetables and or soils attached to vegetables (if applicable)

Leachate via soakaways (if applicable)

The potential pathways for this site are:

Ingestion of soils

Ingestion of dusts (indoors and outdoors)

Dermal contact with soils

7.4.3 Receptor(s)

The potential receptors and associated risks for this site are:

Construction staff – very low risk

Residents and farm workers on site – very low risk

Residents and farm workers off site – very low risk (no apparent current impacted)

Buildings off site (existing commercial buildings and houses appear to be not impacted) – very low risk

Converted building and below ground services – very low risk

Groundwater (secondary ‘A’ (minor) aquifer and SPZ) – very low risk (no expected contaminants or leachable contaminants)

7.4.4 Assessment of Risk

The assessment of the associated risk is based on the CIRIA (Construction Industry Research and Information Association) C552 methodology, contaminated land risk assessment, a guide to good practice (2001), tabulated below and overleaf.

(SH = Significant Harm, SPOSH = Significant Possibility of Significant Harm).

Classification of Consequence

Classification	Definition
Severe	Concentration of contaminants is likely to (or is known from previous data to) exceed that indicative of unacceptable intake or contact. Highly elevated concentrations likely to result in 'significant harm' to human health as defined by the EPA 1990 Part 2A, if exposure occurs i.e. SH/SPOSH concentrations are high enough to cause acute (short term) effects. Equivalent to an EA category 1 pollution incident including persistent and/or extensive effects on water quality (controlled waters); leading to a closure of a potable abstraction point; major impact on amenity value or major damage to agriculture or commerce. Major damage to aquatic or other ecosystems, which is likely to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long term maintenance of the population. Catastrophic damage to buildings or property.
Medium	Concentration of contaminants is likely to (or is known from previous data to) exceed that indicative of unacceptable intake or contact. Elevated concentrations which could result in 'significant harm' to human health as defined by the EPA 1990 Part 2A, if exposure occurs i.e. greater than SH/SPOSH Equivalent to an EA category 2 pollution incident including a significant effect on water quality (controlled waters); notification required to abstractors; reduction on amenity value or significant damage to agriculture or commerce. Significant damage to aquatic or other ecosystems, which may result in a substantial adverse change in its functioning or harm to a species of special interest that may endanger the long term maintenance of the population. Significant damage to buildings or property.

Classification of Consequence (cont)

Classification	Definition
Mild	Concentration of contaminants is likely to (or is known from previous data to) exceed that indicative of no harm but not unacceptable intake or contact. Exposure to human health unlikely to lead to 'significant harm' i.e. concentrations are greater than SGV/GAC but less than SH/SPOSH. Equivalent to an EA category 3 pollution incident including minimal or short term effects on water quality (controlled waters); minor impact on amenity value, agriculture or commerce. Minor damage or short term damage to aquatic or other ecosystems, which is unlikely to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long term maintenance of the population. Minor damage to buildings or property.
Minor	Concentration of contaminants is likely to (or is known from previous data to) be less than that indicative of no harm. No measurable effect on humans i.e. less than SGV/GAC. Equivalent to an unsubstantial pollution incident with no observed effect on water quality (controlled waters); no reduction on amenity value or damage to agriculture or commerce. No observed effect to aquatic or other ecosystems. Repairable effects of damage to buildings or property.

Classification of Probability

Classification	Definition
High Likelihood	There is a pollution linkage and an event that appears very likely in the short term and almost inevitable in the long term, or there is evidence at the receptor of harm or 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 no means certain that even over a longer period such event could take place, and it is less likely in the shorter term.
Unlikely	There is a pollution linkage but the circumstances are such that it is improbable that an event would occur even in the very long term.

Matrix of Consequence against Probability to determine Risk Classification

Probability	Consequence			
	Severe	Medium	Mild	Minor
High Likelihood	Very High Risk	High Risk	Moderate Risk	Low Risk
Likely	High Risk	Moderate Risk	Low Risk	Very Low Risk
Low Likelihood	Moderate Risk	Low Risk	Low Risk	Very Low Risk
Unlikely	Low Risk	Very Low Risk	Very Low Risk	Very Low Risk

A schematic diagram of the conceptual model for the site dated 13/06/17 is shown in appendix 6, conceptual model.

7.5 Investigation Work Recommended

7.5.1 General

As outlined above it is unlikely that there are any sources of contamination on this site that could have impacted the site soils from the on site current and past activities and are at levels that would pose an unacceptable risk.

It is also unlikely that the site has been impacted by the uses and or/activities from the immediate surrounding areas.

The risk to human health could be classed as very low.

The risk to the converted barn and below ground services could also be classed as very low.

The site overlies a minor aquifer and is within a source protection zone (SPZ). It is proposed that the surface water drainage for the converted barn will be discharged via the existing local mains.

The foul drainage for the converted barn will be discharged via the existing mains system.

The risk to controlled waters now and on completion of the development could be classed as very low.

It is therefore not necessary to carry out a detailed phase II intrusive investigation of the site.

7.6 Excavated Soils

Any excavated soils that are produced as part of the construction work that are to be removed from the site to landfill, chemical analysis will be required to classify the 'waste' in conjunction with the EU Landfill Directive that came into effect in 2005, which defines the criteria for the chemical analysis and classification of materials that are to be disposed to landfill.

Should soils need to be removed from the site to landfill, a European Landfill Directive Waste Acceptance Criteria analysis will be required on the material to be disposed to be submitted to the proposed receiving tip before the soil is removed from the site.

The different strata excavated (if applicable) should be segregated and analysed separately prior to disposal off site.

7.7 Additional Notes

Should any contaminants be encountered during the development works that were not expected analysis must be carried out to identify the type and extent of the contamination.

During the construction work, exposed soils should be protected from any accidental leakage or spillages from stored oils/fuels or chemicals used in the construction work, if any, to prevent any potential impact to the site or controlled waters.

The ground stability hazards in section 6.2 and associated comments where applicable are the opinion of the BGS based on the expected geology.

A copy of this report should be forwarded to Gravesham Borough Council or other regulators/insurers if applicable for their consideration and approval prior to the commencement of any further works on the site.

K.D.Huxley CSci CChem MRSC MEnvSc

Date: 13/06/17

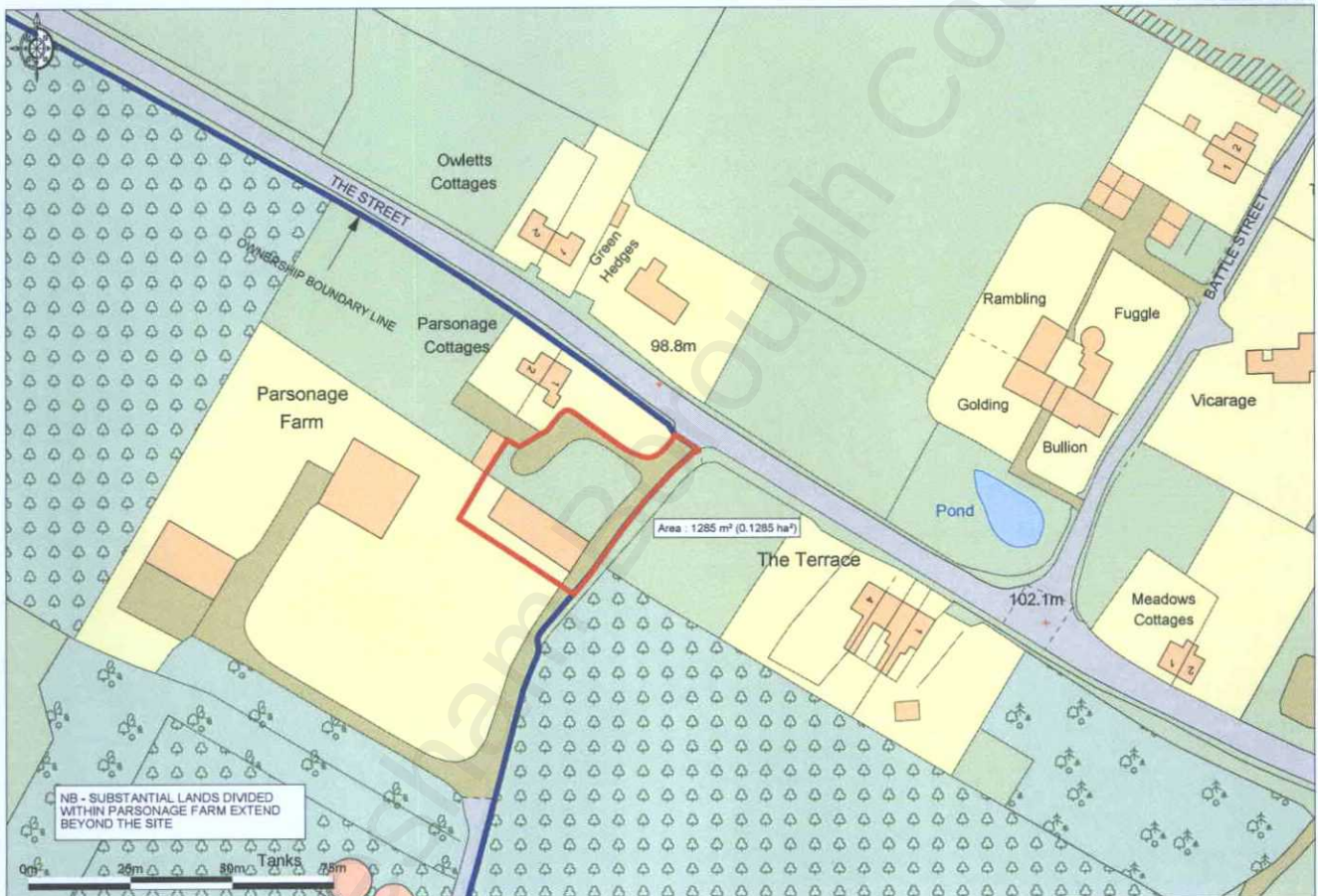
APPENDIX 1

SITE PLANS

Gravesham Borough Council

SITE LOCATION PLAN 1:1250 @ A4
Parsonage Barn, Cobham, Kent

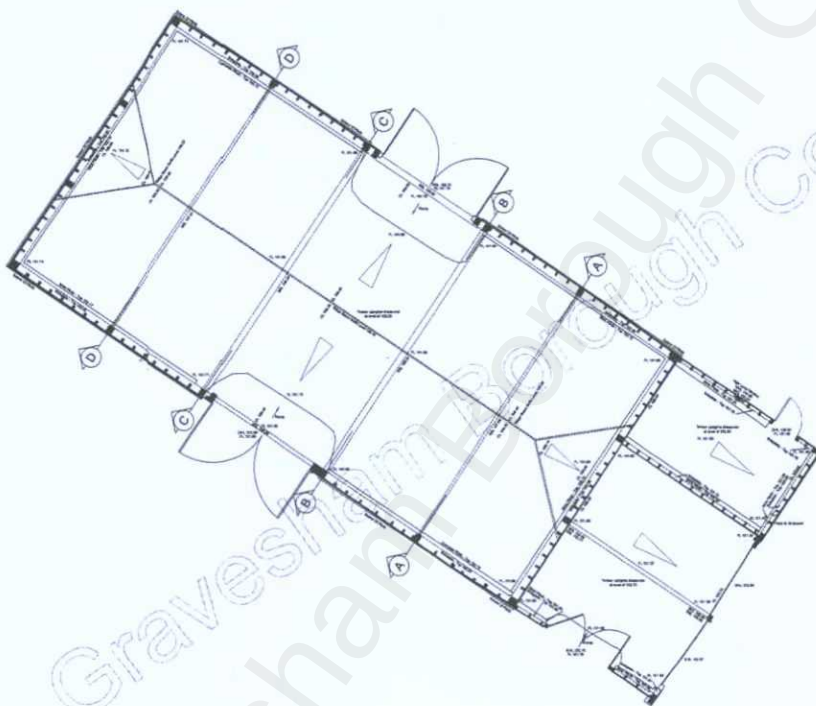
SMITHSGORE



Promap

Ordnance Survey © Crown Copyright 2014 All rights reserved. Licence number 100023402. Printed Scale: 1:1250

The plan is published for convenience only. Although thought to be correct its accuracy cannot be guaranteed and it does not form part of the contract.



20140557
7.8 JUN 2018

REVISIONS	
NO.	DESCRIPTION
1	ISSUED FOR TENDER
2	REVISED TO SHOW CHANGES
3	REVISED TO SHOW CHANGES
4	REVISED TO SHOW CHANGES
5	REVISED TO SHOW CHANGES
6	REVISED TO SHOW CHANGES
7	REVISED TO SHOW CHANGES
8	REVISED TO SHOW CHANGES
9	REVISED TO SHOW CHANGES
10	REVISED TO SHOW CHANGES
11	REVISED TO SHOW CHANGES
12	REVISED TO SHOW CHANGES
13	REVISED TO SHOW CHANGES
14	REVISED TO SHOW CHANGES
15	REVISED TO SHOW CHANGES
16	REVISED TO SHOW CHANGES
17	REVISED TO SHOW CHANGES
18	REVISED TO SHOW CHANGES
19	REVISED TO SHOW CHANGES
20	REVISED TO SHOW CHANGES
21	REVISED TO SHOW CHANGES
22	REVISED TO SHOW CHANGES
23	REVISED TO SHOW CHANGES
24	REVISED TO SHOW CHANGES
25	REVISED TO SHOW CHANGES
26	REVISED TO SHOW CHANGES
27	REVISED TO SHOW CHANGES
28	REVISED TO SHOW CHANGES
29	REVISED TO SHOW CHANGES
30	REVISED TO SHOW CHANGES
31	REVISED TO SHOW CHANGES
32	REVISED TO SHOW CHANGES
33	REVISED TO SHOW CHANGES
34	REVISED TO SHOW CHANGES
35	REVISED TO SHOW CHANGES
36	REVISED TO SHOW CHANGES
37	REVISED TO SHOW CHANGES
38	REVISED TO SHOW CHANGES
39	REVISED TO SHOW CHANGES
40	REVISED TO SHOW CHANGES
41	REVISED TO SHOW CHANGES
42	REVISED TO SHOW CHANGES
43	REVISED TO SHOW CHANGES
44	REVISED TO SHOW CHANGES
45	REVISED TO SHOW CHANGES
46	REVISED TO SHOW CHANGES
47	REVISED TO SHOW CHANGES
48	REVISED TO SHOW CHANGES
49	REVISED TO SHOW CHANGES
50	REVISED TO SHOW CHANGES
51	REVISED TO SHOW CHANGES
52	REVISED TO SHOW CHANGES
53	REVISED TO SHOW CHANGES
54	REVISED TO SHOW CHANGES
55	REVISED TO SHOW CHANGES
56	REVISED TO SHOW CHANGES
57	REVISED TO SHOW CHANGES
58	REVISED TO SHOW CHANGES
59	REVISED TO SHOW CHANGES
60	REVISED TO SHOW CHANGES
61	REVISED TO SHOW CHANGES
62	REVISED TO SHOW CHANGES
63	REVISED TO SHOW CHANGES
64	REVISED TO SHOW CHANGES
65	REVISED TO SHOW CHANGES
66	REVISED TO SHOW CHANGES
67	REVISED TO SHOW CHANGES
68	REVISED TO SHOW CHANGES
69	REVISED TO SHOW CHANGES
70	REVISED TO SHOW CHANGES
71	REVISED TO SHOW CHANGES
72	REVISED TO SHOW CHANGES
73	REVISED TO SHOW CHANGES
74	REVISED TO SHOW CHANGES
75	REVISED TO SHOW CHANGES
76	REVISED TO SHOW CHANGES
77	REVISED TO SHOW CHANGES
78	REVISED TO SHOW CHANGES
79	REVISED TO SHOW CHANGES
80	REVISED TO SHOW CHANGES
81	REVISED TO SHOW CHANGES
82	REVISED TO SHOW CHANGES
83	REVISED TO SHOW CHANGES
84	REVISED TO SHOW CHANGES
85	REVISED TO SHOW CHANGES
86	REVISED TO SHOW CHANGES
87	REVISED TO SHOW CHANGES
88	REVISED TO SHOW CHANGES
89	REVISED TO SHOW CHANGES
90	REVISED TO SHOW CHANGES
91	REVISED TO SHOW CHANGES
92	REVISED TO SHOW CHANGES
93	REVISED TO SHOW CHANGES
94	REVISED TO SHOW CHANGES
95	REVISED TO SHOW CHANGES
96	REVISED TO SHOW CHANGES
97	REVISED TO SHOW CHANGES
98	REVISED TO SHOW CHANGES
99	REVISED TO SHOW CHANGES
100	REVISED TO SHOW CHANGES

 QMS ISO 9001 REGISTERED FIRM Certificate Number: 20-008	 QMS ISO 14001 REGISTERED FIRM Certificate Number: 20-009
---	--

Notes:

Site and levels relate to OS OSN Active Network.
 Timber uprights measured at specific heights. Full wall information shown in internal elevations. Drawing 13241/020.
 Structural Crane location shown in drawing 13241/020.
 Survey scale 1:100, plot scale 1:50.

Maltby Land Surveys Ltd

2 QUEEN ROAD
 WEST BUCKINGHAM
 MK35 9JG
 Tel: 01494 410000
 Fax: 01494 410001
 Email: info@maltbyland.co.uk
 Website: www.maltbyland.co.uk

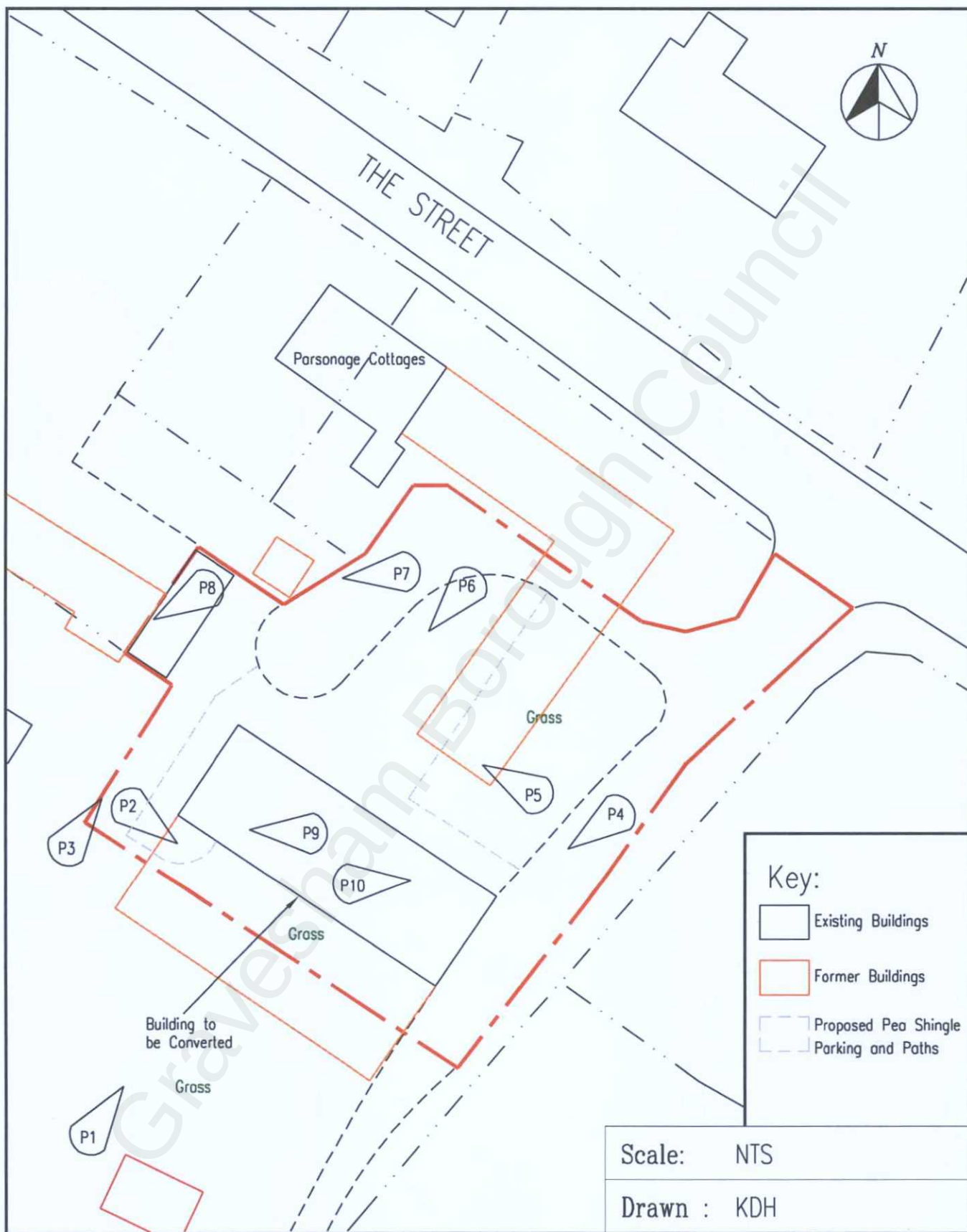
SUBMITTED BY	MP	SMITHS GORE
DRAWN BY	SL	
CHECKED BY	SL	

RICS 1/50 (A1 Sheet)

PARSONAGE BARN, COBHAM, KENT, DA12 3DX

GROUND FLOOR PLAN

Job No	Rev	Drawing Number
13241		13241/020
Date	SEPT 2013	



Key:

- Existing Buildings
- Former Buildings
- Proposed Pea Shingle Parking and Paths

Scale: NTS

Drawn : KDH

Location : Parsonage Farm, Cobham DA12 3DG

Report: 07573/23

Title : Site Plan

Fig. No.: 1

APPENDIX 2

AERIAL PHOTOGRAPH

Groundsure Enviro Insight

Address: Parsonage Farm, The Street, Cobham, Gravesend, DA12 3DG
Date: 19 May 2017
Reference: CMAPS-CM-625309-5500-190517EDR
Client: CENTREMAPS



Aerial Photograph Capture date: 09-Aug-2015
Grid Reference: 566668,168567
Site Size: 0.14ha

Report Reference: CMAPS-CM-625309-5500-190517EDR
Client Reference: 5500

APPENDIX 3

SITE PHOTOGRAPHS

PHOTOGRAPH 1



Looking northeast across the grassed area to the south of the barn to be converted and brick building that may be converted at a later date. This will remain as a grassed area. The adjacent Parsonage Cottages are in the far background.

PHOTOGRAPH 2



Looking southeast along the south elevation of the barn to be converted. This area will be part of the private gardens.

PHOTOGRAPH 3



Looking northeast along the west boundary showing the brick building that may be converted at a later date. This will remain as a grassed area. The concrete area to the right will be replaced with pea shingle for an access path to the converted barn.

PHOTOGRAPH 4



Looking southwest along part of the access drive showing the southeast elevation of the barn to be converted. The 'lean to' part of the barn will be two car ports and a utility room for one of the dwellings.

PHOTOGRAPH 5



Looking northwest across the grassed area to the north of the barn to be converted. The area in the foreground will remain as a grassed area.

PHOTOGRAPH 6



Looking southwest across the grassed area to the north of the barn to be converted. This area will be pea shingle for additional parking.

PHOTOGRAPH 7



Looking west across from the existing access and parking area at the brick building that may be converted at a later date. This area will remain as access and parking.

PHOTOGRAPH 8



Inside the ground floor of the brick building.

PHOTOGRAPH 9



Inside the barn to be converted showing the stored bulk fruit bins. This area will be mainly unit 1.

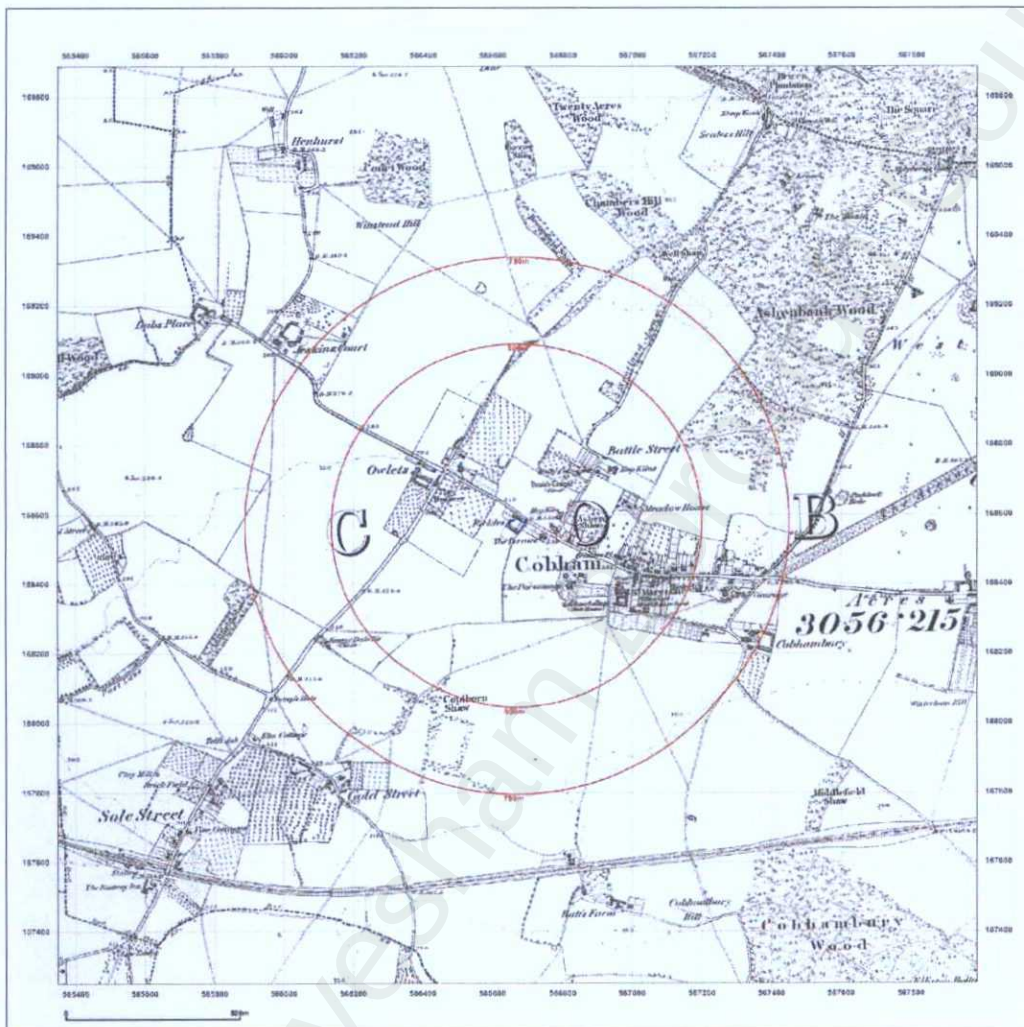
PHOTOGRAPH 10



Inside the barn to be converted showing the stored fabric ground covers. This area will be unit 2.

APPENDIX 4

HISTORICAL MAPS



Site Details:

Parsonage Farm, The Street,
Cobham, Gravesend, DA12 3DG

Client Ref: 5500
Report Ref: CMAPS-CM-625309-5500-190517HIS
Grid Ref: S66668, 168567

Map Name: County Series

Map date: 1867

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1867
Revised 1907
Edition N/A
Copyright N/A
Labeled N/A



Produced by
Groundsure Insights
www.groundsure.com

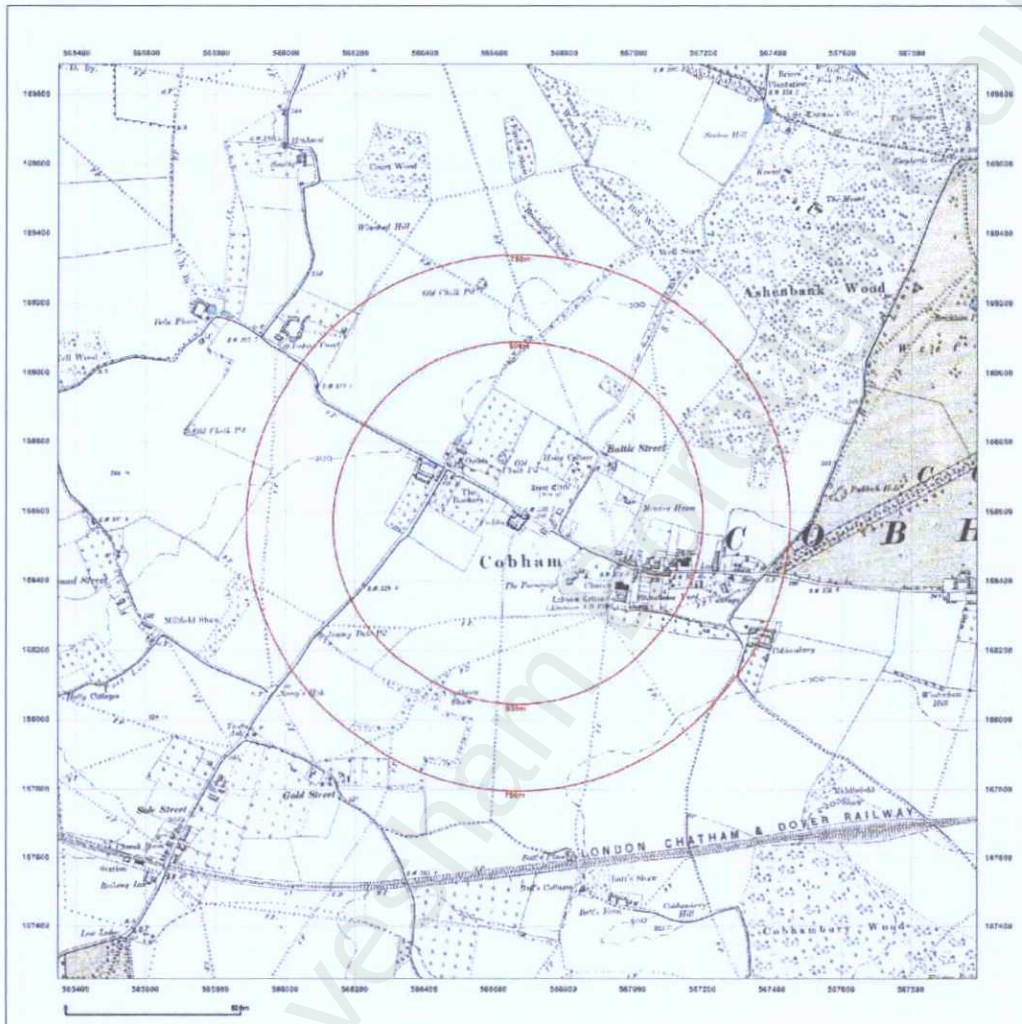


Supplied by:
www.centremapslive.com
groundsure@centremaps.com

© Crown copyright and database rights 2015 Ordnance Survey 100035207

Production date: 19 May 2017

To view map legend click here [Legend](#)



Site Details:
Parsonage Farm, The Street,
Cobham, Gravesend, DA12 3DG

Client Ref: SS00
Report Ref: CMAPS-CM-625309-5500-190517HIS
Grid Ref: 566668, 168567

Map Name: County Series

Map date: 1895

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1864
Revised 1895
Edition NIA
Copyright NIA
Levelled NIA



Produced by
Groundsure Insights
www.groundsure.com

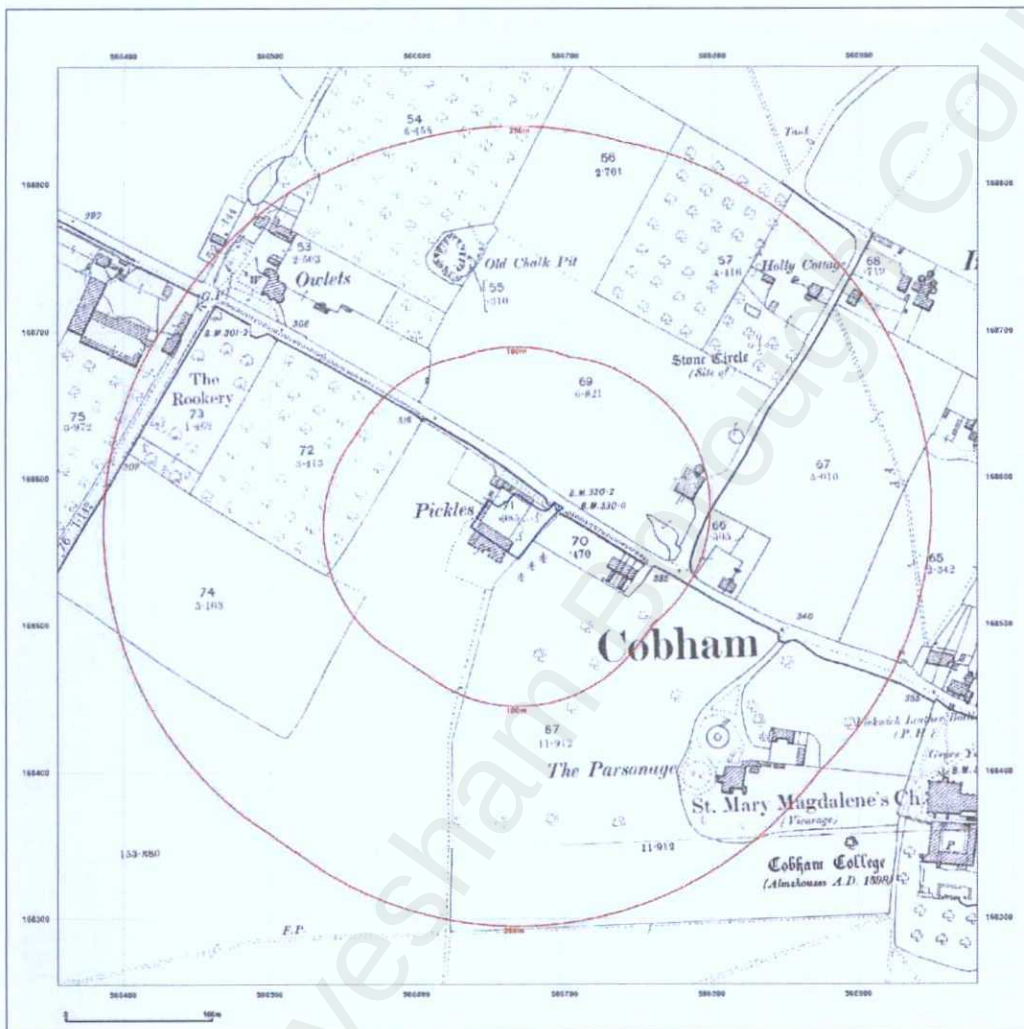


Supplied by:
www.centremapslive.com
groundsure@centremaps.com

© Crown copyright and database rights 2015 Ordnance Survey 100035207

Production date: 19 May 2017

To view map legend click here [Legend](#)



Site Details:

Parsonage Farm, The Street,
Cobham, Gravesend, DA12 3DG

Client Ref: 5500
Report Ref: CMAPS-CM-625309-5500-190517HIS
Grid Ref: 566668, 168567

Map Name: County Series

Map date: 1896-1897

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1897
Revised 1897
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1898
Revised 1898
Edition N/A
Copyright N/A
Levelled N/A



Produced by
Groundsure Insights
www.groundsure.com

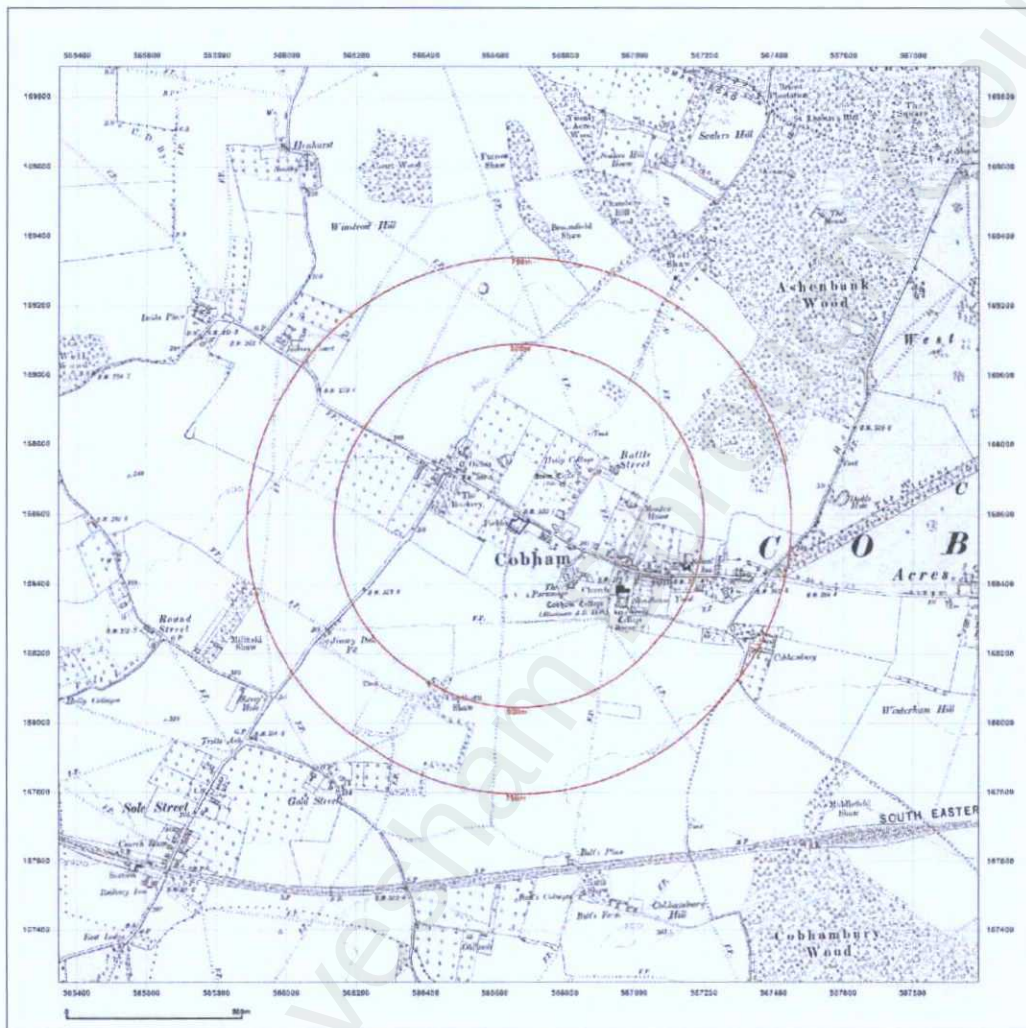


Supplied by:
www.centremapslive.com
groundsure@centremaps.com

© Crown copyright and database rights 2015 Ordnance Survey 100035207

Production date: 19 May 2017

To view map legend click here [Legend](#)



Site Details:

Parsonage Farm, The Street,
Cobham, Gravesend, DA12 3DG

Client Ref: 5500
Report Ref: CMAPS-CM-625309-5500-190517HIS
Grid Ref: 566668, 168567

Map Name: County Series

Map date: 1907

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1902
Revised 1907
Edition N/A
Copyright N/A
Licensed N/A



Produced by
Groundsure Insights
www.groundsure.com

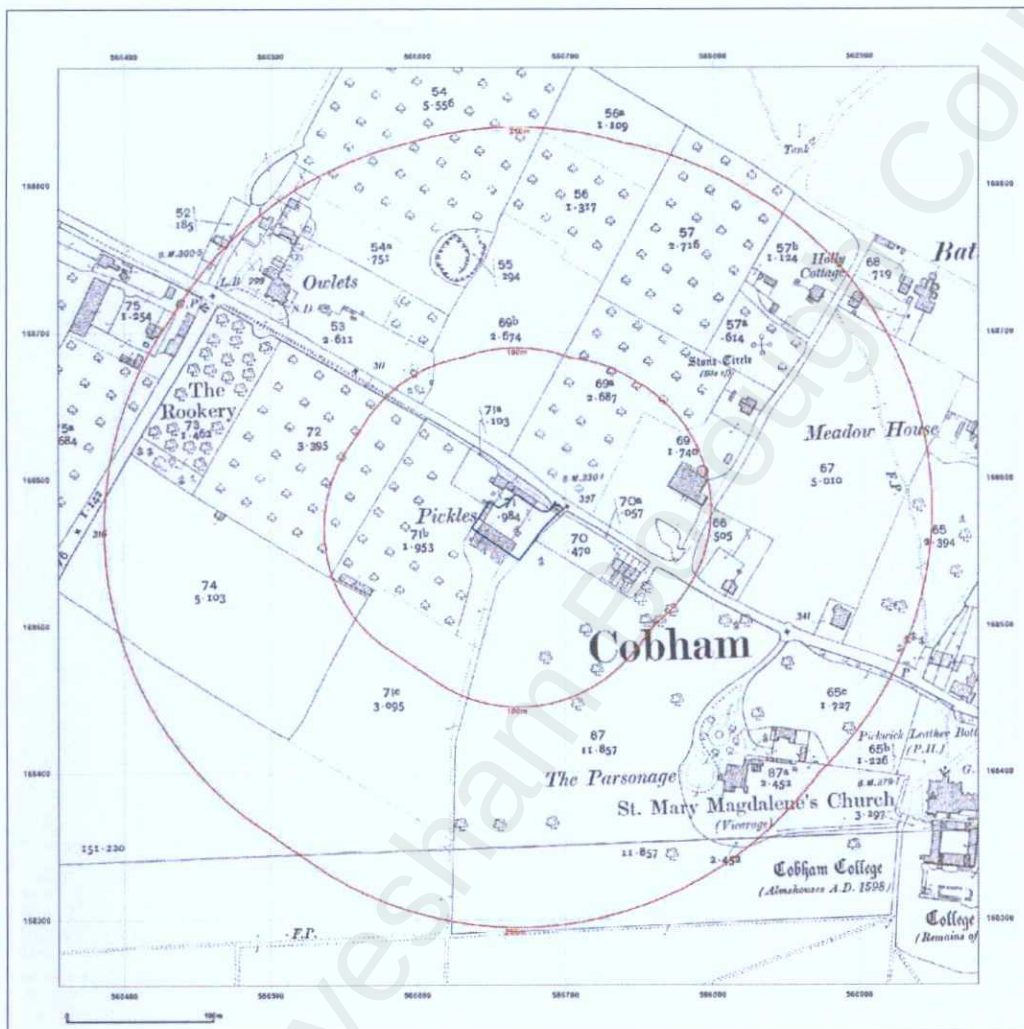


Supplied by:
www.centremapslive.com
groundsure@centremaps.com

© Crown copyright and database rights 2015 Ordnance Survey 100035207

Production date: 19 May 2017

To view map legend click here [Legend](#)



Site Details:

Parsonage Farm, The Street,
Cobham, Gravesend, DA12 3DG

Client Ref: 5500
Report Ref: CMAP5-CM-625309-5500-190517HIS
Grid Ref: 566668, 168567

Map Name: County Series

Map date: 1908

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1908
Revised 1908
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1908
Revised 1908
Edition N/A
Copyright N/A
Levelled N/A



Produced by
Groundsure Insights
www.groundsure.com

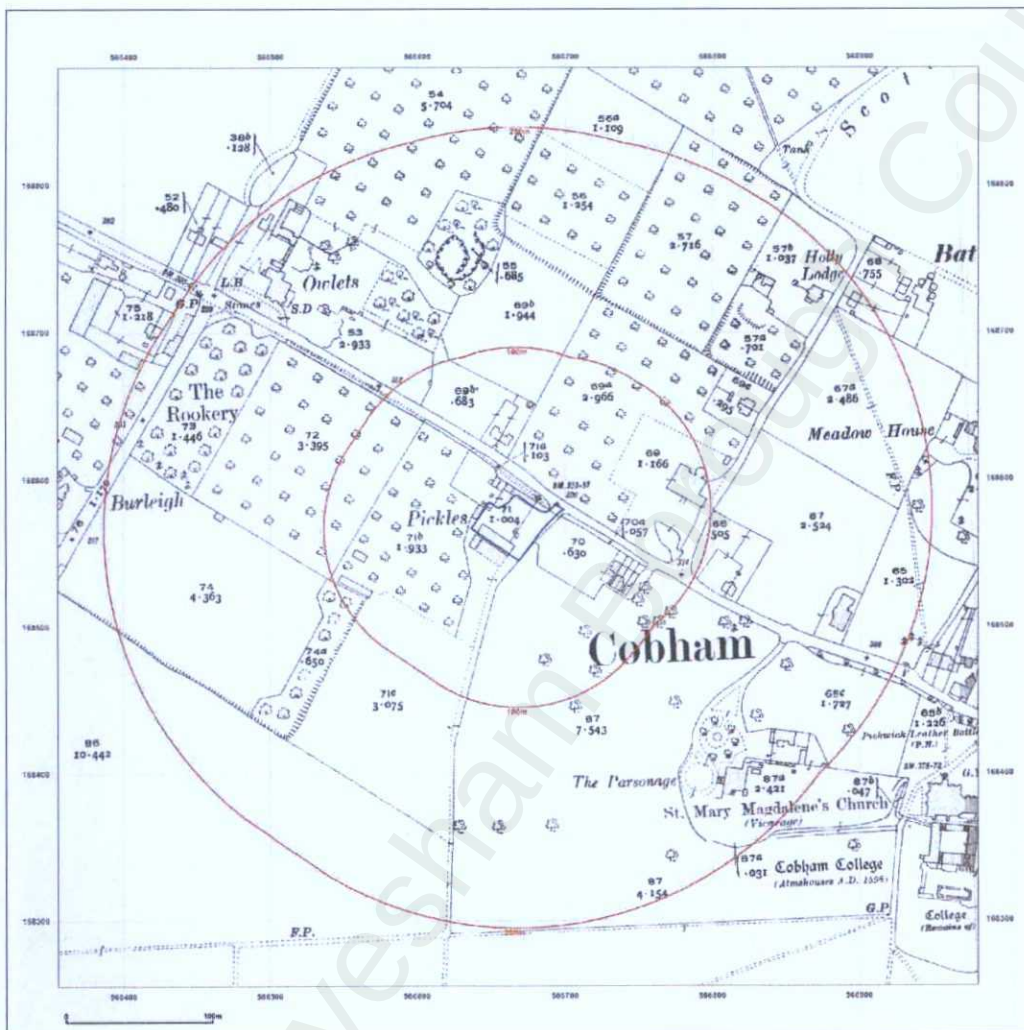


Supplied by:
www.centremapslive.com
groundsure@centremaps.com

© Crown copyright and database rights 2015 Ordnance Survey 100035307

Production date: 19 May 2017

To view map legend click here [Legend](#)



Site Details:

Parsonage Farm, The Street,
Cobham, Gravesend, DA12 3DG

Client Ref: 5500
Report Ref: CMAPS-CM-625309-5500-190517HIS
Grid Ref: 566668, 168567

Map Name: County Series

Map date: 1933-1936

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1933
Revised 1933
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1936
Revised 1936
Edition N/A
Copyright N/A
Levelled N/A



Produced by
Groundsure Insights
www.groundsure.com

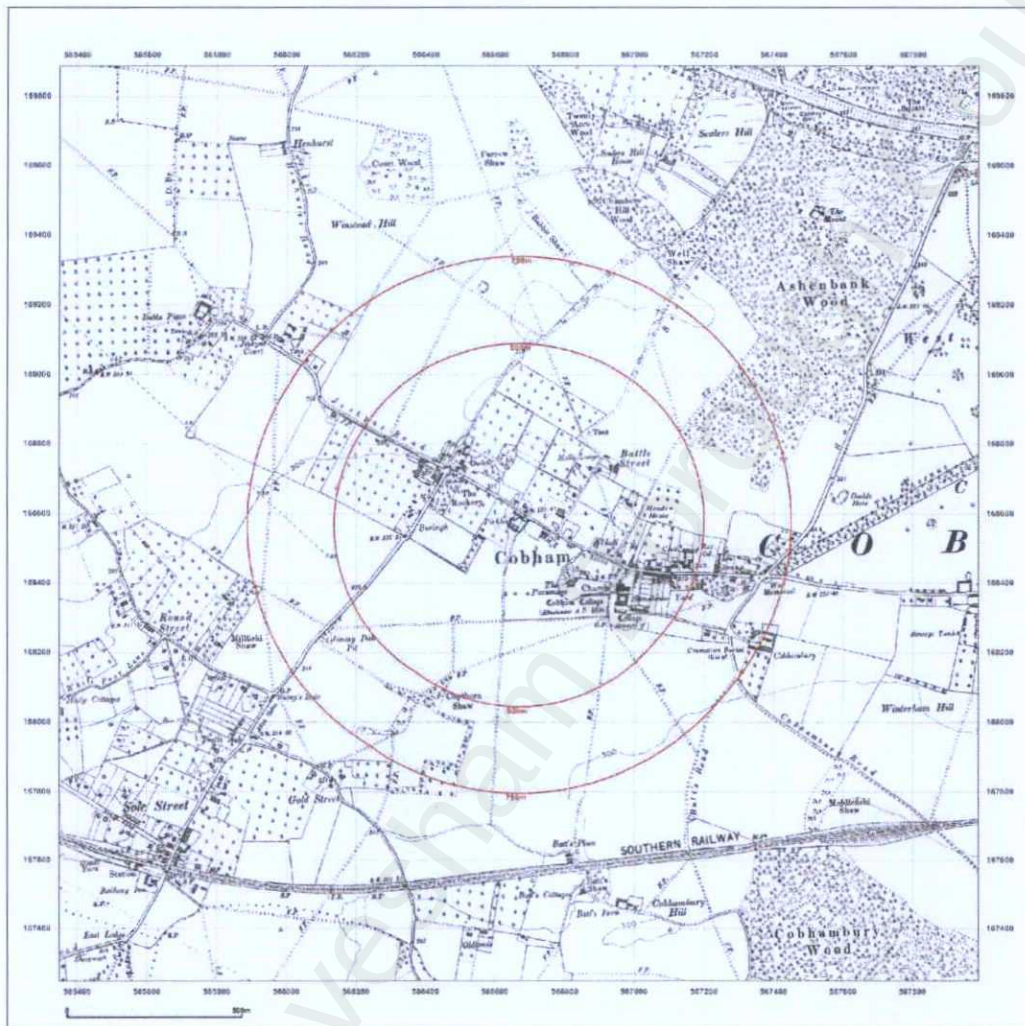


Supplied by:
www.centremapslive.com
groundsure@centremaps.com

© Crown copyright and database rights 2015 Ordnance Survey 100035207

Production date: 19 May 2017

To view map legend click here [Legend](#)



Site Details:

Parsonage Farm, The Street,
Cobham, Gravesend, DA12 3DG

Client Ref: 5500
Report Ref: CMAPS-CM-625309-5500-190517HIS
Grid Ref: 566668, 168567

Map Name: County Series

Map date: 1939

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1902
Revised 1939
Edition N/A
Copyright N/A
Levelled N/A



Produced by
Groundsure Insights
www.groundsure.com

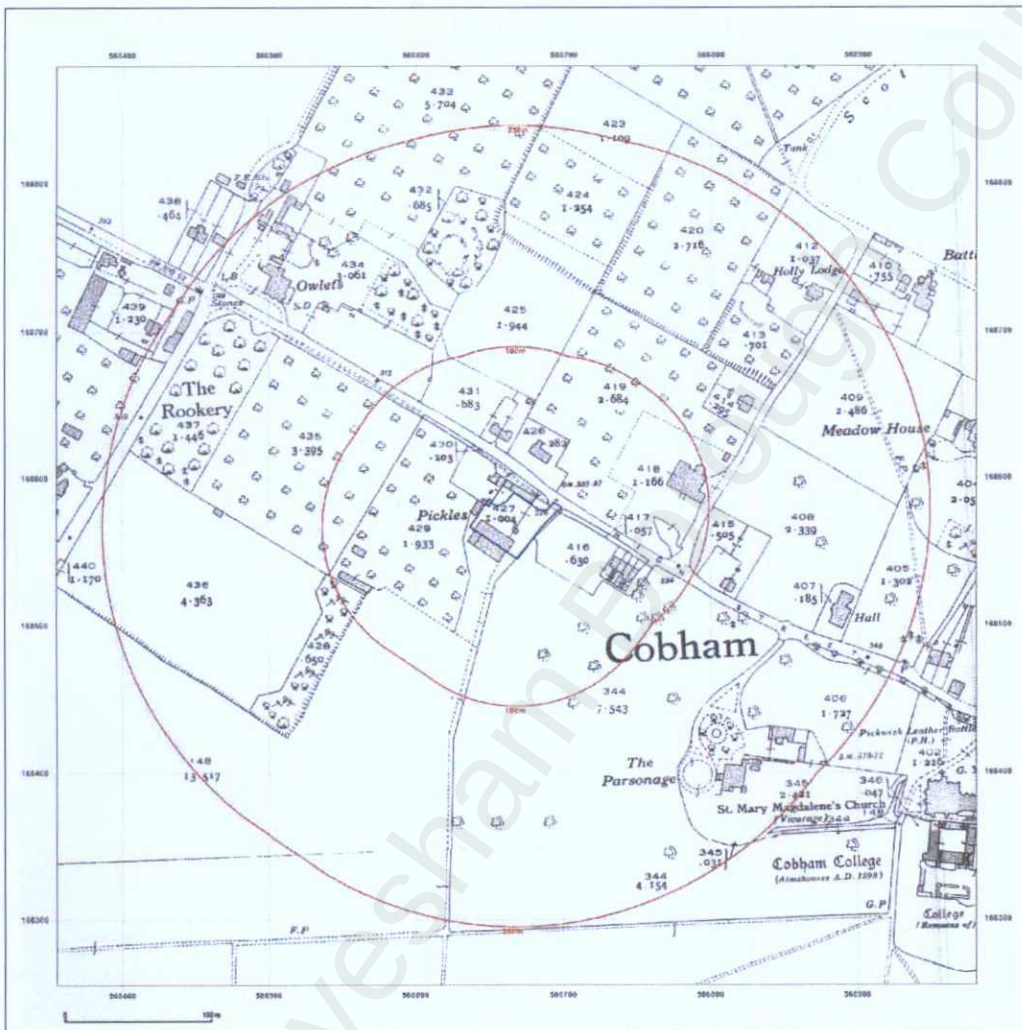


Supplied by:
www.centremapslive.com
groundsure@centremaps.com

© Crown copyright and database rights 2015 Ordnance Survey 100035207

Production date: 19 May 2017

To view map legend click here [Legend](#)



Site Details:
 Parsonage Farm, The Street,
 Cobham, Gravesend, DA12 3DG

Client Ref: 5500
Report Ref: CMAPS-CM-625309-5500-190517HIS
Grid Ref: 566668, 168567

Map Name: County Series
Map date: 1939
Scale: 1:2,500
Printed at: 1:2,500



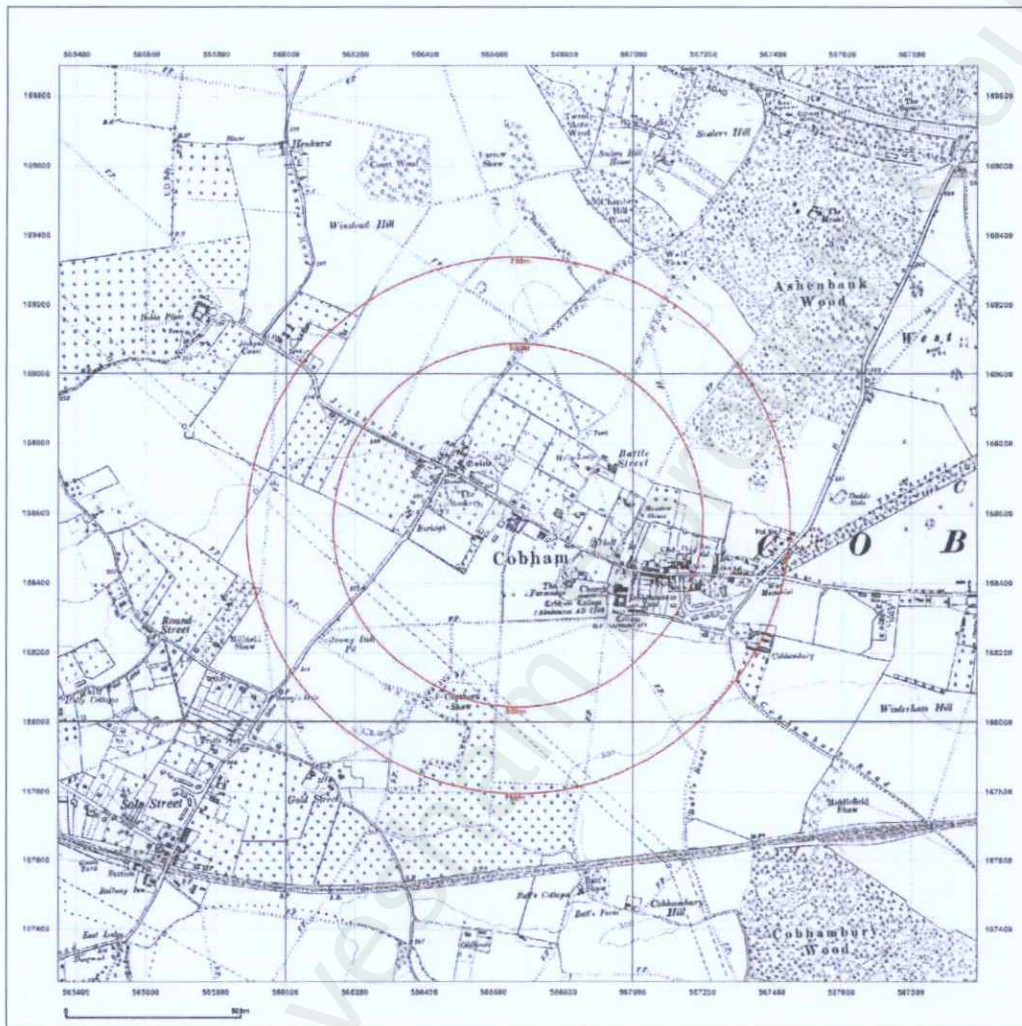
Surveyed 1939
 Revised 1939
 Edition N/A
 Copyright N/A
 Levelling N/A

Surveyed 1939
 Revised 1939
 Edition N/A
 Copyright N/A
 Levelling N/A

Groundsure Produced by
 Groundsure Insights
www.groundsure.com

Powered by
 Supplied by:
www.centremapslive.com
groundsure@centremapslive.com

© Crown copyright and database rights 2015 Ordnance Survey 100035207
 Production date: 19 May 2017
 To view map legend click here [Legend](#)



Site Details:

Parsonage Farm, The Street,
Cobham, Gravesend, DA12 3DG

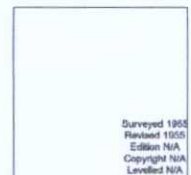
Client Ref: 5500
Report Ref: CMAPS-CM-625309-5500-190517HIS
Grid Ref: 566668, 168567

Map Name: Provisional

Map date: 1955

Scale: 1:10,560

Printed at: 1:10,560



Produced by
Groundsure Insights
www.groundsure.com

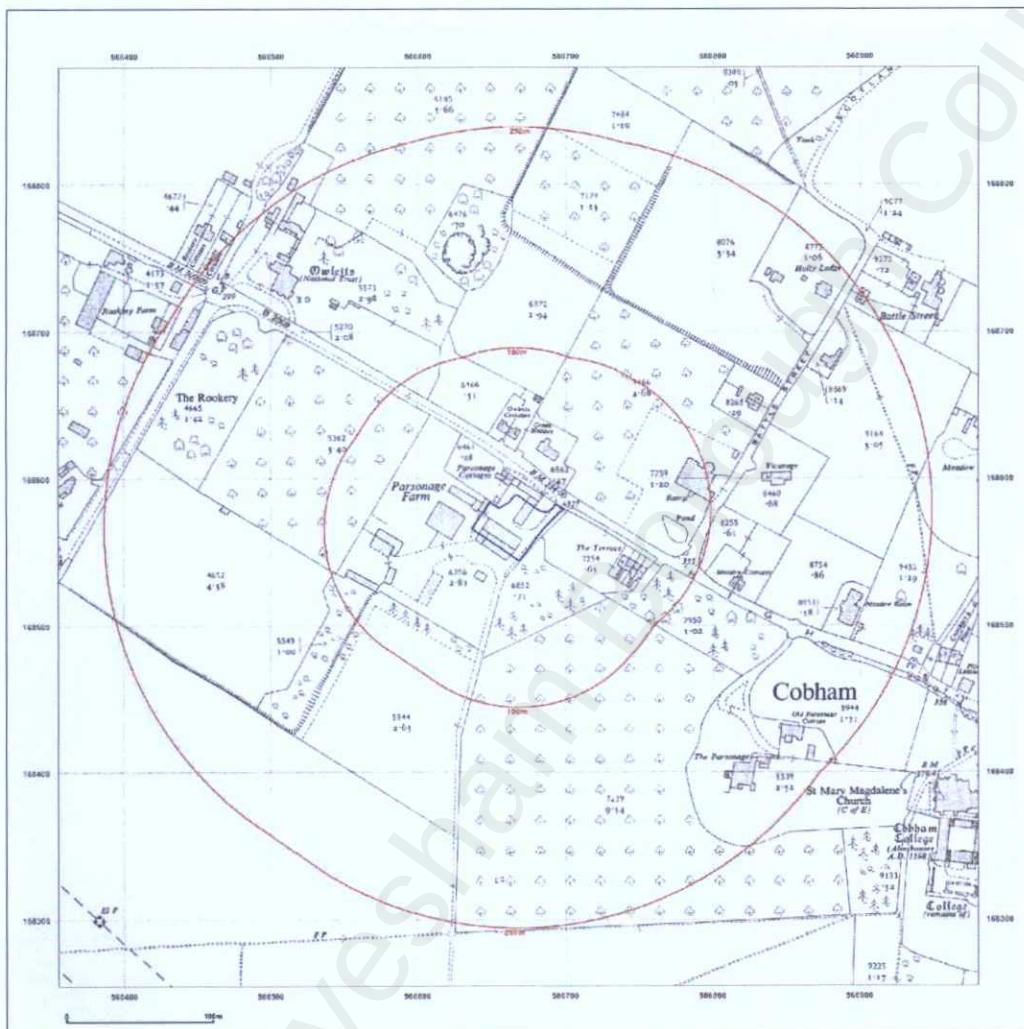


Supplied by:
www.centremapslive.com
groundsure@centremapslive.com

© Crown copyright and database rights 2015 Ordnance Survey 100035207

Production date: 19 May 2017

To view map legend click here [Legend](#)



Site Details:

Parsonage Farm, The Street,
Cobham, Gravesend, DA12 3DG

Client Ref: 5500
Report Ref: CMAPS-CM-625309-5500-190517HIS
Grid Ref: 566668, 168567

Map Name: National Grid

Map date: 1960

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1960
Revised 1960
Edition N/A
Copyright 1960
Levelled 1952



Produced by
Groundsure Insights
www.groundsure.com

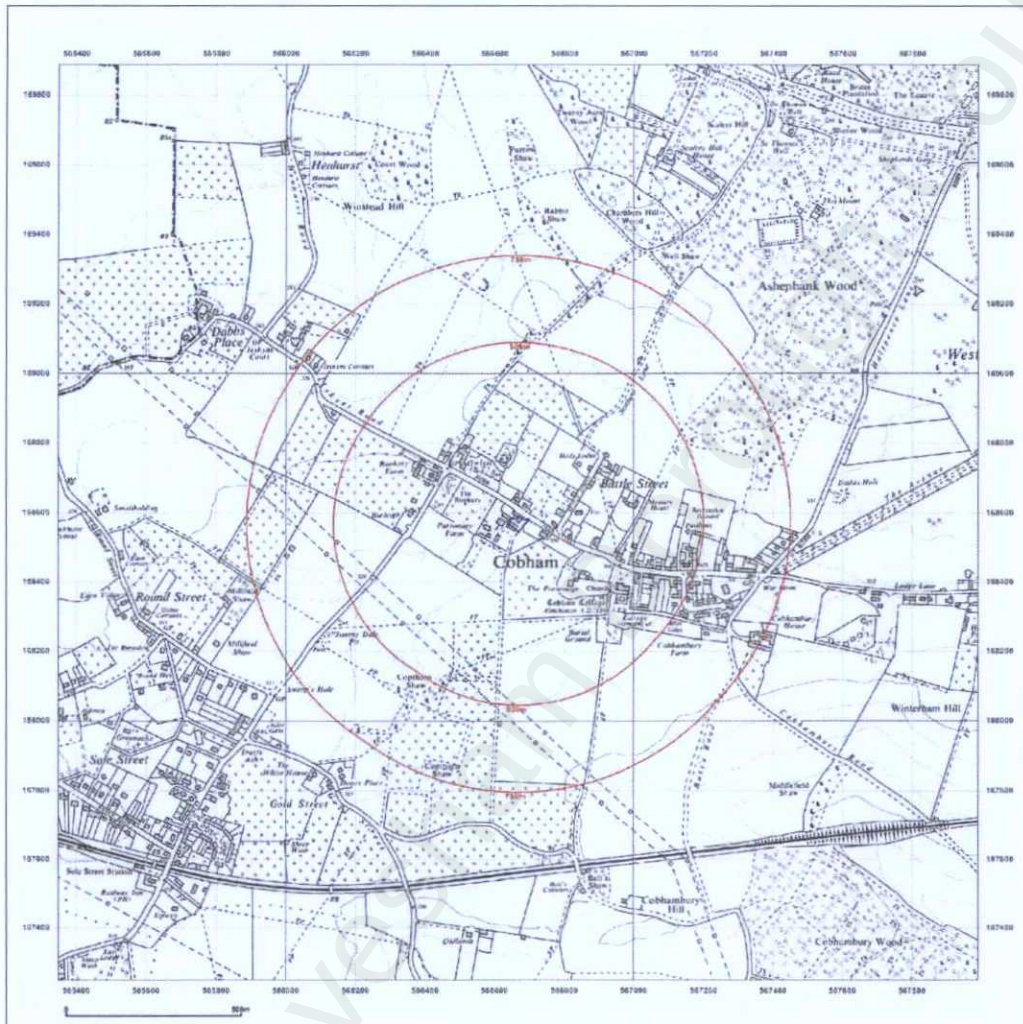


Supplied by:
www.centremapslive.com
groundsure@centremaps.com

© Crown copyright and database rights 2015 Ordnance Survey 100035207

Production date: 19 May 2017

To view map legend click here [Legend](#)



Site Details:

Parsonage Farm, The Street,
Cobham, Gravesend, DA12 3DG

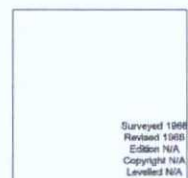
Client Ref: 5500
Report Ref: CMAPS-CM-625309-5500-190517HIS
Grid Ref: 56666B, 168567

Map Name: Provisional

Map date: 1966

Scale: 1:10,560

Printed at: 1:10,560



Produced by
Groundsure Insights
www.groundsure.com

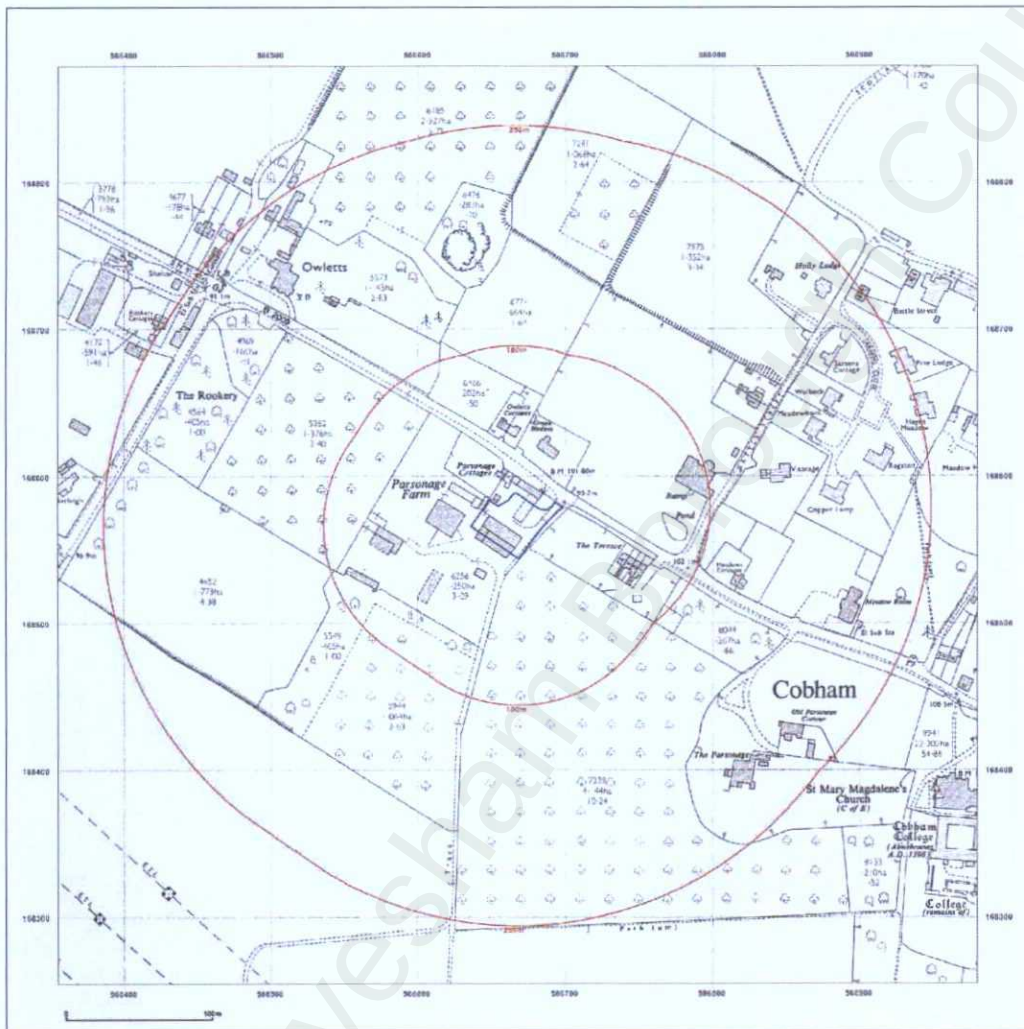


Supplied by:
www.centremapslive.com
groundsure@centremaps.com

© Crown copyright and database rights 2015 Ordnance Survey 100035207

Production date: 19 May 2017

To view map legend click here [Legend](#)



Site Details:

Parsonage Farm, The Street,
Cobham, Gravesend, DA12 3DG

Client Ref: 5500
Report Ref: CMAP5-CM-625309-5500-190517HIS
Grid Ref: 566668, 168567

Map Name: National Grid

Map date: 1976

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1976
Revised 1976
Edition N/A
Copyright 1977
Levelled 1996



Produced by
Groundsure Insights
www.groundsure.com



Supplied by:
www.centremapslive.com
groundsure@centremaps.com

© Crown copyright and database rights 2015 Ordnance Survey 100035207

Production date: 19 May 2017

To view map legend click here [Legend](#)



Site Details:

Parsonage Farm, The Street,
Cobham, Gravesend, DA12 3DG

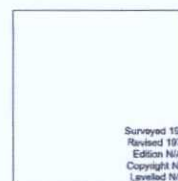
Client Ref: 5500
Report Ref: CMAPS-CM-625309-5500-190517HIS
Grid Ref: 566668, 168567

Map Name: National Grid

Map date: 1977

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1978
Revised 1977
Edition N/A
Copyright N/A
Levelled N/A



Produced by
Groundsure Insights
www.groundsure.com

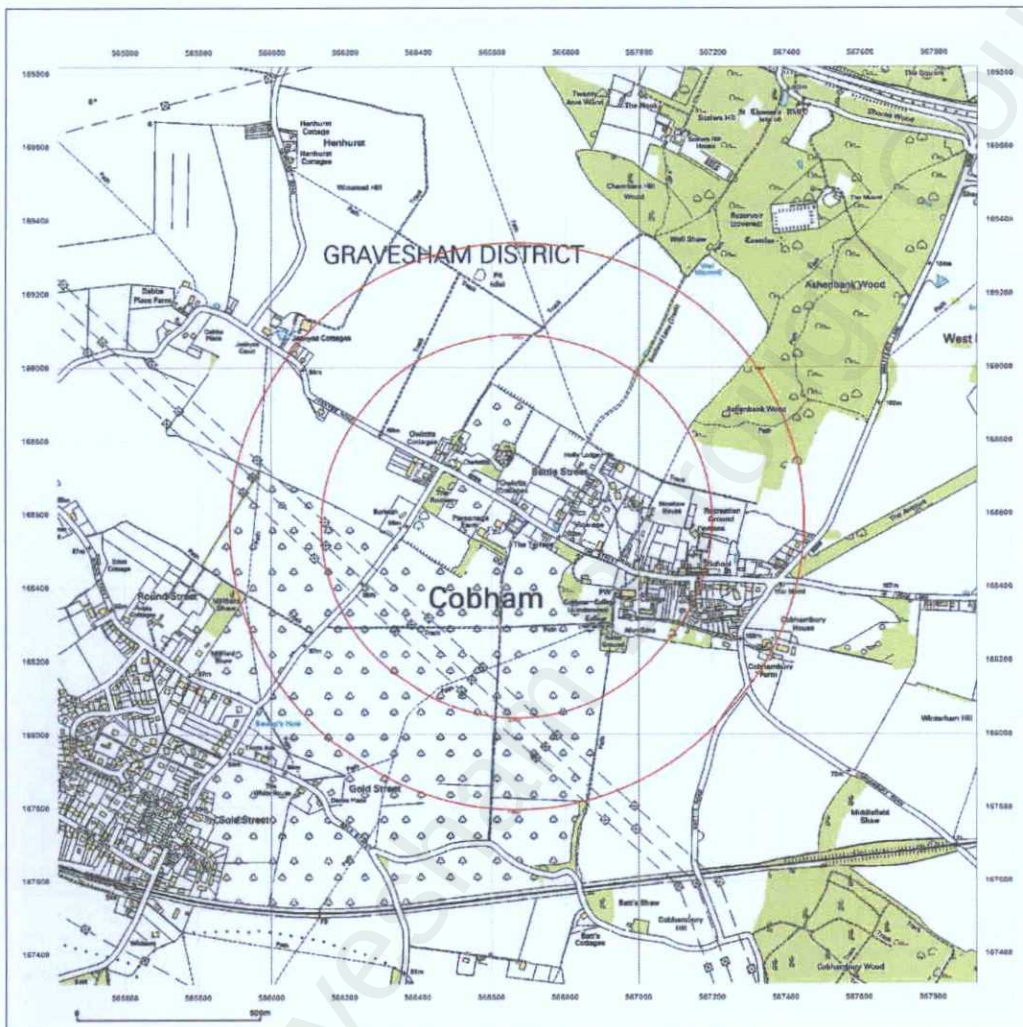


Supplied by:
www.centremapslive.com
groundsure@centremaps.com

© Crown copyright and database rights 2015 Ordnance Survey 100035207

Production date: 19 May 2017

To view map legend click here [Legend](#)



Site Details:

Parsonage Farm, The Street,
Cobham, Gravesend, DA12 3DG

Client Ref: 5500
Report Ref: CMAPS-CM-625309-5500-190517HIS
Grid Ref: 566668, 168567

Map Name: 1:10,000 Raster

Map date: 2002

Scale: 1:10,000

Printed at: 1:10,000



Produced by
Groundsure Insights
www.groundsure.com

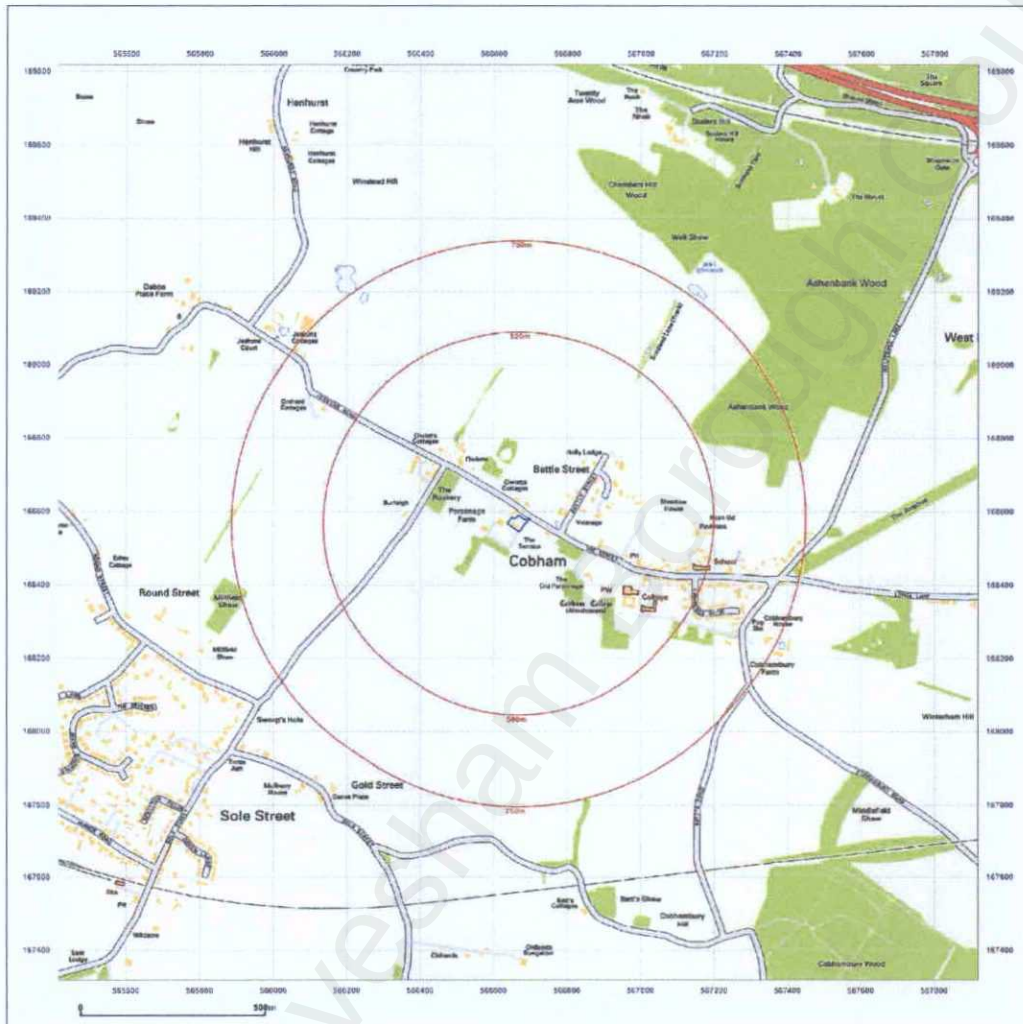


Supplied by:
www.centremapslive.com
groundsure@centremaps.com

© Crown copyright and database rights 2015 Ordnance Survey 100035207

Production date: 19 May 2017

To view map legend click here [Legend](#)



Site Details:
Parsonage Farm, The Street,
Cobham, Gravesend, DA12 3DG

Client Ref: 5500
Report Ref: CMAPS-CM-625309-5500-190517HIS
Grid Ref: 566668, 168567

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000



Produced by
Groundsure Insights
www.groundsure.com

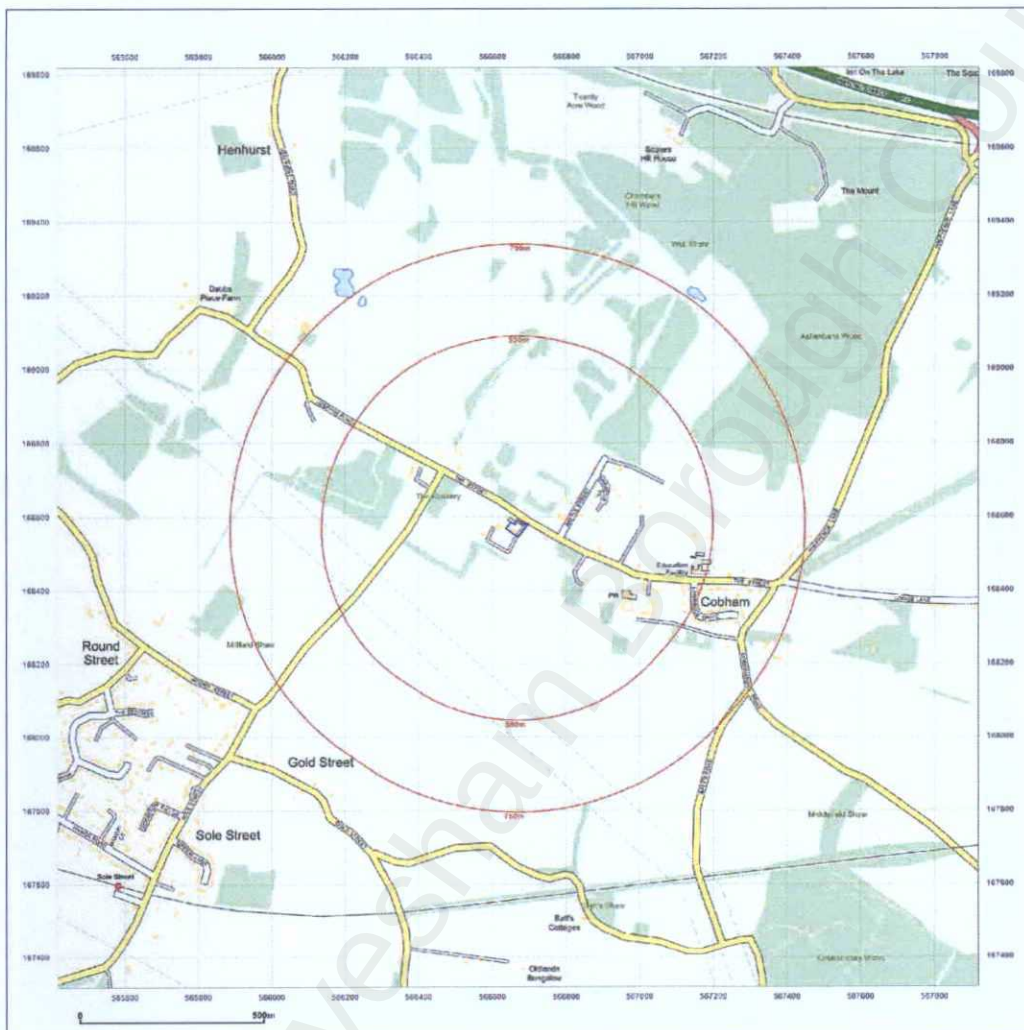


Supplied by:
www.centremapslive.com
groundsure@centremaps.com

© Crown copyright and database rights 2015 Ordnance Survey 100035207

Production date: 19 May 2017

To view map legend click here [Legend](#)



Site Details:

Parsonage Farm, The Street,
Cobham, Gravesend, DA12 3DG

Client Ref: 5500
Report Ref: CMAPS-CM-625309-5500-190517HIS
Grid Ref: 566668, 168567

Map Name: National Grid

Map date: 2014

Scale: 1:10,000

Printed at: 1:10,000



Produced by
Groundsure Insights
www.groundsure.com



Supplied by:
www.centremapslive.com
groundsure@centremaps.com

© Crown copyright and database rights 2015 Ordnance Survey 100035207

Production date: 19 May 2017

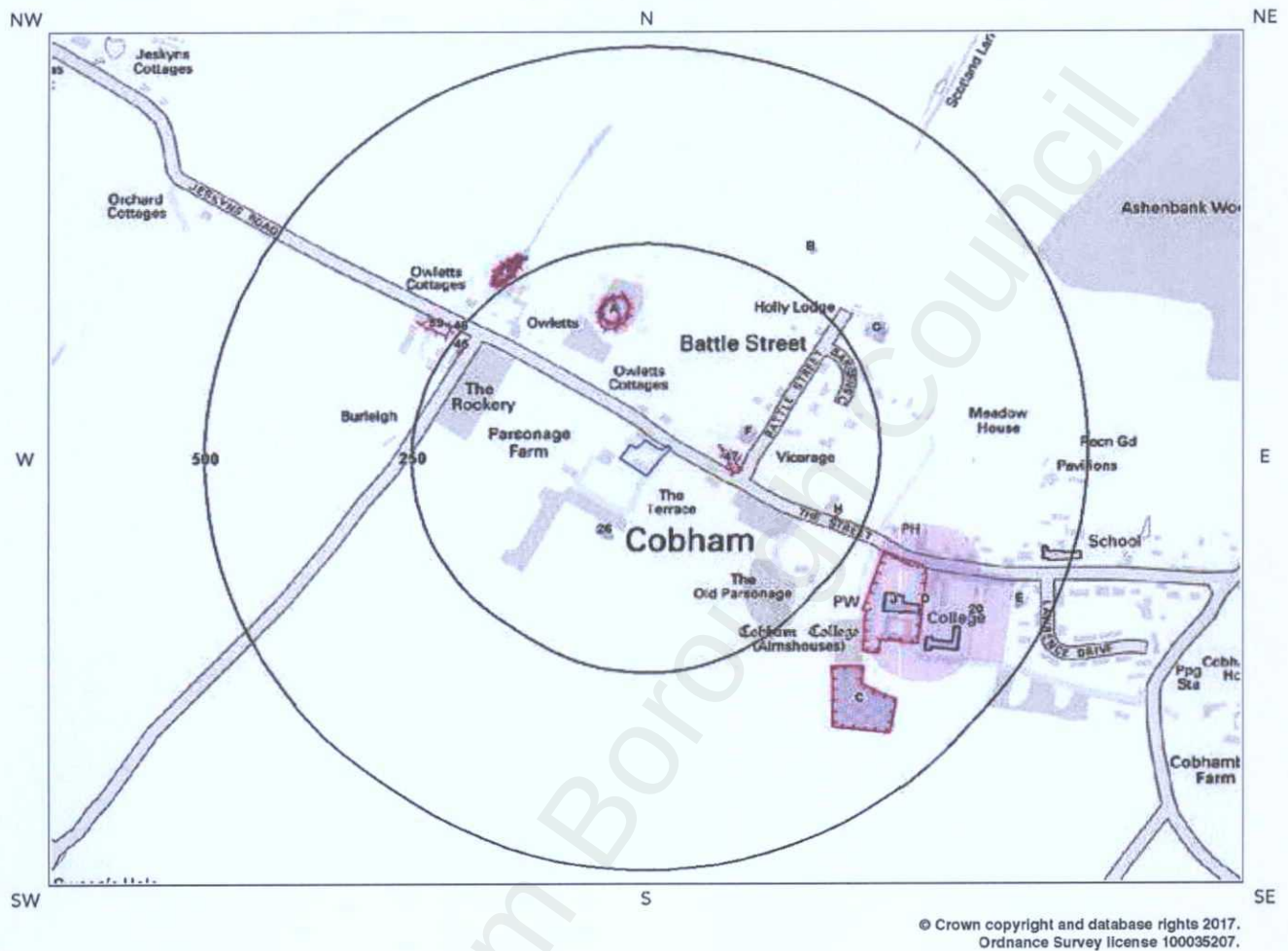
To view map legend click here: [Legend](#)

APPENDIX 5

ENVIRONMENTAL MAPS

Gravesham Borough Council

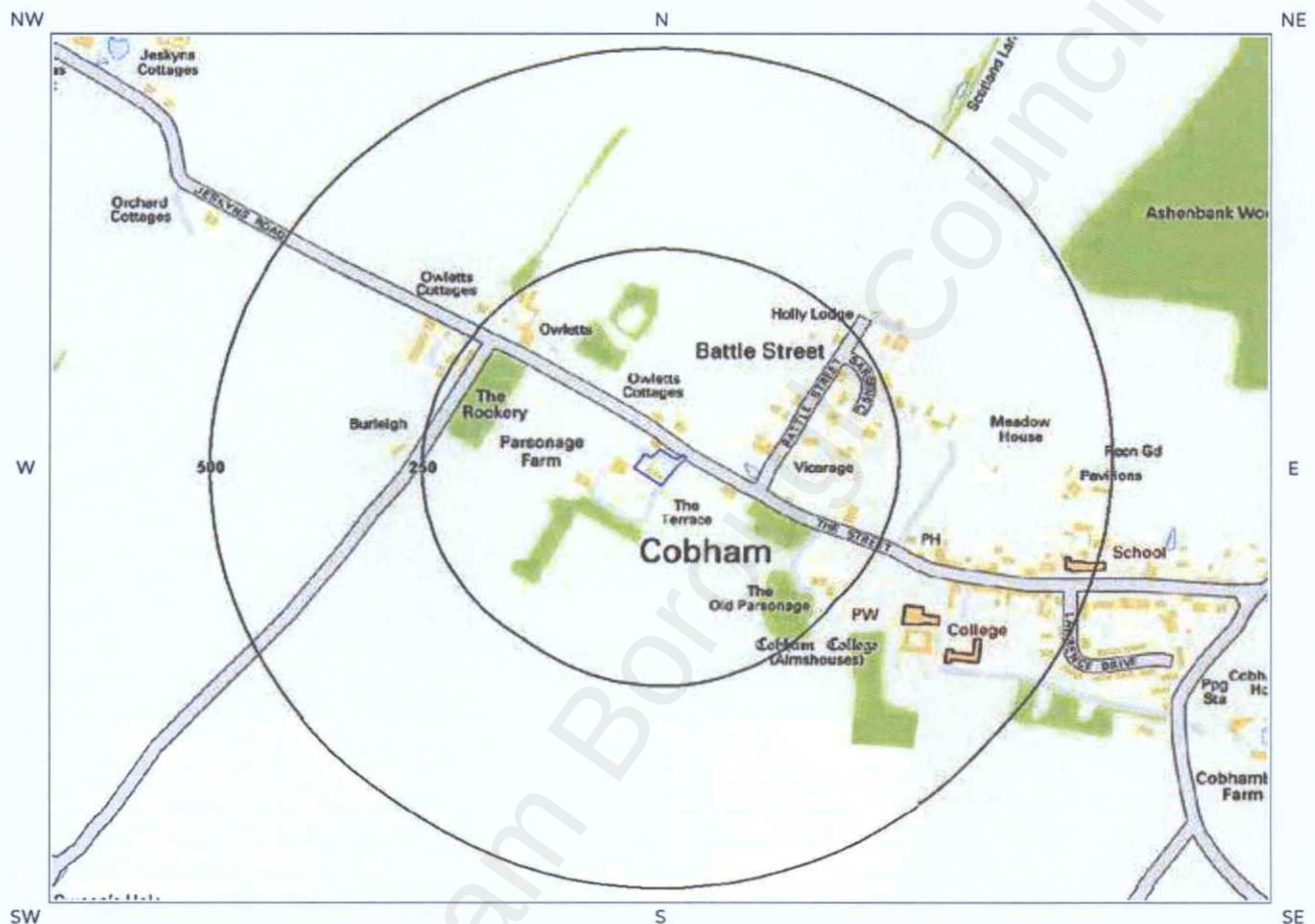
1. Historical Land Use



© Crown copyright and database rights 2017.
Ordnance Survey license 100035207.



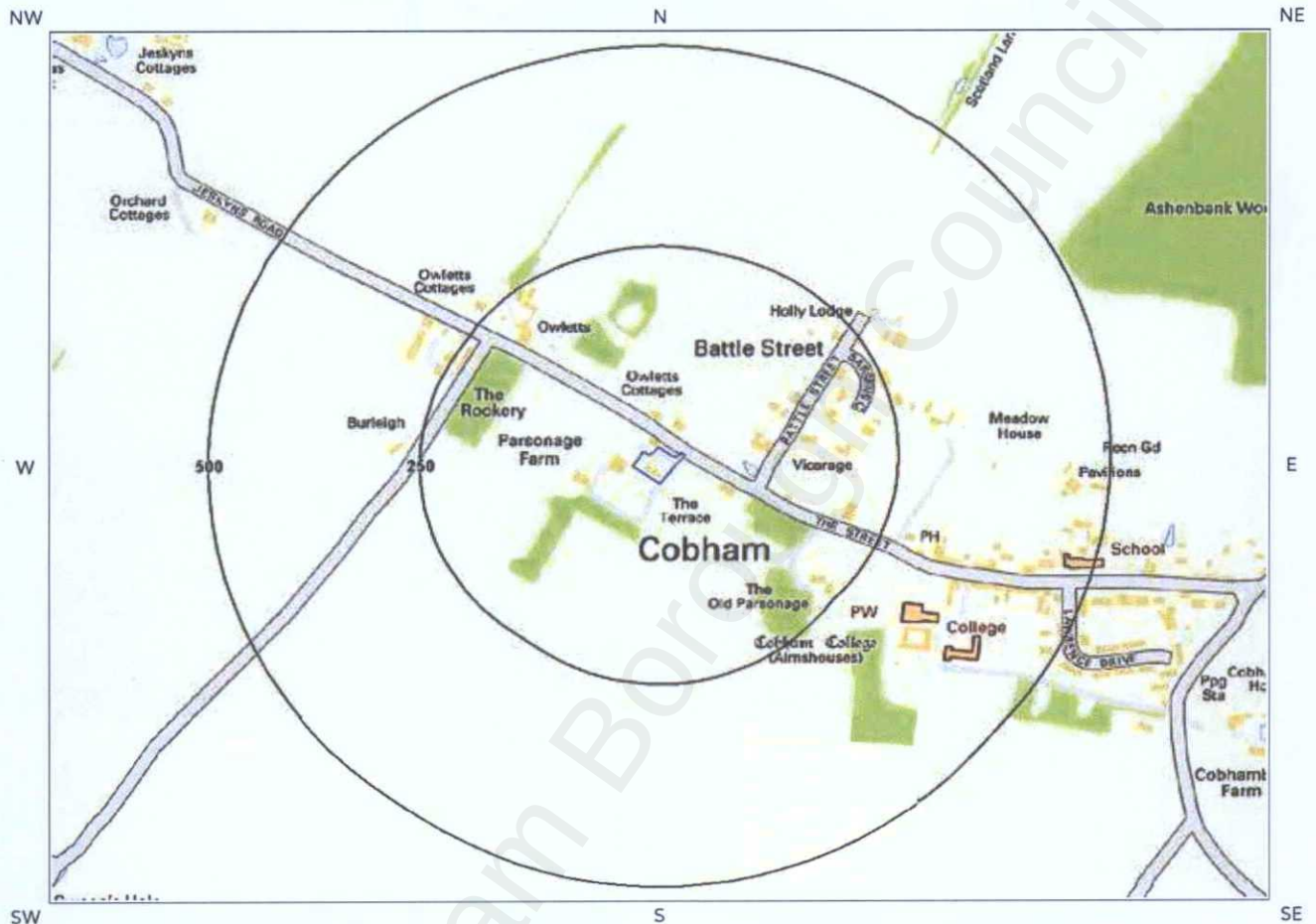
2. Environmental Permits, Incidents and Registers Map



© Crown copyright and database rights 2017.
Ordnance Survey license 100035207.

- | | | |
|--------------------|---------------------------------|--|
| Site Outline | ★ Recorded Pollution Incident | ▼ RAS 3 & 4 Authorisations |
| Search Buffers (m) | ◆ Dangerous Substances (List 1) | ▲ Part A(1) Authorised Processes and Historic IPC Authorisations |
| 250 | ◇ Dangerous Substances (List 2) | ▲ Part A(2) and Part B Authorised Processes |
| 500 | ■ Water Industry Referrals | ⬢ COMAH / NIHS Sites |
| | ■ Licenced Discharge Consents | ■ Sites Determined as Contaminated Land |
| | ■ Red List Discharge Consents | ● Hazardous Substance Consents and Enforcements |

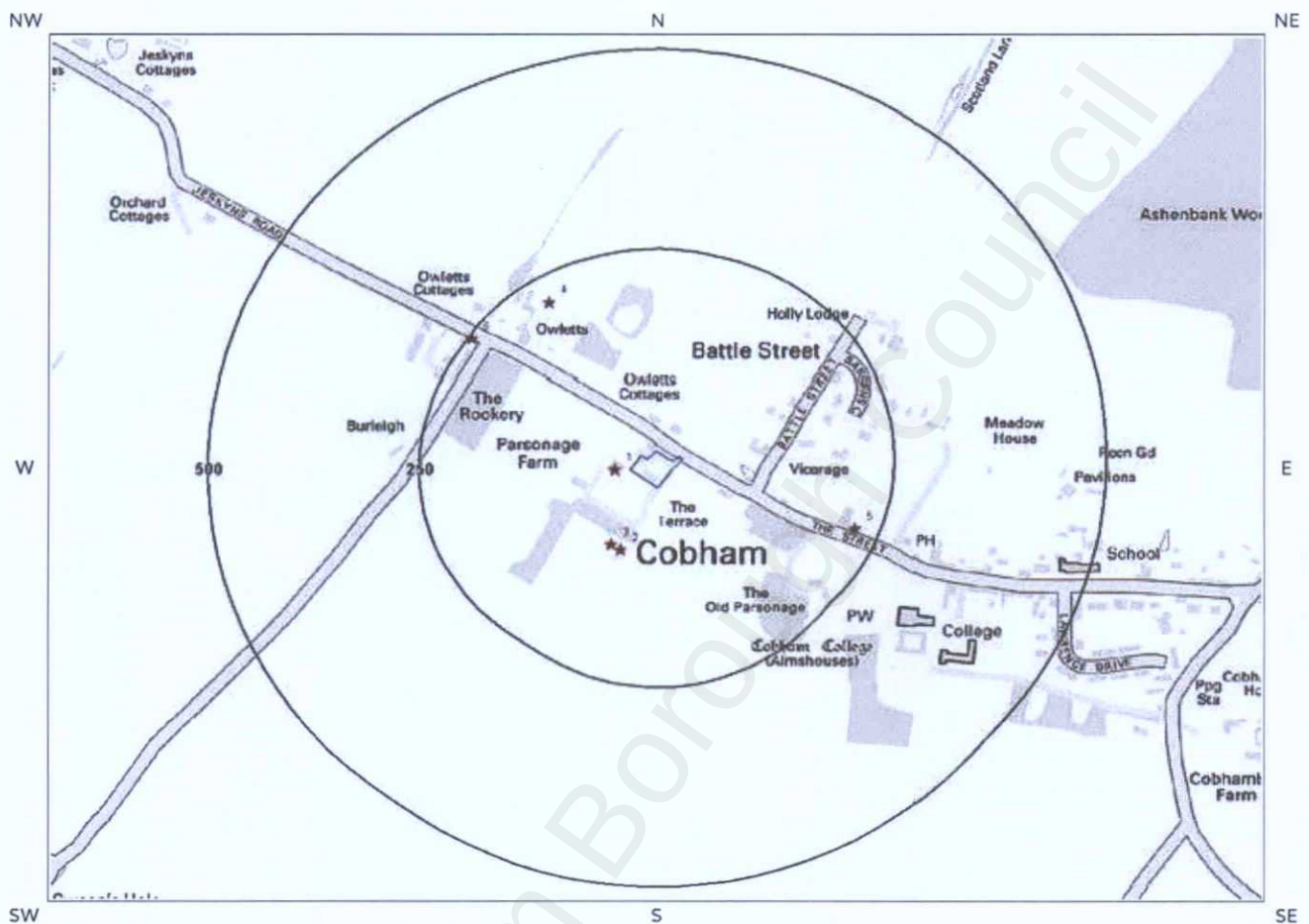
3. Landfill and Other Waste Sites Map



© Crown copyright and database rights 2017.
Ordnance Survey license 100035207.



4. Current Land Use Map

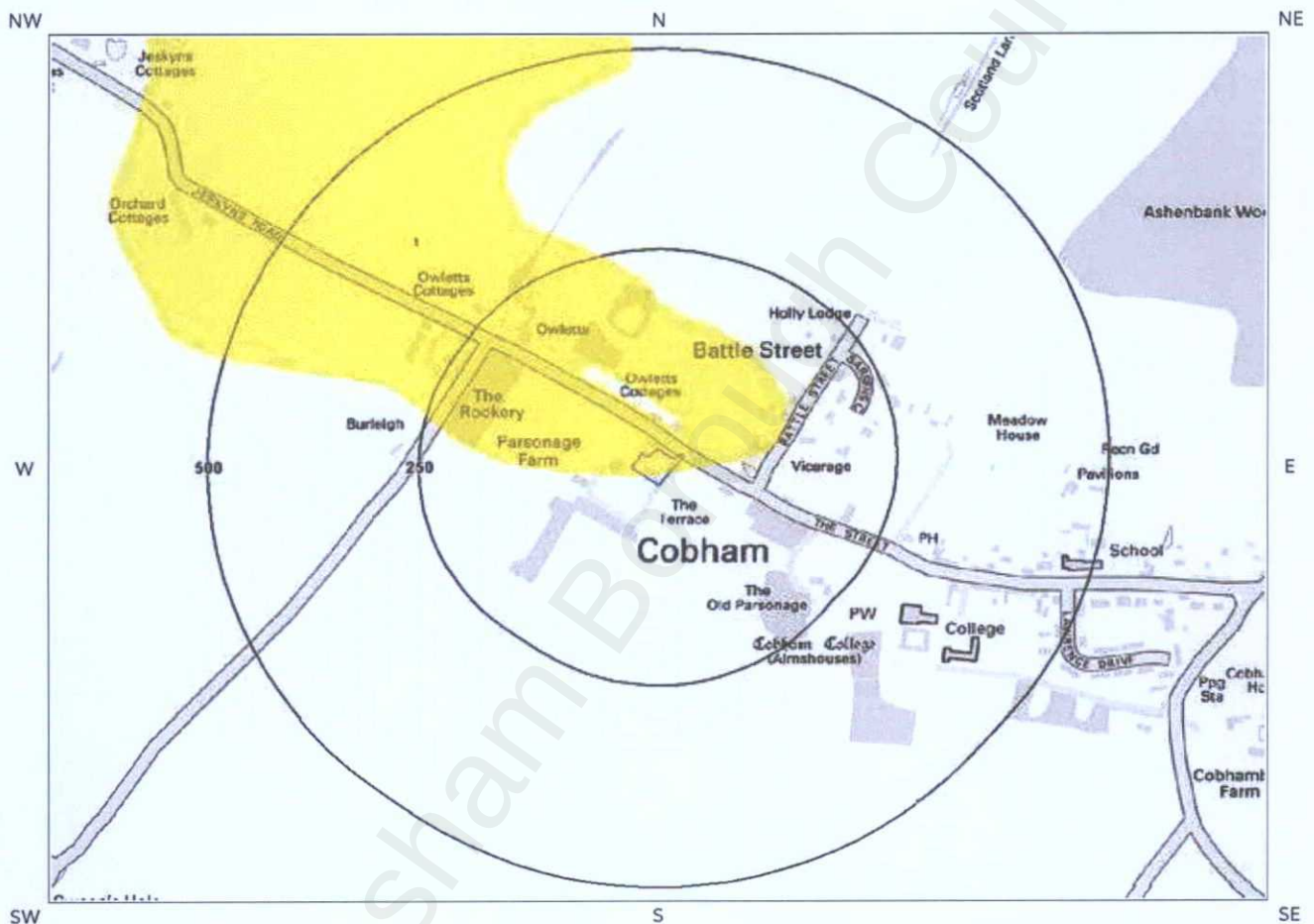


© Crown copyright and database rights 2017.
Ordnance Survey license 100035207.

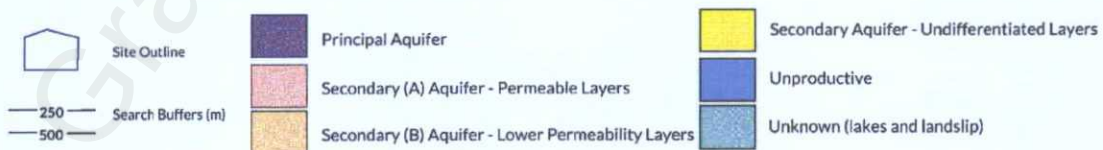


6 Hydrogeology and Hydrology

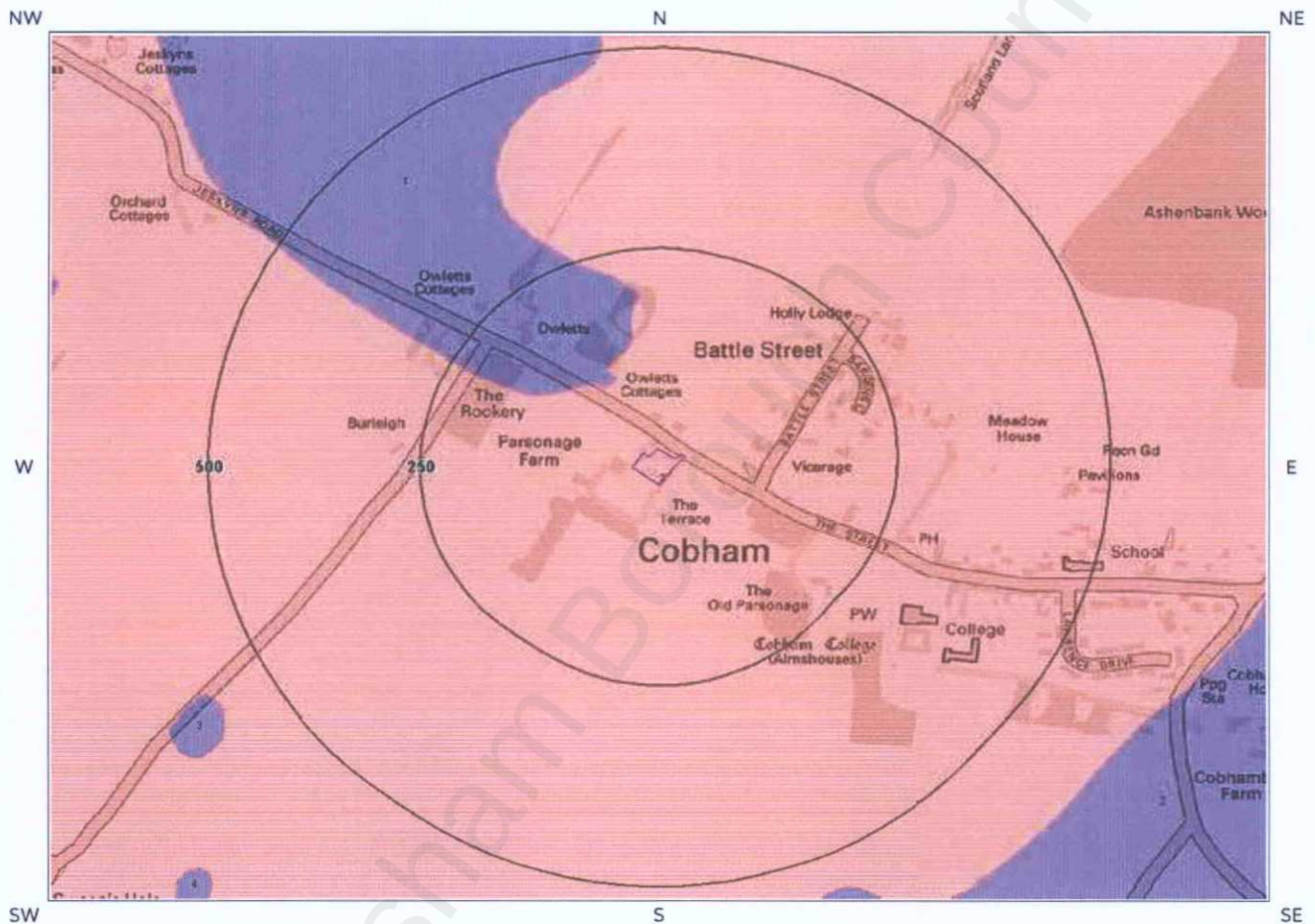
6a. Aquifer Within Superficial Geology



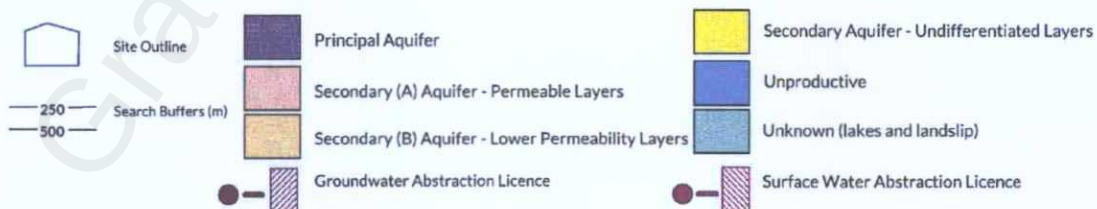
© Crown copyright and database rights 2017
Ordnance Survey license 100035207.



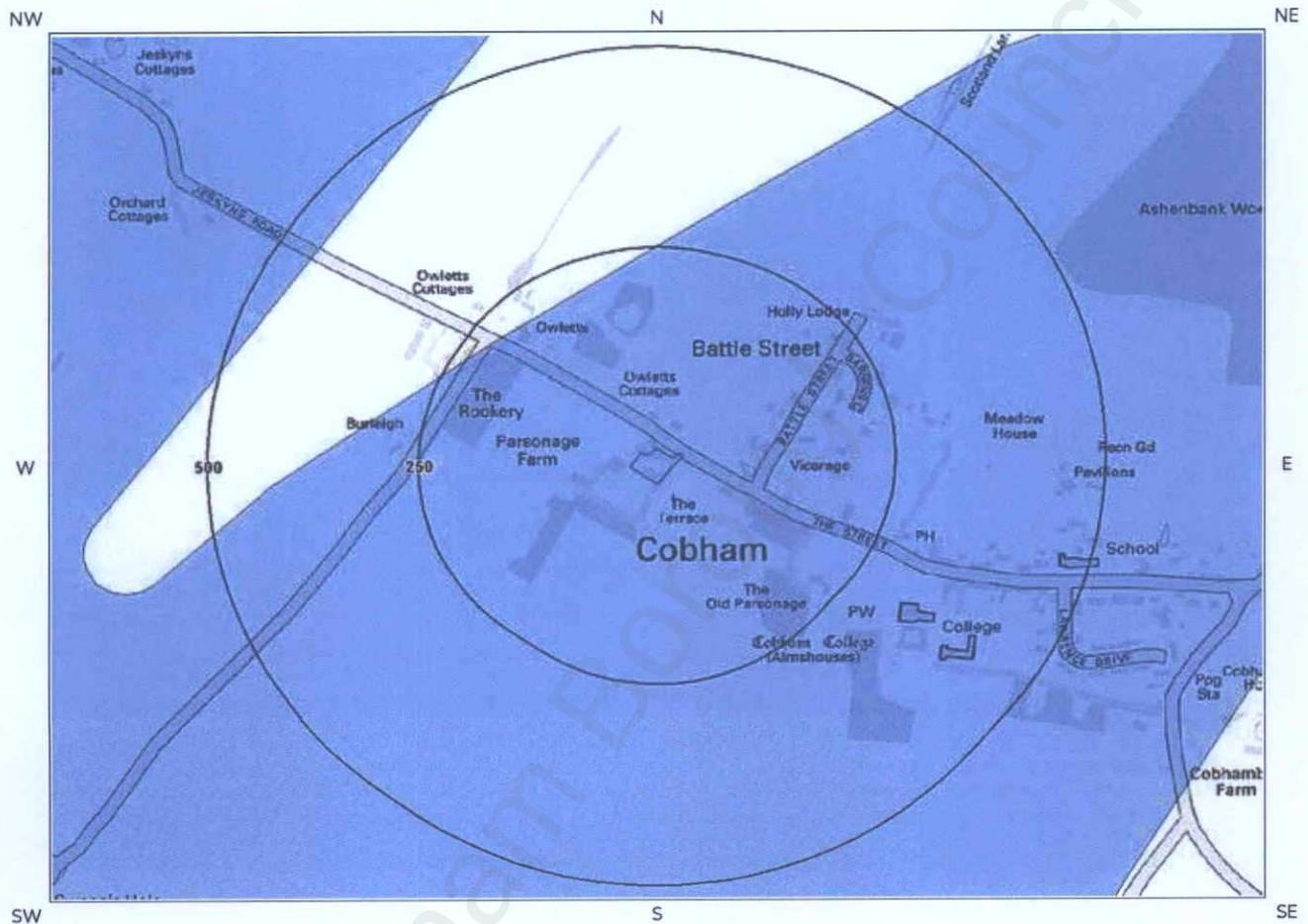
6b. Aquifer Within Bedrock Geology and Abstraction Licenses



© Crown copyright and database rights 2017
Ordnance Survey license 100035207.



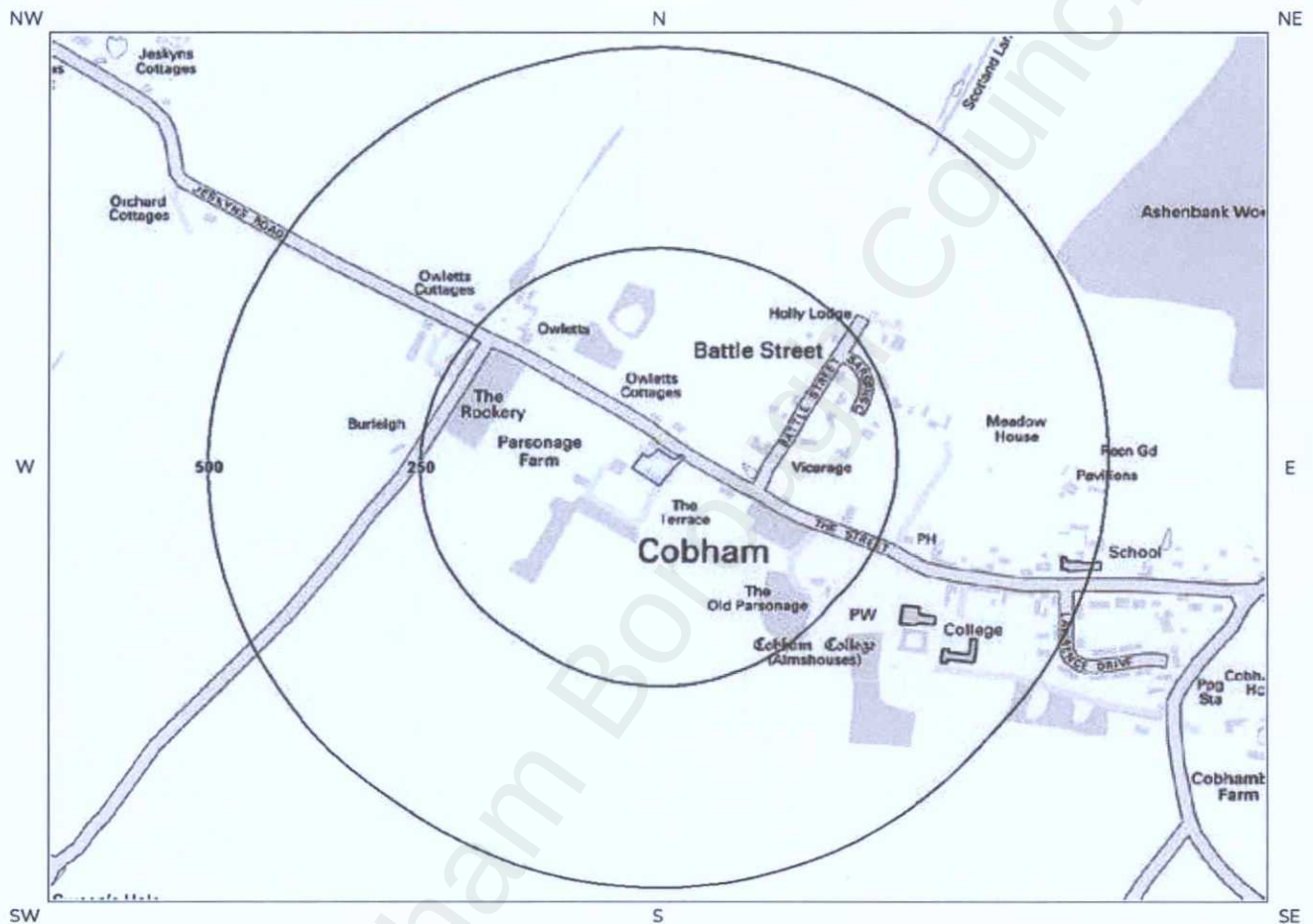
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses



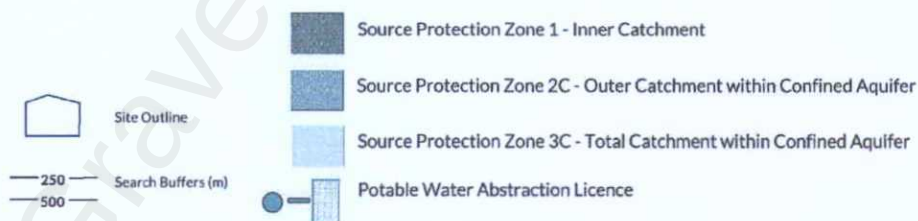
© Crown copyright and database rights 2017
Ordnance Survey license 100035207.



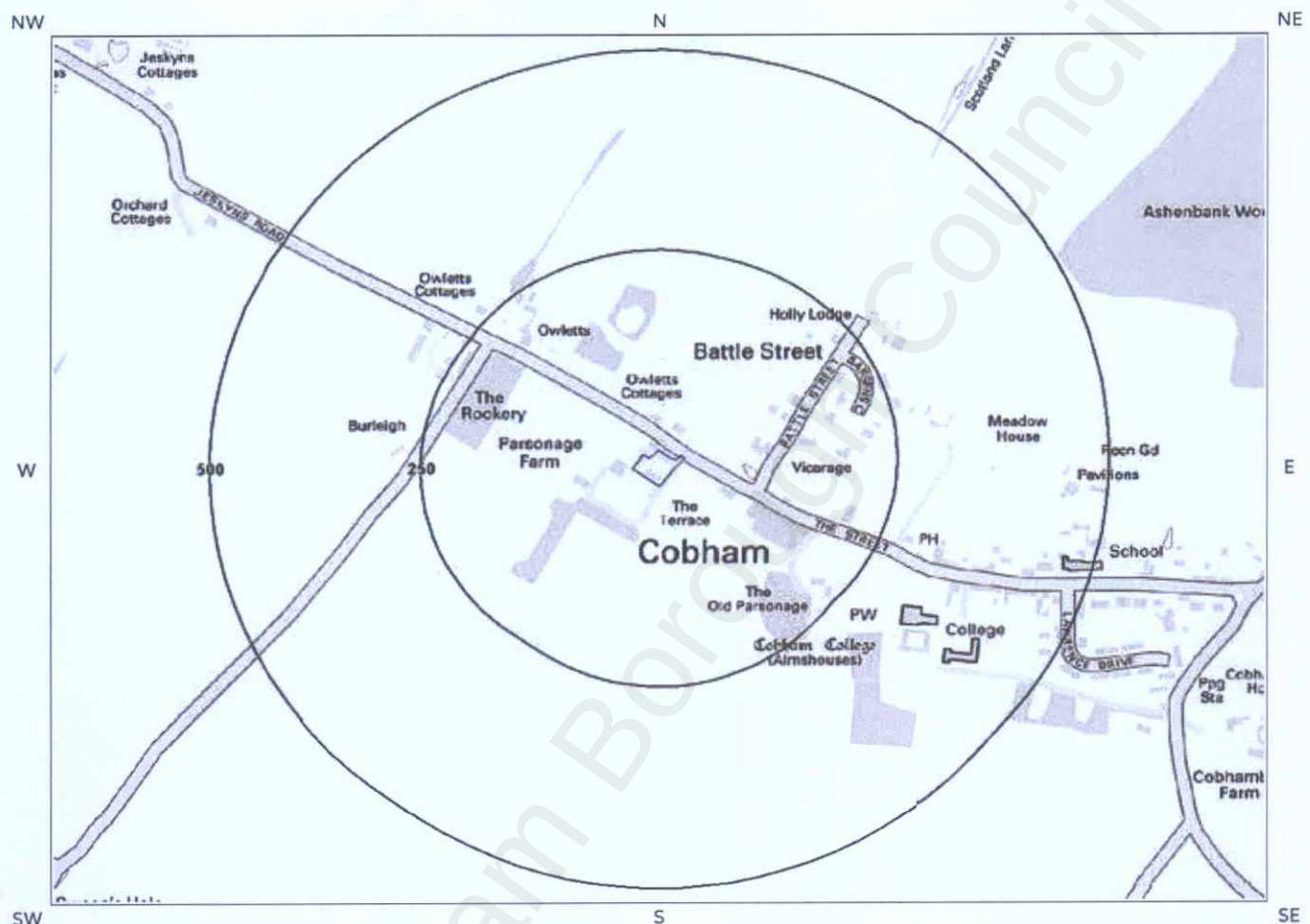
6d. Hydrogeology – Source Protection Zones within confined aquifer



© Crown copyright and database rights 2017
Ordnance Survey license 100035207.



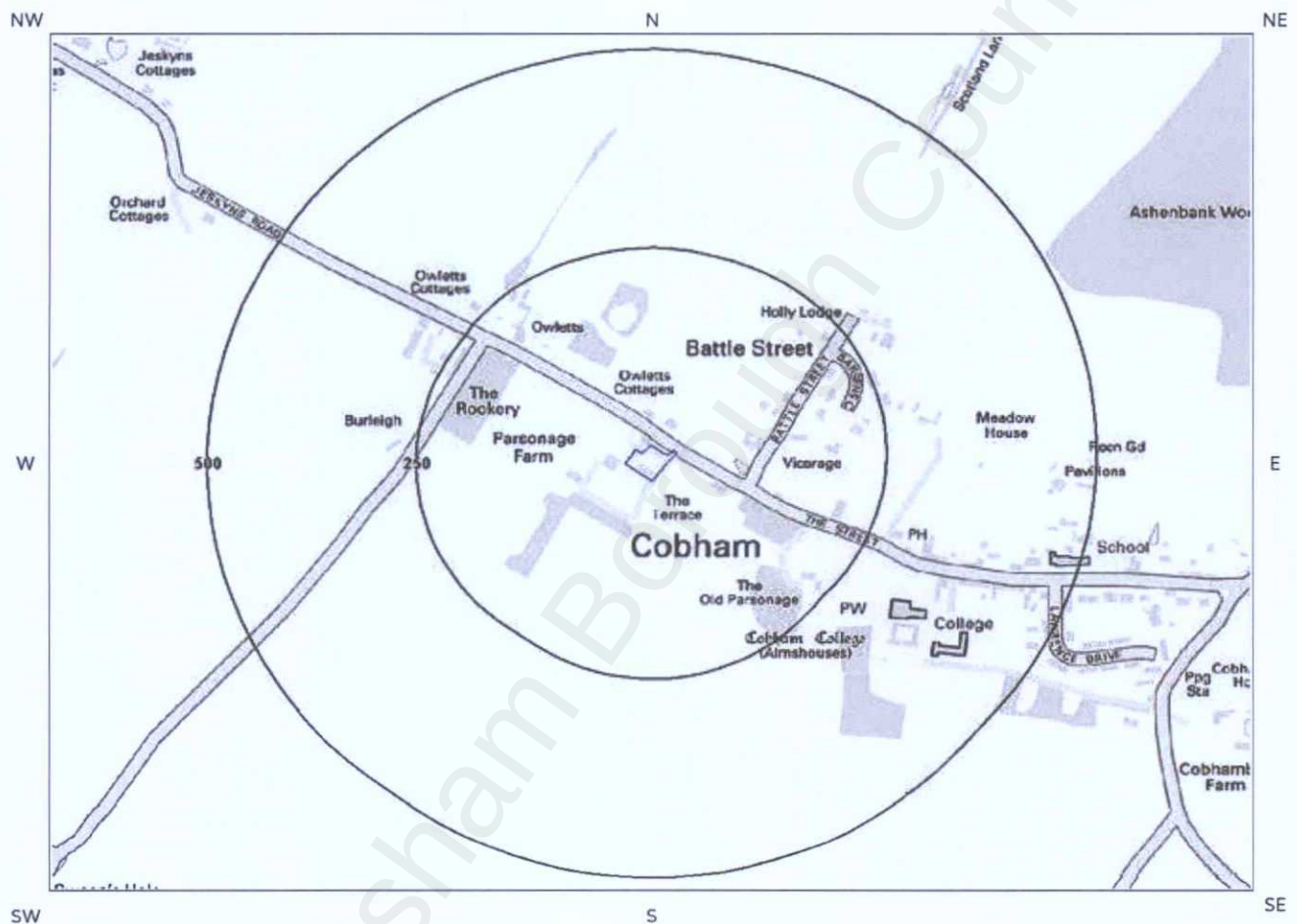
6e. Hydrology – Detailed River Network and River Quality



© Crown copyright and database rights 2017.
Ordnance Survey license 100035207.



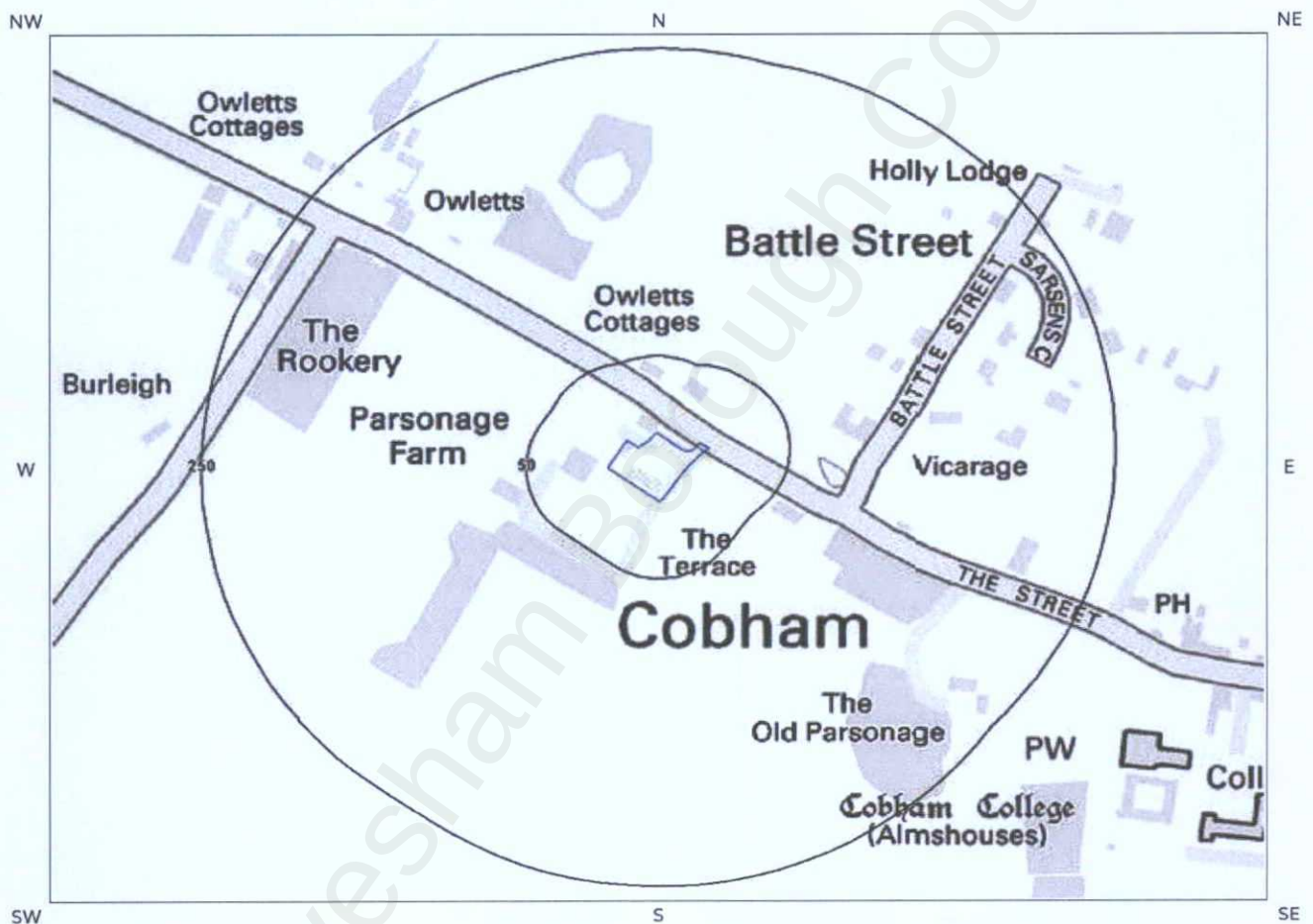
7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



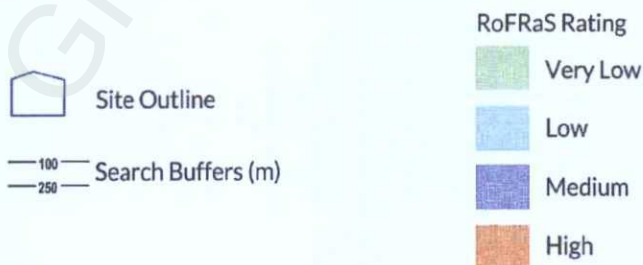
© Crown copyright and database rights 2017.
Ordnance Survey license 100035207.



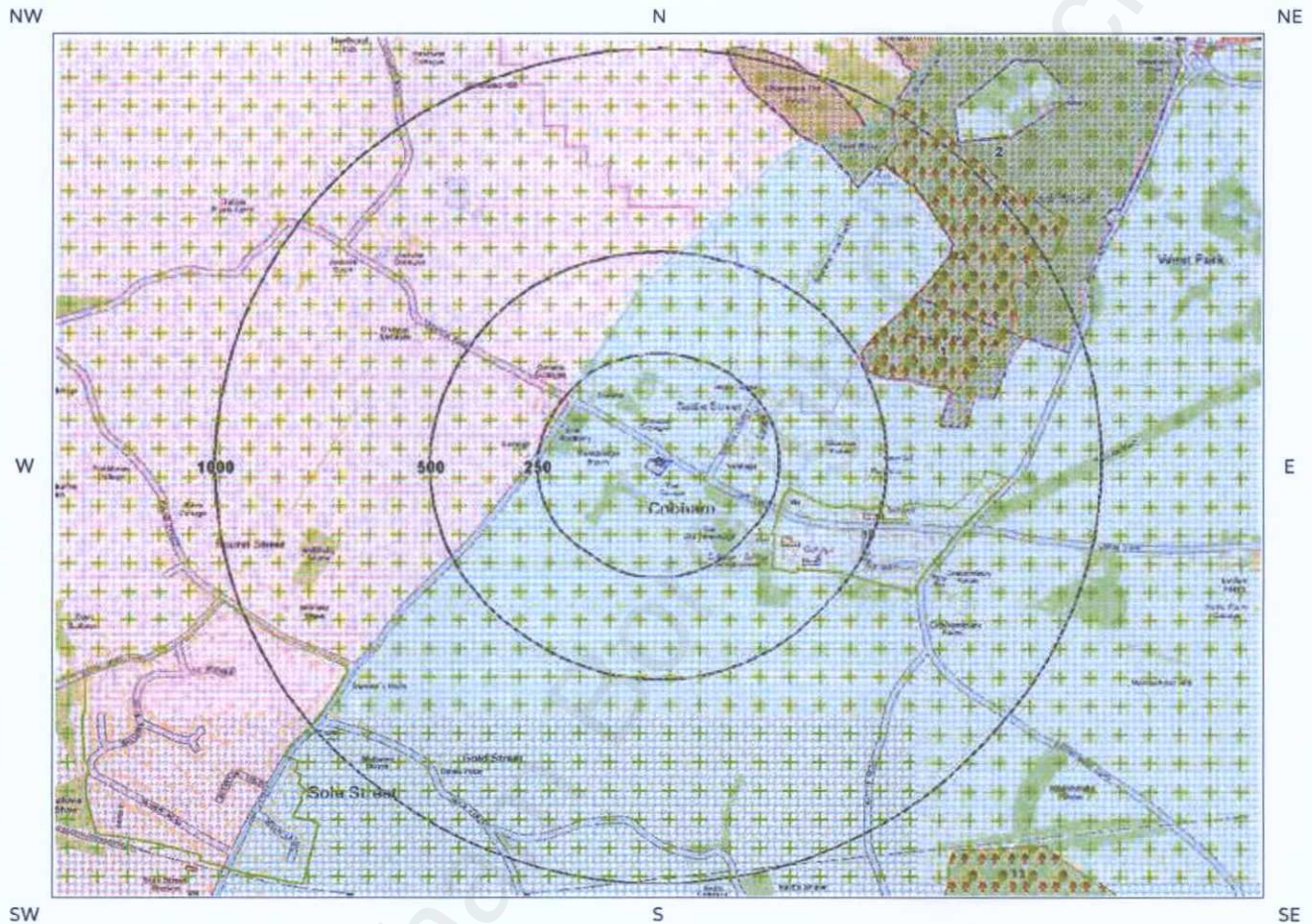
7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



© Crown copyright and database rights 2017.
Ordnance Survey license 100035207.



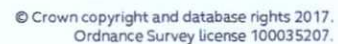
8. Designated Environmentally Sensitive Sites Map



© Crown copyright and database rights 2017.
Ordnance Survey license 100035207.



1.1 Artificial Ground Map (1:10,000 scale)



Site Outline

Search Buffers (m)

500

1000

Made Ground (undivided)

Disturbed Ground (undivided)

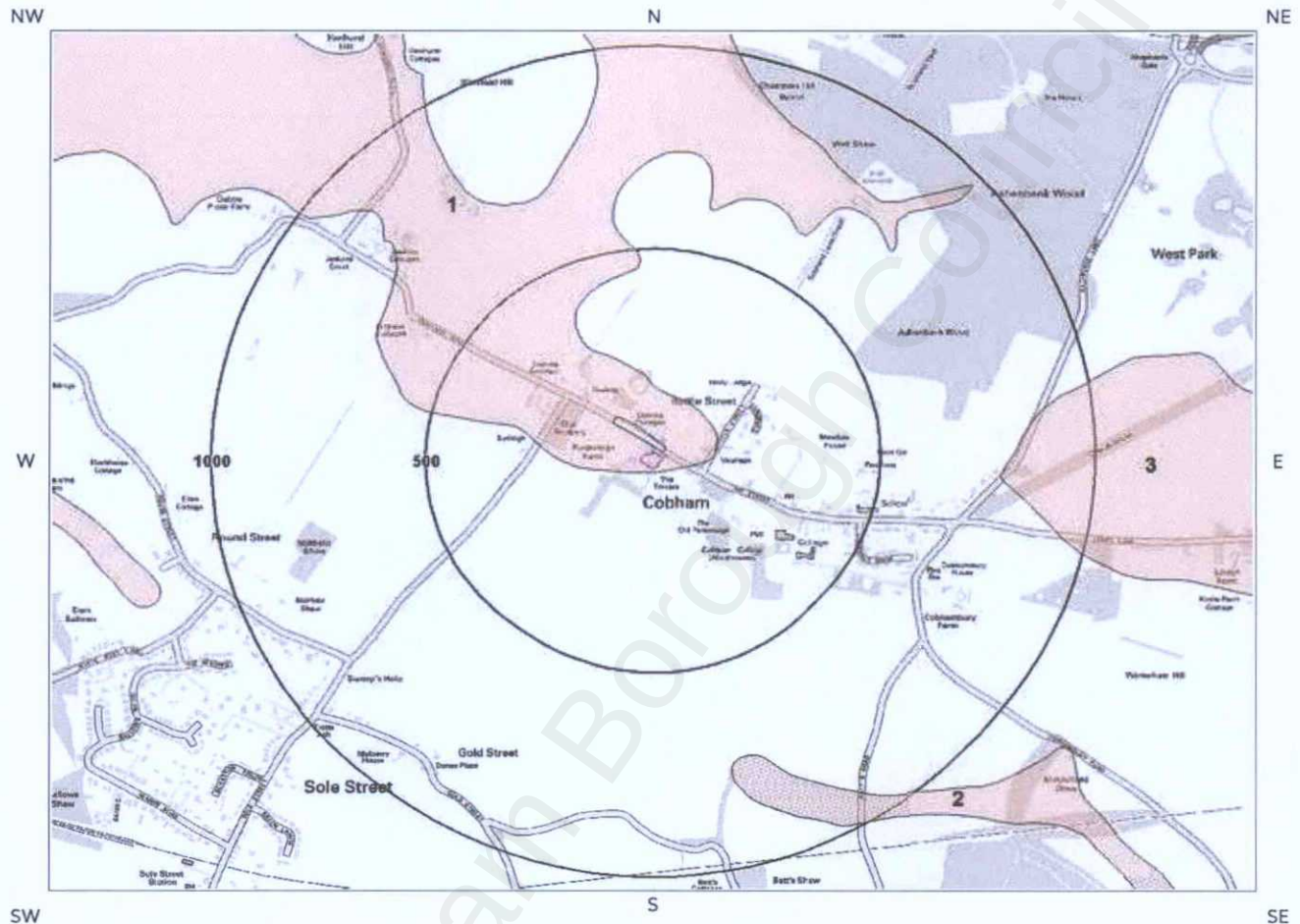
Worked Ground (undivided)

Landscaped Ground (undivided)

Infilled Ground

Reclaimed Ground

1.2 Superficial Deposits and Landslips Map (1:10,000 scale)



Artificial Ground Legend

© Crown copyright and database rights 2017.
Ordnance Survey license 100035207.

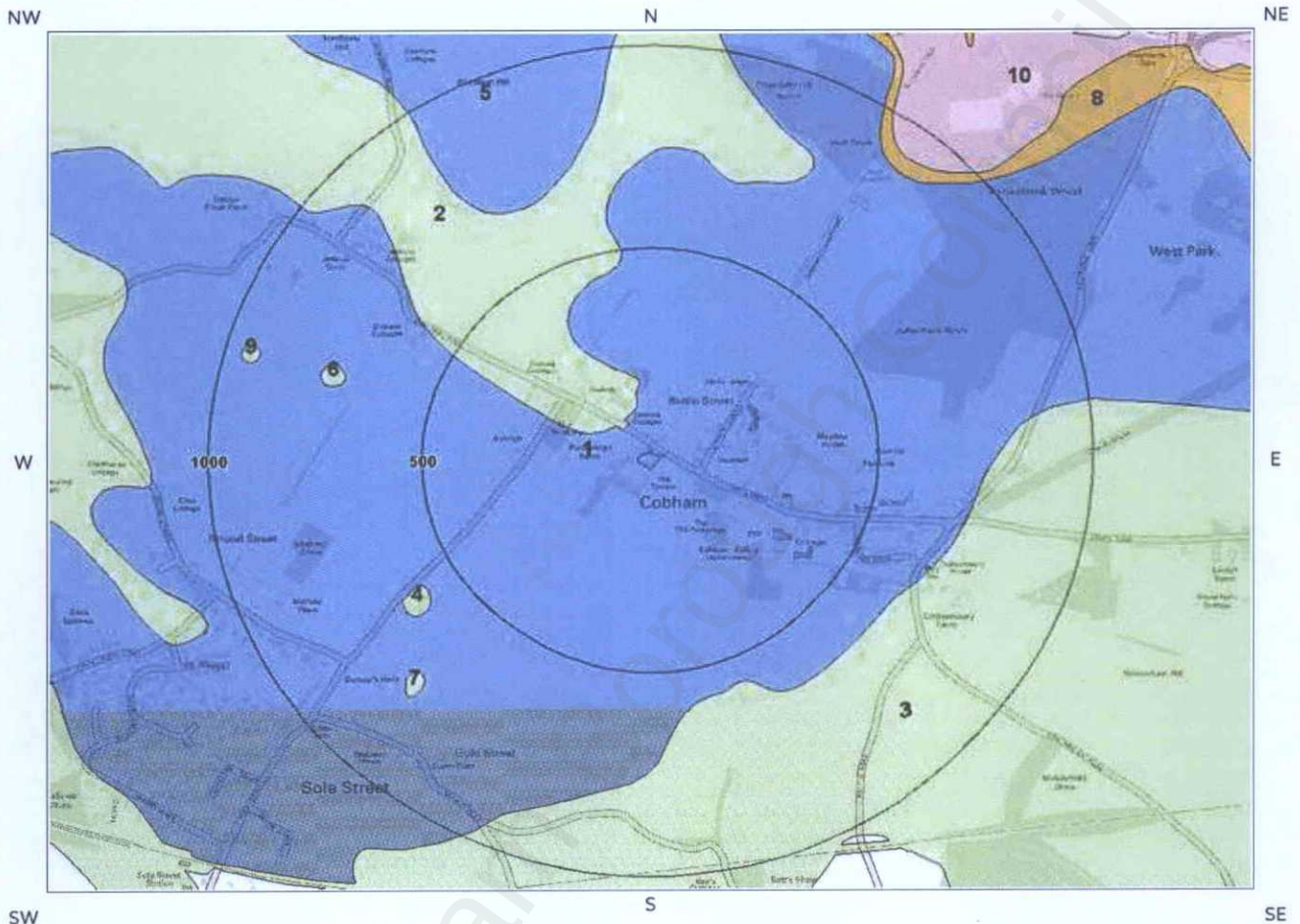


Site Outline



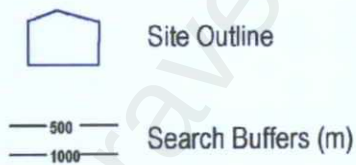
Search Buffers (m)

1.3 Bedrock and Faults Map (1:10,000 scale)

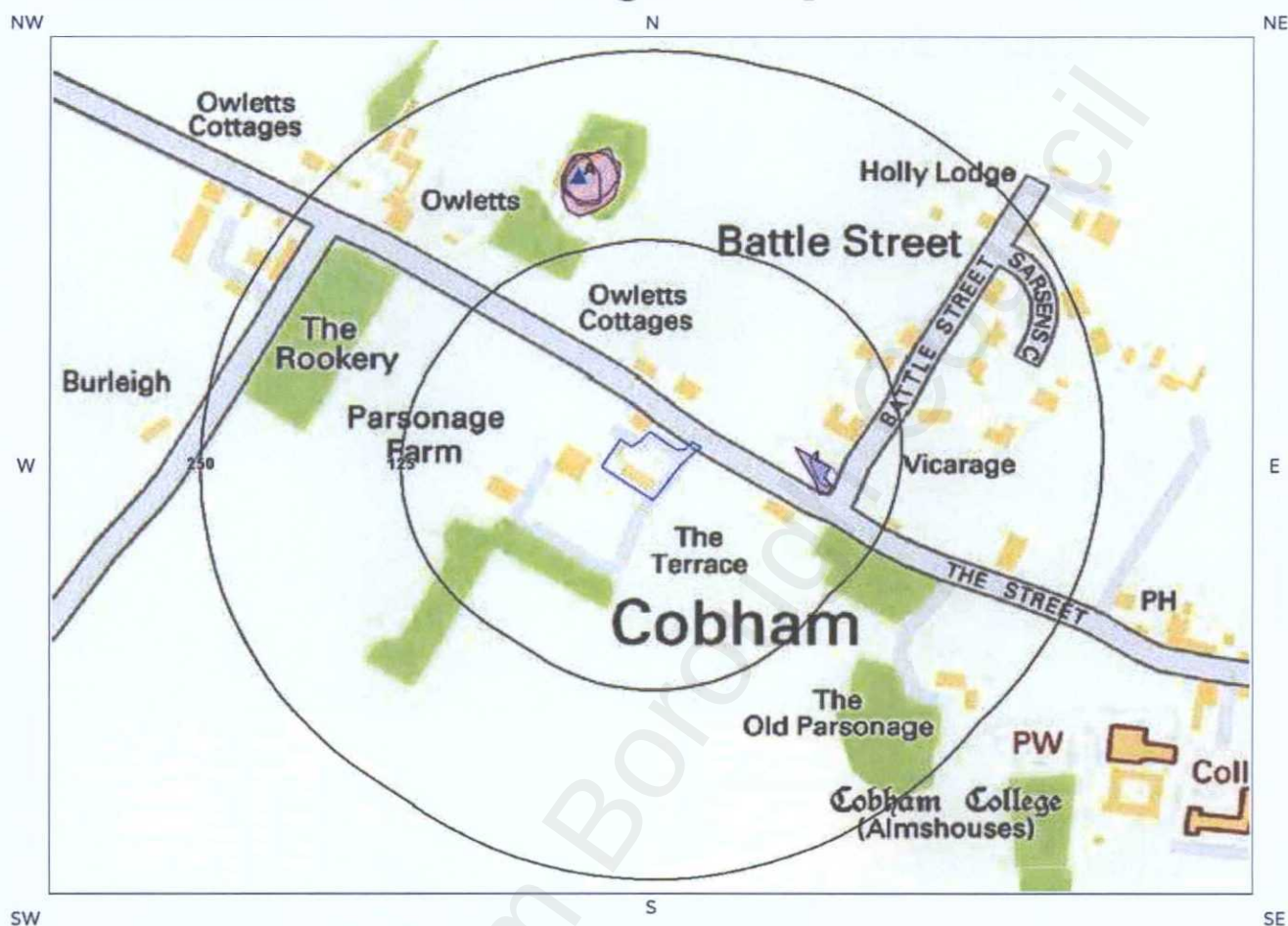


Bedrock and Faults Legend

© Crown copyright and database rights 2017.
Ordnance Survey license 100035207.

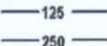


4 Ground Workings Map

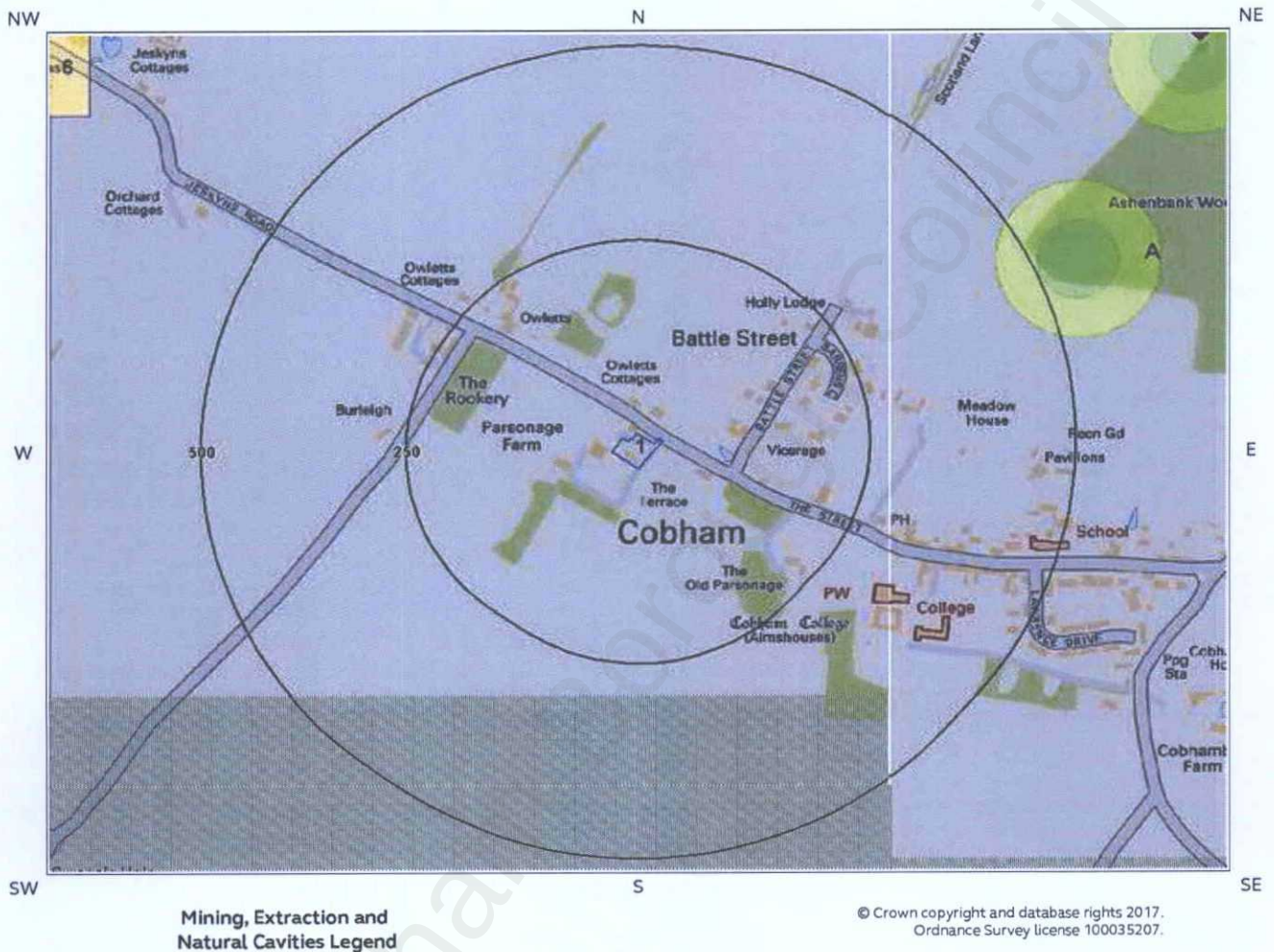


Ground Workings Legend

© Crown copyright and database rights 2017.
Ordnance Survey license 100035207.

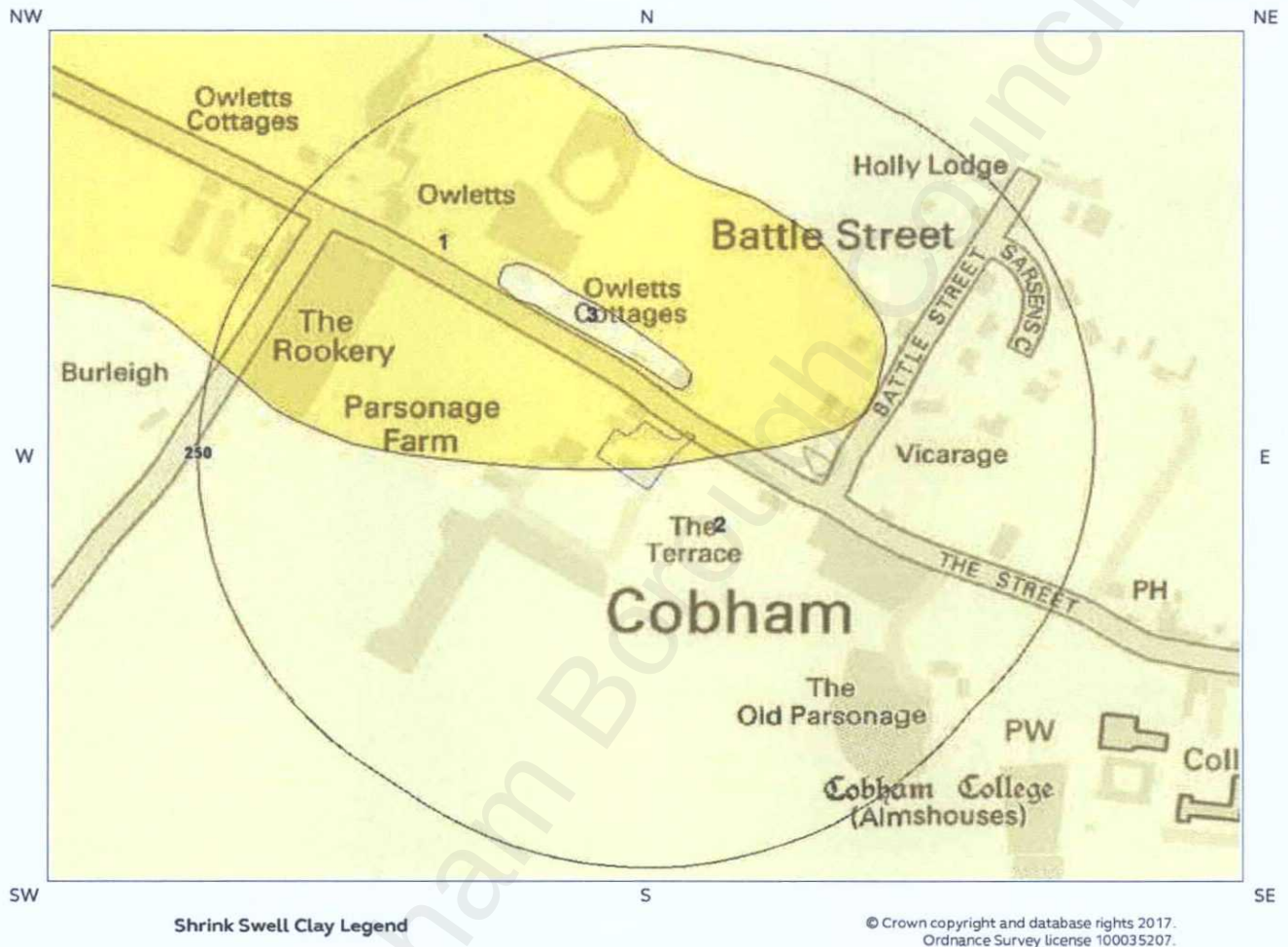
- | | | | |
|---|--------------------|---|----------------------------------|
|  | Site Outline |  | Historic Surface Ground Workings |
|  | Search Buffers (m) |  | Historic Underground Workings |
| | |  | Current Ground Workings |

5 Mining, Extraction & Natural Cavities Map

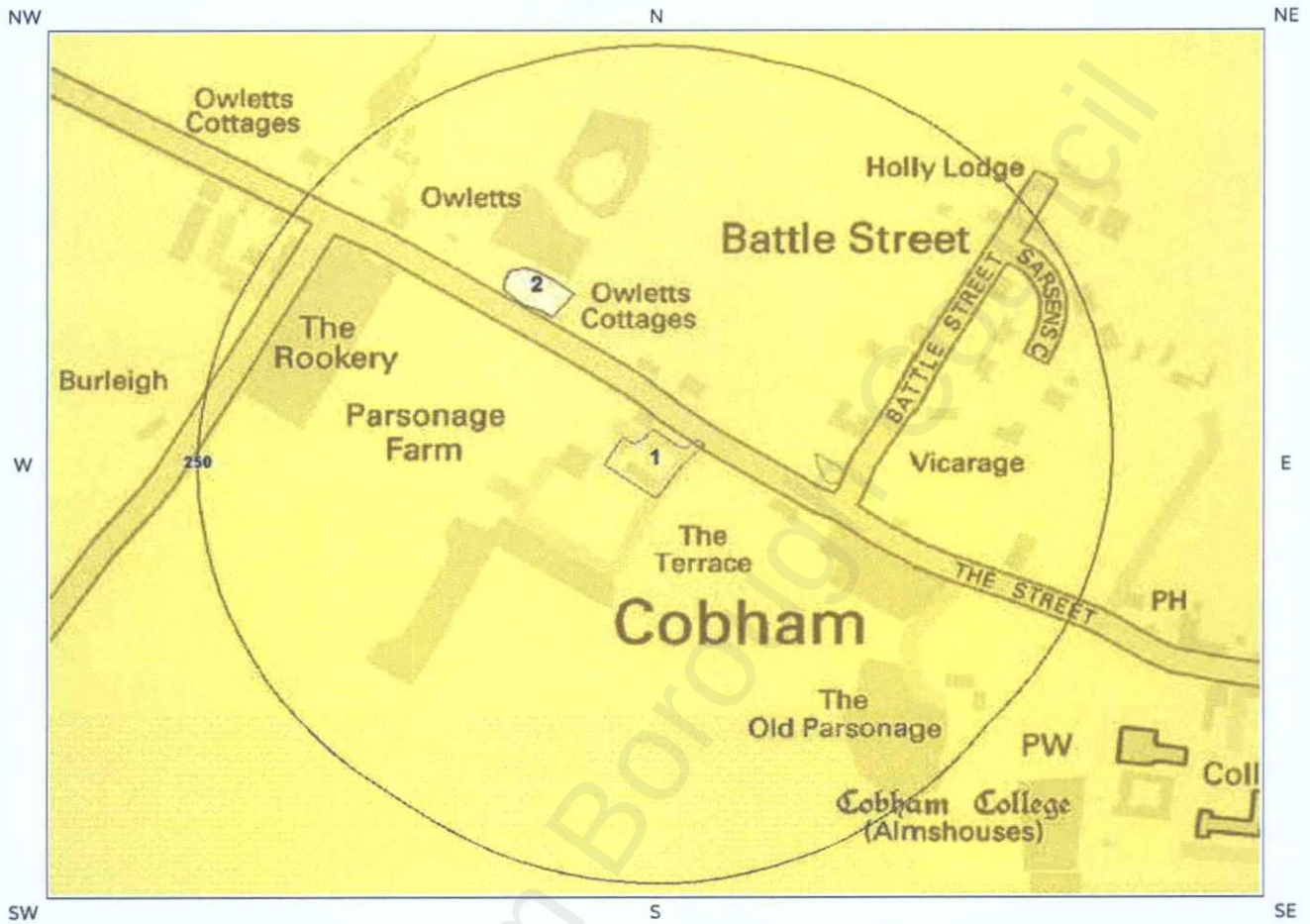


6 Natural Ground Subsidence

6.1 Shrink-Swell Clay Map

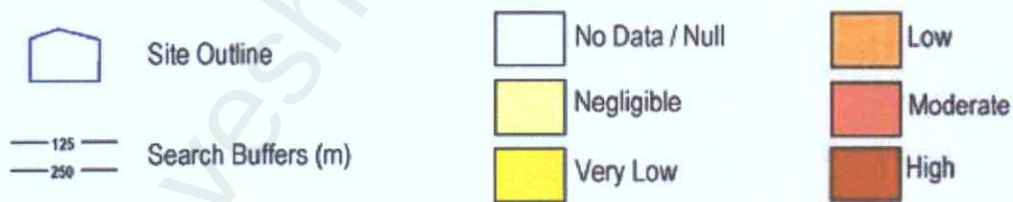


6.2 Landslides Map

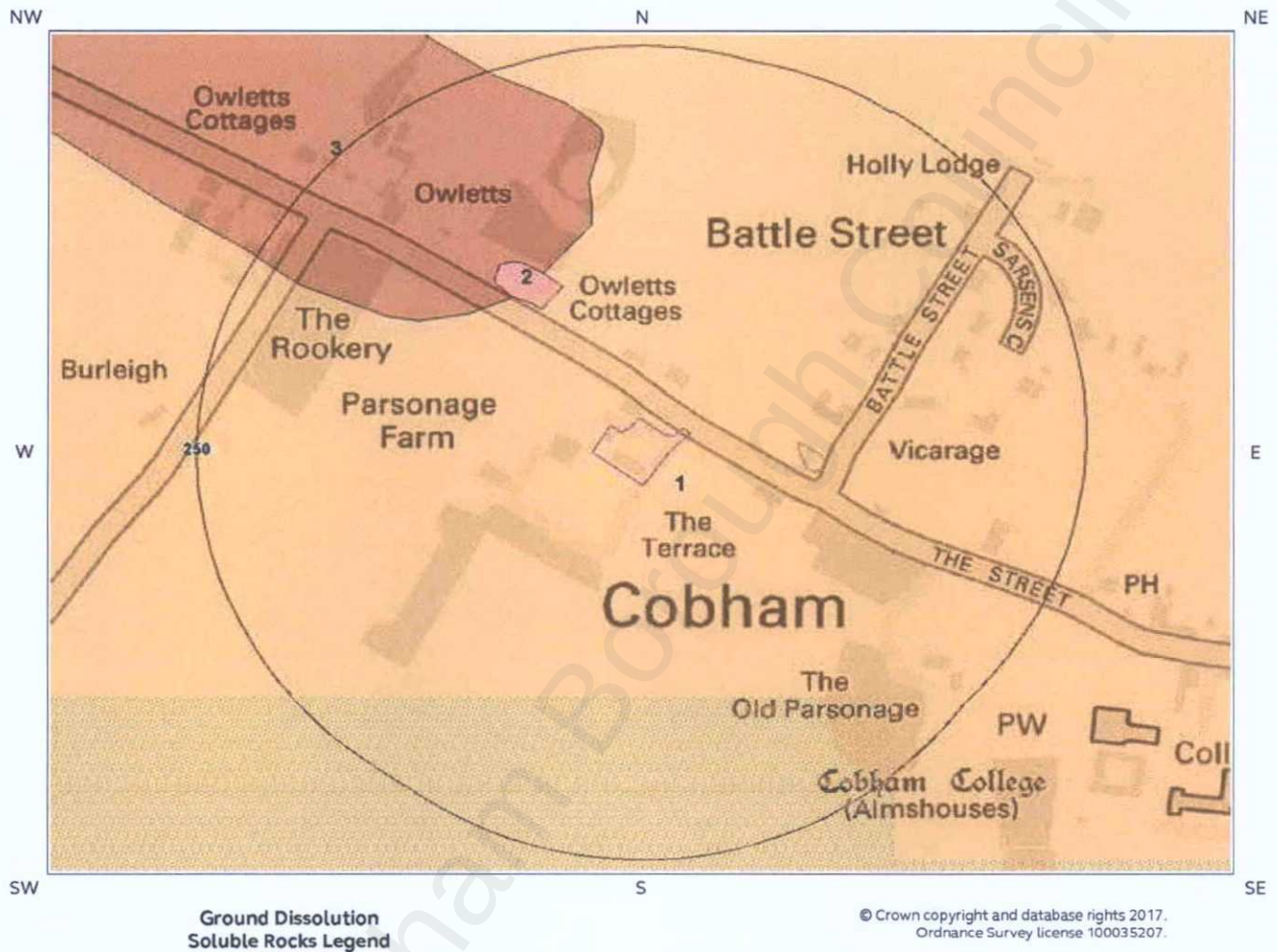


Landslides Legend

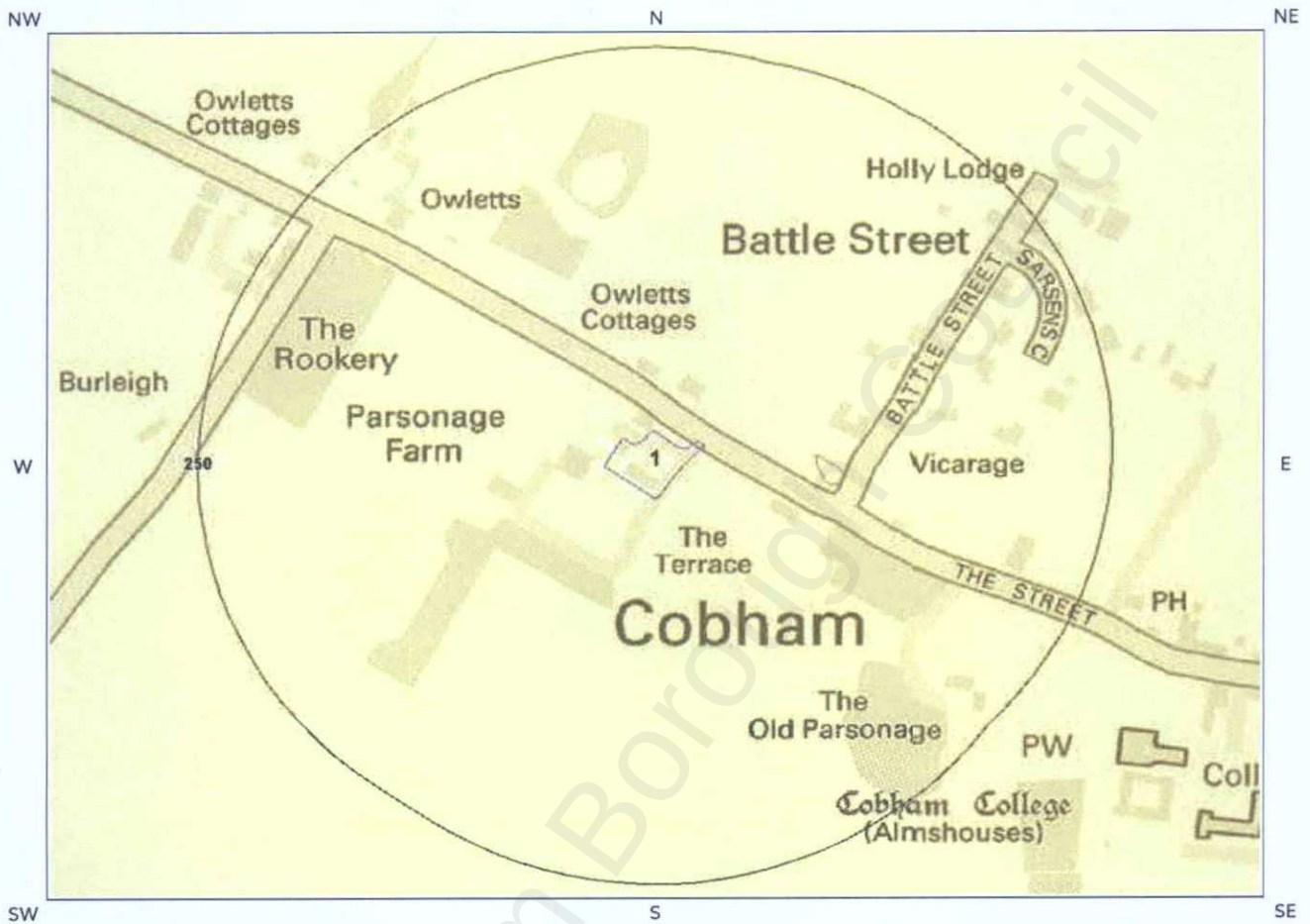
© Crown copyright and database rights 2017.
Ordnance Survey license 100035207.



6.3 Ground Dissolution of Soluble Rocks Map

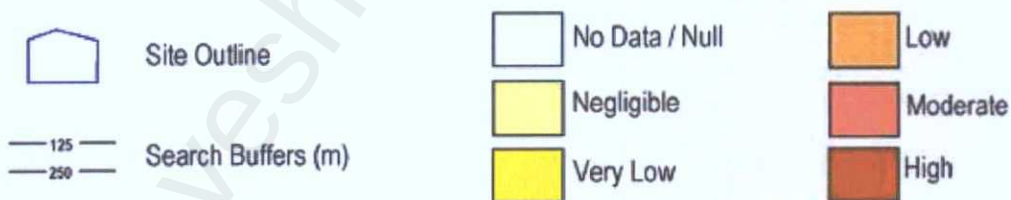


6.4 Compressible Deposits Map

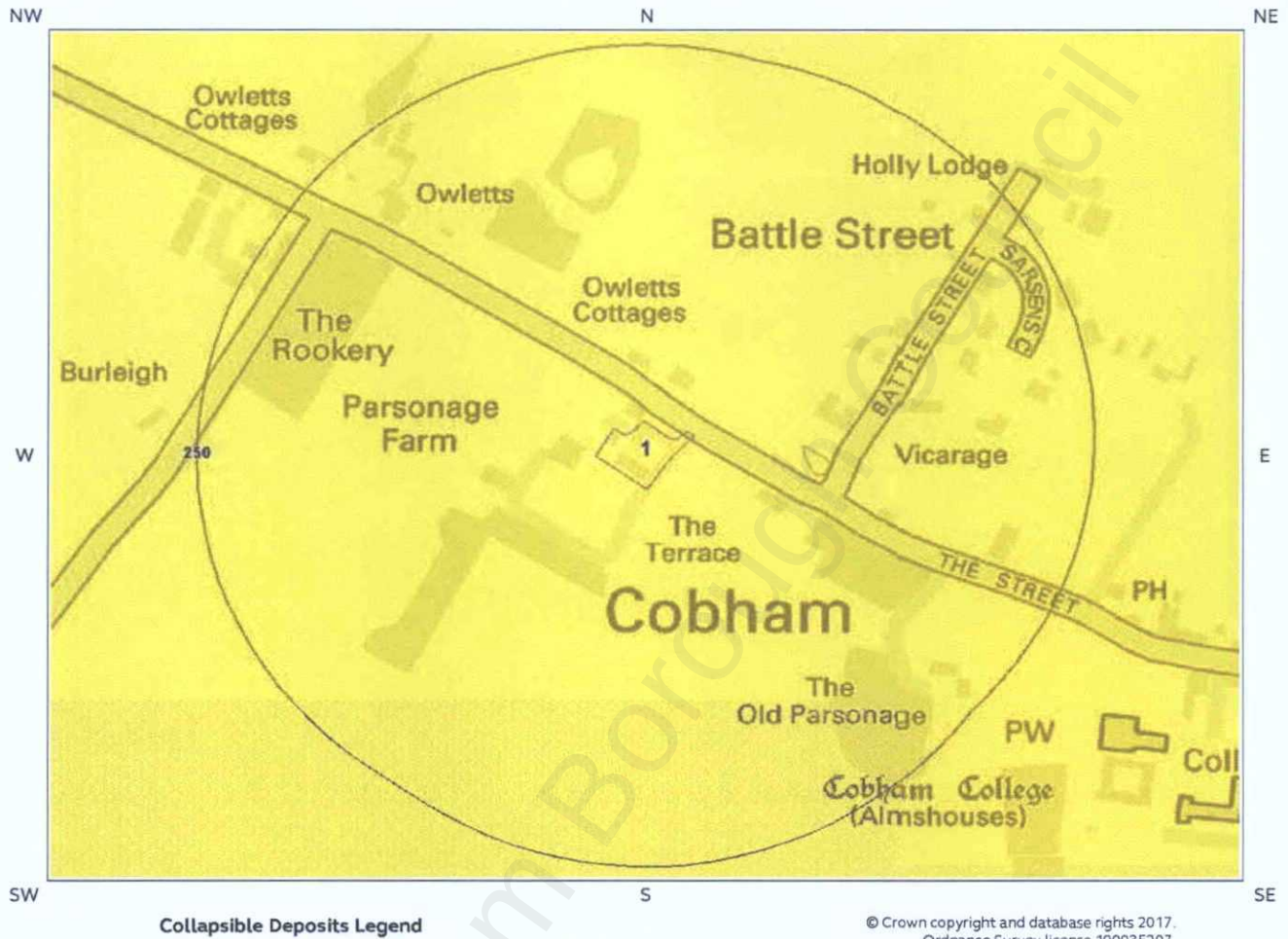


Compressible Deposits Legend

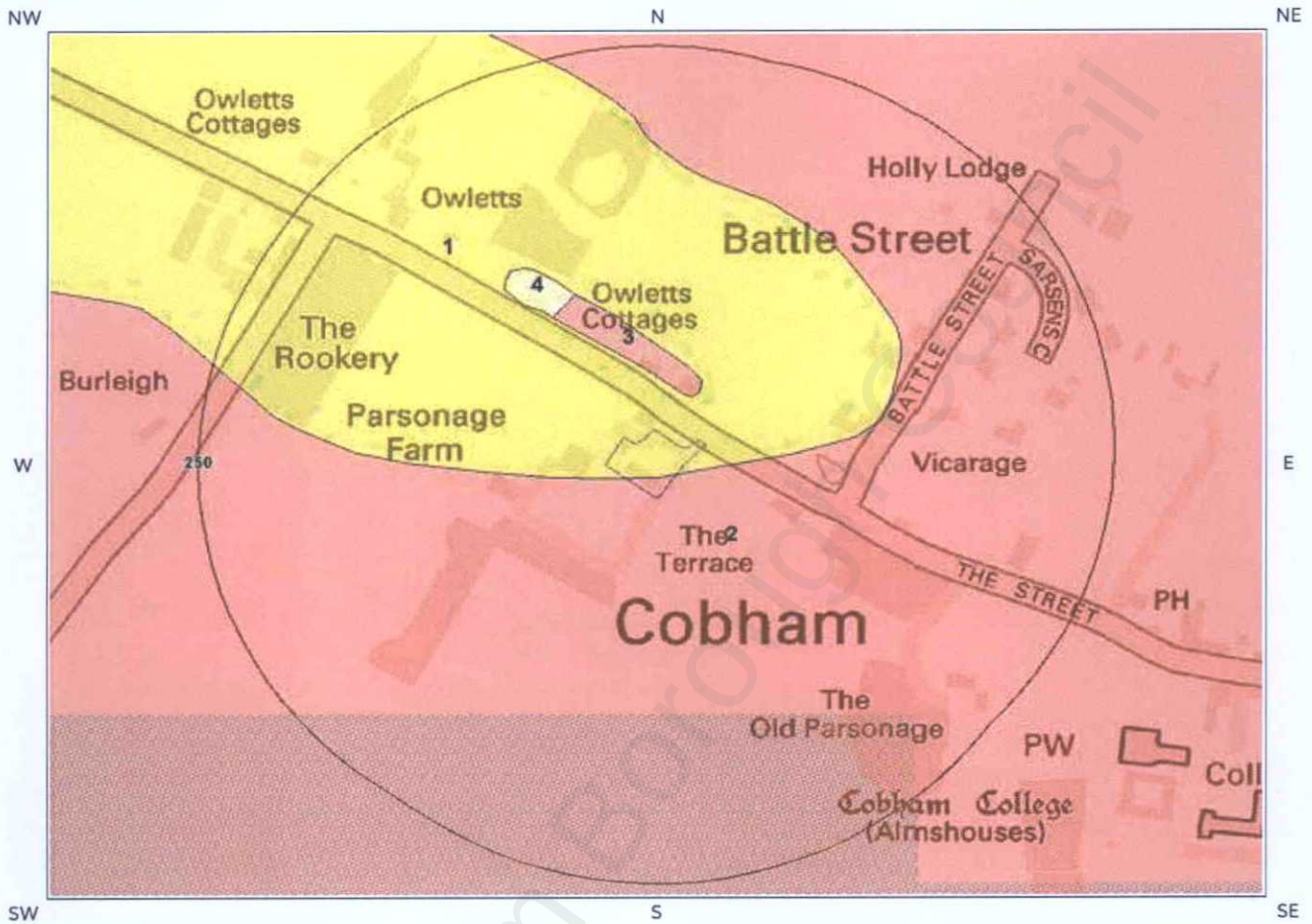
© Crown copyright and database rights 2017.
Ordnance Survey license 100035207.



6.5 Collapsible Deposits Map

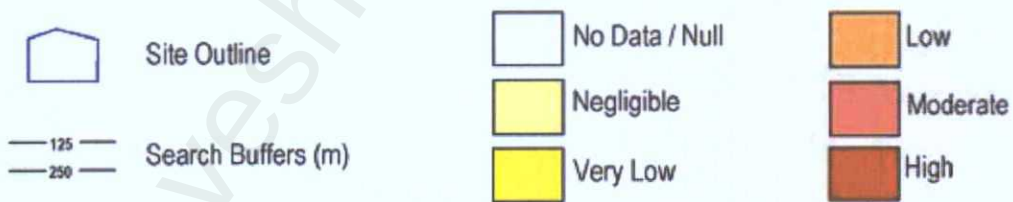


6.6 Running Sand Map

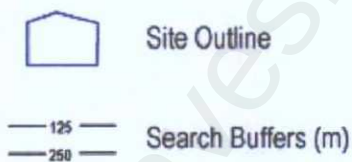
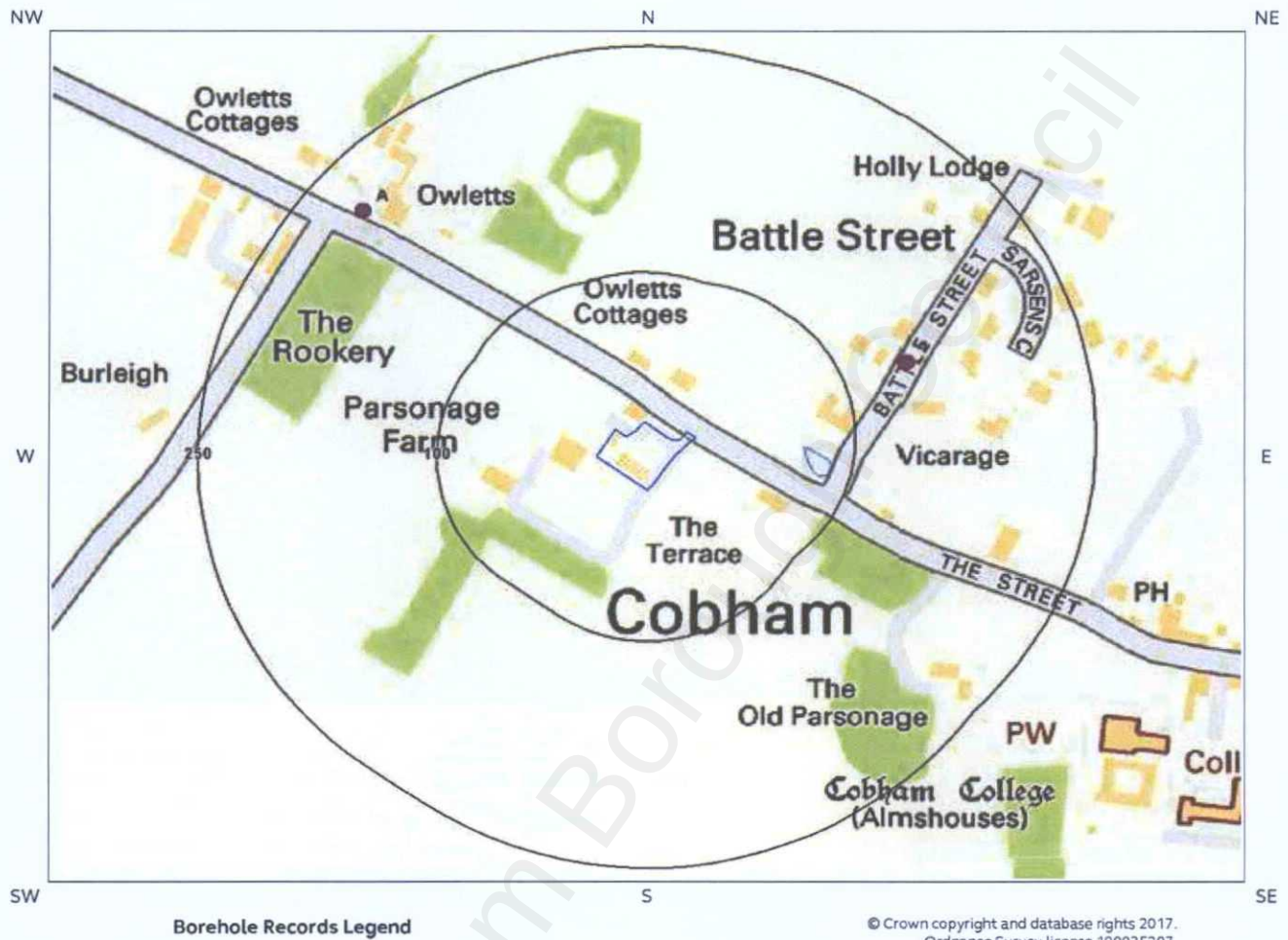


Running Sand Legend

© Crown copyright and database rights 2017.
Ordnance Survey license 100035207.

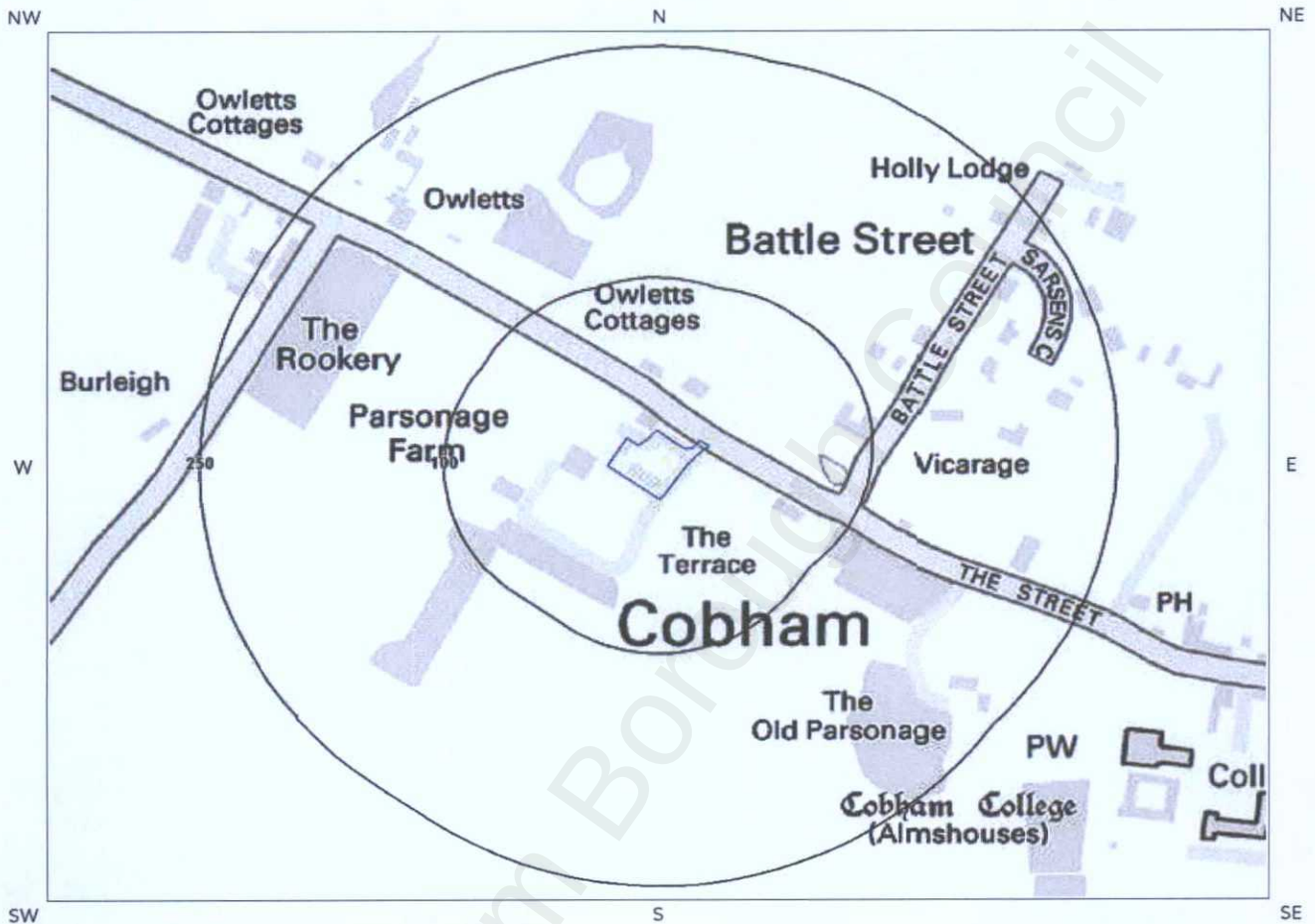


7 Borehole Records Map



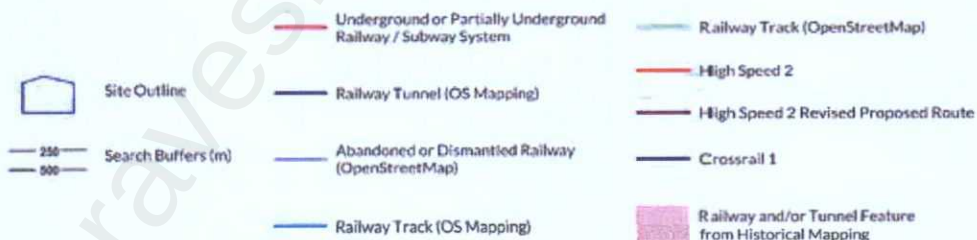
● Borehole Locations

9 Railways and Tunnels Map



Railways and Tunnels Legend

© Crown copyright and database rights 2017.
Ordnance Survey license 100035207.
© OpenStreetMapContributors



APPENDIX 6

CONCEPTUAL MODEL

