



**Kivesborough  
Littlehampton Road  
Ferring  
West Sussex**

**Ground Contamination  
Risk Assessment Report**

**Report Beneficiary:**

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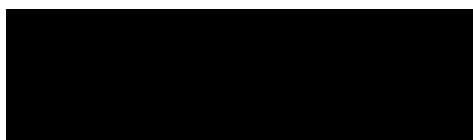
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This report is not intended to be either an ecological, archaeological or flood risk assessment. An appropriate specialist should be consulted about any concerns that may arise in this regard.

## EXECUTIVE SUMMARY

The following presents a summary of the main findings of the report. It is emphasised that no reliance should be placed on any individual point until the whole of the report has been read as other sections of the report may put into context the information contained herein.

It is proposed to construct three new houses with associated areas of private garden within the existing garden of Kivesborough, Littlehampton Road, Ferring, West Sussex.

The site currently comprises the garden, parking area and access road to the existing property located to the east of the site. A nursery is located to the west of the site.

The site comprised part of an open field at the time of the earliest inspected historical map, dated 1876. By the early 1960s, the site formed part of a larger nursery and a glasshouse was shown to extend onto the site. By the early 1970s, the site is shown in its current configuration.

Reference to geological datasets indicates that the site is expected to be underlain by River Terrace Deposits overlying the White Chalk Subgroup. The ground investigation confirmed the underlying soils to comprise a shallow thickness of made ground soils, overlying River Terrace deposits.

The River Terrace Deposits are classed as a Secondary A Aquifer. The White Chalk Subgroup is classed as a Principal Aquifer. The site does not lie within a SPZ. Groundwater was not encountered during the course of the investigation.

The preliminary contamination risk assessment identified potential pollutant linkages relating to proposed end users of the site and controlled waters.

The ground investigation did not identify any of the potential contaminants to be present at concentrations considered to pose an unacceptable risk to either end users of the site or controlled waters beneath the site. No remedial measures or further contamination risk assessment works are considered to be necessary.

It is recommended that this report is submitted to the Local Authority in support of a planning application for the site.

The conclusions drawn in this report should be considered as provisional until such time as the report has been accepted by the Local Authority.

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  - Historical Maps
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## **1. INTRODUCTION**

It is proposed to construct three new houses with associated areas of private garden within the existing garden of Kivesborough, Littlehampton Road, Ferring, West Sussex. A copy of the proposed development layout is presented in Appendix A.

Ashdown Site Investigation Ltd was requested to undertake a ground investigation to inform a preliminary and quantitative risk assessment, for submission in support of a planning application for the site. This followed the issue of pre-application advice, in which Environmental Health recommended the imposition of the full contaminated land planning condition for the development.

The specific objectives of the works were to:

- a) Establish the expected geology, hydrogeology and hydrology at the site;
- b) Ascertain the development history and current site use;
- c) Develop a preliminary conceptual model of the site identifying potential pollutant linkages relating to end users of the proposed development works, to controlled waters beneath and in the vicinity of the site, or to other off-site sensitive receptors, if identified;
- d) Investigate the shallow ground and groundwater conditions in the area of the proposed development;
- e) Test for the presence of contaminants identified by the preliminary conceptual model; and
- f) Develop a quantitative conceptual model of the site identifying pollutant linkages relating to end users of the proposed development works, to controlled waters beneath and in the vicinity of the site, or to other off-site sensitive receptors, if identified.

The scope of the works covered by this report, and the terms and conditions under which they were undertaken, were set out within the offer letter Q13710, dated 3<sup>rd</sup> January 2024. The instruction to proceed was received on behalf of the client from ECE Planning.

Copies of the historical maps and geo-environmental data referred to in this report are presented within Appendix G. Whilst the boundary within the historical maps and geoenvironmental data include the existing property Kivesborough, this assessment is limited to the area of the proposed development only, as shown by the red line boundary on the proposed site plan included as Appendix A. Where necessary distances provided in the data from the site boundary will be reinterpreted accordingly.

## **2. SITE CONTEXT**

### **2.1 Walkover Survey**

The site is located within the western part of the curtilage of Kivesborough located off Littlehampton Road, Ferring, West Sussex and is centred on the approximate Ordnance Survey national grid reference 508926, 103231. A site location plan and site plan are presented as Figure 1 and Figure 2, respectively.

The site comprises two grass areas separated by a gravel access road that leads to a parking area, together with various outbuildings.

The larger garden area to the south of the access road is bordered by trees and contains a small wooden outhouse and a pond located centrally.

**Garden area to south of the access road**



The smaller garden area to the north is mainly laid to lawn, with a larger outbuilding along the western boundary.

**Garden area to north of the access road**



The existing house, Kivesborough, is located beyond the parking area to the east. A nursery is located to the west of the site, with undeveloped land to the north and south.

## 2.2 Geological Data Review

### 2.2.1 Expected Geology and Aquifer Designation

The stratigraphic succession that may be expected to underlie the site has been established by reference to British Geological Survey (BGS) mapping and the BGS Lexicon of Named Rock Units. The expected stratigraphy is presented in the following table.

Table 1. Expected Strata and Aquifer Designation

| Type               | Stratum                | Aquifer Designation |
|--------------------|------------------------|---------------------|
| <b>Superficial</b> | River Terrace Deposits | Secondary A Aquifer |
| <b>Bedrock</b>     | White Chalk Subgroup   | Principal Aquifer   |

The River Terrace Deposits in this area was formerly denoted as the Brickearth and comprises brown sandy (fine) silt or clay largely originating from the solution weathering of the previously existing chalk. The material will have been reworked by water flow to produce some lateral variability in the grain size of the soil (sand and gravel) and can be expected to contain a variable content of flint.

The Wite Chalk Subgroup comprises chalk with flints. The Subgroup contains discrete marl seams, nodular chalk and flint seams throughout.

### 2.2.2 BGS Borehole

The nearest BGS borehole is identified ~34m to the north of the site and appears to be for a soakaway. The borehole encountered clay deposits to 8m depth overlying chalk.

### 2.2.3 Natural Ground Subsidence

Table 2. Natural Ground Subsidence from Groundsure Data

| Section                                            | Groundsure Comment |
|----------------------------------------------------|--------------------|
| <b>Soil Volume Change Potential (Shrink-Swell)</b> | Low                |
| <b>Running Sands</b>                               | Low                |
| <b>Compressible Deposits</b>                       | Negligible         |
| <b>Collapsible Deposits</b>                        | Low                |
| <b>Landslides</b>                                  | Very Low           |
| <b>Ground Dissolution of Soluble Rocks</b>         | Very Low           |

The chalk can be expected to have a deeply convoluted upper surface as a result of solution weathering and erosion. The presence of natural cavities in the chalk is very rare and solution features, if present, can be expected to be infilled with Quaternary Superficial Deposits. The infill material may be significantly weaker than the surrounding chalk. Solution features can comprise pipes extending to several metres deep into the chalk or conical depressions and basin shaped structures. The Groundsure data indicates the risk from soluble rocks is very low.

## 2.2.4 Ground Cavities and Sinkholes

Table 3. Ground Cavities and Sinkholes from Groundsure Data

| Section                          | Groundsure Comment                                 |
|----------------------------------|----------------------------------------------------|
| <b>Natural Cavities</b>          | No records are identified within 500m of the site. |
| <b>Mining Cavities</b>           | No records are identified within 500m of the site. |
| <b>Reported Recent Incidents</b> | No records are identified within 500m of the site. |
| <b>Historical Incidents</b>      | No records are identified within 500m of the site. |
| <b>National Karst Database</b>   | No records are identified within 500m of the site. |

## 2.2.5 Mining and Ground Workings

Table 4. Mining and Ground Workings from Groundsure Data

| Section                                     | Groundsure Comment                                                                                                                                                                                                                 |
|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>BritPits</b>                             | No BritPits are identified within 500m of the site.                                                                                                                                                                                |
| <b>Surface Ground Workings</b>              | The only records identified are for a small cutting 163m south of the site and a pond ~205m west of the site. Given the nature of the entries and the distance from the site they are not considered to pose an unacceptable risk. |
| <b>Underground Workings</b>                 | No underground workings are identified within 1km of the site.                                                                                                                                                                     |
| <b>Underground Mining Extents</b>           | No records are identified within 500m of the site.                                                                                                                                                                                 |
| <b>Historical Mineral Planning Areas</b>    | No records are identified within 500m of the site.                                                                                                                                                                                 |
| <b>Non-Coal Mining</b>                      | The site is not identified to be in a non-coal mining area.                                                                                                                                                                        |
| <b>JPB Mining Areas</b>                     | No records are identified within 500m of the site.                                                                                                                                                                                 |
| <b>The Coal Authority – Non-Coal Mining</b> | No records are identified within 500m of the site.                                                                                                                                                                                 |
| <b>Researched Mining</b>                    | No records are identified within 500m of the site.                                                                                                                                                                                 |
| <b>Mining Record Office Plans</b>           | No records are identified within 500m of the site.                                                                                                                                                                                 |
| <b>BGS Mine Plans</b>                       | No records are identified within 500m of the site.                                                                                                                                                                                 |
| <b>Coal Mining</b>                          | No records are identified on the site.                                                                                                                                                                                             |
| <b>Brine Areas</b>                          | No records are identified on the site.                                                                                                                                                                                             |
| <b>Gypsum Areas</b>                         | No records are identified on the site.                                                                                                                                                                                             |
| <b>Tin Mining</b>                           | No records are identified on the site.                                                                                                                                                                                             |
| <b>Clay Mining</b>                          | No records are identified on the site.                                                                                                                                                                                             |

Historically, chalk deposits were often mined locally. Most commonly historical mines characteristically comprise a narrow shaft with a number of chambers radiating from the base. These structures are colloquially known as “deneholes”, “chalk-wells” or “chalkangles”.

The depth of the features reflects the depth to the underlying chalk bedrock. The shaft width was commonly in the order of 2m to 3m, widening out into galleries at depth. The chalk was extracted for soil improvement and was usually applied directly to fields though sometimes the

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chalk was processed, typically by burning in kilns where the chalk was used to produce quicklime (calcium oxide).

Once they had reached their limits the mines were commonly capped. Various capping techniques were used; examples include the use of upturned trees or brick arching. Records pertaining to the distribution of these localised mines are incomplete, usually being limited to features marked as shafts or the occurrence of circular depressions on historic Ordnance Survey maps. In the field they are most likely to be visible as shallow depressions, if at all.

The Grounsure data does not indicate the presence of any historical mines within the vicinity of the site and the risk posed to the development is considered to be negligible to very low.

## 2.2.6 Radon

Table 5. Radon

| Section                          | Groundsure Comment                                                                                                                                                                   |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Radon Affected Areas</b>      | The site is reported to be within an area where between 1% and 3% of properties are above the action level requiring radon gas protection measures to be installed in new buildings. |
| <b>Radon Protection Measures</b> | No radon protection measures are reported by the British Geological Survey to be necessary in the construction of new dwellings or extensions.                                       |

## 2.2.7 Soil Chemistry

Table 6. BGS Estimated Background Soil Chemistry

| Contaminant                  | Estimated Value (mg/kg) |
|------------------------------|-------------------------|
| <b>Arsenic</b>               | 15-25                   |
| <b>Bioaccessible Arsenic</b> | -                       |
| <b>Lead</b>                  | 100                     |
| <b>Bioaccessible Lead</b>    | 60                      |
| <b>Cadmium</b>               | 1.8                     |
| <b>Chromium</b>              | 60-90                   |
| <b>Nickel</b>                | 15-30                   |

## 2.3 Hydrogeological and Hydrological Data

### 2.3.1 Groundwater Abstractions

A historical groundwater abstraction licence for farming and domestic use is recorded to lie 302m to the north of the site.

The closest active groundwater abstraction licence is recorded to lie 911m to the north of the site. The abstraction is for spray irrigation.

### **2.3.2 Surface Water Abstractions**

No surface water abstraction licences are indicated within 2km of the site.

### **2.3.3 Potable Abstractions**

No potable abstraction licences are indicated within 2km of the site.

### **2.3.4 Groundwater Vulnerability**

The level of groundwater vulnerability, as reported within the Groundsure data, is Medium.

### **2.3.5 Groundwater Source Protection Zones (SPZ)**

The Environment Agency defines SPZs as those areas where groundwater supplies are at risk from potentially polluting activities and accidental releases of pollutants. SPZs are primarily a policy tool used to control activities close to water supplies intended for human consumption.

The site does not lie within a SPZ.

### **2.3.6 Surface Water Features**

The nearest recorded significant surface water feature identified by the data is a water course, located 123m south west of the site. As discussed in Section 2.1, a pond is located on site.

### **2.3.7 Flood Risk**

The table below summarises the flood risk data provided by the Groundsure report. It is noted that this does not constitute a flood risk assessment.

*Table 7. Flood Risk*

| <b>Section</b>                                        | <b>On Site</b>                                | <b>Within 50m of the Site</b>                |
|-------------------------------------------------------|-----------------------------------------------|----------------------------------------------|
| <b>Risk of Flooding from Rivers and Seas (RoFRaS)</b> | None Identified                               | None Identified                              |
| <b>Historical Flood Events</b>                        | None Identified                               | None Identified                              |
| <b>Flood Defences</b>                                 | None Identified                               | None Identified                              |
| <b>Areas Benefitting from Flood Defences</b>          | None Identified                               | None Identified                              |
| <b>Flood Storage Areas</b>                            | None Identified                               | None Identified                              |
| <b>Environment Agency Flood Zone 2</b>                | None Identified                               | None Identified                              |
| <b>Environment Agency Flood Zone 3</b>                | None Identified                               | None Identified                              |
| <b>Surface Water Flooding</b>                         | Highest Risk: 1 in 1000 year, 0.3m-1.0m depth | Highest Risk: 1 in 100 year, 0.3m-1.0m depth |
| <b>Groundwater Flooding</b>                           | Highest Risk: Moderate-High                   | Highest Risk: Moderate-High                  |

### 3. GEO-ENVIRONMENTAL DATA

#### 3.1 Historical Industrial Sites

The following table summarises past land uses of the site and the surrounding area extracted by Groundsure from historical maps.

Table 8. *Historical Industrial Sites*

| Section                                | Remarks                                                                                                  |
|----------------------------------------|----------------------------------------------------------------------------------------------------------|
| <b>Historical Industrial Land Uses</b> | The site and the surrounding area are shown to be part of nurseries, shown earliest on the 1943 mapping. |
| <b>Historical Tank Database</b>        | No historical tanks are identified within 100m of the site.                                              |
| <b>Historical Energy Features</b>      | No energy features are identified within 100m of the site.                                               |
| <b>Historical Petrol Stations</b>      | No historical petrol stations are identified within 100m of the site.                                    |
| <b>Historical Garages</b>              | No historical garages are identified within 100m of the site.                                            |
| <b>Historical Military Sites</b>       | No historical military sites are identified within 100m of the site.                                     |

#### 3.2 Landfill and Other Waste Sites

The following table summarises the location of waste sites either on the site or within the surrounding area (within 250m of the site).

Table 9. *Landfill and Other Waste Sites*

| Section                                                                        | Groundsure Comments                                                                                                                                                                                |
|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Active or Recent Landfills</b>                                              | No active or recent landfills are identified within 250m of the site.                                                                                                                              |
| <b>Historical Landfill<br/>(BGS Records/LA/Mapping<br/>Records EA Records)</b> | No historical landfills are identified within 250m of the site.                                                                                                                                    |
| <b>Historical Waste Sites</b>                                                  | No historical waste sites are identified within 250m of the site.                                                                                                                                  |
| <b>Licensed Waste Sites</b>                                                    | No licensed waste sites are identified within 250m of the site.                                                                                                                                    |
| <b>Waste Exemptions</b>                                                        | A number of exemptions are identified ~73m west of the site for the use of waste in construction. Given the nature of the exemption it is not considered to pose an unacceptable risk to the site. |

#### 3.3 Current Industrial Land Use

The relevant current industrial land uses are discussed in the table below.

Table 10. *Current Industrial Land Uses*

| Section                                   | Groundsure Comments                                                                               |
|-------------------------------------------|---------------------------------------------------------------------------------------------------|
| <b>Recent Industrial Land Use</b>         | No recent industrial land uses are identified within 100m of the site.                            |
| <b>Current or Recent Petrol stations</b>  | No current or recent petrol stations are identified within 100m of the site.                      |
| <b>Electricity Cables / Gas Pipelines</b> | No underground high voltage cables or high-pressure pipes are identified within 100m of the site. |

| Section                                                                     | Groundsure Comments                                                                          |
|-----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| <b>Sites determined as Contaminated Land</b>                                | No sites determined as contaminated land are identified within 100m of the site.             |
| <b>Control of Major Accident Hazards (COMAH) Sites</b>                      | No COMAH sites are identified within 100m of the site.                                       |
| <b>Regulated Explosive Sites</b>                                            | No regulated explosive sites are identified within 100m of the site.                         |
| <b>Hazardous Substance Storage/Usage</b>                                    | No consents have been granted for hazardous substance storage/usage within 100m of the site. |
| <b>Historical Licensed Industrial Activities (IPC)</b>                      | No records are identified within 100m of the site.                                           |
| <b>Licensed Industrial Activities (Part A(1))</b>                           | No records are identified within 100m of the site.                                           |
| <b>Licensed Pollutant Release (Part A(2)/B)</b>                             | No records are identified within 100m of the site.                                           |
| <b>Radioactive Substance Authorisations</b>                                 | No records are identified within 100m of the site.                                           |
| <b>Licensed Discharges to Controlled Waters</b>                             | No records are identified within 100m of the site.                                           |
| <b>Pollutant Release to Surface Water / Public Sewer</b>                    | No records are identified within 100m of the site.                                           |
| <b>List 1 / List 2 Dangerous Substances</b>                                 | No records are identified within 100m of the site.                                           |
| <b>Pollution Incidents (EA/NRW)</b>                                         | No pollution incidents are identified within 100m of the site.                               |
| <b>Pollution Inventory Substances / Waste Transfers / Radioactive Waste</b> | No records are identified within 100m of the site.                                           |

### 3.4 Sensitive Land Use

No sensitive land uses at risk from contamination are identified within 1km of the site.

### 3.5 Railway Infrastructure and Projects

A railway line is identified approximately 170m south of the site.

## 4. HISTORICAL MAP AND IMAGERY REVIEW

Historical Ordnance Survey maps and imagery covering the area of the site have been reviewed and are summarised in the following table.

It is noted that maps and images present information applicable at the time of production of the maps or image captures, that maps are subject to surveying and cartographic errors and images to atmospheric conditions at the time of their capture. It is possible that significant developments may have taken place on or within the vicinity of the site that are not shown on the inspected maps and images.

'In the Vicinity of the Site' generally refers to features of relevance within approximately 250m of the site boundary but may also include more distant features if considered to be pertinent to the assessment of the development history.

*Table 11. Summary of Significant Features Identified on Historical Maps and Images*

| <b>Map/Image Details</b>                        | <b>On-Site</b>                                                                                                                                       | <b>In the Vicinity of the Site</b>                                                                                                                                                                                                      |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1876 / 1877</b><br><b>1:10,560 / 1:2,500</b> | The site comprises part of an open field, which extends around the site.                                                                             | The railway line, including its cutting is shown approximately 170m south of the site.                                                                                                                                                  |
| <b>1943</b><br><b>1:10,560</b>                  | The site comprises part of a nursery. A glass house is shown to extend onto the site from the south, occupying the south eastern extent of the site. | Further glasshouses are shown to the west and south east of the site.                                                                                                                                                                   |
| <b>1962</b><br><b>1:10,560</b>                  | The glasshouse is no longer shown to occupy the site and appears to have been demolished. A track is shown running east to west through the site.    |                                                                                                                                                                                                                                         |
| <b>1969-1971</b><br><b>1:2,500</b>              | The site appears to be shown in its current configuration, comprising the garden of a property located to the east of the site.                      | A glass house associated with the nursery is located to the west of the site.                                                                                                                                                           |
| <b>1983</b><br><b>1:2,500</b>                   |                                                                                                                                                      | The glasshouse to the west is no longer shown.                                                                                                                                                                                          |
| <b>1999</b><br><b>Aerial Photograph</b>         | The site is shown as previously described – a garden area either side of an access road.                                                             | A house is shown to the east of the site. The areas to the north, south and west of the site are undeveloped, though vegetation scarring indicative of historical structures is visible in the area to the north and south of the site. |
| <b>2010</b><br><b>Aerial Photograph</b>         | The pond is shown within the garden area, as well as ancillary structures.                                                                           | The house to the east of the site has been significantly redeveloped.<br><br>A growing area associated with the nursery is shown to the west of the site.                                                                               |

## 5. PRELIMINARY CONTAMINATION RISK ASSESSMENT

### 5.1 Introduction

The risk assessment considers the potential sources of contamination identified, the receptors that may be present in view of the development proposals and the contaminant pathways by which these may be linked. A complete pollutant linkage is only deemed to exist where all three are present and a site is considered suitable for use where no complete pollutant linkages are identified.

Where a complete pollutant linkage is deemed to be present, an assessment of the level of risk associated with the pollutant linkage has been carried out in line with current guidance<sup>1</sup>.

The level of risk is determined using the risk matrix presented in the following table. Classifications of probability, consequence and risk are presented in Appendix B.

Table 12. Risk Assessment Matrix

|             |            | Probability  |              |              |              |
|-------------|------------|--------------|--------------|--------------|--------------|
|             |            | Very Low     | Low          | Moderate     | High         |
| Consequence | Very Minor | Negligible   | Very Low     | Low          | Low/Moderate |
|             | Minor      | Very Low     | Low          | Low/Moderate | Moderate     |
|             | Moderate   | Low          | Low/Moderate | Moderate     | High         |
|             | Severe     | Low/Moderate | Moderate     | High         | Very High    |

### 5.2 Contaminant Pathways Identified

The development is to comprise new residential buildings together with areas of private garden.

Pathways associated with gas and vapour intrusion into new buildings are considered to be valid, along with direct contact and dust related pathways, and pathways associated with the consumption of home grown produce.

Should the proposed development plans be altered, a revised risk assessment may be required.

It is noted that an asbestos survey of existing structures and infrastructure<sup>2</sup> was beyond the brief of this report. The risk assessment assumes that, should asbestos be identified within buildings or infrastructure, any such materials will be managed in accordance with current legislation and guidance, to ensure this does not represent an ongoing risk to end users and, specifically, to ensure that asbestos materials are not introduced into the underlying soils.

The site is expected to be underlain by River Terrace Deposits overlying White Chalk Subgroup soils which are classed as a Secondary A and a Principal Aquifer, respectively. Although the site is not located within a SPZ, pathways relating to controlled waters may be reasonably considered to be present.

<sup>1</sup> Contaminated Land Risk Assessment: A guide to good practice, CIRIA C552, 2001.

<sup>2</sup> As defined under Section 5(a) of the Control of Asbestos Regulations, 2012.

### **5.3 Potential Contamination Sources Identified**

The following potential sources of contamination have been identified by the preliminary contamination risk assessment:

- Historical use of the site as part of a larger nursery.
- Potential made ground from historical demolition and clearance works on the site and the wider area.

The potential contaminants associated with these sources are set out in the conceptual model.

### **5.4 Preliminary Conceptual Model**

The preliminary conceptual model for the proposed development is presented in Appendix C.

## 6. SITE WORKS

### 6.1 Introduction

The intrusive site works comprised a series of dynamic sampler boreholes and hand augered boreholes. The intrusive work was carried out on 26<sup>th</sup> January, 2024. The exploratory hole locations are shown on Figure 2.

Descriptions of the strata encountered and comments on groundwater conditions are shown in the exploratory hole records given in Appendix D, together with explanatory notes to assist in their interpretation.

### 6.2 Exploratory Holes

The following table summarises the intrusive works undertaken at the site.

*Table 13. Summary of Intrusive Works Undertaken*

| Designation | Depth (m bgl) | Method          |
|-------------|---------------|-----------------|
| WS01        | 1.50          | Hand Auger      |
| WS02        | 1.00          | Hand Auger      |
| WS03        | 1.00          | Dynamic Sampler |
| WS04        | 1.00          | Dynamic Sampler |
| WS05        | 1.00          | Dynamic Sampler |
| WS06        | 1.00          | Hand Auger      |
| WS07        | 1.00          | Hand Auger      |
| WS08        | 0.70          | Hand Auger      |

### 6.3 Sampling

Samples of soil were taken from the exploratory holes at the depths shown in the exploratory hole records. The types of samples taken are indicated on the exploratory hole records. Details on the sample types are provided in the explanatory notes.

Where appropriate, samples were stored in cool boxes with cooling blocks to maintain temperatures below 4°C until transferred to refrigerators upon return to the office and subsequently forwarded to the external accredited chemical testing laboratory.

### 6.4 Laboratory Testing

Laboratory testing was scheduled by Ashdown Site Investigation Ltd. Results from the laboratory tests are provided in Appendix E.

Chemical testing was undertaken by a laboratory with recognised (UKAS and MCERTS) accreditation for quality control.

## **7. GROUND CONDITIONS**

### **7.1 Stratigraphy**

#### **7.1.1 Surface Covering**

With the exception of WS01, which was excavated through a 100mm layer of made ground comprising sandy clayey gravel of pea shingle, each of the exploratory holes was excavated through a surface cover of topsoil.

#### **7.1.2 Made Ground**

Made ground, generally comprising slightly gravelly slightly sandy silty clay, was recorded to depths of between 0.40m and 0.80m below ground level. The gravel fraction comprised variable quantities of flint, chalk, ash-like material, brick, glass, slate, clinker-like material, plastic and organic material.

#### **7.1.3 River Terrace Deposits**

Underlying the made ground soils, the investigation progressed into undisturbed silty clay deposits with varying sand and gravel content. The gravel fraction comprised variable quantities of flint, ironstone and chalk.

These deposits, which continued to the full depth of the investigation, are considered to represent the River Terrace Deposits indicated to underlie the site on BGS geological maps.

### **7.2 Groundwater Conditions and Stability**

Each of the exploratory holes was recorded to remain dry and stable during the course of excavation.

## 8. QUANTITATIVE CONTAMINATION ASSESSMENT

### 8.1 Assessment Strategy

Given that the potential sources of contamination are likely to be diffuse across the site, the ground investigation comprised a series of spatially distributed exploratory holes across the development area to allow samples of the shallow soils to be obtained and tested for the contaminants identified by the preliminary conceptual model.

### 8.2 Analysis of Contamination Test Results

#### 8.2.1 Method of Assessment

For the assessment of risk to end users, comparison of the results of the laboratory testing has been made against published soil screening values (SSV) comprising the 'Suitable For Use Levels' (S4UL)<sup>3</sup> or, in lieu of an S4UL being developed for lead, the Category 4 Screening Level (C4SL)<sup>4</sup>.

For the assessment of risk to controlled waters a qualitative assessment has been undertaken based upon the concentrations of contaminants recorded within the soil samples and the information obtained about the sensitivity of the underlying strata or nearby surface water receptors.

#### 8.2.2 Heavy Metals & Polycyclic Aromatic Hydrocarbon (PAH) Compounds

The following table summarises the SSV along with the maximum and minimum concentrations of the heavy metals and PAH compounds tested for.

Table 14. Summary of Test Results – Heavy Metals and PAH Compounds

| Contaminant         | SSV (mg/kg) | No. of Samples | Minimum Concentration (mg/kg) | Maximum concentration (mg/kg) | Limit of Detection (mg/kg) | No of exceedances |
|---------------------|-------------|----------------|-------------------------------|-------------------------------|----------------------------|-------------------|
| Arsenic             | 37          | 8              | 8                             | 14                            | < 2                        | 0                 |
| Water Soluble Boron | 290         | 8              | <LOD                          | <LOD                          | < 1                        | 0                 |
| Cadmium             | 11          | 8              | 0.3                           | 0.7                           | < 0.2                      | 0                 |
| Chromium            | 910         | 8              | 18                            | 33                            | < 2                        | 0                 |
| Hexavalent Chromium | 6           | 8              | <LOD                          | <LOD                          | < 2                        | 0                 |
| Copper              | 2400        | 8              | 15                            | 39                            | < 4                        | 0                 |
| Lead                | 200         | 8              | 24                            | 170                           | < 3                        | 0                 |
| Mercury             | 40          | 8              | <LOD                          | <LOD                          | < 1                        | 0                 |
| Nickel              | 180         | 8              | 11                            | 19                            | < 3                        | 0                 |
| Selenium            | 250         | 8              | <LOD                          | <LOD                          | < 3                        | 0                 |
| Zinc                | 3700        | 8              | 65                            | 357                           | < 3                        | 0                 |
| Naphthalene         | 2.3         | 8              | <LOD                          | <LOD                          | < 0.1                      | 0                 |
| Acenaphthylene      | 170         | 8              | <LOD                          | <LOD                          | < 0.1                      | 0                 |
| Acenaphthene        | 210         | 8              | <LOD                          | <LOD                          | < 0.1                      | 0                 |
| Fluorene            | 170         | 8              | <LOD                          | <LOD                          | < 0.1                      | 0                 |

<sup>3</sup> Nathanail, C.P, et al., The LQM/CIEH S4ULs for Human Health Risk Assessment, 2015, Land Quality Press, Nottingham. Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3071.

<sup>4</sup> SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination. Final Project Report, published by DEFRA, 2014.

R16075

| Contaminant          | SSV<br>(mg/kg) | No. of<br>Samples | Minimum<br>Concentration<br>(mg/kg) | Maximum<br>concentration<br>(mg/kg) | Limit of<br>Detection<br>(mg/kg) | No of<br>exceedances |
|----------------------|----------------|-------------------|-------------------------------------|-------------------------------------|----------------------------------|----------------------|
| Phenanthrene         | 95             | 8                 | <LOD                                | <LOD                                | < 0.1                            | 0                    |
| Anthracene           | 2400           | 8                 | <LOD                                | <LOD                                | < 0.1                            | 0                    |
| Fluoranthene         | 280            | 8                 | <LOD                                | 0.33                                | < 0.1                            | 0                    |
| Pyrene               | 620            | 8                 | <LOD                                | 0.32                                | < 0.1                            | 0                    |
| Benz(a)anthracene    | 7.2            | 8                 | <LOD                                | 0.19                                | < 0.1                            | 0                    |
| Chrysene             | 15             | 8                 | <LOD                                | 0.22                                | < 0.1                            | 0                    |
| Benzo(b)fluoranthene | 2.6            | 8                 | <LOD                                | 0.25                                | < 0.1                            | 0                    |
| Benzo(k)fluoranthene | 77             | 8                 | <LOD                                | <LOD                                | < 0.1                            | 0                    |
| Benzo(a)pyrene       | 2.2            | 8                 | <LOD                                | 0.21                                | < 0.1                            | 0                    |
| Indeno(123-cd)pyrene | 27             | 8                 | <LOD                                | 0.16                                | < 0.1                            | 0                    |
| Dibenz(ah)anthracene | 0.24           | 8                 | <LOD                                | <LOD                                | < 0.1                            | 0                    |
| Benzo(ghi)perylene   | 320            | 8                 | <LOD                                | 0.14                                | < 0.1                            | 0                    |

None of the samples of made ground tested recorded concentrations of heavy metals or PAH compounds above their respective SSV. The concentrations of heavy metals and PAH compounds present within the made ground soils are not considered to pose an unacceptable risk to end users of the site.

At the concentrations recorded, none of the heavy metals or PAH compounds would be expected to exhibit significant mobility within the soils and are therefore not considered to pose an unacceptable risk to controlled waters beneath the site.

### 8.2.3 Asbestos

No suspected asbestos materials were noted within any of the exploratory holes undertaken at the site.

Eight samples of the made ground were screened for the presence of asbestos. None of the samples recorded the presence of any asbestos materials.

There is not considered to be an unacceptable risk to end users from asbestos materials within soils.

Due to the heterogeneity of made ground, there will always remain the potential for localised asbestos materials to be encountered during construction works, though the likelihood of this is considered to be very low. All workers at the site should be made aware of what actions to take in the event that suspected asbestos materials are identified at any time during the development works.

## 8.2.4 Petroleum Hydrocarbons

The following table lists the SSV for petroleum hydrocarbon equivalent carbon weight fractions calculated for 1% organic content.

Table 15. SSV for petroleum hydrocarbon equivalent carbon weight fractions

| Petroleum Hydrocarbon Fraction | SSV (mg/kg) | Petroleum Hydrocarbon Fraction | SSV (mg/kg) |
|--------------------------------|-------------|--------------------------------|-------------|
| Aliphatic EC 5-6               | 42          | Aromatic EC 5-7                | 70          |
| Aliphatic EC >6-8              | 100         | Aromatic EC >7-8               | 130         |
| Aliphatic EC >8-10             | 27          | Aromatic EC >8-10              | 34          |
| Aliphatic EC >10-12            | 130         | Aromatic EC >10-12             | 74          |
| Aliphatic EC >12-16            | 1100        | Aromatic EC >12-16             | 140         |
| Aliphatic EC >16-35            | 65000       | Aromatic EC >16-21             | 260         |
| Aliphatic EC >35-44            | 65000       | Aromatic EC >21-35             | 1100        |
|                                |             | Aromatic EC >35-44             | 1100        |

Whilst full speciation of the concentrations of petroleum hydrocarbons by aromatic and aliphatic fractions was not undertaken, the results of the testing undertaken can still be compared with the more stringent of the screening values for the respective equivalent carbon weight fraction and, where the concentration recorded is found to be lower, it can be reasonably concluded that no significant risk is present.

No visual or olfactory evidence of petroleum hydrocarbon contamination was encountered within any of the exploratory holes at the site. Testing of the shallow soils recorded very low concentrations of petroleum hydrocarbon, significantly below the more conservative SSV for each equivalent carbon weight fraction.

The concentrations of petroleum hydrocarbons present within soils are not considered to pose an unacceptable risk to end users of the site or controlled waters beneath the site.

Comparison of the test results for petroleum hydrocarbons has been undertaken with the threshold value for PE water supply pipework<sup>5</sup>. The concentrations do not exceed the threshold value.

Nonetheless, it is strongly recommended that designers consult with the local water supply company to determine the specific water supply pipe material required to be used, or whether they require further laboratory testing and assessment specific to proposed routes of services.

<sup>5</sup> Set out within Table 3.1 of the Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites, UK Water Industry Research, 2010.

## **8.3 Quantitative Contamination Risk Assessment**

### **8.3.0 Contamination Sources Identified**

Following the ground investigation, no sources of contamination have been identified by the quantitative contamination risk assessment.

#### **8.3.1 Quantitative Conceptual Model**

The quantitative conceptual model for the proposed development is presented in Appendix F.

In the absence of any complete pollutant linkages being identified, no remedial measures or further contamination risk assessment works are considered to be necessary.

## **8.4 Risks to Other Potential Receptors**

All construction workers must undertake their own risk assessment, based upon the works to be carried out and the proposed method by which this will be achieved, in accordance with current health and safety legislation. Their assessment should take into account all available information about the site, including that present within this report.

Appropriate working procedures and PPE should be adopted to ensure the health and safety of the site operatives. Instruction should be given in the recognition of potentially hazardous materials. All site personnel should be appropriately briefed on the discovery strategy, presented below, and what actions they must take in the event that further evidence of contamination is identified or suspected.

## **8.5 Regulatory Approval**

It is recommended that this report is submitted to the Local Authority in support of a planning application for the site. The report should also be submitted to any other relevant regulator and/or warrantor.

The conclusions drawn in this report should be considered as provisional until such time as the report has been accepted by the Local Authority.

## **8.6 Discovery Strategy**

If, during the course of the site clearance and development works, any materials not previously identified by the investigation that are suspected of being 'contaminants' are encountered, then the following procedure should apply:

- All works in that area should cease and the site manager should be informed.
- Advice should be sought from suitably qualified and experienced personnel as to whether any further site inspection, sampling, testing and/or assessment is deemed necessary.
- If required, the conclusions of any assessment and any proposed remedial works (if required) should be agreed by the local authority.
- If necessary, full details of any remedial works should be included in a verification report for the site.

Suspected 'contamination' may take the following form, though it is noted that this list is not exhaustive and site operatives should ask if they are at all unsure of any findings:

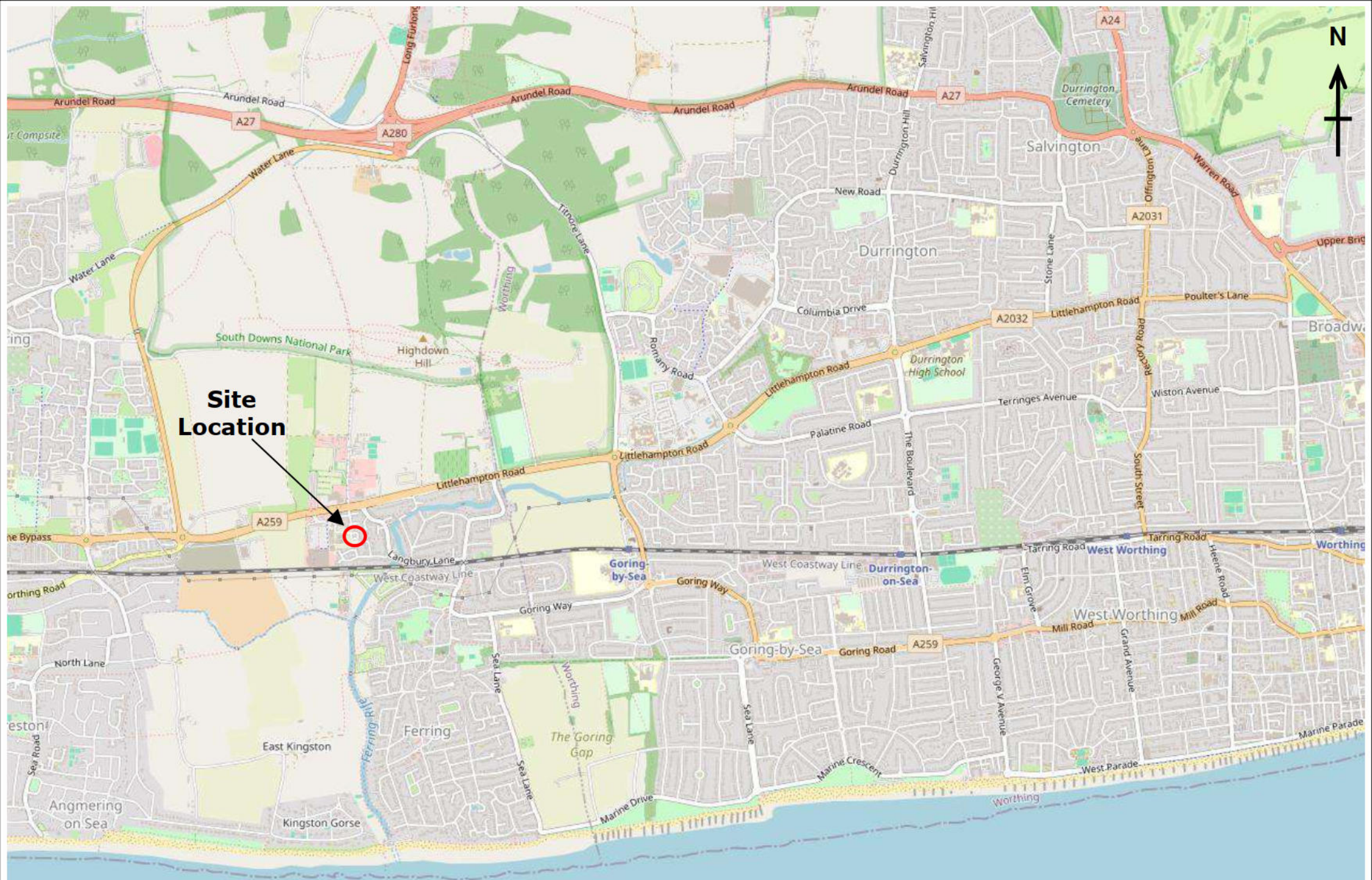
- Soil or water looks oily and/or has an oily odour
- Soil or water has a solvent type of odour
- Significant quantities of man-made materials within fill such as paint cans, car parts, glass fragments
- Suspected asbestos containing materials (insulating boards, cement, loose fibres etc.)
- Significant volumes of clinker like or ashy material
- Sand bags, and/or subsurface concrete structures
- Animal carcasses or evidence of animal burial pits

**Ashdown Site Investigation Ltd.**

## FIGURES

Figure 1 Site Location Plan

Figure 2 Site Plan



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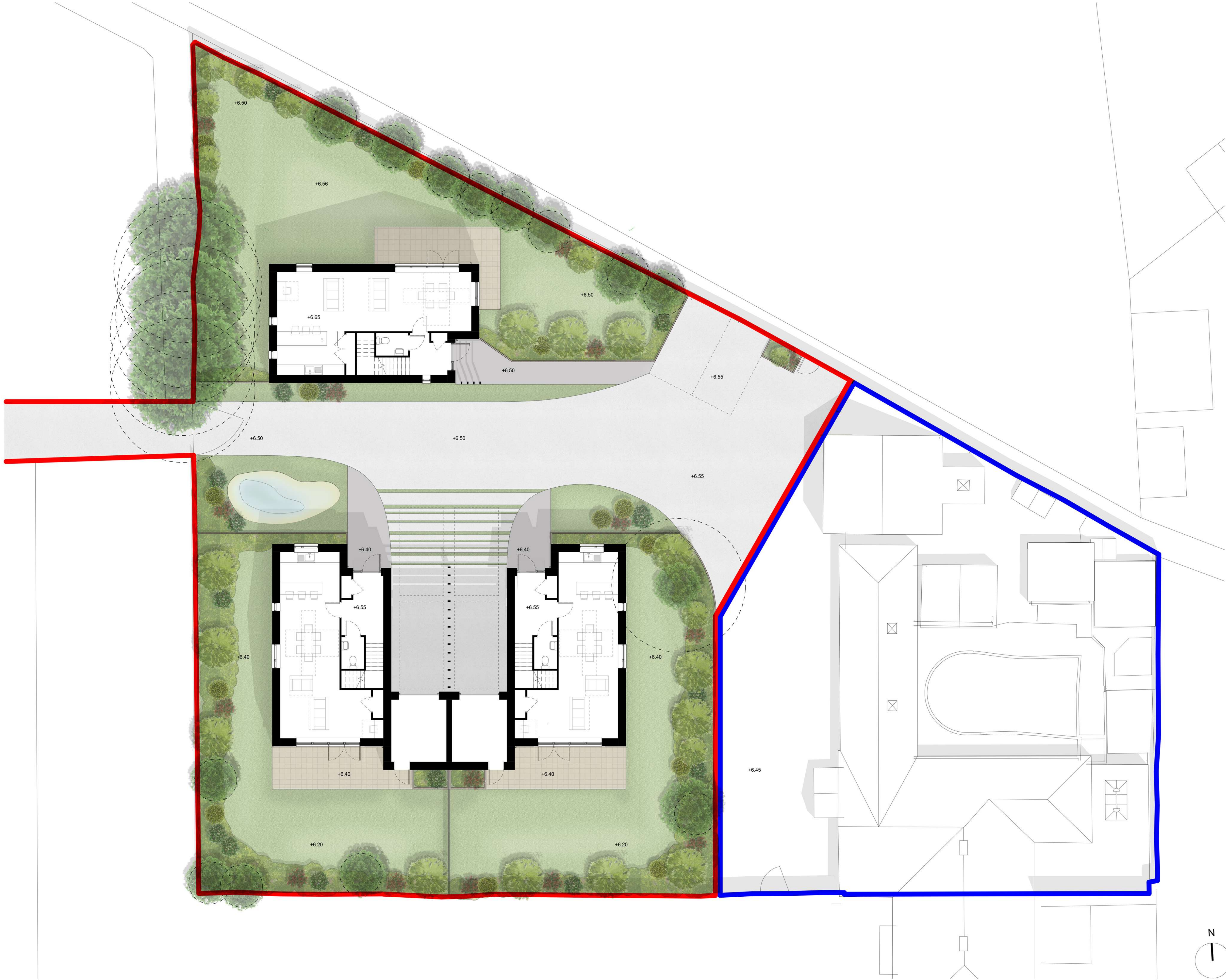
| ASHDOWN SITE INVESTIGATION<br>LIMITED | Site Location Plan | Site Name                                              | Figure No. | Project Reference |
|---------------------------------------|--------------------|--------------------------------------------------------|------------|-------------------|
|                                       |                    | Kivesborough, Littlehampton Road, Ferring, West Sussex | 1          | P16455            |



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## **APPENDIX A**

### Proposed Development Layout



| Rev | Date | Revision Details | Dr | Ch |
|-----|------|------------------|----|----|
|-----|------|------------------|----|----|



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Mr & Mrs Dichello

Job Title  
Kivesborough, Ferring

Drawing Title  
Proposed Site Plan

Scale  
1:100 @ A1 / 1:200 @ A3



Project Drawing No Rev

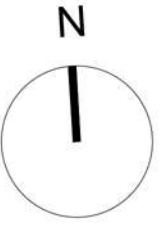
7339 SK 10

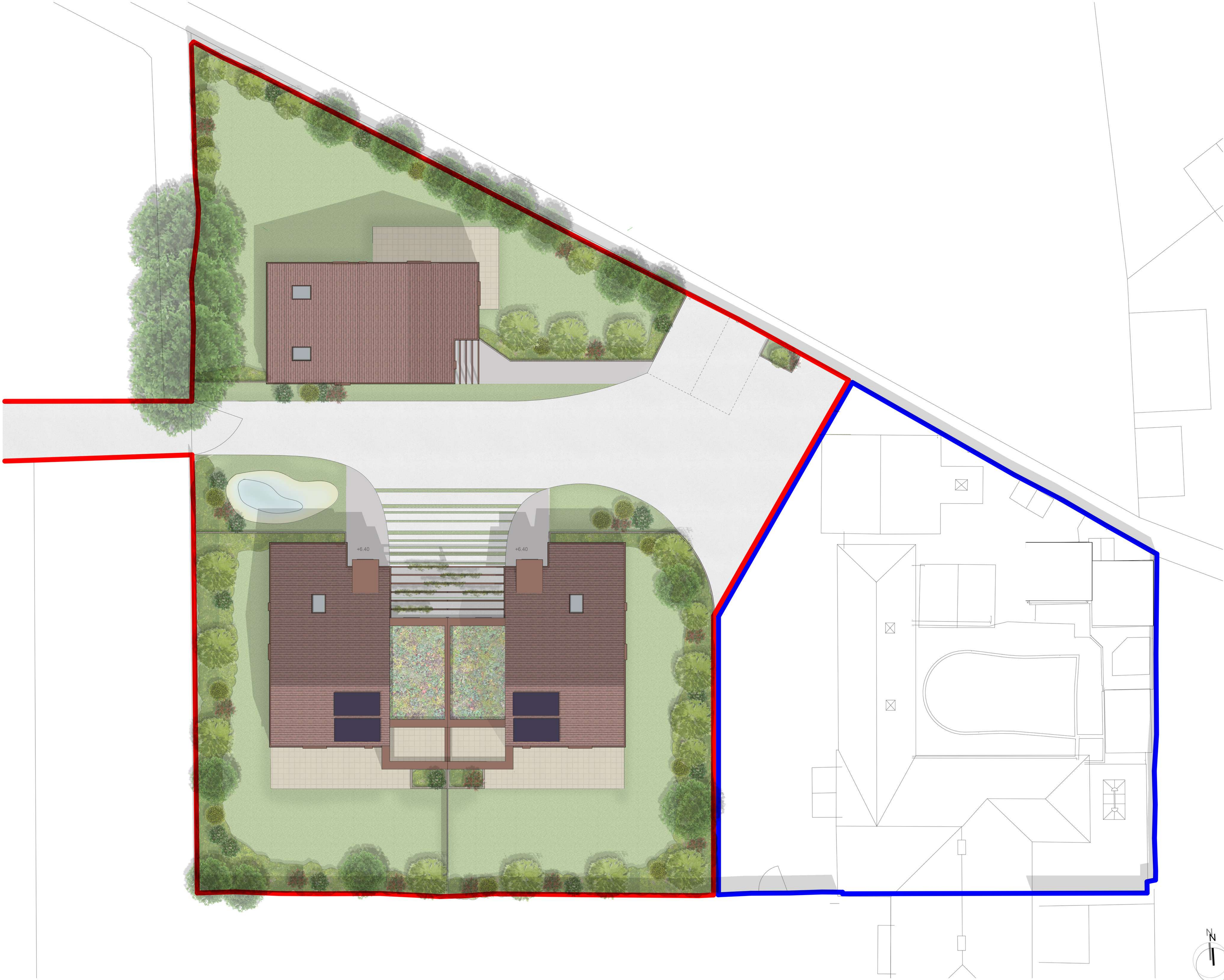
Drawn Checked Date

IM JB 18.12.23

Status

S0 - Work In Progress





| Rev | Date | Revision Details | Dr | Ch |
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Kivesborough, Ferring

Drawing Title  
Proposed Site Plan - Roof Plan

Scale  
1:100 @ A1 / 1:200 @ A3

metres 2 4 6 8 10

Project Drawing No Rev

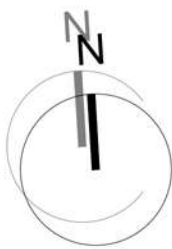
7339 SK 12

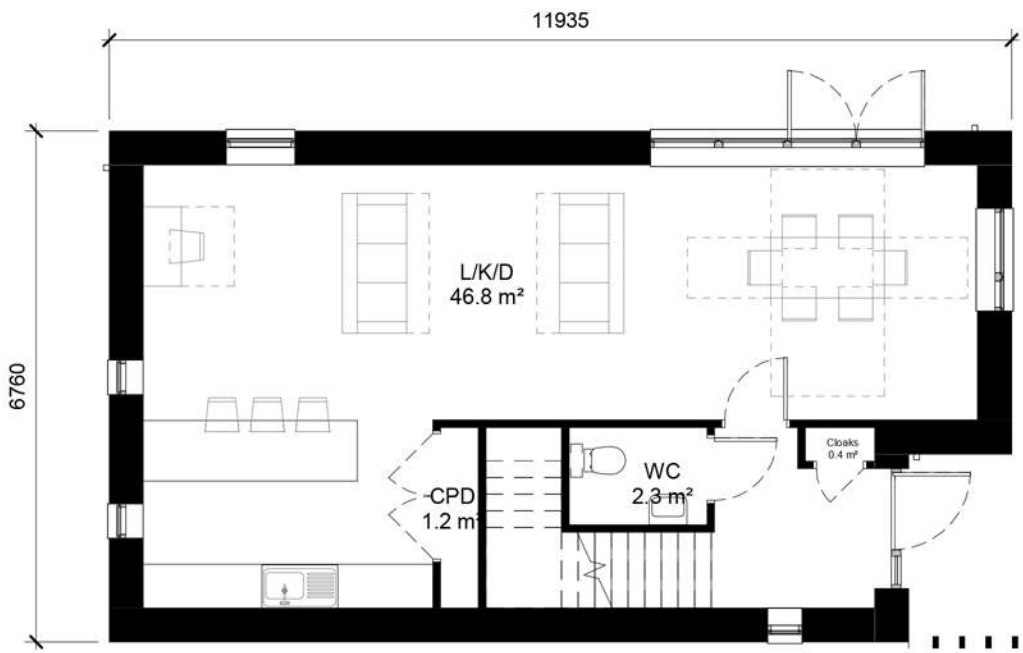
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IM JB 18.12.23

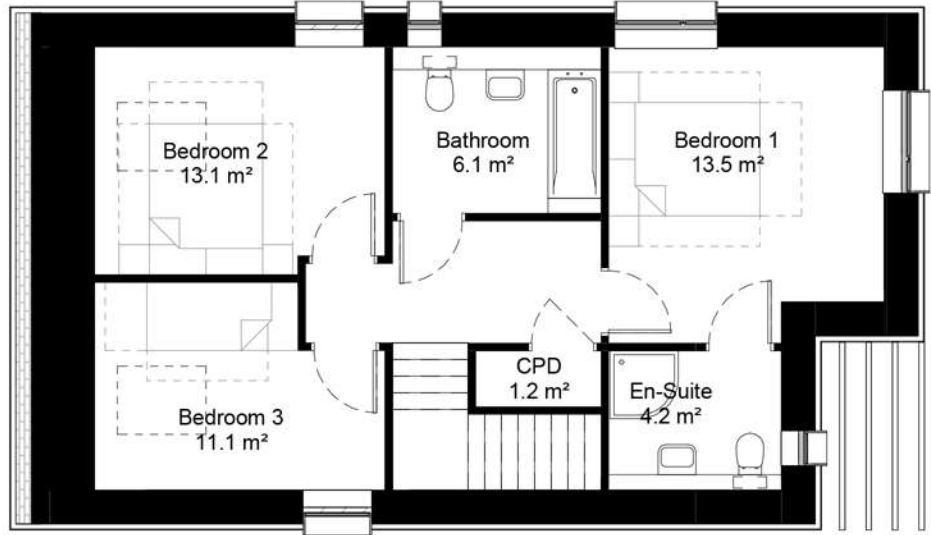
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S0 - Work In Progress

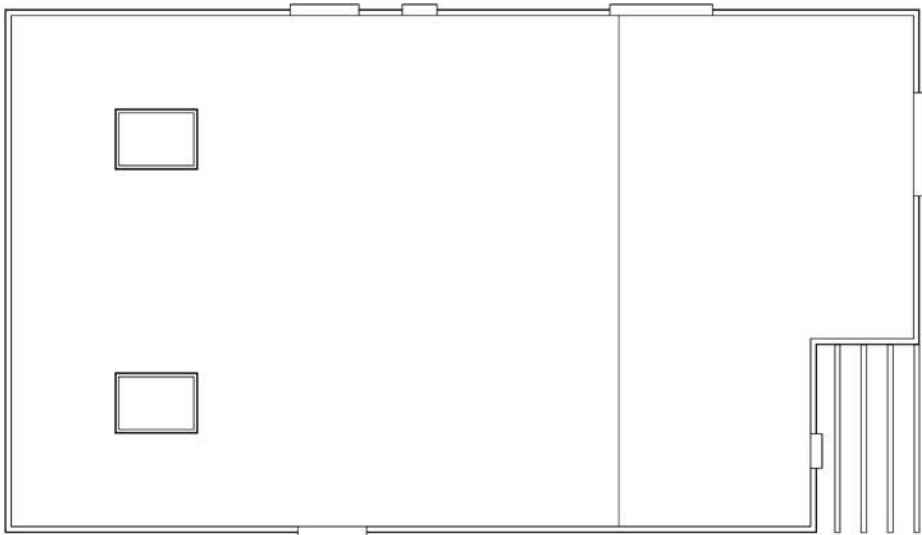




Plot 1 Ground Floor Plan  
1 : 100



Plot 1 First Floor Plan  
1 : 100



Plot 1 Roof Plan  
1 : 100



Plot 1 East Elevation  
1 : 100



Plot 1 North Elevation  
1 : 100



Plot 1 West Elevation  
1 : 100



Plot 1 South Elevation  
1 : 100



Plot 1 Section  
1 : 100

| Rev | Date | Revision Details | Dr | Ch |
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Drawing Title  
Proposed Plans & Elevation - Plot 1

Scale  
1:100 @ A1 / 1:200 @ A3

metres 2 4 6 8 10

Project Drawing No Rev

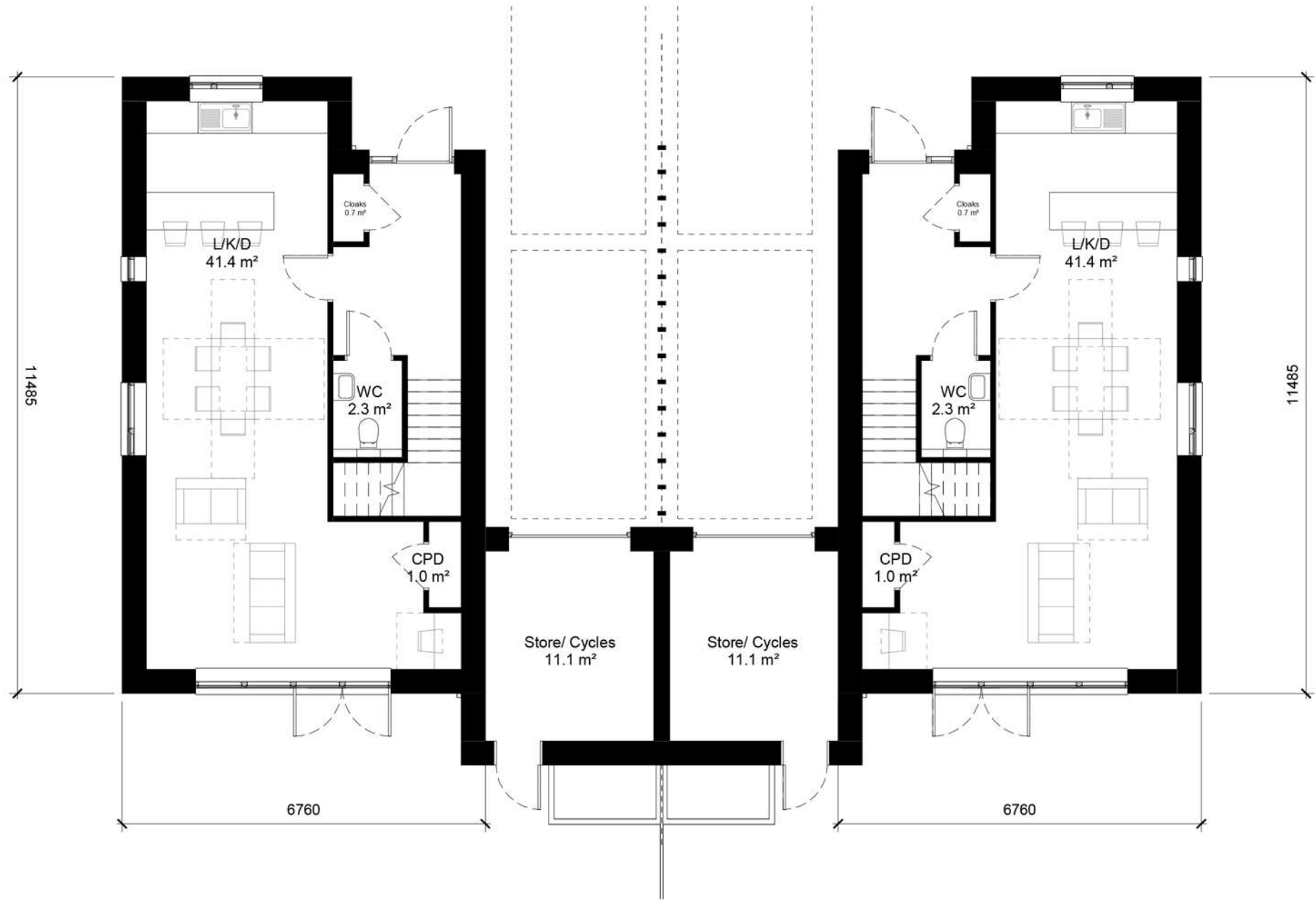
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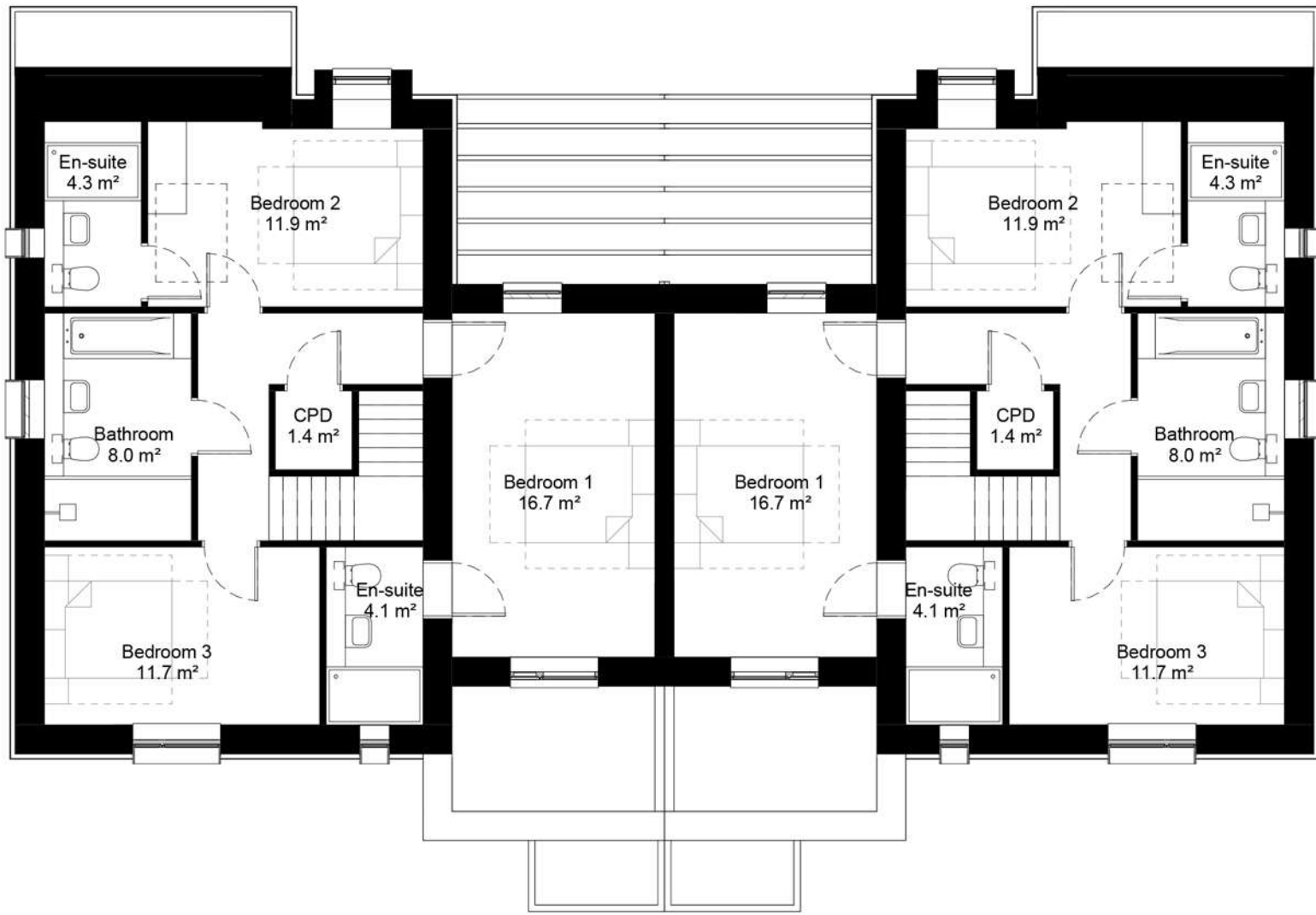
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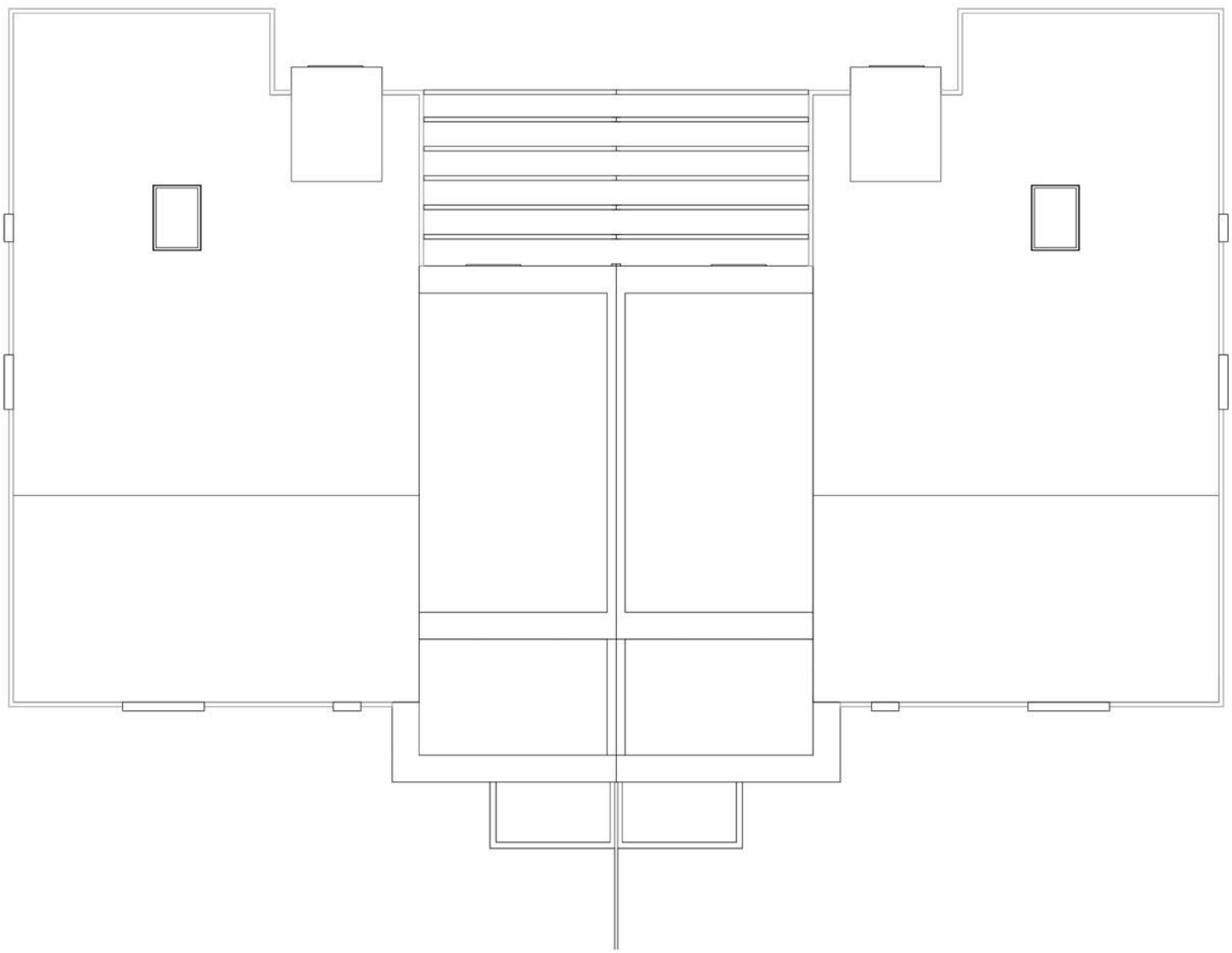
S0 - Work In Progress



Plot 2-3 Ground Floor Plan  
1 : 100



Plot 2-3 First Floor Plan  
1 : 100



Plot 2-3 Roof Plan  
1 : 100



Plot 2-3 North Elevation  
1 : 100



Plot 2-3 East Elevation  
1 : 100



Plot 2-3 South Elevation  
1 : 100



Plot 2-3 West Elevation  
1 : 100



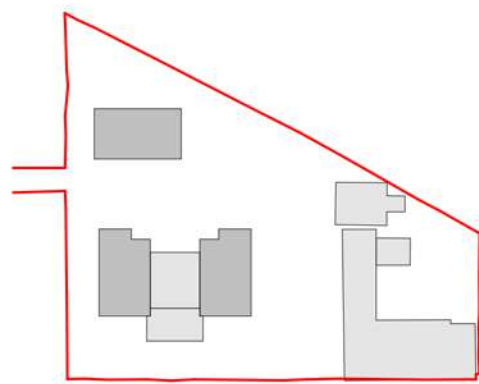
Plot 2 Section  
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| Rev | Date | Revision Details                                                                                                                                                                                                                                                                                                                     | Dr | Ch |
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| Drawing Title                                                                         |            |
| Proposed Plans & Elevations - Plot 2-3                                                |            |
| Scale                                                                                 |            |
| 1:100 @ A1 / 1:200 @ A3                                                               |            |
|  |            |
| Project                                                                               | Drawing No |
| 7339                                                                                  | SK 16      |
| Drawn                                                                                 | Checked    |
| IM                                                                                    | JB         |
| Status                                                                                | Date       |
|                                                                                       | 18.12.23   |

S0 - Work In Progress



Street Scene AA  
1 : 100



Street Scene BB  
1 : 100

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Drawing Title  
Proposed Street Scenes

Scale  
1:100 @ A1 / 1:200 @ A3



Project Drawing No Rev

7339 SK 20

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IM JB 18.12.23

Status

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## **APPENDIX B**

Classification of Probability, Consequence and Risk

| Probability of risk being realised |                                                                                                                                                                                                                                                                       |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Classification                     | Definition                                                                                                                                                                                                                                                            |
| High                               | There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable over the long term or there is evidence at the receptor of harm or pollution.                                                                       |
| Moderate                           | 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                                | 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.                                   |
| Very Low                           | There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long term.                                                                                                                                   |

| Consequence of risk being realised |                    |                                                                                                                                                   |
|------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Classification                     | Category           | Definition                                                                                                                                        |
| Severe                             | Human Health       | Short term (acute) risk to human health likely to result in "significant harm" as defined by the Environment Protection Act 1990, Part IIA.       |
|                                    | Controlled Waters  | Short term risk of pollution (note: Water Resources Act contains no scope for considering significance of pollution) of sensitive water resource. |
|                                    | Property           | Catastrophic damage to buildings/property.                                                                                                        |
|                                    | Ecological Systems | A short term risk to a particular ecosystem or organisation forming part of such ecosystem.                                                       |
| Moderate                           | Human Health       | Chronic damage to Human Health.                                                                                                                   |
|                                    | Controlled Waters  | Pollution of sensitive water resources (note: Water Resources Act contains no scope for considering significance of pollution).                   |
|                                    | Ecological System  | A significant change in a particular ecosystem or organism forming part of such ecosystem.                                                        |
| Minor                              | Controlled Waters  | Pollution of non-sensitive water resources.                                                                                                       |
|                                    | Property           | Significant damage to crops, buildings, structures and services.                                                                                  |
|                                    | Ecological Systems | Damage to sensitive buildings/structures/services or the environment.                                                                             |
| Very Minor                         | Human Health       | Non-permanent health effects to human health (easily prevented by means such as personal protective clothing, etc).                               |
|                                    | Property           | Easily repairable effects of damage to buildings, structures and services.                                                                        |
|                                    | Project            | Harm, although not necessarily significant harm, which may result in a financial loss or expenditure to resolve.                                  |

| Risk classification definitions |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Very High                       | 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 are likely to be required.                                                                    |
| High                            | 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 long term.                                                                                                                                     |
| Moderate                        | It is possible that harm could arise to a designated receptor from an identified hazard. However, it is 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                             | It is possible that harm could arise to a designated receptor from an identified hazard, but there is a low likelihood of this hazard occurring and if realised, harm would at worst normally be mild.                                                                                                                                                                                                                                      |
| Very Low                        | 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.                                                                                                                                                                                                                                                                                                    |

## **APPENDIX C**

### Preliminary Conceptual Model

| Kivesborough, Littlehampton Road, Ferring, West Sussex                                                |                                       |                                          |                                                      | Preliminary Conceptual Model                                 |              | P16455       |              |
|-------------------------------------------------------------------------------------------------------|---------------------------------------|------------------------------------------|------------------------------------------------------|--------------------------------------------------------------|--------------|--------------|--------------|
| Potential Source                                                                                      | Potential Receptor                    | Potential Contaminants                   | Potential Pathway                                    | Complete Linkage Present?                                    | Probability  | Consequence  | Risk         |
| • Historical use of the site as part of a larger nursery                                              | End Users                             | Petroleum Hydrocarbons                   | Dermal contact with soil and dust (indoor & outdoor) | Yes                                                          | P2: Low      | C3: Moderate | Low/Moderate |
|                                                                                                       |                                       |                                          | Ingestion of soil and indoor dust                    | Yes                                                          | P2: Low      | C3: Moderate | Low/Moderate |
|                                                                                                       |                                       |                                          | Consumption of home-grown produce and attached soil  | Yes                                                          | P2: Low      | C3: Moderate | Low/Moderate |
|                                                                                                       |                                       |                                          | Inhalation of soil dust (indoor and outdoor)         | Yes                                                          | P2: Low      | C3: Moderate | Low/Moderate |
|                                                                                                       |                                       |                                          | Inhalation of soil vapours                           | Yes                                                          | P1: Very Low | C3: Moderate | Low          |
|                                                                                                       |                                       |                                          | Inhalation of soil gases/<br>Risk of explosion       | Identified contaminant does not pose a risk via this pathway |              |              | N/A          |
|                                                                                                       | End Users (via Water Supply Pipework) | Petroleum Hydrocarbons                   | Contamination of incoming services                   | Yes                                                          | P2: Low      | C2: Minor    | Low          |
|                                                                                                       | Groundwater                           | Petroleum Hydrocarbons                   | Migration to groundwater                             | Yes                                                          | P1: Very Low | C2: Minor    | Very Low     |
| • Potential made ground from historical demolition and clearance works on the site and the wider area | End Users                             | Asbestos, Heavy Metals and PAH Compounds | Dermal contact with soil and dust (indoor & outdoor) | Yes                                                          | P2: Low      | C3: Moderate | Low/Moderate |
|                                                                                                       |                                       |                                          | Ingestion of soil and indoor dust                    | Yes                                                          | P2: Low      | C3: Moderate | Low/Moderate |
|                                                                                                       |                                       |                                          | Consumption of home-grown produce and attached soil  | Yes                                                          | P2: Low      | C3: Moderate | Low/Moderate |
|                                                                                                       |                                       |                                          | Inhalation of soil dust (indoor and outdoor)         | Yes                                                          | P2: Low      | C3: Moderate | Low/Moderate |
|                                                                                                       |                                       |                                          | Inhalation of soil vapours                           | Identified contaminants do not pose a risk via this pathway  |              |              | N/A          |
|                                                                                                       |                                       |                                          | Inhalation of soil gases/<br>Risk of explosion       | Identified contaminants do not pose a risk via this pathway  |              |              | N/A          |
|                                                                                                       | End Users (via Water Supply Pipework) |                                          | Contamination of incoming services                   | Identified contaminants do not pose a risk via this pathway  |              |              | N/A          |
|                                                                                                       | Groundwater                           | Heavy Metals and PAH Compounds           | Migration to groundwater                             | Yes                                                          | P1: Very Low | C2: Minor    | Very Low     |

## **APPENDIX D**

Explanatory Notes

Exploratory Hole Records

## **Explanatory Notes**

### **Symbols and abbreviations on Exploratory Hole Records**

#### *Samples*

- U 'Undisturbed' Sample: - 100mm diameter by 450mm long. The number of blows to drive in the sampling tube is shown after the test index letter in the SPT column.
- Pi Piston Sample: 'Undisturbed' sample 100mm diameter by 600mm long.
- D Disturbed Sample
- R Root Sample
- B Bulk Disturbed Sample
- W Water Sample
- ES Environmental Suite (on older records may be referenced J T)

#### *In Situ Testing*

- S Standard penetration test (SPT): Using the split spoon sampler.
- C Standard Penetration Test (SPT): Using a solid cone instead of the sampler – conducted usually in coarse grained soils or weak rocks.
- V Shear Vane Test: Undrained shear strength (cohesion) (kN/m<sup>2</sup>) shown within the Vane/Pen Test and N Value column.
- H Hand penetrometer Test: Undrained shear strength (cohesion) (kN/m<sup>2</sup>) shown within the Vane/Pen Test and N Value column.
- P Perth Penetrometer Test: Number of blows for 300mm penetration shown under Vane/Pen Test and N Value column.

#### *Excavation Method*

- CP Cable Percussion Borehole
- RC Rotary Cored Borehole
- WLS Dynamic Sampler Borehole using windowless sampler tubes
- WS Dynamic Sampler Borehole using window sampler tubes
- TP Trial Pit excavated using mechanic excavator
- HDP Trial Pit excavated using hand tools

### **Soil Description**

Description and classification of soils has been carried out using as a general basis the British Standard Geotechnical investigation and testing – Identification and classification of soil, Part 1 Identification and description (BS EN ISO 14688-1) and Part 2 Principles of classification (BS EN 14688-2) as well as the BS5930 code of Practice for Ground Investigations.

### **Rock Description**

Description and classification of rocks has been carried out using as a general basis the British Standard Geotechnical investigation and testing – Identification and classification of rock, Part 1 Identification and classification (BS EN ISO 14689-1) as well as the BS5930 code of Practice for Ground Investigations. TCR – Total Core Recovery, SCR – Solid Core Recovery, RQD – Rock Quality Designation, NI – Non Intact, If – indicative fracture spacing (min/ave/max), FI – Fracture Index.

### **Chalk Description**

Chalk description is based on BS EN ISO 14688, BS EN ISO 14689 and BS5930. The classification of chalk generally follows the guidance offered by the Construction Industry Research and Information Association (CIRIA) C574, 'Engineering in Chalk'. This is based on assessment of chalk density, discontinuity and aperture spacing, and the proportion of intact chalk to silt of chalk.

### **In Situ Strength Testing**

Standard penetration testing (SPT) carried out in accordance with BS EN ISO 22476-3:2005.

Continuous dynamic probe testing conducted using a super heavy DPSH-B (As defined by BS EN ISO 22476-2:2005) probing geometry. The DPSH-B configuration is similar to that of the standard penetration test (SPT); the main differences being that the tip comprises a 90° cone, the driving rods are lighter than those used for SPT testing and the blow counts are recorded over 100mm increments rather than 300mm, as is the case for the SPT.

Perth penetrometer tests carried out in accordance with Australian Standard AS 1289:6.3.3-1997, Method of Testing Soils for Engineering Purposes; no equivalent European or British Standard having been published to date.

Undrained shear strength determinations made in-situ using a Geonor hand shear vane or a hand penetrometer.

Testing to determine the in-situ California Bearing Ratio (CBR) of soils conducted at shallow depths using a hand-held Transport Research Laboratory (TRL) cone penetrometer.

---

## **APPENDIX E**

### Contamination Laboratory Test Results



Alex Bewick  
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Unit 3 The Grain Store  
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Ditchling Common  
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BN6 8SG

**Derwentside Environmental Testing Services Ltd**  
Unit 1  
Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath  
Kent



## **DETS Report No: 24-00857**

**Site Reference:** Kivesborough, Littlehampton Road, Ferring, West Sussex

**Project / Job Ref:** P16455 2010

**Order No:** 11489

**Sample Receipt Date:** 30/01/2024

**Sample Scheduled Date:** 30/01/2024

**Report Issue Number:** 1

**Reporting Date:** 05/02/2024

**Authorised by:**



Steve Knight  
Customer Support Manager

Dates of laboratory activities for each tested analyte are available upon request.

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.



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**Lenham Heath**  
**Maidstone**



| Soil Analysis Certificate                                                     |                        |               |               |               |               |               |
|-------------------------------------------------------------------------------|------------------------|---------------|---------------|---------------|---------------|---------------|
| <b>DETS Report No: 24-00857</b>                                               | <b>Date Sampled</b>    | 26/01/24      | 26/01/24      | 26/01/24      | 26/01/24      | 26/01/24      |
| <b>Ashdown Site Investigations Ltd</b>                                        | <b>Time Sampled</b>    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| <b>Site Reference: Kivesborough, Littlehampton Road, Ferring, West Sussex</b> | <b>TP / BH No</b>      | WS01          | WS02          | WS03          | WS04          | WS05          |
| <b>Project / Job Ref: P16455_2010</b>                                         | <b>Additional Refs</b> | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| <b>Order No: 11489</b>                                                        | <b>Depth (m)</b>       | 0.35          | 0.15          | 0.50          | 0.40          | 0.10          |
| <b>Reporting Date: 05/02/2024</b>                                             | <b>DETS Sample No</b>  | 696382        | 696383        | 696384        | 696385        | 696386        |

| Determinand                       | Unit     | RL     | Accreditation |              |              |              |              |              |
|-----------------------------------|----------|--------|---------------|--------------|--------------|--------------|--------------|--------------|
| Asbestos Screen <sup>(S)</sup>    | N/a      | N/a    | ISO17025      | Not Detected | Not Detected | Not Detected | Not Detected | Not Detected |
| pH                                | pH Units | N/a    | MCERTS        | 7.8          | 7.1          | 7.9          | 7.7          | 6.9          |
| Total Sulphate as SO <sub>4</sub> | mg/kg    | < 200  | MCERTS        | 327          | 444          | 265          | 361          | 564          |
| Total Sulphate as SO <sub>4</sub> | %        | < 0.02 | MCERTS        | 0.03         | 0.04         | 0.03         | 0.04         | 0.06         |
| Organic Matter (SOM)              | %        | < 0.1  | MCERTS        | 3.7          | 7.5          | 2            | 2.7          | 6.2          |
| Arsenic (As)                      | mg/kg    | < 2    | MCERTS        | 11           | 14           | 9            | 14           | 11           |
| W/S Boron                         | mg/kg    | < 1    | NONE          | < 1          | < 1          | < 1          | < 1          | < 1          |
| Cadmium (Cd)                      | mg/kg    | < 0.2  | MCERTS        | 0.3          | 0.7          | 0.4          | 0.6          | 0.7          |
| Chromium (Cr)                     | mg/kg    | < 2    | MCERTS        | 25           | 31           | 23           | 33           | 32           |
| Chromium (hexavalent)             | mg/kg    | < 2    | NONE          | < 2          | < 2          | < 2          | < 2          | < 2          |
| Copper (Cu)                       | mg/kg    | < 4    | MCERTS        | 30           | 27           | 15           | 29           | 39           |
| Lead (Pb)                         | mg/kg    | < 3    | MCERTS        | 38           | 170          | 24           | 51           | 38           |
| Mercury (Hg)                      | mg/kg    | < 1    | MCERTS        | < 1          | < 1          | < 1          | < 1          | < 1          |
| Nickel (Ni)                       | mg/kg    | < 3    | MCERTS        | 19           | 16           | 17           | 19           | 16           |
| Selenium (Se)                     | mg/kg    | < 2    | MCERTS        | < 2          | < 2          | < 2          | < 2          | < 2          |
| Zinc (Zn)                         | mg/kg    | < 3    | MCERTS        | 95           | 357          | 65           | 119          | 110          |

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion  
Subcontracted analysis (S)



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| Soil Analysis Certificate                                              |                 |               |               |               |  |  |
|------------------------------------------------------------------------|-----------------|---------------|---------------|---------------|--|--|
| DETS Report No: 24-00857                                               | Date Sampled    | 26/01/24      | 26/01/24      | 26/01/24      |  |  |
| Ashdown Site Investigations Ltd                                        | Time Sampled    | None Supplied | None Supplied | None Supplied |  |  |
| Site Reference: Kivesborough, Littlehampton Road, Ferring, West Sussex | TP / BH No      | WS06          | WS07          | WS08          |  |  |
| Project / Job Ref: P16455_2010                                         | Additional Refs | None Supplied | None Supplied | None Supplied |  |  |
| Order No: 11489                                                        | Depth (m)       | 0.15          | 0.20          | 0.15          |  |  |
| Reporting Date: 05/02/2024                                             | DETS Sample No  | 696387        | 696388        | 696389        |  |  |

| Determinand                       | Unit     | RL     | Accreditation |              |              |              |  |
|-----------------------------------|----------|--------|---------------|--------------|--------------|--------------|--|
| Asbestos Screen <sup>(S)</sup>    | N/a      | N/a    | ISO17025      | Not Detected | Not Detected | Not Detected |  |
| pH                                | pH Units | N/a    | MCERTS        | 7.4          | 7.6          | 7.4          |  |
| Total Sulphate as SO <sub>4</sub> | mg/kg    | < 200  | MCERTS        | 650          | 508          | 450          |  |
| Total Sulphate as SO <sub>4</sub> | %        | < 0.02 | MCERTS        | 0.07         | 0.05         | 0.05         |  |
| Organic Matter (SOM)              | %        | < 0.1  | MCERTS        | 7.2          | 7.6          | 7.9          |  |
| Arsenic (As)                      | mg/kg    | < 2    | MCERTS        | 9            | 8            | 11           |  |
| W/S Boron                         | mg/kg    | < 1    | NONE          | < 1          | < 1          | < 1          |  |
| Cadmium (Cd)                      | mg/kg    | < 0.2  | MCERTS        | 0.5          | 0.5          | 0.5          |  |
| Chromium (Cr)                     | mg/kg    | < 2    | MCERTS        | 28           | 18           | 23           |  |
| Chromium (hexavalent)             | mg/kg    | < 2    | NONE          | < 2          | < 2          | < 2          |  |
| Copper (Cu)                       | mg/kg    | < 4    | MCERTS        | 32           | 33           | 38           |  |
| Lead (Pb)                         | mg/kg    | < 3    | MCERTS        | 50           | 75           | 55           |  |
| Mercury (Hg)                      | mg/kg    | < 1    | MCERTS        | < 1          | < 1          | < 1          |  |
| Nickel (Ni)                       | mg/kg    | < 3    | MCERTS        | 15           | 11           | 13           |  |
| Selenium (Se)                     | mg/kg    | < 2    | MCERTS        | < 2          | < 2          | < 2          |  |
| Zinc (Zn)                         | mg/kg    | < 3    | MCERTS        | 106          | 109          | 149          |  |

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion  
Subcontracted analysis (S)



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4480

| Soil Analysis Certificate - Speciated PAHs                             |                 |               |               |               |               |               |
|------------------------------------------------------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|
| DETS Report No: 24-00857                                               | Date Sampled    | 26/01/24      | 26/01/24      | 26/01/24      | 26/01/24      | 26/01/24      |
| Ashdown Site Investigations Ltd                                        | Time Sampled    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: Kivesborough, Littlehampton Road, Ferring, West Sussex | TP / BH No      | WS01          | WS02          | WS03          | WS04          | WS05          |
| Project / Job Ref: P16455_2010                                         | Additional Refs | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Order No: 11489                                                        | Depth (m)       | 0.35          | 0.15          | 0.50          | 0.40          | 0.10          |
| Reporting Date: 05/02/2024                                             | DETS Sample No  | 696382        | 696383        | 696384        | 696385        | 696386        |

| Determinand            | Unit  | RL    | Accreditation |       |       |       |       |       |
|------------------------|-------|-------|---------------|-------|-------|-------|-------|-------|
| Naphthalene            | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Acenaphthylene         | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Acenaphthene           | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Fluorene               | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Phenanthrene           | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Anthracene             | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Fluoranthene           | mg/kg | < 0.1 | MCERTS        | < 0.1 | 0.13  | < 0.1 | < 0.1 | 0.14  |
| Pyrene                 | mg/kg | < 0.1 | MCERTS        | < 0.1 | 0.12  | < 0.1 | < 0.1 | < 0.1 |
| Benzo(a)anthracene     | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Chrysene               | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Benzo(b)fluoranthene   | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Benzo(k)fluoranthene   | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Benzo(a)pyrene         | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Indeno(1,2,3-cd)pyrene | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Dibenz(a,h)anthracene  | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Benzo(ghi)perylene     | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Total EPA-16 PAHs      | mg/kg | < 1.6 | MCERTS        | < 1.6 | < 1.6 | < 1.6 | < 1.6 | < 1.6 |



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#### Soil Analysis Certificate - Speciated PAHs

|                                                                        |                 |               |               |               |  |  |
|------------------------------------------------------------------------|-----------------|---------------|---------------|---------------|--|--|
| DETS Report No: 24-00857                                               | Date Sampled    | 26/01/24      | 26/01/24      | 26/01/24      |  |  |
| Ashdown Site Investigations Ltd                                        | Time Sampled    | None Supplied | None Supplied | None Supplied |  |  |
| Site Reference: Kivesborough, Littlehampton Road, Ferring, West Sussex | TP / BH No      | WS06          | WS07          | WS08          |  |  |
| Project / Job Ref: P16455_2010                                         | Additional Refs | None Supplied | None Supplied | None Supplied |  |  |
| Order No: 11489                                                        | Depth (m)       | 0.15          | 0.20          | 0.15          |  |  |
| Reporting Date: 05/02/2024                                             | DETS Sample No  | 696387        | 696388        | 696389        |  |  |

| Determinand            | Unit  | RL    | Accreditation |       |       |       |  |
|------------------------|-------|-------|---------------|-------|-------|-------|--|
| Naphthalene            | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 |  |
| Acenaphthylene         | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 |  |
| Acenaphthene           | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 |  |
| Fluorene               | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 |  |
| Phenanthrene           | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 |  |
| Anthracene             | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 |  |
| Fluoranthene           | mg/kg | < 0.1 | MCERTS        | 0.16  | 0.33  | < 0.1 |  |
| Pyrene                 | mg/kg | < 0.1 | MCERTS        | 0.13  | 0.32  | < 0.1 |  |
| Benzo(a)anthracene     | mg/kg | < 0.1 | MCERTS        | < 0.1 | 0.19  | < 0.1 |  |
| Chrysene               | mg/kg | < 0.1 | MCERTS        | < 0.1 | 0.22  | < 0.1 |  |
| Benzo(b)fluoranthene   | mg/kg | < 0.1 | MCERTS        | < 0.1 | 0.25  | < 0.1 |  |
| Benzo(k)fluoranthene   | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 |  |
| Benzo(a)pyrene         | mg/kg | < 0.1 | MCERTS        | < 0.1 | 0.21  | < 0.1 |  |
| Indeno(1,2,3-cd)pyrene | mg/kg | < 0.1 | MCERTS        | < 0.1 | 0.16  | < 0.1 |  |
| Dibenz(a,h)anthracene  | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 |  |
| Benzo(ghi)perylene     | mg/kg | < 0.1 | MCERTS        | < 0.1 | 0.14  | < 0.1 |  |
| Total EPA-16 PAHs      | mg/kg | < 1.6 | MCERTS        | < 1.6 | 1.8   | < 1.6 |  |



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# Soil Analysis Certificate - EPH Banded (Type F)

|                                                                        |                 |               |               |               |               |               |
|------------------------------------------------------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|
| DETS Report No: 24-00857                                               | Date Sampled    | 26/01/24      | 26/01/24      | 26/01/24      | 26/01/24      | 26/01/24      |
| Ashdown Site Investigations Ltd                                        | Time Sampled    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: Kivesborough, Littlehampton Road, Ferring, West Sussex | TP / BH No      | WS01          | WS02          | WS03          | WS04          | WS05          |
| Project / Job Ref: P16455_2010                                         | Additional Refs | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Order No: 11489                                                        | Depth (m)       | 0.35          | 0.15          | 0.50          | 0.40          | 0.10          |
| Reporting Date: 05/02/2024                                             | DETS Sample No  | 696382        | 696383        | 696384        | 696385        | 696386        |

| Determinand                       | Unit  | RL  | Accreditation |     |     |     |     |     |
|-----------------------------------|-------|-----|---------------|-----|-----|-----|-----|-----|
| EPH (>C8 - C10) :<br>EH 1D Total  | mg/kg | < 1 | MCERTS        | < 1 | < 1 | < 1 | < 1 | < 1 |
| EPH (>C10 - C12) :<br>EH 1D Total | mg/kg | < 1 | MCERTS        | < 1 | < 1 | < 1 | < 1 | < 1 |
| EPH (>C12 - C16) :<br>EH 1D Total | mg/kg | < 1 | MCERTS        | < 1 | < 1 | < 1 | < 1 | < 1 |
| EPH (>C16 - C21) :<br>EH 1D Total | mg/kg | < 1 | MCERTS        | < 1 | < 1 | < 1 | < 1 | < 1 |
| EPH (>C21 - C40) :<br>EH 1D Total | mg/kg | < 6 | MCERTS        | 10  | 10  | < 6 | < 6 | < 6 |
| EPH (C8 - C40) :<br>EH 1D Total   | mg/kg | < 6 | MCERTS        | 10  | 10  | < 6 | < 6 | < 6 |



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# Soil Analysis Certificate - EPH Banded (Type F)

|                                                                        |                 |               |               |               |  |  |
|------------------------------------------------------------------------|-----------------|---------------|---------------|---------------|--|--|
| DETS Report No: 24-00857                                               | Date Sampled    | 26/01/24      | 26/01/24      | 26/01/24      |  |  |
| Ashdown Site Investigations Ltd                                        | Time Sampled    | None Supplied | None Supplied | None Supplied |  |  |
| Site Reference: Kivesborough, Littlehampton Road, Ferring, West Sussex | TP / BH No      | WS06          | WS07          | WS08          |  |  |
| Project / Job Ref: P16455_2010                                         | Additional Refs | None Supplied | None Supplied | None Supplied |  |  |
| Order No: 11489                                                        | Depth (m)       | 0.15          | 0.20          | 0.15          |  |  |
| Reporting Date: 05/02/2024                                             | DETS Sample No  | 696387        | 696388        | 696389        |  |  |

| Determinand                       | Unit  | RL  | Accreditation |     |     |     |  |  |
|-----------------------------------|-------|-----|---------------|-----|-----|-----|--|--|
| EPH (>C8 - C10) :<br>EH 1D Total  | mg/kg | < 1 | MCERTS        | < 1 | < 1 | < 1 |  |  |
| EPH (>C10 - C12) :<br>EH 1D Total | mg/kg | < 1 | MCERTS        | < 1 | < 1 | < 1 |  |  |
| EPH (>C12 - C16) :<br>EH 1D Total | mg/kg | < 1 | MCERTS        | < 1 | < 1 | < 1 |  |  |
| EPH (>C16 - C21) :<br>EH 1D Total | mg/kg | < 1 | MCERTS        | < 1 | 2   | < 1 |  |  |
| EPH (>C21 - C40) :<br>EH 1D Total | mg/kg | < 6 | MCERTS        | < 6 | 26  | 41  |  |  |
| EPH (C8 - C40) :<br>EH 1D Total   | mg/kg | < 6 | MCERTS        | < 6 | 28  | 41  |  |  |



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#### Soil Analysis Certificate - Sample Descriptions

|                                                                        |
|------------------------------------------------------------------------|
| DETS Report No: 24-00857                                               |
| Ashdown Site Investigations Ltd                                        |
| Site Reference: Kivesborough, Littlehampton Road, Ferring, West Sussex |
| Project / Job Ref: P16455_2010                                         |
| Order No: 11489                                                        |
| Reporting Date: 05/02/2024                                             |

|  |
|--|
|  |
|--|

| DETS Sample No | TP / BH No | Additional Refs | Depth (m) | Moisture Content (%) | Sample Matrix Description                   |
|----------------|------------|-----------------|-----------|----------------------|---------------------------------------------|
| 696382         | WS01       | None Supplied   | 0.35      | 18.2                 | Brown sandy clay with stones                |
| 696383         | WS02       | None Supplied   | 0.15      | 16.8                 | Brown sandy clay with stones and vegetation |
| 696384         | WS03       | None Supplied   | 0.50      | 15.4                 | Brown sandy clay                            |
| 696385         | WS04       | None Supplied   | 0.40      | 14.6                 | Brown sandy clay                            |
| 696386         | WS05       | None Supplied   | 0.10      | 22.4                 | Brown sandy clay with stones                |
| 696387         | WS06       | None Supplied   | 0.15      | 17.8                 | Brown sandy clay with stones                |
| 696388         | WS07       | None Supplied   | 0.20      | 19.1                 | Brown sandy clay with stones and vegetation |
| 696389         | WS08       | None Supplied   | 0.15      | 22.8                 | Brown sandy clay with stones and vegetation |

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample <sup>1/5</sup>

Unsuitable Sample <sup>u/s</sup>



DETS Ltd  
Unit 1, Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath



#### Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 24-00857

Ashdown Site Investigations Ltd

Site Reference: Kivesborough, Littlehampton Road, Ferring, West Sussex

Project / Job Ref: P16455\_2010

Order No: 11489

Reporting Date: 05/02/2024

| Matrix | Analysed On | Determinand                                                                                                                                     | Brief Method Description                                                                                                                             | Method No |
|--------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Soil   | D           | Boron - Water Soluble                                                                                                                           | Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES                                                            | E012      |
| Soil   | AR          | BTEX                                                                                                                                            | Determination of BTEX by headspace GC-MS                                                                                                             | E001      |
| Soil   | D           | Cations                                                                                                                                         | Determination of cations in soil by aqua-regia digestion followed by ICP-OES                                                                         | E002      |
| Soil   | D           | Chloride - Water Soluble (2:1)                                                                                                                  | Determination of chloride by extraction with water & analysed by ion chromatography                                                                  | E009      |
| Soil   | AR          | Chromium - Hexavalent                                                                                                                           | Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry | E016      |
| Soil   | AR          | Cyanide - Complex                                                                                                                               | Determination of complex cyanide by distillation followed by colorimetry                                                                             | E015      |
| Soil   | AR          | Cyanide - Free                                                                                                                                  | Determination of free cyanide by distillation followed by colorimetry                                                                                | E015      |
| Soil   | AR          | Cyanide - Total                                                                                                                                 | Determination of total cyanide by distillation followed by colorimetry                                                                               | E015      |
| Soil   | D           | Cyclohexane Extractable Matter (CEM)                                                                                                            | Gravimetrically determined through extraction with cyclohexane                                                                                       | E011      |
| Soil   | AR          | Diesel Range Organics (C10 - C24)                                                                                                               | Determination of hexane/acetone extractable hydrocarbons by GC-FID                                                                                   | E004      |
| Soil   | AR          | Electrical Conductivity                                                                                                                         | Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement                             | E022      |
| Soil   | AR          | Electrical Conductivity                                                                                                                         | Determination of electrical conductivity by addition of water followed by electrometric measurement                                                  | E023      |
| Soil   | D           | Elemental Sulphur                                                                                                                               | Determination of elemental sulphur by solvent extraction followed by GC-MS                                                                           | E020      |
| Soil   | AR          | EPH (C10 - C40)                                                                                                                                 | Determination of acetone/hexane extractable hydrocarbons by GC-FID                                                                                   | E004      |
| Soil   | AR          | EPH Product ID                                                                                                                                  | Determination of acetone/hexane extractable hydrocarbons by GC-FID                                                                                   | E004      |
| Soil   | AR          | EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)                                                                                   | Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS                                        | E004      |
| Soil   | D           | Fluoride - Water Soluble                                                                                                                        | Determination of Fluoride by extraction with water & analysed by ion chromatography                                                                  | E009      |
| Soil   | D           | Fraction Organic Carbon (FOC)                                                                                                                   | Determination of TOC by combustion analyser.                                                                                                         | E027      |
| Soil   | D           | Organic Matter (SOM)                                                                                                                            | Determination of TOC by combustion analyser.                                                                                                         | E027      |
| Soil   | D           | TOC (Total Organic Carbon)                                                                                                                      | Determination of TOC by combustion analyser.                                                                                                         | E027      |
| Soil   | AR          | Exchangeable Ammonium                                                                                                                           | Determination of ammonium by discrete analyser.                                                                                                      | E029      |
| Soil   | D           | FOC (Fraction Organic Carbon)                                                                                                                   | Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate                     | E010      |
| Soil   | D           | Loss on Ignition @ 450oC                                                                                                                        | Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace                                       | E019      |
| Soil   | D           | Magnesium - Water Soluble                                                                                                                       | Determination of water soluble magnesium by extraction with water followed by ICP-OES                                                                | E025      |
| Soil   | D           | Metals                                                                                                                                          | Determination of metals by aqua-regia digestion followed by ICP-OES                                                                                  | E002      |
| Soil   | AR          | Mineral Oil (C10 - C40)                                                                                                                         | Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge                                                  | E004      |
| Soil   | AR          | Moisture Content                                                                                                                                | Moisture content; determined gravimetrically                                                                                                         | E003      |
| Soil   | D           | Nitrate - Water Soluble (2:1)                                                                                                                   | Determination of nitrate by extraction with water & analysed by ion chromatography                                                                   | E009      |
| Soil   | D           | Organic Matter                                                                                                                                  | Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate                                 | E010      |
| Soil   | AR          | PAH - Speciated (EPA 16)                                                                                                                        | Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards                | E005      |
| Soil   | AR          | PCB - 7 Congeners                                                                                                                               | Determination of PCB by extraction with acetone and hexane followed by GC-MS                                                                         | E008      |
| Soil   | D           | Petroleum Ether Extract (PEE)                                                                                                                   | Gravimetrically determined through extraction with petroleum ether                                                                                   | E011      |
| Soil   | AR          | pH                                                                                                                                              | Determination of pH by addition of water followed by electrometric measurement                                                                       | E007      |
| Soil   | AR          | Phenols - Total (monohydric)                                                                                                                    | Determination of phenols by distillation followed by colorimetry                                                                                     | E021      |
| Soil   | D           | Phosphate - Water Soluble (2:1)                                                                                                                 | Determination of phosphate by extraction with water & analysed by ion chromatography                                                                 | E009      |
| Soil   | D           | Sulphate (as SO4) - Total                                                                                                                       | Determination of total sulphate by extraction with 10% HCl followed by ICP-OES                                                                       | E013      |
| Soil   | D           | Sulphate (as SO4) - Water Soluble (2:1)                                                                                                         | Determination of sulphate by extraction with water & analysed by ion chromatography                                                                  | E009      |
| Soil   | D           | Sulphate (as SO4) - Water Soluble (2:1)                                                                                                         | Determination of water soluble sulphate by extraction with water followed by ICP-OES                                                                 | E014      |
| Soil   | AR          | Sulphide                                                                                                                                        | Determination of sulphide by distillation followed by colorimetry                                                                                    | E018      |
| Soil   | D           | Sulphur - Total                                                                                                                                 | Determination of total sulphur by extraction with aqua-regia followed by ICP-OES                                                                     | E024      |
| Soil   | AR          | SVOC                                                                                                                                            | Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS                                               | E006      |
| Soil   | AR          | Thiocyanate (as SCN)                                                                                                                            | Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry  | E017      |
| Soil   | D           | Toluene Extractable Matter (TEM)                                                                                                                | Gravimetrically determined through extraction with toluene                                                                                           | E011      |
| Soil   | D           | Total Organic Carbon (TOC)                                                                                                                      | Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate                                 | E010      |
| Soil   | AR          | TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)         | Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS       | E004      |
| Soil   | AR          | TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44) | Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS       | E004      |
| Soil   | AR          | VOCs                                                                                                                                            | Determination of volatile organic compounds by headspace GC-MS                                                                                       | E001      |
| Soil   | AR          | VPH (C6-C8 & C8-C10)                                                                                                                            | Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID                                                                            | E001      |

D Dried  
AR As Received



DETS Ltd  
Unit 1, Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath



| List of HWOL Acronyms and Operators                                    |  |
|------------------------------------------------------------------------|--|
| DETS Report No: 24-00857                                               |  |
| Ashdown Site Investigations Ltd                                        |  |
| Site Reference: Kivesborough, Littlehampton Road, Ferring, West Sussex |  |
| Project / Job Ref: P16455_2010                                         |  |
| Order No: 11489                                                        |  |
| Reporting Date: 05/02/2024                                             |  |

| Acronym | Description                                                         |
|---------|---------------------------------------------------------------------|
| HS      | Headspace analysis                                                  |
| EH      | Extractable Hydrocarbons - i.e. everything extracted by the solvent |
| CU      | Clean-up - e.g. by florisil, silica gel                             |
| 1D      | GC - Single coil gas chromatography                                 |
| 2D      | GC-GC - Double coil gas chromatography                              |
| Total   | Aliphatics & Aromatics                                              |
| AL      | Aliphatics only                                                     |
| AR      | Aromatics only                                                      |
| #1      | EH_2D_Total but with humics mathematically subtracted               |
| #2      | EH_2D_Total but with fatty acids mathematically subtracted          |
|         | Operator - underscore to separate acronyms (exception for +)        |
| +       | Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total   |

|                                      |
|--------------------------------------|
| Det - Acronym                        |
| EPH Banded (C10 - C12) - EH_1D_Total |
| EPH Banded (C12 - C16) - EH_1D_Total |
| EPH Banded (C16 - C21) - EH_1D_Total |
| EPH Banded (C21 - C40) - EH_1D_Total |
| EPH Banded (C8 - C10) - EH_1D_Total  |
| EPH Banded (C8 - C40) - EH_1D_Total  |

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## **APPENDIX F**

### Quantitative Conceptual Model

| Kivesborough, Littlehampton Road, Ferring, West Sussex |                                       |              |                                                      | Quantitative Conceptual Model                                        |             | P16455      |      |
|--------------------------------------------------------|---------------------------------------|--------------|------------------------------------------------------|----------------------------------------------------------------------|-------------|-------------|------|
| Source                                                 | Receptor                              | Contaminants | Pathway                                              | Complete Linkage Present?                                            | Probability | Consequence | Risk |
| None Identified                                        | End Users                             |              | Dermal contact with soil and dust (indoor & outdoor) | No contaminants present above SSVs                                   |             |             | N/A  |
|                                                        |                                       |              | Ingestion of soil and indoor dust                    | No contaminants present above SSVs                                   |             |             | N/A  |
|                                                        |                                       |              | Consumption of home-grown produce and attached soil  | No contaminants present above SSVs                                   |             |             | N/A  |
|                                                        |                                       |              | Inhalation of soil dust (indoor and outdoor)         | No contaminants present above SSVs                                   |             |             | N/A  |
|                                                        |                                       |              | Inhalation of soil vapours                           | No contaminants present above SSVs                                   |             |             | N/A  |
|                                                        |                                       |              | Inhalation of soil gases/<br>Risk of explosion       | No potential gas source identified                                   |             |             | N/A  |
|                                                        | End Users (via Water Supply Pipework) |              | Contamination of incoming services                   | No contaminants present above screening criteria                     |             |             | N/A  |
|                                                        | Groundwater                           |              | Migration to groundwater                             | No contaminants present at concentrations posing risk to groundwater |             |             | N/A  |

## **APPENDIX G**

Groundsure Enviro+Geo Insight Report  
Historical Maps

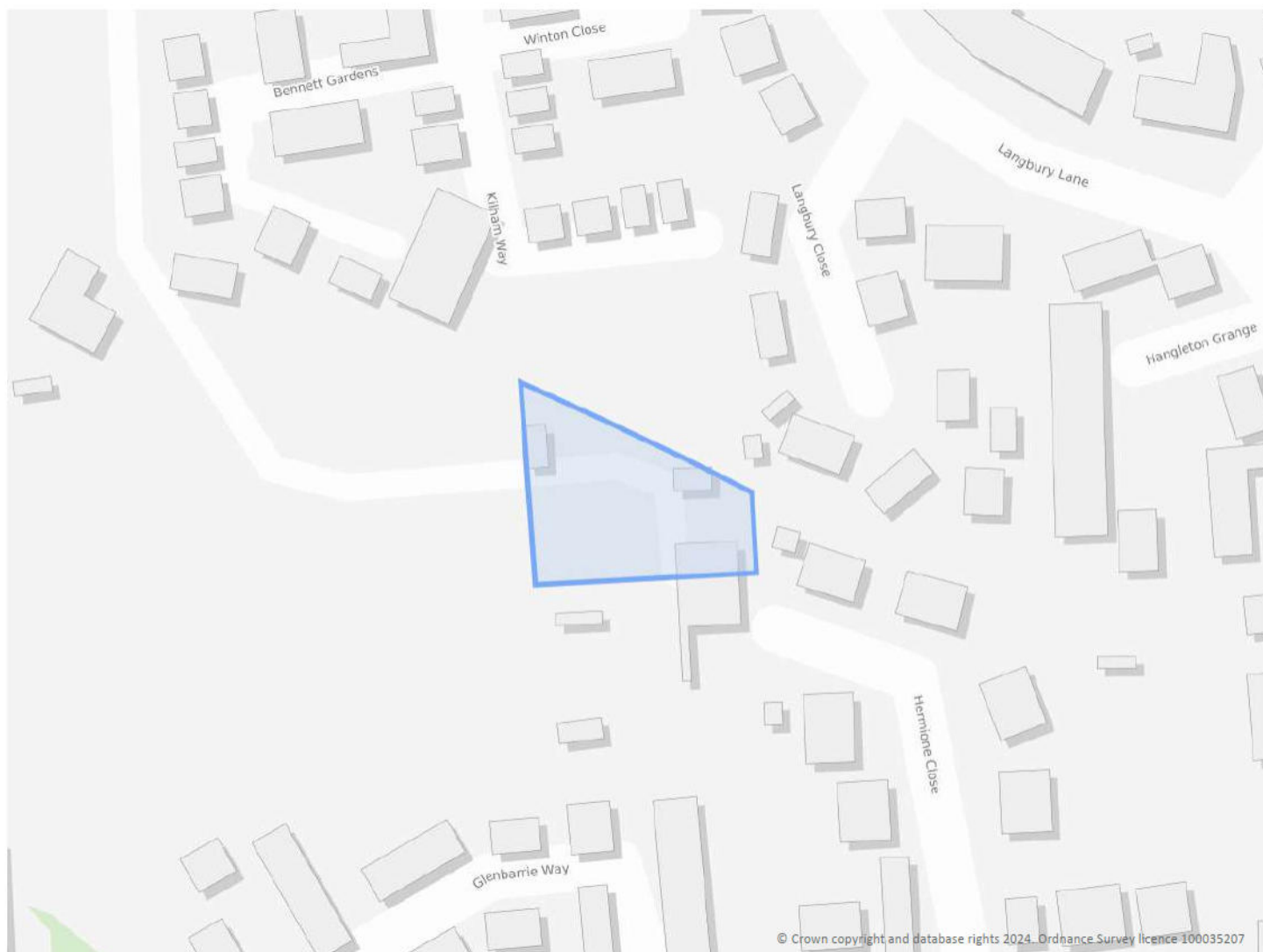
KINGSBORO, LITTLEHAMPTON ROAD, FERRING,

## Order Details

Date: 25/01/2024  
Your ref: P16455  
Our Ref: GS-E2X-TZX-Y7A-PZG

## Site Details

Location: 508926 103237  
Area: 0.19 ha  
Authority: [Arun District Council](#) ↗



[Summary of findings](#)

[p. 2 >](#)

[Aerial image](#)

[p. 9 >](#)

[OS MasterMap site plan](#)

[p.14 >](#)

[groundsure.com/insightuserguide](https://groundsure.com/insightuserguide) ↗



## Summary of findings

| Page                    | Section                  | <a href="#">Past land use &gt;</a>                     | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
|-------------------------|--------------------------|--------------------------------------------------------|---------|-------|---------|----------|-----------|
| <a href="#">15 &gt;</a> | <a href="#">1.1 &gt;</a> | <a href="#">Historical industrial land uses &gt;</a>   | 4       | 0     | 7       | 4        | -         |
| <a href="#">16 &gt;</a> | <a href="#">1.2 &gt;</a> | <a href="#">Historical tanks &gt;</a>                  | 0       | 0     | 3       | 11       | -         |
| <a href="#">17 &gt;</a> | <a href="#">1.3 &gt;</a> | <a href="#">Historical energy features &gt;</a>        | 0       | 0     | 2       | 4        | -         |
| 18                      | 1.4                      | Historical petrol stations                             | 0       | 0     | 0       | 0        | -         |
| 18                      | 1.5                      | Historical garages                                     | 0       | 0     | 0       | 0        | -         |
| 18                      | 1.6                      | Historical military land                               | 0       | 0     | 0       | 0        | -         |
| Page                    | Section                  | <a href="#">Past land use - un-grouped &gt;</a>        | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
| <a href="#">19 &gt;</a> | <a href="#">2.1 &gt;</a> | <a href="#">Historical industrial land uses &gt;</a>   | 5       | 0     | 8       | 6        | -         |
| <a href="#">20 &gt;</a> | <a href="#">2.2 &gt;</a> | <a href="#">Historical tanks &gt;</a>                  | 0       | 0     | 3       | 20       | -         |
| <a href="#">21 &gt;</a> | <a href="#">2.3 &gt;</a> | <a href="#">Historical energy features &gt;</a>        | 0       | 0     | 3       | 10       | -         |
| 22                      | 2.4                      | Historical petrol stations                             | 0       | 0     | 0       | 0        | -         |
| 22                      | 2.5                      | Historical garages                                     | 0       | 0     | 0       | 0        | -         |
| Page                    | Section                  | <a href="#">Waste and landfill &gt;</a>                | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
| 23                      | 3.1                      | Active or recent landfill                              | 0       | 0     | 0       | 0        | -         |
| 23                      | 3.2                      | Historical landfill (BGS records)                      | 0       | 0     | 0       | 0        | -         |
| 24                      | 3.3                      | Historical landfill (LA/mapping records)               | 0       | 0     | 0       | 0        | -         |
| 24                      | 3.4                      | Historical landfill (EA/NRW records)                   | 0       | 0     | 0       | 0        | -         |
| 24                      | 3.5                      | Historical waste sites                                 | 0       | 0     | 0       | 0        | -         |
| 24                      | 3.6                      | Licensed waste sites                                   | 0       | 0     | 0       | 0        | -         |
| <a href="#">24 &gt;</a> | <a href="#">3.7 &gt;</a> | <a href="#">Waste exemptions &gt;</a>                  | 0       | 0     | 3       | 12       | -         |
| Page                    | Section                  | <a href="#">Current industrial land use &gt;</a>       | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
| <a href="#">27 &gt;</a> | <a href="#">4.1 &gt;</a> | <a href="#">Recent industrial land uses &gt;</a>       | 0       | 0     | 5       | -        | -         |
| <a href="#">28 &gt;</a> | <a href="#">4.2 &gt;</a> | <a href="#">Current or recent petrol stations &gt;</a> | 0       | 0     | 1       | 0        | -         |
| 28                      | 4.3                      | Electricity cables                                     | 0       | 0     | 0       | 0        | -         |
| 28                      | 4.4                      | Gas pipelines                                          | 0       | 0     | 0       | 0        | -         |
| 29                      | 4.5                      | Sites determined as Contaminated Land                  | 0       | 0     | 0       | 0        | -         |

| 29             | 4.6              | Control of Major Accident Hazards (COMAH)                       | 0                        | 0     | 0       | 0        | -         |
|----------------|------------------|-----------------------------------------------------------------|--------------------------|-------|---------|----------|-----------|
| 29             | 4.7              | Regulated explosive sites                                       | 0                        | 0     | 0       | 0        | -         |
| 29             | 4.8              | Hazardous substance storage/usage                               | 0                        | 0     | 0       | 0        | -         |
| 29             | 4.9              | Historical licensed industrial activities (IPC)                 | 0                        | 0     | 0       | 0        | -         |
| 30             | 4.10             | Licensed industrial activities (Part A(1))                      | 0                        | 0     | 0       | 0        | -         |
| <b>30 &gt;</b> | <b>4.11 &gt;</b> | <b><u>Licensed pollutant release (Part A(2)/B) &gt;</u></b>     | 0                        | 0     | 1       | 3        | -         |
| 31             | 4.12             | Radioactive Substance Authorisations                            | 0                        | 0     | 0       | 0        | -         |
| <b>31 &gt;</b> | <b>4.13 &gt;</b> | <b><u>Licensed Discharges to controlled waters &gt;</u></b>     | 0                        | 0     | 11      | 17       | -         |
| 35             | 4.14             | Pollutant release to surface waters (Red List)                  | 0                        | 0     | 0       | 0        | -         |
| 35             | 4.15             | Pollutant release to public sewer                               | 0                        | 0     | 0       | 0        | -         |
| 35             | 4.16             | List 1 Dangerous Substances                                     | 0                        | 0     | 0       | 0        | -         |
| 35             | 4.17             | List 2 Dangerous Substances                                     | 0                        | 0     | 0       | 0        | -         |
| 35             | 4.18             | Pollution Incidents (EA/NRW)                                    | 0                        | 0     | 0       | 0        | -         |
| 36             | 4.19             | Pollution inventory substances                                  | 0                        | 0     | 0       | 0        | -         |
| 36             | 4.20             | Pollution inventory waste transfers                             | 0                        | 0     | 0       | 0        | -         |
| 36             | 4.21             | Pollution inventory radioactive waste                           | 0                        | 0     | 0       | 0        | -         |
| Page           | Section          | <b><u>Hydrogeology &gt;</u></b>                                 | On site                  | 0-50m | 50-250m | 250-500m | 500-2000m |
| <b>37 &gt;</b> | <b>5.1 &gt;</b>  | <b><u>Superficial aquifer &gt;</u></b>                          | Identified (within 500m) |       |         |          |           |
| <b>39 &gt;</b> | <b>5.2 &gt;</b>  | <b><u>Bedrock aquifer &gt;</u></b>                              | Identified (within 500m) |       |         |          |           |
| <b>40 &gt;</b> | <b>5.3 &gt;</b>  | <b><u>Groundwater vulnerability &gt;</u></b>                    | Identified (within 50m)  |       |         |          |           |
| <b>41 &gt;</b> | <b>5.4 &gt;</b>  | <b><u>Groundwater vulnerability- soluble rock risk &gt;</u></b> | Identified (within 0m)   |       |         |          |           |
| 41             | 5.5              | Groundwater vulnerability- local information                    | None (within 0m)         |       |         |          |           |
| <b>42 &gt;</b> | <b>5.6 &gt;</b>  | <b><u>Groundwater abstractions &gt;</u></b>                     | 0                        | 0     | 0       | 1        | 5         |
| 44             | 5.7              | Surface water abstractions                                      | 0                        | 0     | 0       | 0        | 0         |
| 44             | 5.8              | Potable abstractions                                            | 0                        | 0     | 0       | 0        | 0         |
| 44             | 5.9              | Source Protection Zones                                         | 0                        | 0     | 0       | 0        | -         |
| 45             | 5.10             | Source Protection Zones (confined aquifer)                      | 0                        | 0     | 0       | 0        | -         |
| Page           | Section          | <b><u>Hydrology &gt;</u></b>                                    | On site                  | 0-50m | 50-250m | 250-500m | 500-2000m |
| <b>46 &gt;</b> | <b>6.1 &gt;</b>  | <b><u>Water Network (OS MasterMap) &gt;</u></b>                 | 0                        | 0     | 8       | -        | -         |

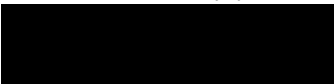
| <a href="#">47 &gt;</a> | <a href="#">6.2 &gt;</a>  | <a href="#">Surface water features &gt;</a>            | 0                                       | 0     | 4       | -        | -         |
|-------------------------|---------------------------|--------------------------------------------------------|-----------------------------------------|-------|---------|----------|-----------|
| <a href="#">47 &gt;</a> | <a href="#">6.3 &gt;</a>  | <a href="#">WFD Surface water body catchments &gt;</a> | 1                                       | -     | -       | -        | -         |
| <a href="#">48 &gt;</a> | <a href="#">6.4 &gt;</a>  | <a href="#">WFD Surface water bodies &gt;</a>          | 0                                       | 0     | 1       | -        | -         |
| <a href="#">48 &gt;</a> | <a href="#">6.5 &gt;</a>  | <a href="#">WFD Groundwater bodies &gt;</a>            | 1                                       | -     | -       | -        | -         |
| Page                    | Section                   | <a href="#">River and coastal flooding &gt;</a>        | On site                                 | 0-50m | 50-250m | 250-500m | 500-2000m |
| 49                      | 7.1                       | Risk of flooding from rivers and the sea               | None (within 50m)                       |       |         |          |           |
| <a href="#">50 &gt;</a> | <a href="#">7.2 &gt;</a>  | <a href="#">Historical Flood Events &gt;</a>           | 0                                       | 0     | 1       | -        | -         |
| 50                      | 7.3                       | Flood Defences                                         | 0                                       | 0     | 0       | -        | -         |
| 50                      | 7.4                       | Areas Benefiting from Flood Defences                   | 0                                       | 0     | 0       | -        | -         |
| 50                      | 7.5                       | Flood Storage Areas                                    | 0                                       | 0     | 0       | -        | -         |
| 51                      | 7.6                       | Flood Zone 2                                           | None (within 50m)                       |       |         |          |           |
| 51                      | 7.7                       | Flood Zone 3                                           | None (within 50m)                       |       |         |          |           |
| Page                    | Section                   | <a href="#">Surface water flooding &gt;</a>            |                                         |       |         |          |           |
| <a href="#">52 &gt;</a> | <a href="#">8.1 &gt;</a>  | <a href="#">Surface water flooding &gt;</a>            | 1 in 100 year, 0.3m - 1.0m (within 50m) |       |         |          |           |
| Page                    | Section                   | <a href="#">Groundwater flooding &gt;</a>              |                                         |       |         |          |           |
| <a href="#">54 &gt;</a> | <a href="#">9.1 &gt;</a>  | <a href="#">Groundwater flooding &gt;</a>              | Moderate-High (within 50m)              |       |         |          |           |
| Page                    | Section                   | <a href="#">Environmental designations &gt;</a>        | On site                                 | 0-50m | 50-250m | 250-500m | 500-2000m |
| 55                      | 10.1                      | Sites of Special Scientific Interest (SSSI)            | 0                                       | 0     | 0       | 0        | 0         |
| 56                      | 10.2                      | Conserved wetland sites (Ramsar sites)                 | 0                                       | 0     | 0       | 0        | 0         |
| 56                      | 10.3                      | Special Areas of Conservation (SAC)                    | 0                                       | 0     | 0       | 0        | 0         |
| 56                      | 10.4                      | Special Protection Areas (SPA)                         | 0                                       | 0     | 0       | 0        | 0         |
| 56                      | 10.5                      | National Nature Reserves (NNR)                         | 0                                       | 0     | 0       | 0        | 0         |
| 57                      | 10.6                      | Local Nature Reserves (LNR)                            | 0                                       | 0     | 0       | 0        | 0         |
| <a href="#">57 &gt;</a> | <a href="#">10.7 &gt;</a> | <a href="#">Designated Ancient Woodland &gt;</a>       | 0                                       | 0     | 0       | 0        | 8         |
| 57                      | 10.8                      | Biosphere Reserves                                     | 0                                       | 0     | 0       | 0        | 0         |
| 58                      | 10.9                      | Forest Parks                                           | 0                                       | 0     | 0       | 0        | 0         |
| 58                      | 10.10                     | Marine Conservation Zones                              | 0                                       | 0     | 0       | 0        | 0         |
| 58                      | 10.11                     | Green Belt                                             | 0                                       | 0     | 0       | 0        | 0         |
| 58                      | 10.12                     | Proposed Ramsar sites                                  | 0                                       | 0     | 0       | 0        | 0         |

| 58                   | 10.13                   | Possible Special Areas of Conservation (pSAC)      | 0                        | 0     | 0       | 0        | 0         |
|----------------------|-------------------------|----------------------------------------------------|--------------------------|-------|---------|----------|-----------|
| 59                   | 10.14                   | Potential Special Protection Areas (pSPA)          | 0                        | 0     | 0       | 0        | 0         |
| 59                   | 10.15                   | Nitrate Sensitive Areas                            | 0                        | 0     | 0       | 0        | 0         |
| <a href="#">59</a> > | <a href="#">10.16</a> > | <a href="#">Nitrate Vulnerable Zones</a> >         | 0                        | 0     | 0       | 0        | 1         |
| <a href="#">60</a> > | <a href="#">10.17</a> > | <a href="#">SSSI Impact Risk Zones</a> >           | 1                        | -     | -       | -        | -         |
| 61                   | 10.18                   | SSSI Units                                         | 0                        | 0     | 0       | 0        | 0         |
| Page                 | Section                 | <a href="#">Visual and cultural designations</a> > | On site                  | 0-50m | 50-250m | 250-500m | 500-2000m |
| 62                   | 11.1                    | World Heritage Sites                               | 0                        | 0     | 0       | -        | -         |
| 63                   | 11.2                    | Area of Outstanding Natural Beauty                 | 0                        | 0     | 0       | -        | -         |
| 63                   | 11.3                    | National Parks                                     | 0                        | 0     | 0       | -        | -         |
| <a href="#">63</a> > | <a href="#">11.4</a> >  | <a href="#">Listed Buildings</a> >                 | 0                        | 0     | 2       | -        | -         |
| 64                   | 11.5                    | Conservation Areas                                 | 0                        | 0     | 0       | -        | -         |
| 64                   | 11.6                    | Scheduled Ancient Monuments                        | 0                        | 0     | 0       | -        | -         |
| 64                   | 11.7                    | Registered Parks and Gardens                       | 0                        | 0     | 0       | -        | -         |
| Page                 | Section                 | <a href="#">Agricultural designations</a> >        | On site                  | 0-50m | 50-250m | 250-500m | 500-2000m |
| <a href="#">65</a> > | <a href="#">12.1</a> >  | <a href="#">Agricultural Land Classification</a> > | Grade 1 (within 250m)    |       |         |          |           |
| 66                   | 12.2                    | Open Access Land                                   | 0                        | 0     | 0       | -        | -         |
| 66                   | 12.3                    | Tree Felling Licences                              | 0                        | 0     | 0       | -        | -         |
| 66                   | 12.4                    | Environmental Stewardship Schemes                  | 0                        | 0     | 0       | -        | -         |
| 66                   | 12.5                    | Countryside Stewardship Schemes                    | 0                        | 0     | 0       | -        | -         |
| Page                 | Section                 | <a href="#">Habitat designations</a>               | On site                  | 0-50m | 50-250m | 250-500m | 500-2000m |
| 67                   | 13.1                    | Priority Habitat Inventory                         | 0                        | 0     | 0       | -        | -         |
| 67                   | 13.2                    | Habitat Networks                                   | 0                        | 0     | 0       | -        | -         |
| 67                   | 13.3                    | Open Mosaic Habitat                                | 0                        | 0     | 0       | -        | -         |
| 67                   | 13.4                    | Limestone Pavement Orders                          | 0                        | 0     | 0       | -        | -         |
| Page                 | Section                 | <a href="#">Geology 1:10,000 scale</a> >           | On site                  | 0-50m | 50-250m | 250-500m | 500-2000m |
| <a href="#">68</a> > | <a href="#">14.1</a> >  | <a href="#">10k Availability</a> >                 | Identified (within 500m) |       |         |          |           |
| 69                   | 14.2                    | Artificial and made ground (10k)                   | 0                        | 0     | 0       | 0        | -         |
| <a href="#">70</a> > | <a href="#">14.3</a> >  | <a href="#">Superficial geology (10k)</a> >        | 1                        | 0     | 2       | 2        | -         |

| 71                      | 14.4                      | Landslip (10k)                                           | 0                        | 0     | 0       | 0        | -         |
|-------------------------|---------------------------|----------------------------------------------------------|--------------------------|-------|---------|----------|-----------|
| <a href="#">72 &gt;</a> | <a href="#">14.5 &gt;</a> | <a href="#">Bedrock geology (10k) &gt;</a>               | 1                        | 1     | 0       | 0        | -         |
| 73                      | 14.6                      | Bedrock faults and other linear features (10k)           | 0                        | 0     | 0       | 0        | -         |
| Page                    | Section                   | <a href="#">Geology 1:50,000 scale &gt;</a>              | On site                  | 0-50m | 50-250m | 250-500m | 500-2000m |
| <a href="#">74 &gt;</a> | <a href="#">15.1 &gt;</a> | <a href="#">50k Availability &gt;</a>                    | Identified (within 500m) |       |         |          |           |
| 75                      | 15.2                      | Artificial and made ground (50k)                         | 0                        | 0     | 0       | 0        | -         |
| 75                      | 15.3                      | Artificial ground permeability (50k)                     | 0                        | 0     | -       | -        | -         |
| <a href="#">76 &gt;</a> | <a href="#">15.4 &gt;</a> | <a href="#">Superficial geology (50k) &gt;</a>           | 1                        | 1     | 2       | 4        | -         |
| <a href="#">77 &gt;</a> | <a href="#">15.5 &gt;</a> | <a href="#">Superficial permeability (50k) &gt;</a>      | Identified (within 50m)  |       |         |          |           |
| 77                      | 15.6                      | Landslip (50k)                                           | 0                        | 0     | 0       | 0        | -         |
| 77                      | 15.7                      | Landslip permeability (50k)                              | None (within 50m)        |       |         |          |           |
| <a href="#">78 &gt;</a> | <a href="#">15.8 &gt;</a> | <a href="#">Bedrock geology (50k) &gt;</a>               | 1                        | 2     | 0       | 0        | -         |
| <a href="#">79 &gt;</a> | <a href="#">15.9 &gt;</a> | <a href="#">Bedrock permeability (50k) &gt;</a>          | Identified (within 50m)  |       |         |          |           |
| 79                      | 15.10                     | Bedrock faults and other linear features (50k)           | 0                        | 0     | 0       | 0        | -         |
| Page                    | Section                   | <a href="#">Boreholes &gt;</a>                           | On site                  | 0-50m | 50-250m | 250-500m | 500-2000m |
| <a href="#">80 &gt;</a> | <a href="#">16.1 &gt;</a> | <a href="#">BGS Boreholes &gt;</a>                       | 0                        | 1     | 0       | -        | -         |
| Page                    | Section                   | <a href="#">Natural ground subsidence &gt;</a>           |                          |       |         |          |           |
| <a href="#">81 &gt;</a> | <a href="#">17.1 &gt;</a> | <a href="#">Shrink swell clays &gt;</a>                  | Low (within 50m)         |       |         |          |           |
| <a href="#">82 &gt;</a> | <a href="#">17.2 &gt;</a> | <a href="#">Running sands &gt;</a>                       | Low (within 50m)         |       |         |          |           |
| <a href="#">83 &gt;</a> | <a href="#">17.3 &gt;</a> | <a href="#">Compressible deposits &gt;</a>               | Negligible (within 50m)  |       |         |          |           |
| <a href="#">84 &gt;</a> | <a href="#">17.4 &gt;</a> | <a href="#">Collapsible deposits &gt;</a>                | Low (within 50m)         |       |         |          |           |
| <a href="#">85 &gt;</a> | <a href="#">17.5 &gt;</a> | <a href="#">Landslides &gt;</a>                          | Very low (within 50m)    |       |         |          |           |
| <a href="#">86 &gt;</a> | <a href="#">17.6 &gt;</a> | <a href="#">Ground dissolution of soluble rocks &gt;</a> | Very low (within 50m)    |       |         |          |           |
| Page                    | Section                   | <a href="#">Mining and ground workings &gt;</a>          | On site                  | 0-50m | 50-250m | 250-500m | 500-2000m |
| 88                      | 18.1                      | BritPits                                                 | 0                        | 0     | 0       | 0        | -         |
| <a href="#">89 &gt;</a> | <a href="#">18.2 &gt;</a> | <a href="#">Surface ground workings &gt;</a>             | 0                        | 0     | 5       | -        | -         |
| 89                      | 18.3                      | Underground workings                                     | 0                        | 0     | 0       | 0        | 0         |
| 89                      | 18.4                      | Underground mining extents                               | 0                        | 0     | 0       | 0        | -         |
| 89                      | 18.5                      | Historical Mineral Planning Areas                        | 0                        | 0     | 0       | 0        | -         |

| <a href="#">90</a> > | <a href="#">18.6</a> > | <a href="#">Non-coal mining</a> >                         | 0                             | 0     | 0       | 1        | 1         |
|----------------------|------------------------|-----------------------------------------------------------|-------------------------------|-------|---------|----------|-----------|
| 90                   | 18.7                   | JPB mining areas                                          | None (within 0m)              |       |         |          |           |
| 90                   | 18.8                   | The Coal Authority non-coal mining                        | 0                             | 0     | 0       | 0        | -         |
| 91                   | 18.9                   | Researched mining                                         | 0                             | 0     | 0       | 0        | -         |
| 91                   | 18.10                  | Mining record office plans                                | 0                             | 0     | 0       | 0        | -         |
| 91                   | 18.11                  | BGS mine plans                                            | 0                             | 0     | 0       | 0        | -         |
| 91                   | 18.12                  | Coal mining                                               | None (within 0m)              |       |         |          |           |
| 91                   | 18.13                  | Brine areas                                               | None (within 0m)              |       |         |          |           |
| 92                   | 18.14                  | Gypsum areas                                              | None (within 0m)              |       |         |          |           |
| 92                   | 18.15                  | Tin mining                                                | None (within 0m)              |       |         |          |           |
| 92                   | 18.16                  | Clay mining                                               | None (within 0m)              |       |         |          |           |
| Page                 | Section                | Ground cavities and sinkholes                             | On site                       | 0-50m | 50-250m | 250-500m | 500-2000m |
| 93                   | 19.1                   | Natural cavities                                          | 0                             | 0     | 0       | 0        | -         |
| 93                   | 19.2                   | Mining cavities                                           | 0                             | 0     | 0       | 0        | 0         |
| 93                   | 19.3                   | Reported recent incidents                                 | 0                             | 0     | 0       | 0        | -         |
| 93                   | 19.4                   | Historical incidents                                      | 0                             | 0     | 0       | 0        | -         |
| 94                   | 19.5                   | National karst database                                   | 0                             | 0     | 0       | 0        | -         |
| Page                 | Section                | <a href="#">Radon</a> >                                   |                               |       |         |          |           |
| <a href="#">95</a> > | <a href="#">20.1</a> > | <a href="#">Radon</a> >                                   | Between 1% and 3% (within 0m) |       |         |          |           |
| Page                 | Section                | <a href="#">Soil chemistry</a> >                          | On site                       | 0-50m | 50-250m | 250-500m | 500-2000m |
| <a href="#">97</a> > | <a href="#">21.1</a> > | <a href="#">BGS Estimated Background Soil Chemistry</a> > | 1                             | 6     | -       | -        | -         |
| 97                   | 21.2                   | BGS Estimated Urban Soil Chemistry                        | 0                             | 0     | -       | -        | -         |
| 98                   | 21.3                   | BGS Measured Urban Soil Chemistry                         | 0                             | 0     | -       | -        | -         |
| Page                 | Section                | <a href="#">Railway infrastructure and projects</a> >     | On site                       | 0-50m | 50-250m | 250-500m | 500-2000m |
| 99                   | 22.1                   | Underground railways (London)                             | 0                             | 0     | 0       | -        | -         |
| 99                   | 22.2                   | Underground railways (Non-London)                         | 0                             | 0     | 0       | -        | -         |
| 100                  | 22.3                   | Railway tunnels                                           | 0                             | 0     | 0       | -        | -         |
| 100                  | 22.4                   | Historical railway and tunnel features                    | 0                             | 0     | 0       | -        | -         |
| 100                  | 22.5                   | Royal Mail tunnels                                        | 0                             | 0     | 0       | -        | -         |

|                       |                        |                            |   |   |   |   |   |
|-----------------------|------------------------|----------------------------|---|---|---|---|---|
| 100                   | 22.6                   | Historical railways        | 0 | 0 | 0 | - | - |
| <a href="#">100</a> > | <a href="#">22.7</a> > | <a href="#">Railways</a> > | 0 | 0 | 4 | - | - |
| 101                   | 22.8                   | Crossrail 1                | 0 | 0 | 0 | 0 | - |
| 101                   | 22.9                   | Crossrail 2                | 0 | 0 | 0 | 0 | - |
| 101                   | 22.10                  | HS2                        | 0 | 0 | 0 | 0 | - |



## Recent aerial photograph



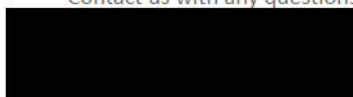
Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2024. All Rights Reserved.

Capture Date: 20/04/2021

Site Area: 0.19ha

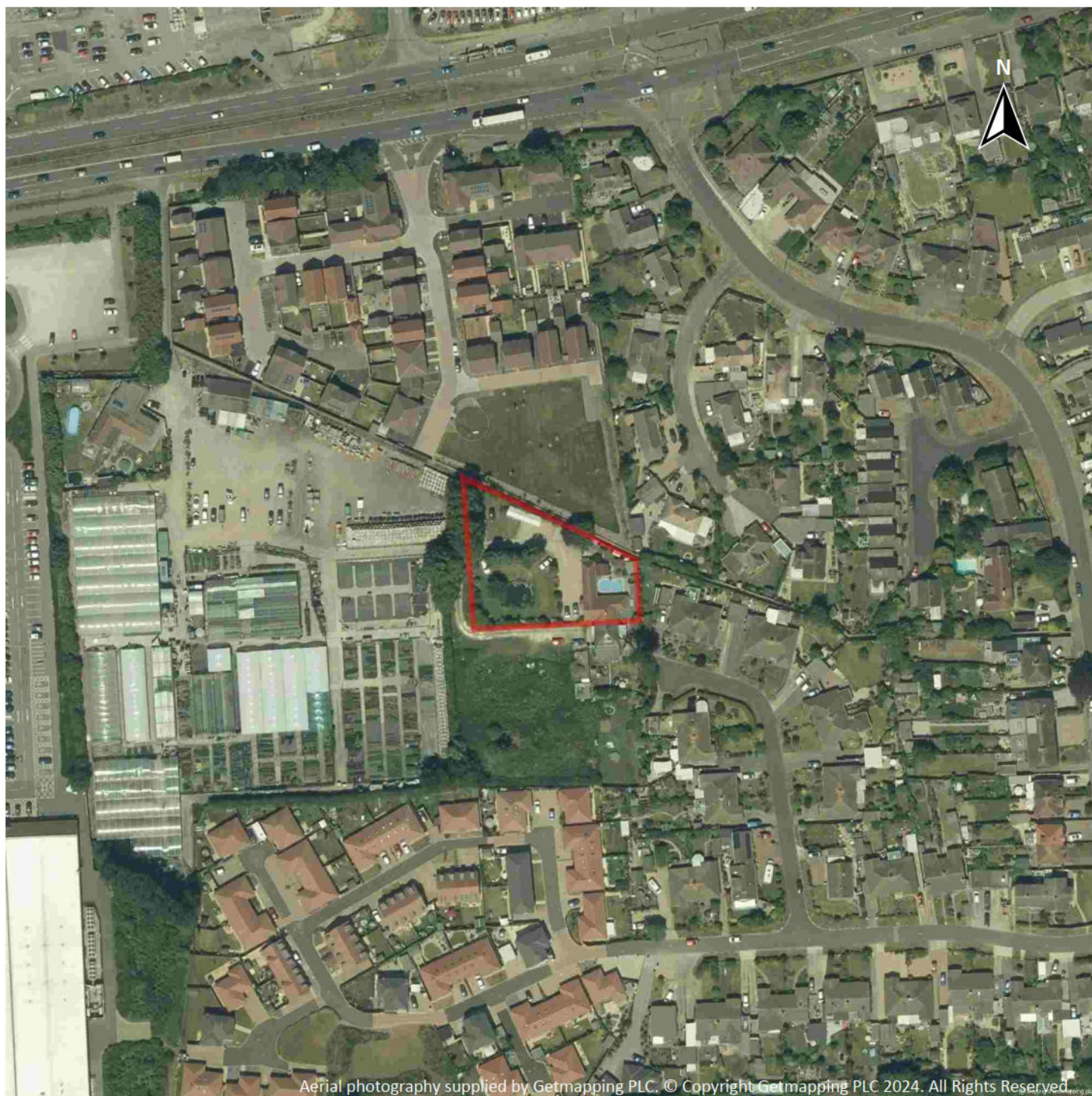


Contact us with any questions at:



Date: 25 January 2024

## Recent site history - 2018 aerial photograph



Capture Date: 28/06/2018

Site Area: 0.19ha



## Recent site history - 2012 aerial photograph

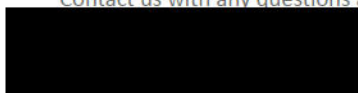


Capture Date: 13/09/2012

Site Area: 0.19ha

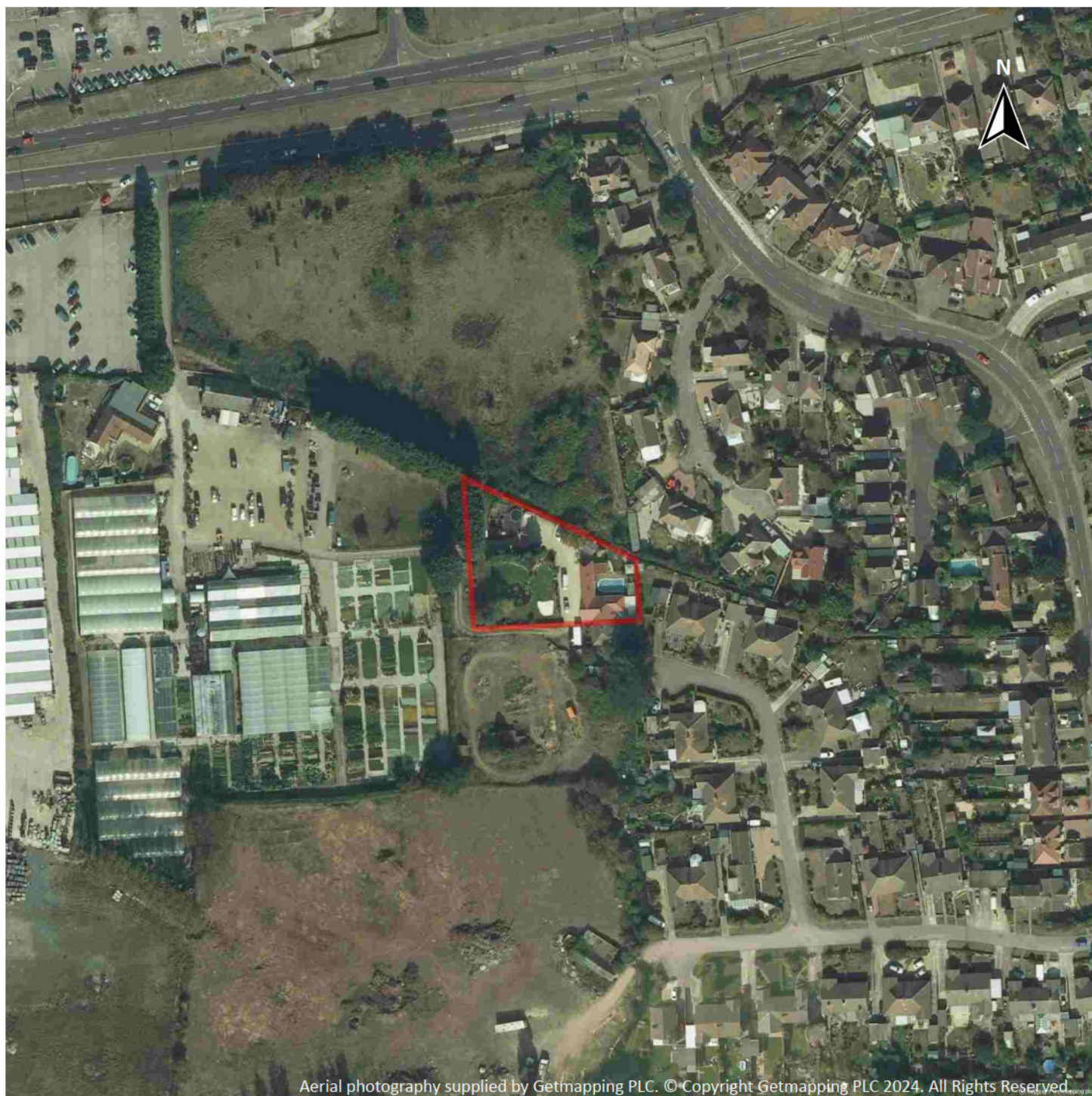


Contact us with any questions at:



Date: 25 January 2024

## Recent site history - 2010 aerial photograph

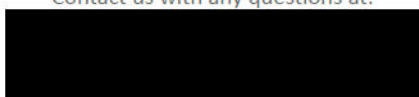


Capture Date: 24/04/2010

Site Area: 0.19ha



Contact us with any questions at:



Date: 25 January 2024

## Recent site history - 1999 aerial photograph



Capture Date: 29/08/1999

Site Area: 0.19ha

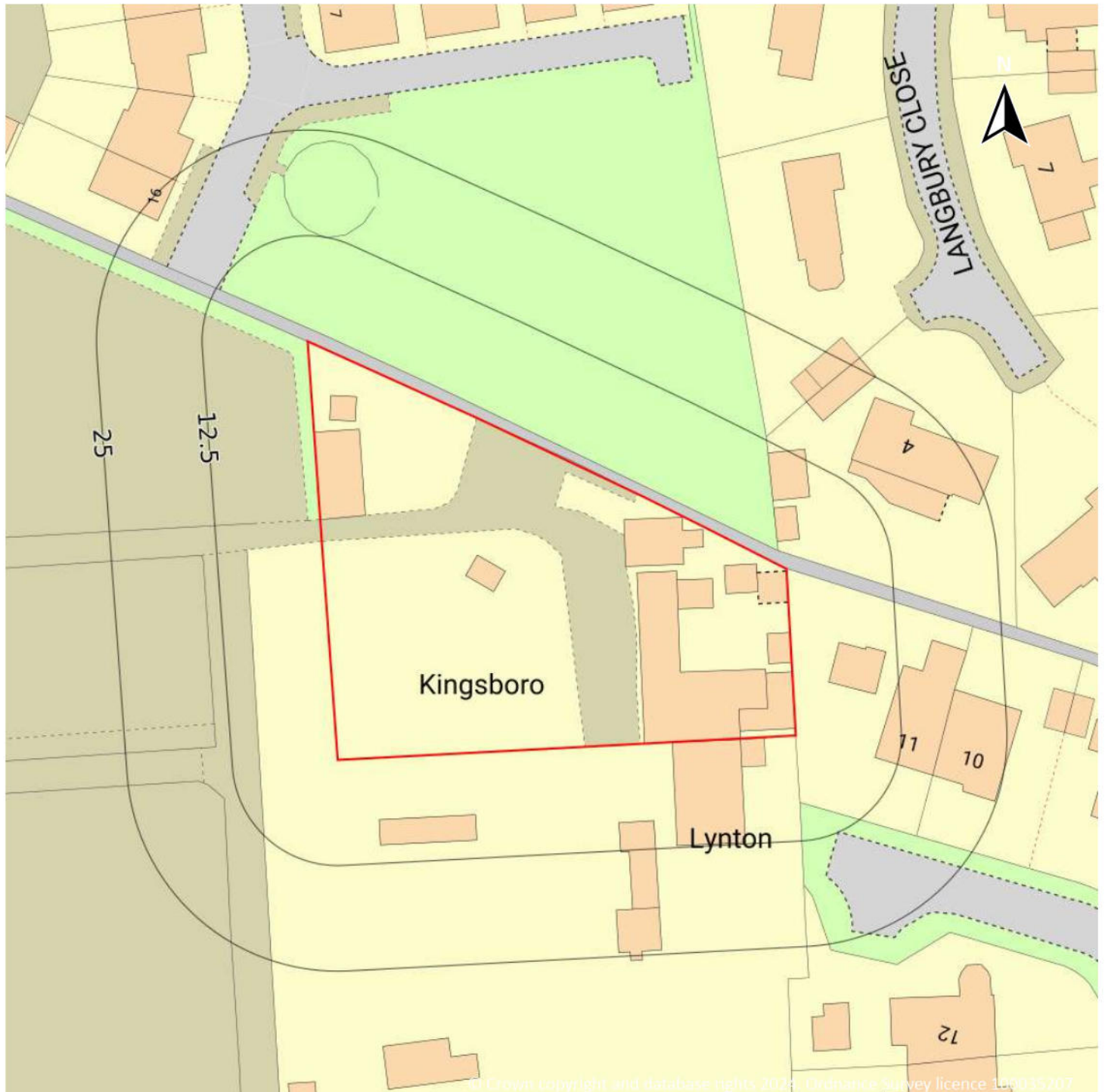


Contact us with any questions at:



Date: 25 January 2024

## OS MasterMap site plan

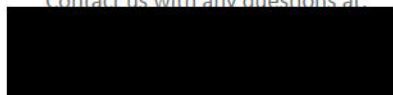


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Site Area: 0.19ha



Contact us with any questions at:



Date: 25 January 2024



| ID | Location | Land use                          | Dates present | Group ID |
|----|----------|-----------------------------------|---------------|----------|
| 2  | On site  | Nursery                           | 1957          | 2225963  |
| 3  | On site  | Nursery                           | 1943 - 1957   | 2274456  |
| 4  | On site  | Nursery                           | 1943          | 2290146  |
| 5  | 107m N   | Unspecified Commercial/Industrial | 1957          | 2130601  |
| 6  | 121m E   | Unspecified Tank                  | 1876          | 2153149  |
| A  | 147m N   | Nursery                           | 1957 - 1974   | 2211832  |
| 7  | 163m S   | Cuttings                          | 1957          | 2129134  |
| 9  | 223m NW  | Unspecified Works                 | 1974          | 2159235  |
| 10 | 227m N   | Nurseries                         | 1974          | 2168165  |
| 11 | 229m N   | Nursery                           | 1943          | 2227920  |
| C  | 250m NW  | Unspecified Tank                  | 1932 - 1943   | 2247567  |
| C  | 253m NW  | Unspecified Tank                  | 1957          | 2260474  |
| D  | 288m SE  | Pumping Station                   | 1943          | 2151648  |
| 14 | 330m N   | Nursery                           | 1974          | 2259690  |

*This data is sourced from Ordnance Survey / Groundsure.*

## 1.2 Historical tanks

### Records within 500m

**14**

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)

| ID | Location | Land use         | Dates present | Group ID |
|----|----------|------------------|---------------|----------|
| 8  | 169m W   | Unspecified Tank | 1971          | 359151   |
| 12 | 230m W   | Tanks            | 1983          | 374891   |
| C  | 249m N   | Unspecified Tank | 1971          | 359155   |
| C  | 253m NW  | Unspecified Tank | 1932 - 1942   | 388288   |



| ID | Location | Land use         | Dates present | Group ID |
|----|----------|------------------|---------------|----------|
| A  | 281m N   | Unspecified Tank | 1932 - 1942   | 395451   |
| A  | 281m N   | Unspecified Tank | 1911          | 359154   |
| A  | 303m N   | Unspecified Tank | 1983 - 1993   | 402906   |
| 13 | 306m N   | Tanks            | 1971 - 1993   | 402659   |
| 15 | 332m N   | Unspecified Tank | 1994          | 359160   |
| E  | 385m N   | Tanks            | 1983 - 1993   | 405250   |
| E  | 386m N   | Unspecified Tank | 1971          | 359161   |
| E  | 394m N   | Unspecified Tank | 1971 - 1983   | 388502   |
| E  | 397m N   | Unspecified Tank | 1983          | 359162   |
| E  | 401m N   | Unspecified Tank | 1971 - 1983   | 397917   |

*This data is sourced from Ordnance Survey / Groundsure.*

### 1.3 Historical energy features

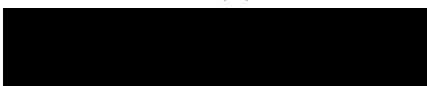
|                            |          |
|----------------------------|----------|
| <b>Records within 500m</b> | <b>6</b> |
|----------------------------|----------|

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)

| ID | Location | Land use               | Dates present | Group ID |
|----|----------|------------------------|---------------|----------|
| B  | 187m N   | Electricity Substation | 1971          | 260175   |
| B  | 187m N   | Electricity Substation | 1983 - 1993   | 269643   |
| D  | 318m SE  | Electricity Substation | 1979          | 282350   |
| D  | 320m SE  | Electricity Substation | 1969 - 1971   | 273122   |
| 16 | 364m NE  | Electricity Substation | 1969 - 1979   | 270536   |
| 17 | 494m S   | Electricity Substation | 1969 - 1994   | 279475   |

*This data is sourced from Ordnance Survey / Groundsure.*



## 1.4 Historical petrol stations

**Records within 500m****0**

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

*This data is sourced from Ordnance Survey / Groundsure.*

## 1.5 Historical garages

**Records within 500m****0**

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

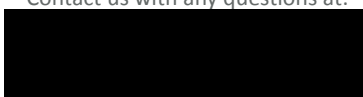
*This data is sourced from Ordnance Survey / Groundsure.*

## 1.6 Historical military land

**Records within 500m****0**

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

*This data is sourced from Ordnance Survey / Groundsure / other sources.*





| ID | Location | Land Use                          | Date | Group ID |
|----|----------|-----------------------------------|------|----------|
| A  | On site  | Nursery                           | 1943 | 2274456  |
| A  | On site  | Nursery                           | 1957 | 2274456  |
| B  | 107m N   | Unspecified Commercial/Industrial | 1957 | 2130601  |
| 4  | 121m E   | Unspecified Tank                  | 1876 | 2153149  |
| B  | 147m N   | Nursery                           | 1974 | 2211832  |
| 5  | 163m S   | Cuttings                          | 1957 | 2129134  |
| 7  | 223m NW  | Unspecified Works                 | 1974 | 2159235  |
| D  | 226m N   | Nursery                           | 1957 | 2211832  |
| D  | 227m N   | Nurseries                         | 1974 | 2168165  |
| 8  | 229m N   | Nursery                           | 1943 | 2227920  |
| B  | 250m NW  | Unspecified Tank                  | 1943 | 2247567  |
| B  | 250m NW  | Unspecified Tank                  | 1932 | 2247567  |
| B  | 253m NW  | Unspecified Tank                  | 1957 | 2260474  |
| E  | 288m SE  | Pumping Station                   | 1943 | 2151648  |
| 10 | 330m N   | Nursery                           | 1974 | 2259690  |
| G  | 330m N   | Nursery                           | 1974 | 2259690  |

This data is sourced from Ordnance Survey / Groundsure.

## 2.2 Historical tanks

### Records within 500m

23

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 19 >](#)

| ID | Location | Land Use         | Date | Group ID |
|----|----------|------------------|------|----------|
| 6  | 169m W   | Unspecified Tank | 1971 | 359151   |
| 9  | 230m W   | Tanks            | 1983 | 374891   |
| B  | 249m N   | Unspecified Tank | 1971 | 359155   |
| B  | 253m NW  | Unspecified Tank | 1932 | 388288   |



| ID | Location | Land Use         | Date | Group ID |
|----|----------|------------------|------|----------|
| B  | 253m NW  | Unspecified Tank | 1942 | 388288   |
| D  | 281m N   | Unspecified Tank | 1932 | 395451   |
| D  | 281m N   | Unspecified Tank | 1942 | 395451   |
| D  | 281m N   | Unspecified Tank | 1911 | 359154   |
| D  | 303m N   | Unspecified Tank | 1983 | 402906   |
| D  | 303m N   | Unspecified Tank | 1992 | 402906   |
| D  | 303m N   | Unspecified Tank | 1993 | 402906   |
| F  | 306m N   | Tanks            | 1971 | 402659   |
| F  | 306m N   | Tanks            | 1983 | 402659   |
| F  | 306m N   | Tanks            | 1993 | 402659   |
| 11 | 332m N   | Unspecified Tank | 1994 | 359160   |
| G  | 385m N   | Tanks            | 1983 | 405250   |
| G  | 385m N   | Tanks            | 1993 | 405250   |
| G  | 386m N   | Unspecified Tank | 1971 | 359161   |
| G  | 394m N   | Unspecified Tank | 1971 | 388502   |
| G  | 395m N   | Unspecified Tank | 1983 | 388502   |
| G  | 397m N   | Unspecified Tank | 1983 | 359162   |
| G  | 401m N   | Unspecified Tank | 1971 | 397917   |
| G  | 401m N   | Unspecified Tank | 1983 | 397917   |

*This data is sourced from Ordnance Survey / Groundsure.*

## 2.3 Historical energy features

**Records within 500m**

**13**

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 19](#) >

| ID | Location | Land Use               | Date | Group ID |
|----|----------|------------------------|------|----------|
| C  | 187m N   | Electricity Substation | 1971 | 260175   |



| ID | Location | Land Use               | Date | Group ID |
|----|----------|------------------------|------|----------|
| C  | 187m N   | Electricity Substation | 1983 | 269643   |
| C  | 187m N   | Electricity Substation | 1993 | 269643   |
| E  | 318m SE  | Electricity Substation | 1979 | 282350   |
| E  | 320m SE  | Electricity Substation | 1969 | 273122   |
| E  | 320m SE  | Electricity Substation | 1971 | 273122   |
| H  | 364m NE  | Electricity Substation | 1979 | 270536   |
| H  | 364m NE  | Electricity Substation | 1969 | 270536   |
| H  | 365m NE  | Electricity Substation | 1971 | 270536   |
| I  | 494m S   | Electricity Substation | 1994 | 279475   |
| I  | 494m S   | Electricity Substation | 1969 | 279475   |
| I  | 495m S   | Electricity Substation | 1969 | 279475   |
| I  | 495m S   | Electricity Substation | 1989 | 279475   |

*This data is sourced from Ordnance Survey / Groundsure.*

## 2.4 Historical petrol stations

|                            |          |
|----------------------------|----------|
| <b>Records within 500m</b> | <b>0</b> |
|----------------------------|----------|

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

*This data is sourced from Ordnance Survey / Groundsure.*

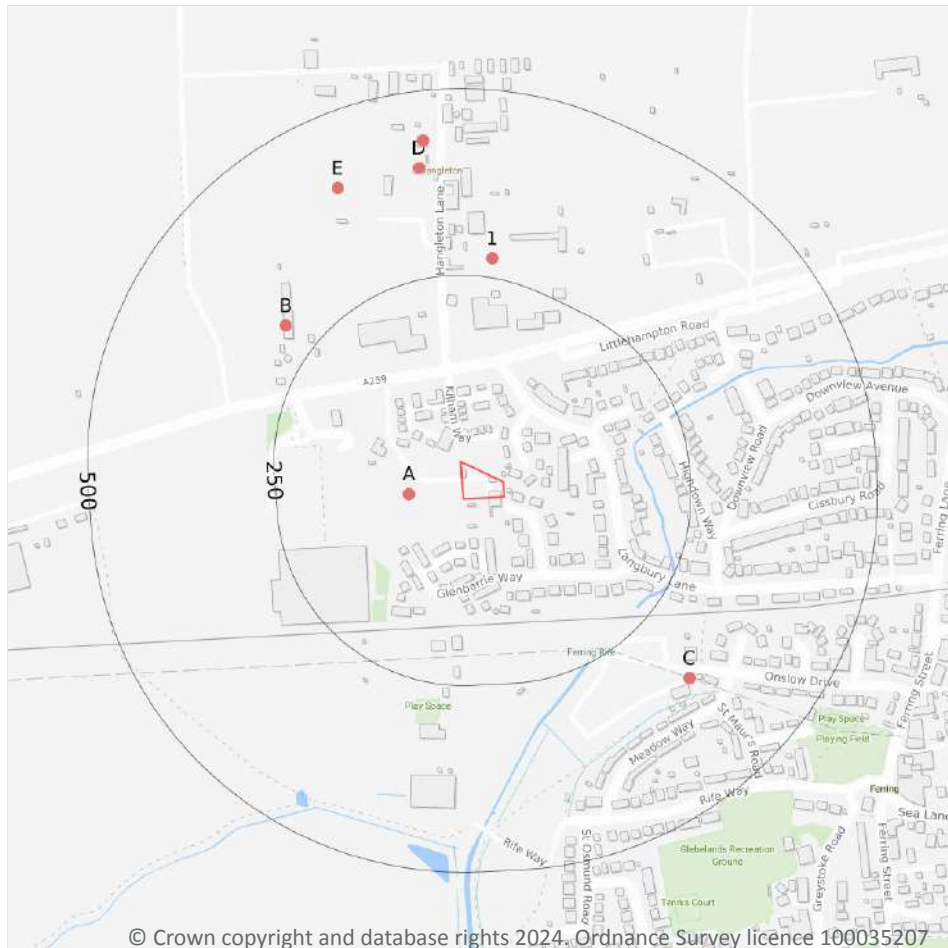
## 2.5 Historical garages

|                            |          |
|----------------------------|----------|
| <b>Records within 500m</b> | <b>0</b> |
|----------------------------|----------|

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

*This data is sourced from Ordnance Survey / Groundsure.*

## 3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Waste exemptions

### 3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

### 3.2 Historical landfill (BGS records)

Records within 500m

0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

*This data is sourced from the British Geological Survey.*



### 3.3 Historical landfill (LA/mapping records)

**Records within 500m****0**

Landfill sites identified from Local Authority records and high detail historical mapping.

*This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.*

### 3.4 Historical landfill (EA/NRW records)

**Records within 500m****0**

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

### 3.5 Historical waste sites

**Records within 500m****0**

Waste site records derived from Local Authority planning records and high detail historical mapping.

*This data is sourced from Ordnance Survey/Groundsure and Local Authority records.*

### 3.6 Licensed waste sites

**Records within 500m****0**

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

### 3.7 Waste exemptions

**Records within 500m****15**

Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on [page 23 >](#)

| ID | Location | Site | Reference | Category              | Sub-Category  | Description                  |
|----|----------|------|-----------|-----------------------|---------------|------------------------------|
| A  | 73m W    | -    | WEX266973 | Using waste exemption | Not on a farm | Use of waste in construction |

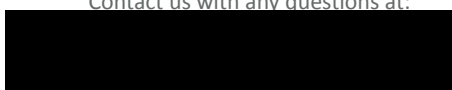


| ID | Location | Site                                                                                                   | Reference             | Category                           | Sub-Category                           | Description                                                                                         |
|----|----------|--------------------------------------------------------------------------------------------------------|-----------------------|------------------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------|
| A  | 73m W    | LITTLEHAMPTON ROAD,<br>FERRING, WORTHING,<br>BN12 6PN                                                  | WEX147352             | Using waste<br>exemption           | Not on a<br>farm                       | Use of waste in construction                                                                        |
| A  | 73m W    | LITTLEHAMPTON ROAD,<br>FERRING, WORTHING,<br>BN12 6PN                                                  | WEX118580             | Using waste<br>exemption           | Not on a<br>farm                       | Use of waste in construction                                                                        |
| 1  | 275m N   | Hangleton Farm Hangleton<br>Lane WORTHING West<br>Sussex BN12 6PP                                      | EPR/AE5554W<br>X/A001 | Using waste<br>exemption           | Non-<br>Agricultura<br>l Waste<br>Only | Use of waste in construction                                                                        |
| B  | 297m NW  | sentry self storage coopers<br>industrial estate<br>littlehampton road ferring<br>west sussex bn12 6pw | EPR/NF0408B<br>D/A001 | Treating waste<br>exemption        | Non-<br>Agricultura<br>l Waste<br>Only | Manual treatment of waste                                                                           |
| B  | 297m NW  | Coopers Industrial Estate<br>Littlehampton Road<br>WORTHING West Sussex<br>BN12 6PW                    | EPR/TF0703LK<br>/A001 | Treating waste<br>exemption        | Non-<br>Agricultura<br>l Waste<br>Only | Manual treatment of waste                                                                           |
| C  | 347m SE  | ONSLOW DRIVE, FERRING,<br>WORTHING, BN12 5RX                                                           | WEX343872             | Disposing of<br>waste<br>exemption | Not on a<br>farm                       | Burning waste in the open                                                                           |
| C  | 347m SE  | ONSLOW DRIVE, FERRING,<br>WORTHING, BN12 5RX                                                           | WEX218748             | Disposing of<br>waste<br>exemption | Not on a<br>farm                       | Burning waste in the open                                                                           |
| D  | 397m N   | Foschini Nursery<br>Hangleton Lane West<br>Sussex                                                      | EPR/HE5383YC<br>/A001 | Using waste<br>exemption           | Non-<br>Agricultura<br>l Waste<br>Only | Use of waste in construction                                                                        |
| E  | 401m NW  | Cobbins Nursery Hangleton<br>Lane WORTHING West<br>Sussex BN12 6PP                                     | EPR/JH0178XR<br>/A001 | Storing waste<br>exemption         | Agricultura<br>l Waste<br>Only         | Storage of waste in a secure<br>place                                                               |
| E  | 401m NW  | Cobbins Nursery Hangleton<br>Lane WORTHING West<br>Sussex BN12 6PP                                     | EPR/JH0178XR<br>/A001 | Treating waste<br>exemption        | Agricultura<br>l Waste<br>Only         | Treatment of waste wood and<br>waste plant matter by chipping,<br>shredding, cutting or pulverising |
| E  | 401m NW  | Cobbins Nursery Hangleton<br>Lane WORTHING West<br>Sussex BN12 6PP                                     | EPR/JH0178XR<br>/A001 | Disposing of<br>waste<br>exemption | Agricultura<br>l Waste<br>Only         | Deposit of agricultural waste<br>consisting of plant tissue under a<br>Plant Health notice          |
| E  | 401m NW  | Cobbins Nursery Hangleton<br>Lane WORTHING West<br>Sussex BN12 6PP                                     | EPR/JH0178XR<br>/A001 | Disposing of<br>waste<br>exemption | Agricultura<br>l Waste<br>Only         | Burning waste in the open                                                                           |

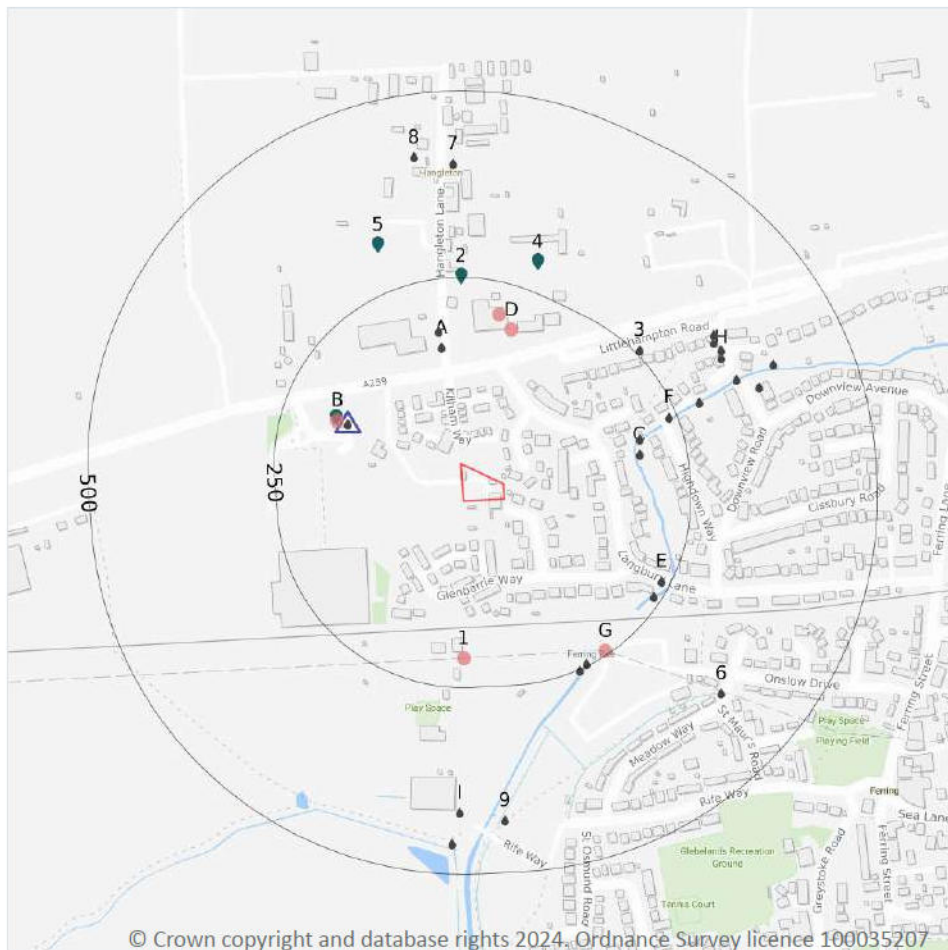


| ID | Location | Site                                                         | Reference          | Category                 | Sub-Category            | Description                     |
|----|----------|--------------------------------------------------------------|--------------------|--------------------------|-------------------------|---------------------------------|
| E  | 401m NW  | Cobbins Nursery Hangleton Lane WORTHING West Sussex BN12 6PP | EPR/JH0178XR /A001 | Treating waste exemption | Agricultural Waste Only | Screening and blending of waste |
| D  | 433m N   | -                                                            | WEX268842          | Using waste exemption    | On a farm               | Use of waste in construction    |

*This data is sourced from the Environment Agency and Natural Resources Wales.*



## 4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- ▲ Current or recent petrol stations
- Licensed pollutant release (Part A(2)/B)
- Licensed Discharges to controlled waters

### 4.1 Recent industrial land uses

Records within 250m

5

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 27 >](#)

| ID | Location | Company                             | Address                                                         | Activity                    | Category                         |
|----|----------|-------------------------------------|-----------------------------------------------------------------|-----------------------------|----------------------------------|
| B  | 176m NW  | Asda Ferring<br>Worthing<br>Automat | Littlehampton Road, Ferring, Worthing, West<br>Sussex, BN12 6PN | Petrol and Fuel<br>Stations | Road and Rail                    |
| D  | 192m N   | Electricity<br>Sub Station          | West Sussex, BN12                                               | Electrical Features         | Infrastructure and<br>Facilities |



| ID | Location | Company         | Address                                                             | Activity            | Category                      |
|----|----------|-----------------|---------------------------------------------------------------------|---------------------|-------------------------------|
| D  | 207m N   | Yeomans Peugeot | Yeomans Peugeot, Littlehampton Road, Ferring, West Sussex, BN12 6PB | New Vehicles        | Motoring                      |
| 1  | 211m S   | Pylon           | West Sussex, BN12                                                   | Electrical Features | Infrastructure and Facilities |
| G  | 245m SE  | Pylon           | West Sussex, BN12                                                   | Electrical Features | Infrastructure and Facilities |

*This data is sourced from Ordnance Survey.*

## 4.2 Current or recent petrol stations

Records within 500m

1

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on [page 27 >](#)

| ID | Location | Company | Address                                                      | LPG | Status |
|----|----------|---------|--------------------------------------------------------------|-----|--------|
| B  | 163m NW  | ASDA    | Littlehampton Road, Ferring, Worthing, West Sussex, BN12 6PN | No  | Open   |

*This data is sourced from Experian.*

## 4.3 Electricity cables

Records within 500m

0

High voltage underground electricity transmission cables.

*This data is sourced from National Grid.*

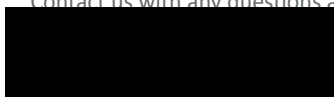
## 4.4 Gas pipelines

Records within 500m

0

High pressure underground gas transmission pipelines.

*This data is sourced from National Grid.*



#### 4.5 Sites determined as Contaminated Land

**Records within 500m****0**

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

*This data is sourced from Local Authority records.*

#### 4.6 Control of Major Accident Hazards (COMAH)

**Records within 500m****0**

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

*This data is sourced from the Health and Safety Executive.*

#### 4.7 Regulated explosive sites

**Records within 500m****0**

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

*This data is sourced from the Health and Safety Executive.*

#### 4.8 Hazardous substance storage/usage

**Records within 500m****0**

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

*This data is sourced from Local Authority records.*

#### 4.9 Historical licensed industrial activities (IPC)

**Records within 500m****0**

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 4.10 Licensed industrial activities (Part A(1))

|                     |   |
|---------------------|---|
| Records within 500m | 0 |
|---------------------|---|

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 4.11 Licensed pollutant release (Part A(2)/B)

|                     |   |
|---------------------|---|
| Records within 500m | 4 |
|---------------------|---|

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on [page 27 >](#)

| ID | Location | Address                                                                                      | Details                                                                                                        |                                                                                                                             |
|----|----------|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| B  | 178m NW  | Asda Petrol Station, Asda Ferring Superstore, Littlehampton Road, Ferring, Worthing BN12 6PW | Process: Unloading of Petrol into Storage at Service Stations<br>Status: Current Permit<br>Permit Type: Part B | Enforcement: No Enforcements Notified<br>Date of enforcement: No Enforcements Notified<br>Comment: No Enforcements Notified |
| 2  | 251m N   | Perifleur Nursery, Hangleton Lane, Ferring, Worthing, BN12 6PP                               | Process: Vegetable Matter Drying Processes<br>Status: Historical Permit<br>Permit Type: Part B                 | Enforcement: No Enforcements Notified<br>Date of enforcement: No Enforcements Notified<br>Comment: No Enforcements Notified |
| 4  | 289m N   | Millbeech Hangleton Nursery, Hangleton Lane, BN12 6PP                                        | Process: Combustion & Incineration<br>Status: Historical Permit<br>Permit Type: Part B                         | Enforcement: No Enforcements Notified<br>Date of enforcement: No Enforcements Notified<br>Comment: No Enforcements Notified |
| 5  | 314m NW  | Cobbins Nurseries, Hangleton Lane, Angmering, Worthing, West Sussex, BN12 6PP                | Process: Combustion & Incineration<br>Status: Current Permit<br>Permit Type: Part B                            | Enforcement: No Enforcements Notified<br>Date of enforcement: No Enforcements Notified<br>Comment: No Enforcements Notified |

*This data is sourced from Local Authority records.*

## 4.12 Radioactive Substance Authorisations

Records within 500m

0

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 4.13 Licensed Discharges to controlled waters

Records within 500m

28

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

Features are displayed on the Current industrial land use map on [page 27](#) >

| ID | Location | Address                                                                                                                      | Details                                                                                                                                                         |                                                                                                                                                                             |
|----|----------|------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A  | 157m N   | WYEVALE GARDEN CENTRE,<br>FERRING, WYEVALE GARDEN<br>CENTRE, A259, FERRING, WEST<br>SUSSEX, BN12 6PG                         | Effluent Type: SEWAGE & TRADE<br>COMBINED - UNSPECIFIED<br>Permit Number: P12182<br>Permit Version: 2<br>Receiving Water: VIA A CULVERT TO<br>FERRING RIFE      | Status: SURRENDERED UNDER EPR<br>2010<br>Issue date: 19/05/2008<br>Effective Date: 19/05/2008<br>Revocation Date: 05/03/2012                                                |
| B  | 160m NW  | COUNTRY FAYRE MARKET,<br>COUNTRY FAYRE MARKET,<br>LITTLEHAMPTON ROAD, FERRING,<br>WORTHING, WEST SUSSEX, BN12<br>6PN         | Effluent Type: SEWAGE<br>DISCHARGES - FINAL/TREATED<br>EFFLUENT - NOT WATER COMPANY<br>Permit Number: P01993<br>Permit Version: 1<br>Receiving Water: INTO LAND | Status: PRE NRA LEGISLATION<br>WHERE ISSUE DATE 01-SEP-89<br>(HISTORIC ONLY)<br>Issue date: 08/11/1988<br>Effective Date: 08/11/1988<br>Revocation Date: 20/12/2012         |
| B  | 160m NW  | COUNTRY FAYRE MARKET,<br>COUNTRY FAYRE MARKET,<br>LITTLEHAMPTON ROAD, FERRING,<br>WORTHING, WEST SUSSEX, BN12<br>6PN         | Effluent Type: SEWAGE<br>DISCHARGES - FINAL/TREATED<br>EFFLUENT - NOT WATER COMPANY<br>Permit Number: P01993<br>Permit Version: 2<br>Receiving Water: INTO LAND | Status: REVOKED UNDER EPR 2010<br>Issue date: 21/12/2012<br>Effective Date: 21/12/2012<br>Revocation Date: 28/08/2013                                                       |
| A  | 180m N   | WYEVALE GARDEN CENTRE,<br>FERRING, WYEVALE GARDEN<br>CENTRE, A259, FERRING, WEST<br>SUSSEX, BN12 6PG                         | Effluent Type: SEWAGE & TRADE<br>COMBINED - UNSPECIFIED<br>Permit Number: P12182<br>Permit Version: 1<br>Receiving Water: VIA A CULVERT TO<br>FERRING RIFE      | Status: VARIED BY APPLICATION -<br>(WRA 91 SCHED 10 - AS AMENDED<br>BY ENV ACT 1995)<br>Issue date: 10/12/2004<br>Effective Date: 10/12/2004<br>Revocation Date: 18/05/2008 |
| C  | 186m E   | RESIDENTIAL DEVELOPMENT,<br>RESIDENTIAL DEVELOPMENT,<br>BROOKSIDE NURSERY, LANGBURY<br>LANE FERRING, WORTHING WEST<br>SUSSEX | Effluent Type: MISCELLANEOUS<br>DISCHARGES - SURFACE WATER<br>Permit Number: S01497<br>Permit Version: 1<br>Receiving Water: CONTROLLED SEA                     | Status: LAPSED UNDER SCHEDULE<br>23 ENVIRONMENT ACT 1995<br>Issue date: 01/04/1991<br>Effective Date: 01/04/1991<br>Revocation Date: 31/03/1997                             |



| ID | Location | Address                                                                                                        | Details                                                                                                                                                    |                                                                                                                                                               |
|----|----------|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| C  | 186m E   | BROOKSIDE NURSERY, BROOKSIDE NURSERY, LANGBURY LANE, FERRING, WORTHING WEST SUSSEX                             | Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER<br>Permit Number: S01568<br>Permit Version: 1<br>Receiving Water: FRESHWATER RIVER                 | Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995<br>Issue date: 22/02/1967<br>Effective Date: 22/02/1967<br>Revocation Date: 31/03/1997                  |
| C  | 191m E   | LITTLEHAMPTON ROAD, A.259, LITTLEHAMPTON ROAD, A.259, AT FERRING, WORTHING, WEST SUSSEX                        | Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER<br>Permit Number: S01652<br>Permit Version: 1<br>Receiving Water: FRESHWATER RIVER                 | Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995<br>Issue date: 09/10/1967<br>Effective Date: 09/10/1967<br>Revocation Date: 31/03/1997                  |
| E  | 238m SE  | ROAD OFF LANGBURY LANE, ROAD OFF LANGBURY LANE, FERRING, WORTHING WEST SUSSEX                                  | Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER<br>Permit Number: S01180<br>Permit Version: 1<br>Receiving Water: CONTROLLED SEA                   | Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995<br>Issue date: 24/03/1961<br>Effective Date: 24/03/1961<br>Revocation Date: 31/03/1997                  |
| F  | 239m E   | LAND AT RIFESIDE, HIGHDOWN WAY, LAND AT RIFESIDE, HIGHDOWN WAY, FERRING                                        | Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER<br>Permit Number: S02835<br>Permit Version: 1<br>Receiving Water: FRESHWATER RIVER                 | Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY)<br>Issue date: 26/05/1960<br>Effective Date: 26/05/1960<br>Revocation Date: 01/07/1991 |
| E  | 239m SE  | PLOT 16 LANGBURY LANE, PLOT 16 LANGBURY LANE, FERRING                                                          | Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER<br>Permit Number: S02559<br>Permit Version: 1<br>Receiving Water: FRESHWATER RIVER                 | Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY)<br>Issue date: 31/10/1966<br>Effective Date: 31/10/1966<br>Revocation Date: 28/02/1997 |
| G  | 246m SE  | ONSLow DRIVE PUMPING STATION, ONSLOW DRIVE PUMPING STATION, FERRING, SUSSEX                                    | Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY<br>Permit Number: A00859<br>Permit Version: 1<br>Receiving Water: FRESHWATER RIVER | Status: SURRENDERED UNDER EPR 2010<br>Issue date: 23/07/2001<br>Effective Date: 23/07/2001<br>Revocation Date: 24/05/2018                                     |
| G  | 251m SE  | ONSLow DRIVE FERRING WPS, FERRING, ONSLOW CARAVAN PARK, ONSLOW DRIVE, FERRING, WORTHING, WEST SUSSEX, BN12 5RX | Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY<br>Permit Number: A01404<br>Permit Version: 1<br>Receiving Water: FERRING RIFE          | Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995)<br>Issue date: 17/10/2006<br>Effective Date: 17/10/2006<br>Revocation Date: -         |



| ID | Location | Address                                                                                          | Details                                                                                                                                          |                                                                                                                                                                     |
|----|----------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3  | 255m NE  | LITTLEHAMPTON ROAD, A.259,<br>LITTLEHAMPTON ROAD, A.259, AT<br>FERRING, WORTHING, WEST<br>SUSSEX | Effluent Type: MISCELLANEOUS<br>DISCHARGES - SURFACE WATER<br>Permit Number: S01652<br>Permit Version: 1<br>Receiving Water: FRESHWATER<br>RIVER | Status: LAPSED UNDER SCHEDULE<br>23 ENVIRONMENT ACT 1995<br>Issue date: 09/10/1967<br>Effective Date: 09/10/1967<br>Revocation Date: 31/03/1997                     |
| F  | 283m E   | BUNGALOWS ADJ. STANBROOKE,<br>BUNGALOWS ADJ. STANBROOKE,<br>FERRING, WORTHING, WEST<br>SUSSEX    | Effluent Type: MISCELLANEOUS<br>DISCHARGES - SURFACE WATER<br>Permit Number: S01185<br>Permit Version: 1<br>Receiving Water: CONTROLLED SEA      | Status: LAPSED UNDER SCHEDULE<br>23 ENVIRONMENT ACT 1995<br>Issue date: 17/05/1960<br>Effective Date: 17/05/1960<br>Revocation Date: 31/03/1997                     |
| H  | 337m NE  | BUNGALOWS ADJ. STANBROOKE,<br>BUNGALOWS ADJ. STANBROOKE,<br>FERRING, WORTHING, WEST<br>SUSSEX    | Effluent Type: MISCELLANEOUS<br>DISCHARGES - SURFACE WATER<br>Permit Number: S01185<br>Permit Version: 1<br>Receiving Water: CONTROLLED SEA      | Status: LAPSED UNDER SCHEDULE<br>23 ENVIRONMENT ACT 1995<br>Issue date: 17/05/1960<br>Effective Date: 17/05/1960<br>Revocation Date: 31/03/1997                     |
| H  | 339m NE  | BUNGALOWS ADJ. STANBROOKE,<br>BUNGALOWS ADJ. STANBROOKE,<br>FERRING, WORTHING, WEST<br>SUSSEX    | Effluent Type: MISCELLANEOUS<br>DISCHARGES - SURFACE WATER<br>Permit Number: S01185<br>Permit Version: 1<br>Receiving Water: CONTROLLED SEA      | Status: LAPSED UNDER SCHEDULE<br>23 ENVIRONMENT ACT 1995<br>Issue date: 17/05/1960<br>Effective Date: 17/05/1960<br>Revocation Date: 31/03/1997                     |
| H  | 341m NE  | LITTLEHAMPTON ROAD, A.259,<br>LITTLEHAMPTON ROAD, A.259, AT<br>FERRING, WORTHING, WEST<br>SUSSEX | Effluent Type: MISCELLANEOUS<br>DISCHARGES - SURFACE WATER<br>Permit Number: S01652<br>Permit Version: 1<br>Receiving Water: FRESHWATER<br>RIVER | Status: LAPSED UNDER SCHEDULE<br>23 ENVIRONMENT ACT 1995<br>Issue date: 09/10/1967<br>Effective Date: 09/10/1967<br>Revocation Date: 31/03/1997                     |
| H  | 342m NE  | BUNGALOWS ADJ. STANBROOKE,<br>BUNGALOWS ADJ. STANBROOKE,<br>FERRING, WORTHING, WEST<br>SUSSEX    | Effluent Type: MISCELLANEOUS<br>DISCHARGES - SURFACE WATER<br>Permit Number: S01185<br>Permit Version: 1<br>Receiving Water: CONTROLLED SEA      | Status: LAPSED UNDER SCHEDULE<br>23 ENVIRONMENT ACT 1995<br>Issue date: 17/05/1960<br>Effective Date: 17/05/1960<br>Revocation Date: 31/03/1997                     |
| H  | 345m NE  | BUNGALOWS ADJ. STANBROOKE,<br>BUNGALOWS ADJ. STANBROOKE,<br>FERRING, WORTHING, WEST<br>SUSSEX    | Effluent Type: MISCELLANEOUS<br>DISCHARGES - SURFACE WATER<br>Permit Number: S01185<br>Permit Version: 1<br>Receiving Water: CONTROLLED SEA      | Status: LAPSED UNDER SCHEDULE<br>23 ENVIRONMENT ACT 1995<br>Issue date: 17/05/1960<br>Effective Date: 17/05/1960<br>Revocation Date: 31/03/1997                     |
| H  | 365m E   | 21 DOWNVIEW ROAD, 21<br>DOWNVIEW ROAD, FERRING                                                   | Effluent Type: UNSPECIFIED<br>Permit Number: S02523<br>Permit Version: 1<br>Receiving Water: FRESHWATER<br>RIVER                                 | Status: PRE NRA LEGISLATION<br>WHERE ISSUE DATE 01-SEP-89<br>(HISTORIC ONLY)<br>Issue date: 30/07/1965<br>Effective Date: 30/07/1965<br>Revocation Date: 28/02/1997 |



| ID | Location | Address                                                                                       | Details                                                                                                                                                                                      |                                                                                                                                                                        |
|----|----------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6  | 390m SE  | ONSLOW DRIVE, ONSLOW DRIVE,<br>FERRING, WORTHING, WEST<br>SUSSEX                              | Effluent Type: MISCELLANEOUS<br>DISCHARGES - SURFACE WATER<br>Permit Number: S01197<br>Permit Version: 1<br>Receiving Water: CONTROLLED SEA                                                  | Status: LAPSED UNDER SCHEDULE<br>23 ENVIRONMENT ACT 1995<br>Issue date: 08/05/1958<br>Effective Date: 08/05/1958<br>Revocation Date: 31/03/1997                        |
| H  | 395m E   | BUNGALOWS ADJ. STANBROOKE,<br>BUNGALOWS ADJ. STANBROOKE,<br>FERRING, WORTHING, WEST<br>SUSSEX | Effluent Type: MISCELLANEOUS<br>DISCHARGES - SURFACE WATER<br>Permit Number: S01185<br>Permit Version: 1<br>Receiving Water: CONTROLLED SEA                                                  | Status: LAPSED UNDER SCHEDULE<br>23 ENVIRONMENT ACT 1995<br>Issue date: 17/05/1960<br>Effective Date: 17/05/1960<br>Revocation Date: 31/03/1997                        |
| 7  | 402m N   | HANGLETON FARM STABLES,<br>HANGLETON FARM STABLES,<br>HANGLETON LANE, FERRING WEST<br>SUSSEX  | Effluent Type: SEWAGE<br>DISCHARGES - FINAL/TREATED<br>EFFLUENT - NOT WATER COMPANY<br>Permit Number: P02511<br>Permit Version: 1<br>Receiving Water: INTO LAND                              | Status: PRE NRA LEGISLATION<br>WHERE ISSUE DATE 01-SEP-89<br>(HISTORIC ONLY)<br>Issue date: 25/08/1989<br>Effective Date: 25/08/1989<br>Revocation Date: -             |
| 8  | 415m N   | FOSCHINI NURSERY, HANGLETON<br>LANE, FERRING, WORTHING, WEST<br>SUSSEX, BN12 6PP              | Effluent Type: SEWAGE<br>DISCHARGES - FINAL/TREATED<br>EFFLUENT - NOT WATER COMPANY<br>Permit Number: EPRGB3399DR<br>Permit Version: 1<br>Receiving Water: GROUNDWATER<br>VIA INFILT. SYSTEM | Status: NEW ISSUED UNDER EPR<br>2010<br>Issue date: 18/07/2017<br>Effective Date: 18/07/2017<br>Revocation Date: -                                                     |
| I  | 417m S   | FERRING COUNTRY CENTRE LTD,<br>RIFE WAY, FERRING, SUSSEX                                      | Effluent Type: SEWAGE<br>DISCHARGES - FINAL/TREATED<br>EFFLUENT - NOT WATER COMPANY<br>Permit Number: P01515<br>Permit Version: 1<br>Receiving Water: INTO LAND                              | Status: POST NRA LEGISLATION<br>WHERE ISSUE DATE > 31-AUG-89<br>(HISTORIC ONLY)<br>Issue date: 19/05/1988<br>Effective Date: 19/05/1988<br>Revocation Date: 20/12/2012 |
| I  | 417m S   | FERRING COUNTRY CENTRE LTD,<br>RIFE WAY, FERRING, SUSSEX                                      | Effluent Type: SEWAGE<br>DISCHARGES - FINAL/TREATED<br>EFFLUENT - NOT WATER COMPANY<br>Permit Number: P01515<br>Permit Version: 2<br>Receiving Water: INTO LAND                              | Status: REVOKED UNDER EPR 2010<br>Issue date: 21/12/2012<br>Effective Date: 21/12/2012<br>Revocation Date: 08/03/2016                                                  |
| 9  | 430m S   | INTER VILLAGE ROAD AT FERRING,<br>INTER VILLAGE ROAD AT FERRING,<br>WORTHING, WEST SUSSEX     | Effluent Type: MISCELLANEOUS<br>DISCHARGES - SURFACE WATER<br>Permit Number: S01058<br>Permit Version: 1<br>Receiving Water: CONTROLLED SEA                                                  | Status: LAPSED UNDER SCHEDULE<br>23 ENVIRONMENT ACT 1995<br>Issue date: 01/04/1991<br>Effective Date: 01/04/1991<br>Revocation Date: 31/03/1997                        |
| I  | 460m S   | FERRING COUNTRY CENTRE, RIFE<br>WAY, FERRING, WEST SUSSEX,<br>BN12 5JZ                        | Effluent Type: SEWAGE<br>DISCHARGES - FINAL/TREATED<br>EFFLUENT - NOT WATER COMPANY<br>Permit Number: EPRDB3699RC<br>Permit Version: 1<br>Receiving Water: FERRING RIFE                      | Status: NEW ISSUED UNDER EPR<br>2010<br>Issue date: 09/03/2016<br>Effective Date: 09/03/2016<br>Revocation Date: -                                                     |



*This data is sourced from the Environment Agency and Natural Resources Wales.*

#### 4.14 Pollutant release to surface waters (Red List)

Records within 500m

0

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

#### 4.15 Pollutant release to public sewer

Records within 500m

0

Discharges of Special Category Effluents to the public sewer.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

#### 4.16 List 1 Dangerous Substances

Records within 500m

0

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

#### 4.17 List 2 Dangerous Substances

Records within 500m

0

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

#### 4.18 Pollution Incidents (EA/NRW)

Records within 500m

0

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

*This data is sourced from the Environment Agency and Natural Resources Wales.*



#### 4.19 Pollution inventory substances

**Records within 500m****0**

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

*This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.*

#### 4.20 Pollution inventory waste transfers

**Records within 500m****0**

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

*This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.*

#### 4.21 Pollution inventory radioactive waste

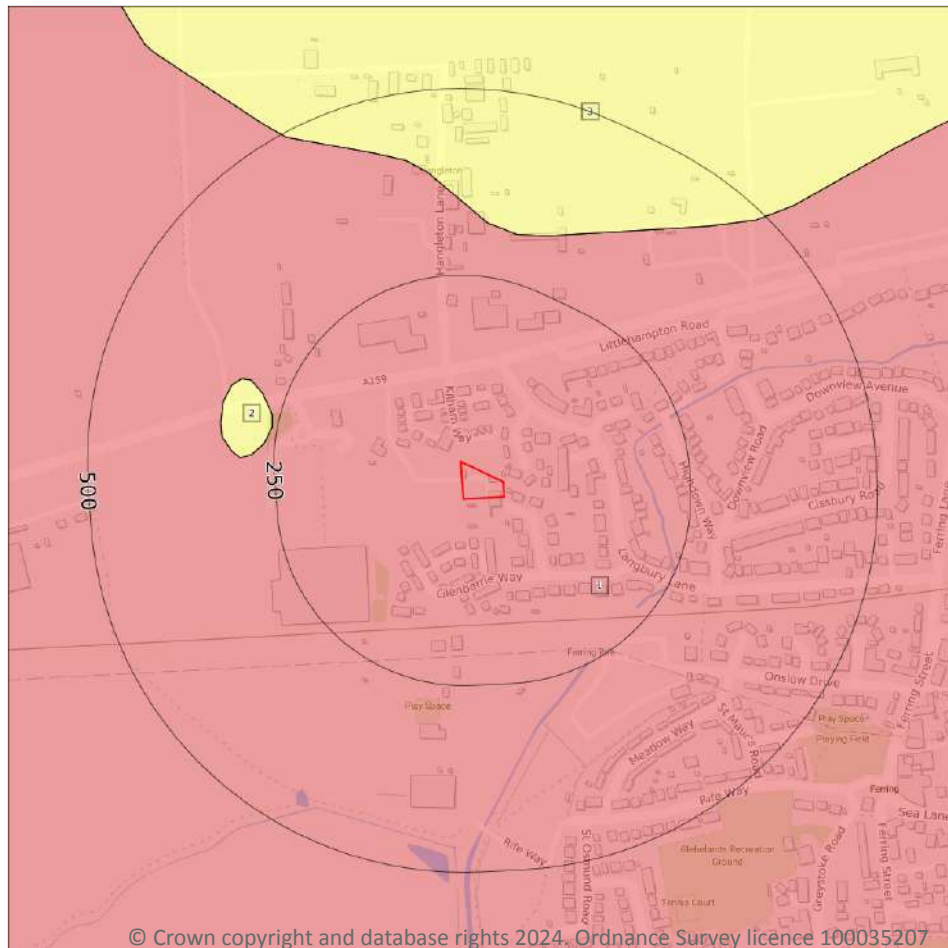
**Records within 500m****0**

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

*This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.*



## 5 Hydrogeology - Superficial aquifer



- Site Outline
- Search buffers in metres (m)
- Principal
  - Secondary A
  - Secondary B
  - Secondary Undifferentiated
  - Unproductive
  - Unknown

### 5.1 Superficial aquifer

Records within 500m

3

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on [page 37](#) >

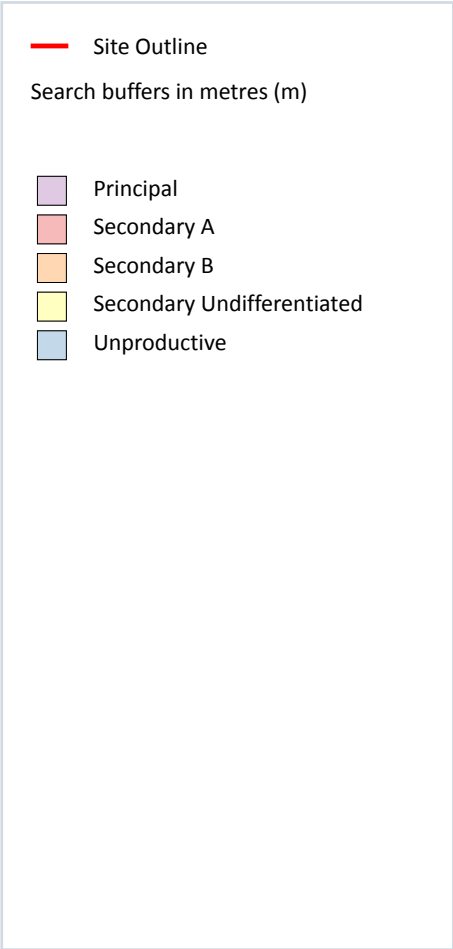
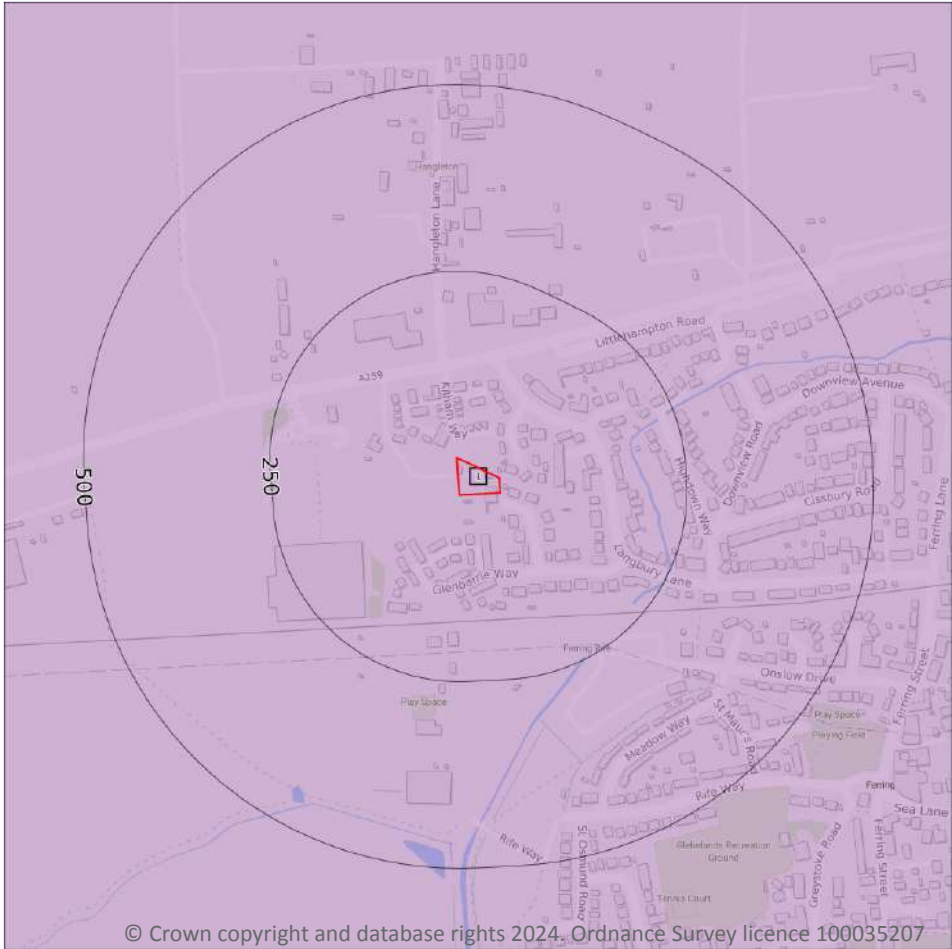
| ID | Location | Designation                | Description                                                                                                                                                                                                                                             |
|----|----------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | On site  | 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                  |
| 2  | 257m W   | Secondary Undifferentiated | Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type |

| ID | Location | Designation                   | Description                                                                                                                                                                                                                                             |
|----|----------|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3  | 314m N   | Secondary<br>Undifferentiated | Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type |

*This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.*



Bedrock aquifer



5.2 Bedrock aquifer

Records within 500m

1

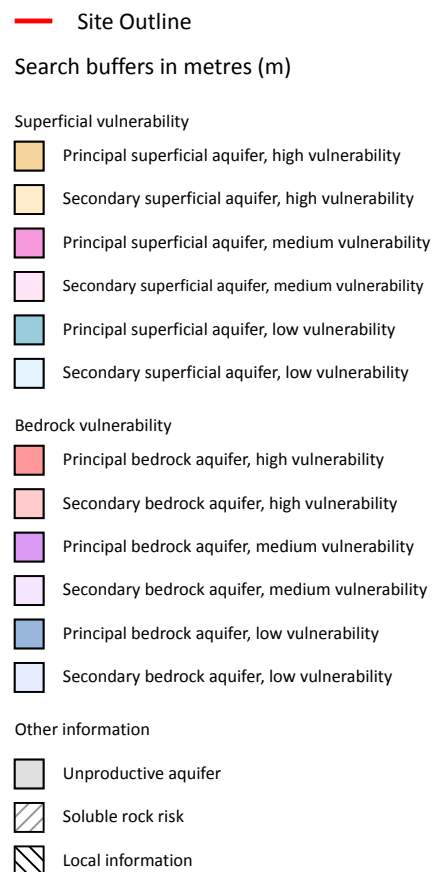
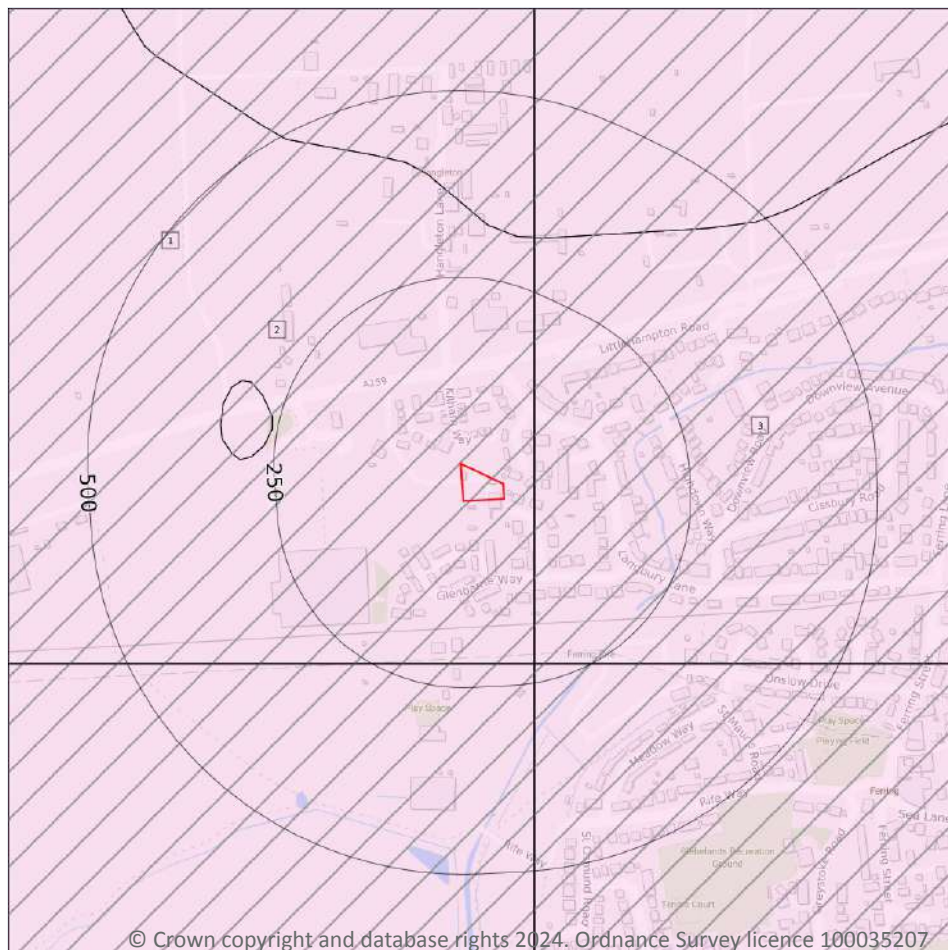
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on [page 39](#) >

| ID | Location | Designation | Description                                                                                                                                                                                                                                |
|----|----------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | On site  | Principal   | Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers |

*This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.*

## Groundwater vulnerability



### 5.3 Groundwater vulnerability

#### Records within 50m

2

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on [page 40](#) >

| ID | Location | Summary                                                                                                                                                                                 | Soil / surface                                                                                                        | Superficial geology                                                                                                                                            | Bedrock geology                                                                                                   |
|----|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| 1  | On site  | <b>Summary Classification:</b><br>Secondary superficial aquifer - Medium Vulnerability<br><b>Combined classification:</b><br>Productive Bedrock Aquifer, Productive Superficial Aquifer | <b>Leaching class:</b><br>Intermediate<br><b>Infiltration value:</b><br>>70%<br><b>Dilution value:</b> 300-550mm/year | <b>Vulnerability:</b> Medium<br><b>Aquifer type:</b> Secondary<br><b>Thickness:</b> <3m<br><b>Patchiness value:</b> >90%<br><b>Recharge potential:</b> High    | <b>Vulnerability:</b> Medium<br><b>Aquifer type:</b> Principal<br><b>Flow mechanism:</b> Well connected fractures |
| 3  | 40m E    | <b>Summary Classification:</b><br>Secondary superficial aquifer - Medium Vulnerability<br><b>Combined classification:</b><br>Productive Bedrock Aquifer, Productive Superficial Aquifer | <b>Leaching class:</b><br>Intermediate<br><b>Infiltration value:</b><br>>70%<br><b>Dilution value:</b> 300-550mm/year | <b>Vulnerability:</b> Medium<br><b>Aquifer type:</b> Secondary<br><b>Thickness:</b> <3m<br><b>Patchiness value:</b> >90%<br><b>Recharge potential:</b> No Data | <b>Vulnerability:</b> Medium<br><b>Aquifer type:</b> Principal<br><b>Flow mechanism:</b> Well connected fractures |

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

## 5.4 Groundwater vulnerability- soluble rock risk

|                        |          |
|------------------------|----------|
| <b>Records on site</b> | <b>1</b> |
|------------------------|----------|

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

| ID | Maximum soluble risk category                                                                                                                                                                                                                           | Percentage of grid square covered by maximum risk |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| 2  | Significant soluble rocks are likely to be present. Low possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow. | 28.000000000000004%                               |

This data is sourced from the British Geological Survey and the Environment Agency.

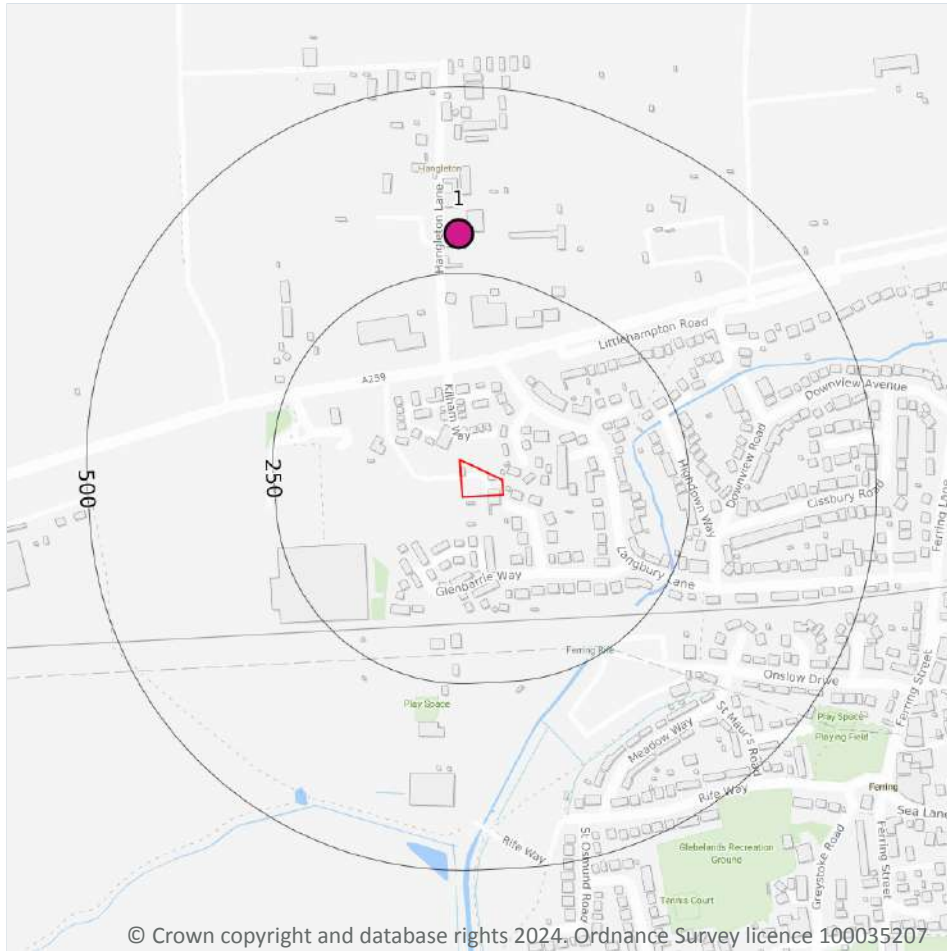
## 5.5 Groundwater vulnerability- local information

|                        |          |
|------------------------|----------|
| <b>Records on site</b> | <b>0</b> |
|------------------------|----------|

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on [REDACTED] or by email on [REDACTED]

This data is sourced from the British Geological Survey and the Environment Agency.

## Abstractions and Source Protection Zones



- Site Outline
- Search buffers in metres (m)
- Source Protection Zone 1  
Inner catchment
- Source Protection Zone 2  
Outer catchment
- Source Protection Zone 3  
Total catchment
- Source Protection Zone 4  
Zone of Special Interest
- Source Protection Zone 1c  
Inner catchment - confined aquifer
- Source Protection Zone 2c  
Outer catchment - confined aquifer
- Source Protection Zone 3c  
Total catchment - confined aquifer
- Drinking water abstraction licences  
Polygon features
- Drinking water abstraction licences  
Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

### 5.6 Groundwater abstractions

Records within 2000m

6

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on [page 42 >](#)

| ID | Location | Details                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                            |
|----|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | 302m N   | Status: Historical<br>Licence No: 10/41/310103<br>Details: General Farming & Domestic<br>Direct Source: Southern Region Groundwater<br>Point: REYNARDS NURSERY<br>Data Type: Point<br>Name: Fox Esq<br>Easting: 508900<br>Northing: 103570                               | Annual Volume (m <sup>3</sup> ): -<br>Max Daily Volume (m <sup>3</sup> ): -<br>Original Application No: -<br>Original Start Date: -<br>Expiry Date: -<br>Issue No: 100<br>Version Start Date: 01/01/1971<br>Version End Date: -                            |
| -  | 911m N   | Status: Active<br>Licence No: 10/41/310112<br>Details: Spray Irrigation - Direct<br>Direct Source: Southern Region Groundwater<br>Point: ROUNDSTONE FARM FERRING<br>Data Type: Point<br>Name: Langmead<br>Easting: 508580<br>Northing: 104120                            | Annual Volume (m <sup>3</sup> ): 77270<br>Max Daily Volume (m <sup>3</sup> ): 1820<br>Original Application No: 169/0753<br>Original Start Date: 03/11/1987<br>Expiry Date: -<br>Issue No: 100<br>Version Start Date: 08/06/2009<br>Version End Date: -     |
| -  | 1261m W  | Status: Active<br>Licence No: 10/41/310106<br>Details: Spray Irrigation - Direct<br>Direct Source: Southern Region Groundwater<br>Point: ROUNDSTONE NURSERY<br>Data Type: Point<br>Name: Haskins Roundstone Garden Centre Limited<br>Easting: 507640<br>Northing: 103240 | Annual Volume (m <sup>3</sup> ): 18200<br>Max Daily Volume (m <sup>3</sup> ): 191<br>Original Application No: NPS/WR/037496<br>Original Start Date: 27/01/1966<br>Expiry Date: -<br>Issue No: 102<br>Version Start Date: 16/02/2022<br>Version End Date: - |
| -  | 1386m W  | Status: Historical<br>Licence No: 10/41/414002<br>Details: Horticultural Watering<br>Direct Source: Southern Region Groundwater<br>Point: WEST END NURSERIES<br>Data Type: Point<br>Name: Van Heyningen Bros. Ltd<br>Easting: 507540<br>Northing: 103530                 | Annual Volume (m <sup>3</sup> ): -<br>Max Daily Volume (m <sup>3</sup> ): -<br>Original Application No: -<br>Original Start Date: -<br>Expiry Date: -<br>Issue No: 100<br>Version Start Date: 11/01/1966<br>Version End Date: -                            |
| -  | 1546m NE | Status: Historical<br>Licence No: 10/41/310110<br>Details: Spray Irrigation - Direct<br>Direct Source: Southern Region Groundwater<br>Point: NORTHBROOK FARM GORING<br>Data Type: Point<br>Name: S.Salbstein Limited<br>Easting: 510230<br>Northing: 104120              | Annual Volume (m <sup>3</sup> ): 10000<br>Max Daily Volume (m <sup>3</sup> ): 614<br>Original Application No: -<br>Original Start Date: -<br>Expiry Date: -<br>Issue No: 102<br>Version Start Date: 01/04/2010<br>Version End Date: -                      |



| ID | Location | Details                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                 |
|----|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -  | 1846m W  | Status: Historical<br>Licence No: 10/41/414018<br>Details: Horticultural Watering<br>Direct Source: Southern Region Groundwater<br>Point: FRESH ACRES NURSERIES<br>Data Type: Point<br>Name: Fresh Acres Nurseries Ltd<br>Easting: 507140<br>Northing: 103820 | Annual Volume (m <sup>3</sup> ): -<br>Max Daily Volume (m <sup>3</sup> ): -<br>Original Application No: -<br>Original Start Date: -<br>Expiry Date: -<br>Issue No: 100<br>Version Start Date: 19/07/1967<br>Version End Date: - |

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 5.7 Surface water abstractions

|                             |          |
|-----------------------------|----------|
| <b>Records within 2000m</b> | <b>0</b> |
|-----------------------------|----------|

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 5.8 Potable abstractions

|                             |          |
|-----------------------------|----------|
| <b>Records within 2000m</b> | <b>0</b> |
|-----------------------------|----------|

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

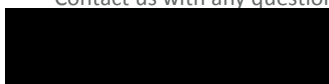
*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 5.9 Source Protection Zones

|                            |          |
|----------------------------|----------|
| <b>Records within 500m</b> | <b>0</b> |
|----------------------------|----------|

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

*This data is sourced from the Environment Agency and Natural Resources Wales.*



## 5.10 Source Protection Zones (confined aquifer)

Records within 500m

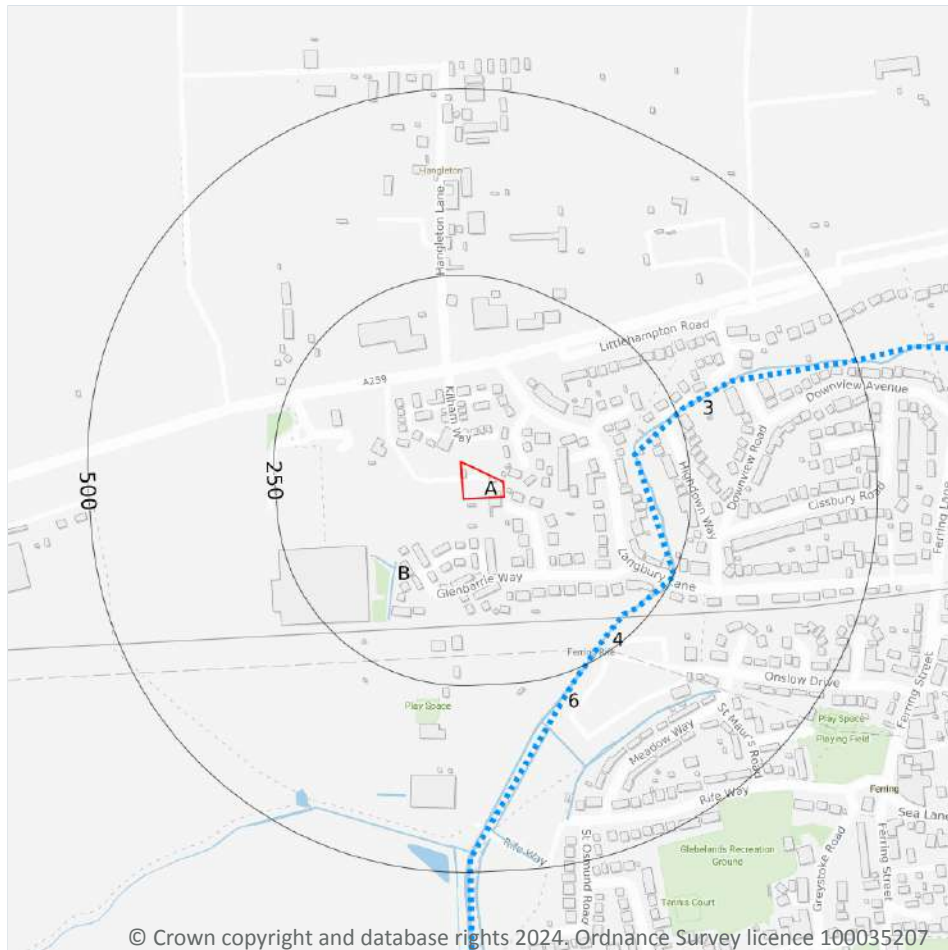
0

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

*This data is sourced from the Environment Agency and Natural Resources Wales.*



## 6 Hydrology



- Site Outline
- Search buffers in metres (m)
- Water Network (OS MasterMap)
- Surface water features (wider than 5m)
- Surface water features (narrower than 5m)
- ⋯ WFD River, canal and surface water transfer water bodies
- WFD Lake water bodies
- WFD Transitional and coastal water bodies
- WFD Surface water body catchments boundaries
- WFD Groundwater body boundaries

### 6.1 Water Network (OS MasterMap)

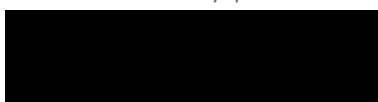
Records within 250m

8

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

Features are displayed on the Hydrology map on [page 46 >](#)

| ID | Location | Type of water feature                               | Ground level      | Permanence                                                      | Name |
|----|----------|-----------------------------------------------------|-------------------|-----------------------------------------------------------------|------|
| B  | 123m SW  | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | -    |



| ID | Location | Type of water feature                               | Ground level      | Permanence                                                      | Name         |
|----|----------|-----------------------------------------------------|-------------------|-----------------------------------------------------------------|--------------|
| B  | 130m SW  | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | -            |
| B  | 130m SW  | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | -            |
| B  | 166m SW  | Inland river not influenced by normal tidal action. | Underground       | Watercourse contains water year round (in normal circumstances) | -            |
| 3  | 180m E   | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Ferring Rife |
| B  | 185m SW  | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | -            |
| 4  | 224m SE  | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Ferring Rife |
| 6  | 248m SE  | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Ferring Rife |

*This data is sourced from the Ordnance Survey.*

## 6.2 Surface water features

### Records within 250m

4

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

Features are displayed on the Hydrology map on [page 46](#) >

*This data is sourced from the Ordnance Survey.*

## 6.3 WFD Surface water body catchments

### Records on site

1

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.



Features are displayed on the Hydrology map on [page 46 >](#)

| ID | Location | Type  | Water body catchment | Water body ID  | Operational catchment | Management catchment     |
|----|----------|-------|----------------------|----------------|-----------------------|--------------------------|
| A  | On site  | River | Ferring Rife         | GB107041073300 | Arun Lower            | Arun and Western Streams |

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 6.4 WFD Surface water bodies

|                           |          |
|---------------------------|----------|
| <b>Records identified</b> | <b>1</b> |
|---------------------------|----------|

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed.

Features are displayed on the Hydrology map on [page 46 >](#)

| ID | Location | Type  | Name         | Water body ID                    | Overall rating | Chemical rating | Ecological rating | Year |
|----|----------|-------|--------------|----------------------------------|----------------|-----------------|-------------------|------|
| 2  | 181m E   | River | Ferring Rife | <a href="#">GB107041073300</a> ↗ | Moderate       | Fail            | Moderate          | 2019 |

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 6.5 WFD Groundwater bodies

|                        |          |
|------------------------|----------|
| <b>Records on site</b> | <b>1</b> |
|------------------------|----------|

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on [page 46 >](#)

| ID | Location | Name                         | Water body ID                    | Overall rating | Chemical rating | Quantitative | Year |
|----|----------|------------------------------|----------------------------------|----------------|-----------------|--------------|------|
| A  | On site  | Littlehampton Anticline East | <a href="#">GB40701G503400</a> ↗ | Poor           | Good            | Poor         | 2019 |

*This data is sourced from the Environment Agency and Natural Resources Wales.*



## 7 River and coastal flooding



- Site Outline
- Search buffers in metres (m)
- River and coastal flooding:
- High
- Medium
- Low
- Very Low
- Historical Flood Events
- Areas Used for Flood Storage
- Areas Benefiting from Flood Defences
- Flood Defences

### 7.1 Risk of flooding from rivers and the sea

Records within 50m

0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 7.2 Historical Flood Events

### Records within 250m

1

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

Features are displayed on the River and coastal flooding map on [page 49](#) >

| ID | Location | Event name   | Date of flood            | Flood source | Flood cause | Type of flood |
|----|----------|--------------|--------------------------|--------------|-------------|---------------|
| A  | 92m NE   | Ferring 1980 | 1980-10-10<br>1980-10-10 | Drainage     | Other       | Fluvial       |

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 7.3 Flood Defences

### Records within 250m

0

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 7.4 Areas Benefiting from Flood Defences

### Records within 250m

0

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 7.5 Flood Storage Areas

### Records within 250m

0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

*This data is sourced from the Environment Agency and Natural Resources Wales.*



## River and coastal flooding - Flood Zones

### 7.6 Flood Zone 2

Records within 50m

0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

### 7.7 Flood Zone 3

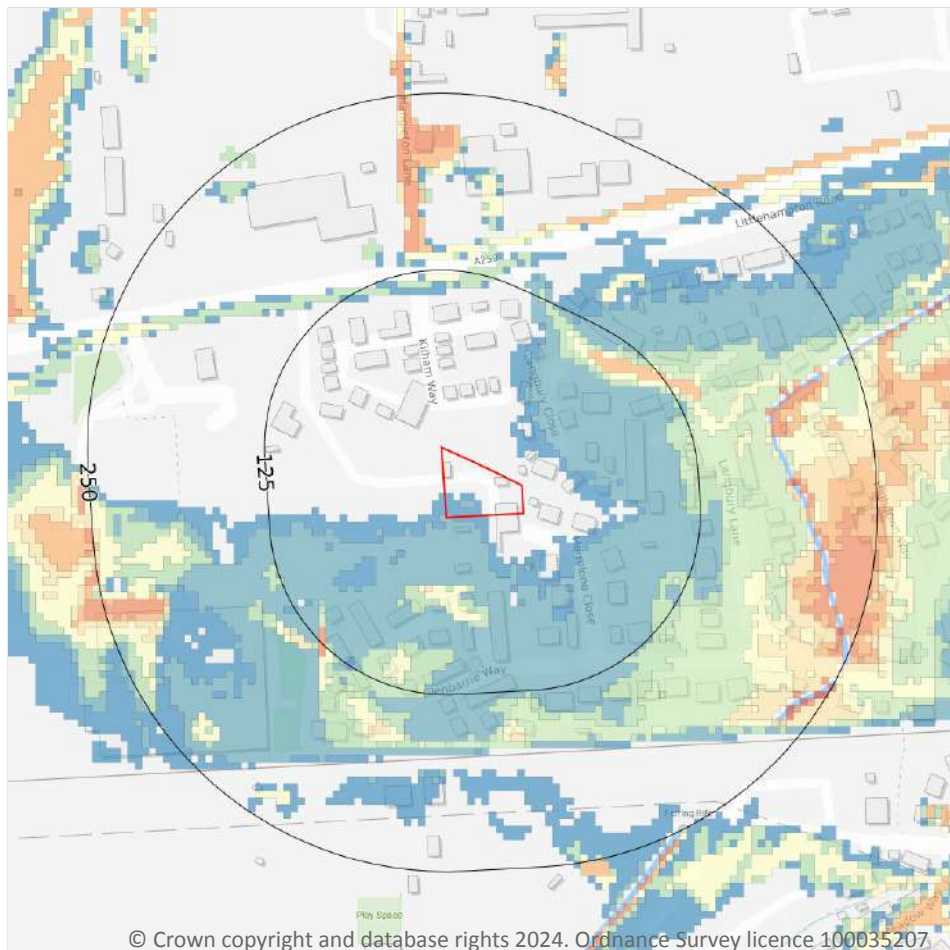
Records within 50m

0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 8 Surface water flooding



— Site Outline

Search buffers in metres (m)

1 in 1000 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

### 8.1 Surface water flooding

**Highest risk on site**

**1 in 1000 year, 0.3m - 1.0m**

**Highest risk within 50m**

**1 in 100 year, 0.3m - 1.0m**

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on [page 52 >](#)

The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

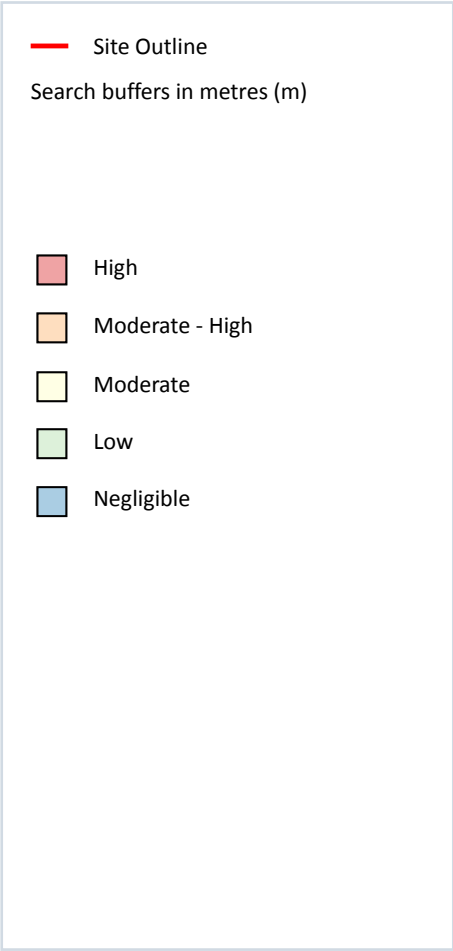
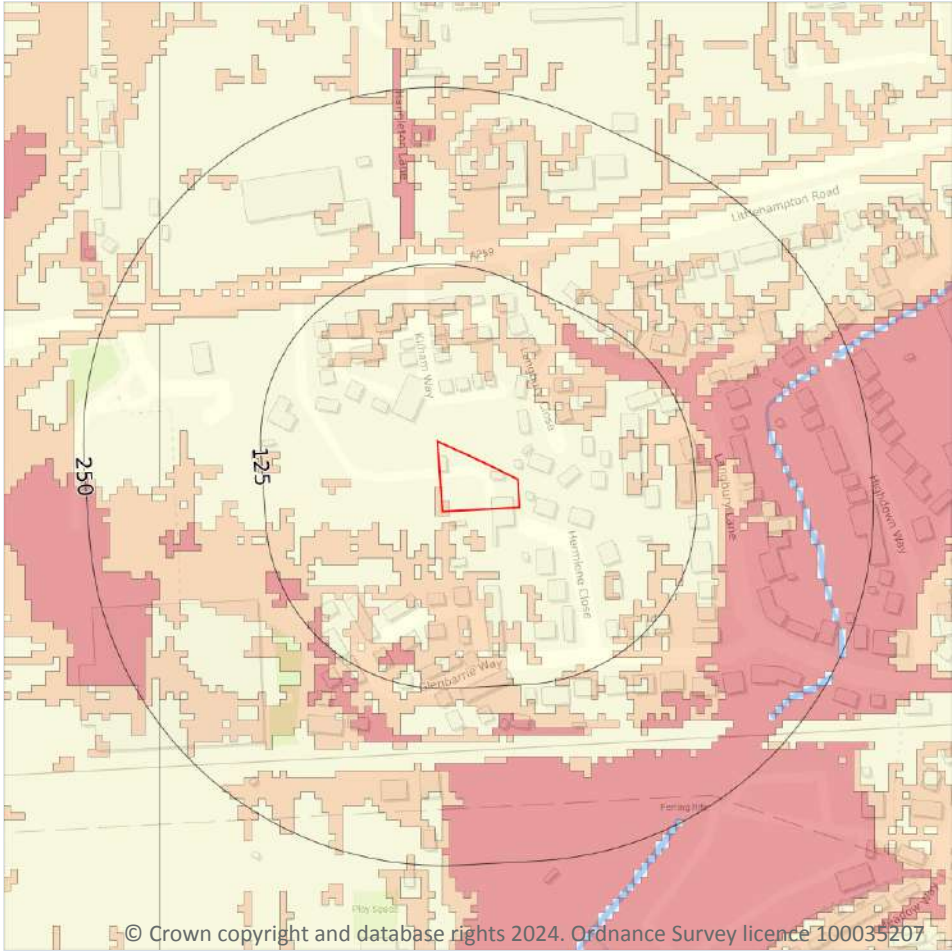
The table below shows the maximum flood depths for a range of return periods for the site.

| Return period  | Maximum modelled depth |
|----------------|------------------------|
| 1 in 1000 year | Between 0.3m and 1.0m  |
| 1 in 250 year  | Negligible             |
| 1 in 100 year  | Negligible             |
| 1 in 30 year   | Negligible             |

*This data is sourced from Ambiantal Risk Analytics.*



## 9 Groundwater flooding



### 9.1 Groundwater flooding

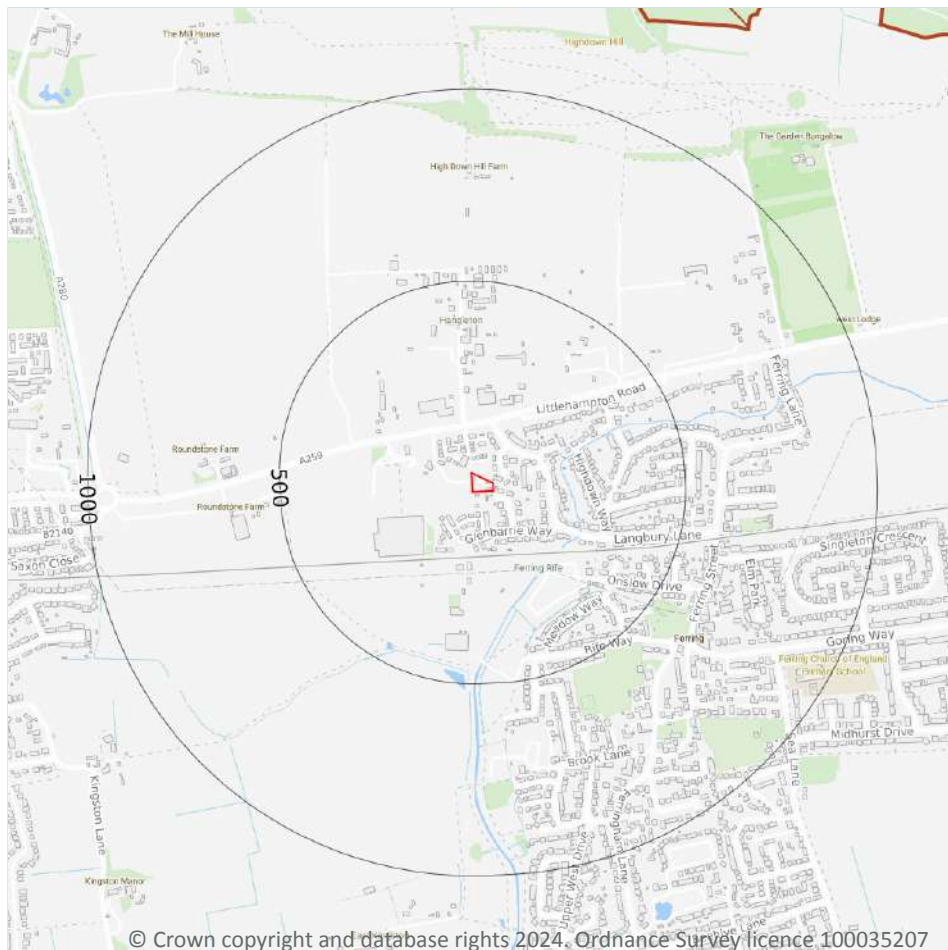
|                         |               |
|-------------------------|---------------|
| Highest risk on site    | Moderate-High |
| Highest risk within 50m | Moderate-High |

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on [page 54 >](#)

*This data is sourced from Ambiantal Risk Analytics.*

## 10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Designated Ancient Woodland

### 10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*



## 10.2 Conserved wetland sites (Ramsar sites)

**Records within 2000m****0**

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.3 Special Areas of Conservation (SAC)

**Records within 2000m****0**

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.4 Special Protection Areas (SPA)

**Records within 2000m****0**

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.5 National Nature Reserves (NNR)

**Records within 2000m****0**

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.6 Local Nature Reserves (LNR)

Records within 2000m

0

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.7 Designated Ancient Woodland

Records within 2000m

8

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

Features are displayed on the Environmental designations map on [page 55 >](#)

| ID | Location | Name                               | Woodland Type                   |
|----|----------|------------------------------------|---------------------------------|
| 1  | 1264m N  | Unknown                            | Ancient & Semi-Natural Woodland |
| -  | 1458m NE | Farmer Land Coppice                | Ancient & Semi-Natural Woodland |
| A  | 1532m NE | White House Coppice, Millers Croft | Ancient & Semi-Natural Woodland |
| -  | 1717m NE | The White House Coppice            | Ancient & Semi-Natural Woodland |
| -  | 1775m NE | The White House Coppice            | Ancient & Semi-Natural Woodland |
| -  | 1782m NE | The White House Coppice            | Ancient & Semi-Natural Woodland |
| -  | 1840m NE | Unknown                            | Ancient & Semi-Natural Woodland |
| -  | 1994m NE | Unknown                            | Ancient & Semi-Natural Woodland |

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.8 Biosphere Reserves

Records within 2000m

0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.9 Forest Parks

Records within 2000m

0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

*This data is sourced from the Forestry Commission.*

## 10.10 Marine Conservation Zones

Records within 2000m

0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.11 Green Belt

Records within 2000m

0

Areas designated to prevent urban sprawl by keeping land permanently open.

*This data is sourced from the Ministry of Housing, Communities and Local Government.*

## 10.12 Proposed Ramsar sites

Records within 2000m

0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

*This data is sourced from Natural England.*

## 10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

*This data is sourced from Natural England and Natural Resources Wales.*

## 10.14 Potential Special Protection Areas (pSPA)

**Records within 2000m****0**

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

*This data is sourced from Natural England.*

## 10.15 Nitrate Sensitive Areas

**Records within 2000m****0**

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

*This data is sourced from Natural England.*

## 10.16 Nitrate Vulnerable Zones

**Records within 2000m****1**

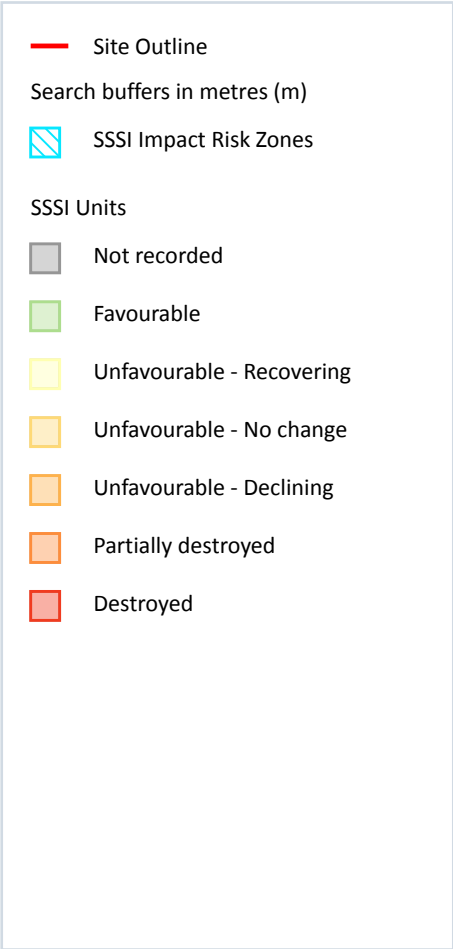
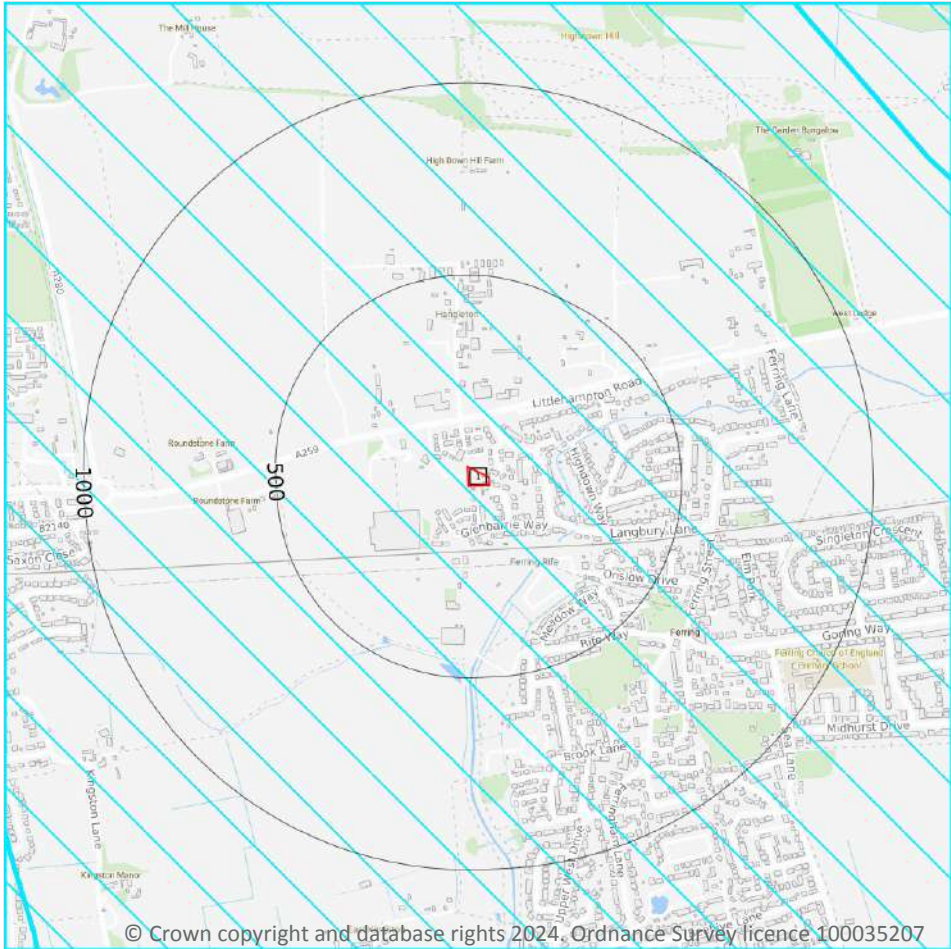
Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

| Location | Name         | Type        | NVZ ID | Status   |
|----------|--------------|-------------|--------|----------|
| 1866m N  | Sussex Chalk | Groundwater | 56     | Existing |

*This data is sourced from Natural England and Natural Resources Wales.*



SSSI Impact Zones and Units



10.17 SSSI Impact Risk Zones

Records on site

1

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts. Features are displayed on the SSSI Impact Zones and Units map on [page 60 >](#)

| ID | Location | Type of developments requiring consultation                       |
|----|----------|-------------------------------------------------------------------|
| 1  | On site  | Infrastructure - Airports, helipads and other aviation proposals. |

This data is sourced from Natural England.

## 10.18 SSSI Units

Records within 2000m

0

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

*This data is sourced from Natural England and Natural Resources Wales.*



## 11 Visual and cultural designations



- Site Outline
- Search buffers in metres (m)
- Listed buildings
- Conservation areas
- Conservation areas - no data
- National Parks
- Areas of Outstanding Natural Beauty
- Registered parks and gardens
- Scheduled Monuments
- World Heritage Sites

### 11.1 World Heritage Sites

Records within 250m

0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

*This data is sourced from Historic England, Cadw and Historic Environment Scotland.*

## 11.2 Area of Outstanding Natural Beauty

Records within 250m

0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 11.3 National Parks

Records within 250m

0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

*This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.*

## 11.4 Listed Buildings

Records within 250m

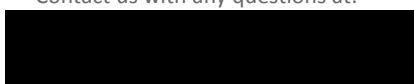
2

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.

Features are displayed on the Visual and cultural designations map on [page 62 >](#)

| ID | Location | Name                               | Grade | Reference Number | Listed date |
|----|----------|------------------------------------|-------|------------------|-------------|
| 1  | 120m E   | North Hangelton<br>South Hangelton | II    | 1027656          | 12/10/1954  |
| 2  | 155m E   | Hangelton Cottage<br>Inglenook     | II    | 1027616          | 20/09/1984  |

*This data is sourced from Historic England, Cadw and Historic Environment Scotland.*



## 11.5 Conservation Areas

**Records within 250m****0**

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

*This data is sourced from Historic England, Cadw and Historic Environment Scotland.*

## 11.6 Scheduled Ancient Monuments

**Records within 250m****0**

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

*This data is sourced from Historic England, Cadw and Historic Environment Scotland.*

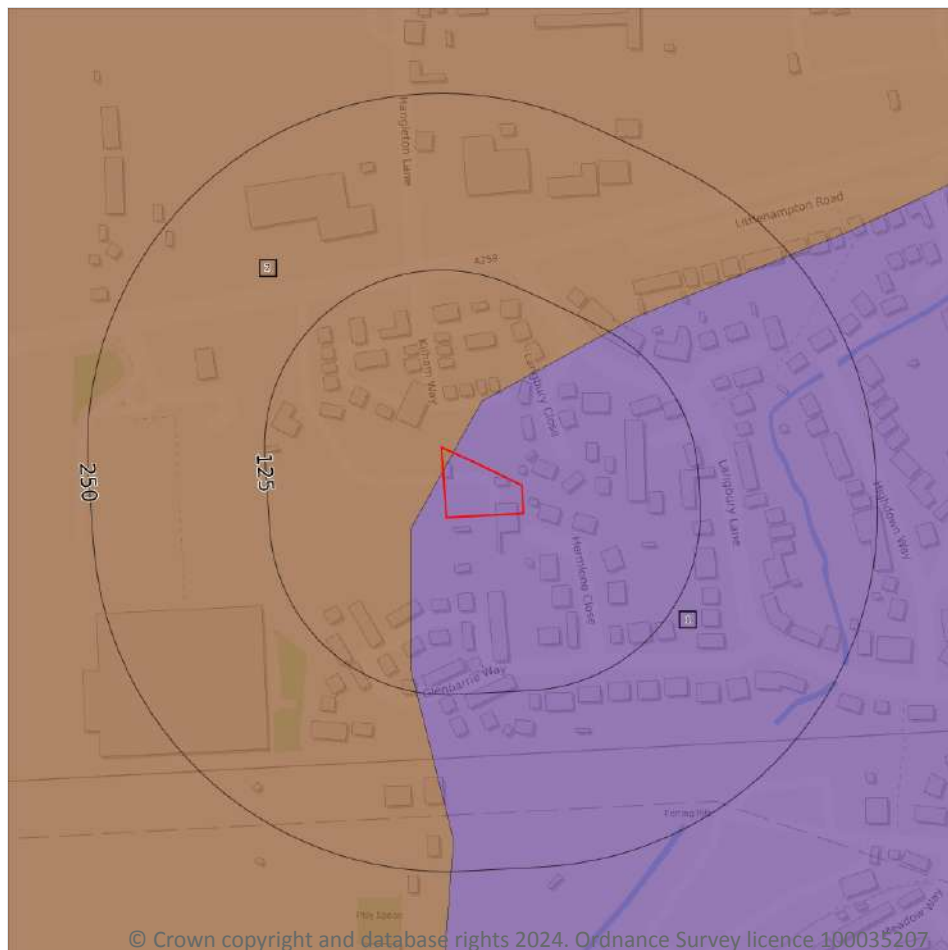
## 11.7 Registered Parks and Gardens

**Records within 250m****0**

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

*This data is sourced from Historic England, Cadw and Historic Environment Scotland.*

## 12 Agricultural designations



- Site Outline
- Search buffers in metres (m)
- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

### 12.1 Agricultural Land Classification

Records within 250m

2

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on [page 65](#) >

| ID | Location | Classification | Description                                                                                                                                                                                                                                                                                                                        |
|----|----------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | On site  | Urban          | -                                                                                                                                                                                                                                                                                                                                  |
| 2  | On site  | Grade 1        | Excellent quality agricultural land. Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality. |



*This data is sourced from Natural England.*

## 12.2 Open Access Land

Records within 250m

0

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

*This data is sourced from Natural England and Natural Resources Wales.*

## 12.3 Tree Felling Licences

Records within 250m

0

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

*This data is sourced from the Forestry Commission.*

## 12.4 Environmental Stewardship Schemes

Records within 250m

0

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

*This data is sourced from Natural England.*

## 12.5 Countryside Stewardship Schemes

Records within 250m

0

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

*This data is sourced from Natural England.*

## 13 Habitat designations

### 13.1 Priority Habitat Inventory

**Records within 250m****0**

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

*This data is sourced from Natural England.*

### 13.2 Habitat Networks

**Records within 250m****0**

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

*This data is sourced from Natural England.*

### 13.3 Open Mosaic Habitat

**Records within 250m****0**

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

*This data is sourced from Natural England.*

### 13.4 Limestone Pavement Orders

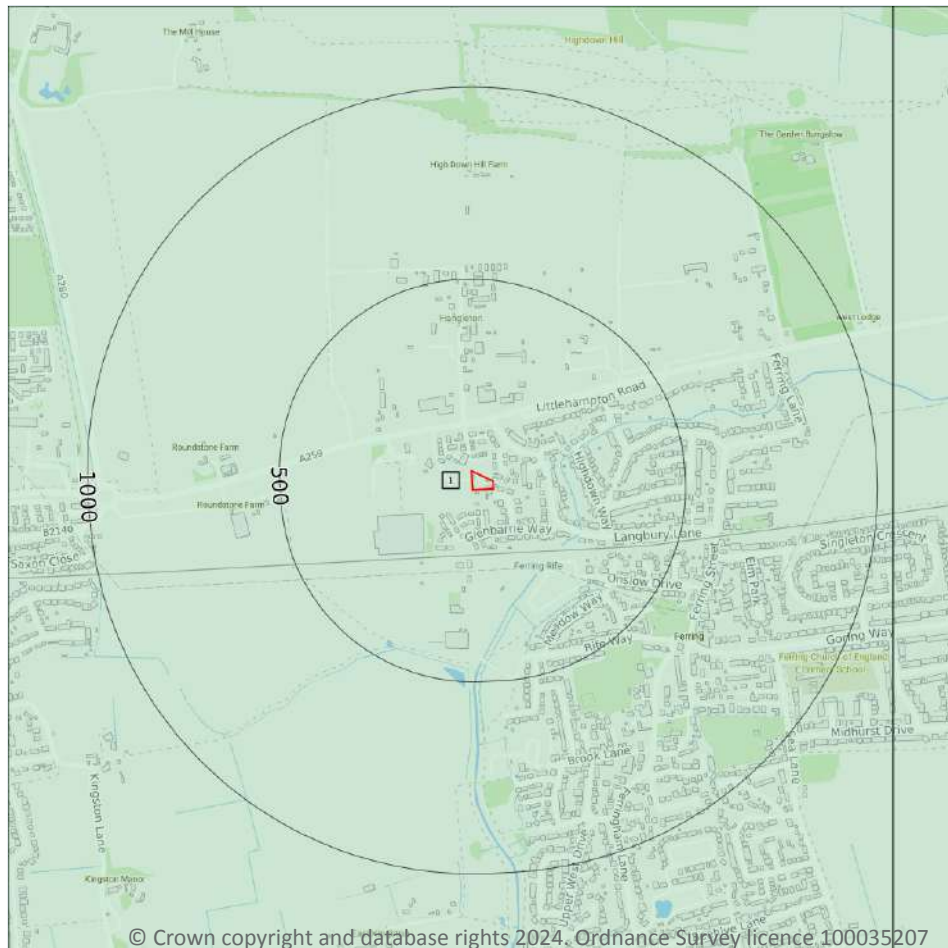
**Records within 250m****0**

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

*This data is sourced from Natural England.*



## 14 Geology 1:10,000 scale - Availability



- Site Outline**
- Search buffers in metres (m)
- Full coverage
  - Partial coverage
  - No coverage

### 14.1 10k Availability

#### Records within 500m

1

An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on [page 68](#) >

| ID | Location | Artificial  | Superficial | Bedrock | Mass movement | Sheet No. |
|----|----------|-------------|-------------|---------|---------------|-----------|
| 1  | On site  | No coverage | Full        | Full    | No coverage   | TQ00SE    |

*This data is sourced from the British Geological Survey.*

## Geology 1:10,000 scale - Artificial and made ground

### 14.2 Artificial and made ground (10k)

Records within 500m

0

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

*This data is sourced from the British Geological Survey.*



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Superficial geology (10k)  
Please see table for more details.

## 70

| ID | Location | LEX Code  | Description       | Rock description |
|----|----------|-----------|-------------------|------------------|
| 4  | 272m E   | BRK-Z     | Brickearth - Silt | Silt             |
| 5  | 319m N   | HEAD-DMTN | Head - Diamicton  | Diamicton        |

*This data is sourced from the British Geological Survey.*

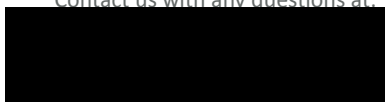
## 14.4 Landslip (10k)

### Records within 500m

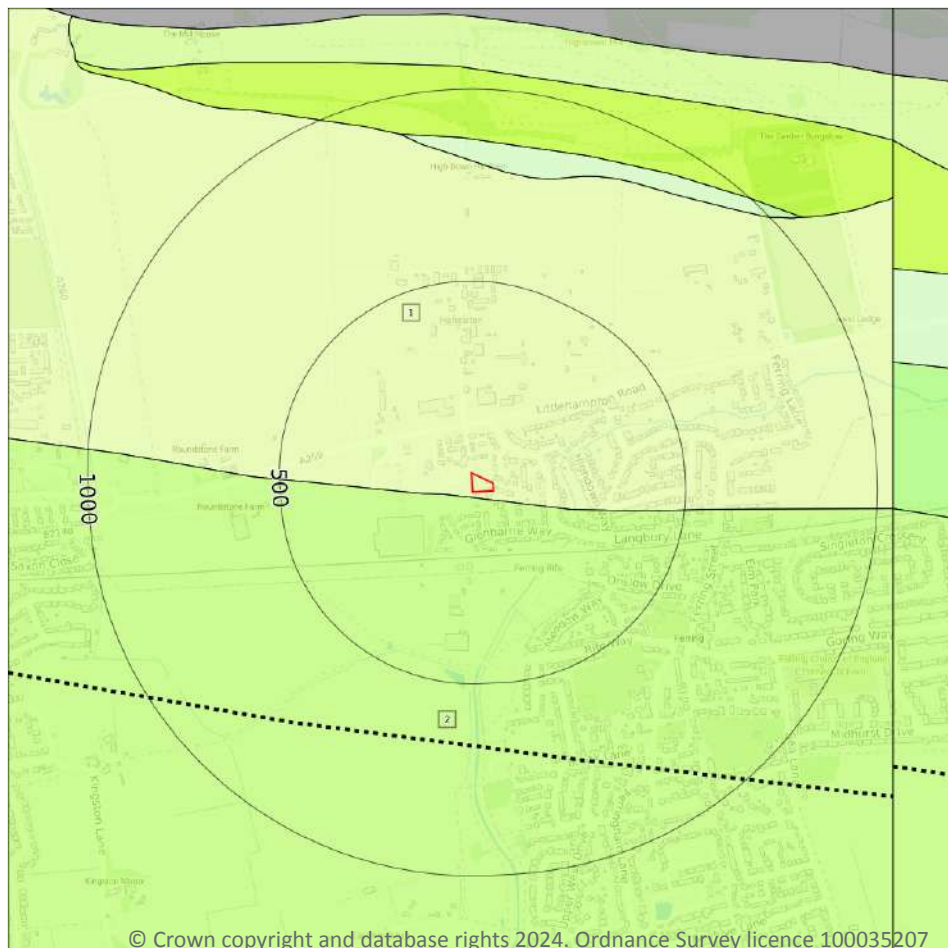
**0**

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

*This data is sourced from the British Geological Survey.*



## Geology 1:10,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

.... Bedrock faults and other linear features (10k)

Bedrock geology (10k)  
Please see table for more details.

### 14.5 Bedrock geology (10k)

Records within 500m

2

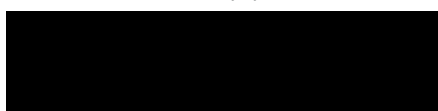
Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 72 >](#)

| ID | Location | LEX Code  | Description                                                                                                                                                       | Rock age                     |
|----|----------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| 1  | On site  | LPCK-CHLK | Lewes Nodular Chalk Formation, Seaford Chalk Formation, Newhaven Chalk Formation, Culver Chalk Formation And Portsdown Chalk Formation (undifferentiated) - Chalk | Campanian Age - Turonian Age |
| 2  | 15m SW   | NPCH-CHLK | New Pit Chalk Formation - Chalk                                                                                                                                   | Turonian Age                 |



Contact us with any questions at:



Date: 25 January 2024

*This data is sourced from the British Geological Survey.*

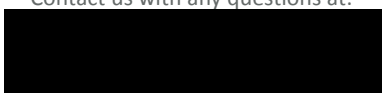
## 14.6 Bedrock faults and other linear features (10k)

Records within 500m

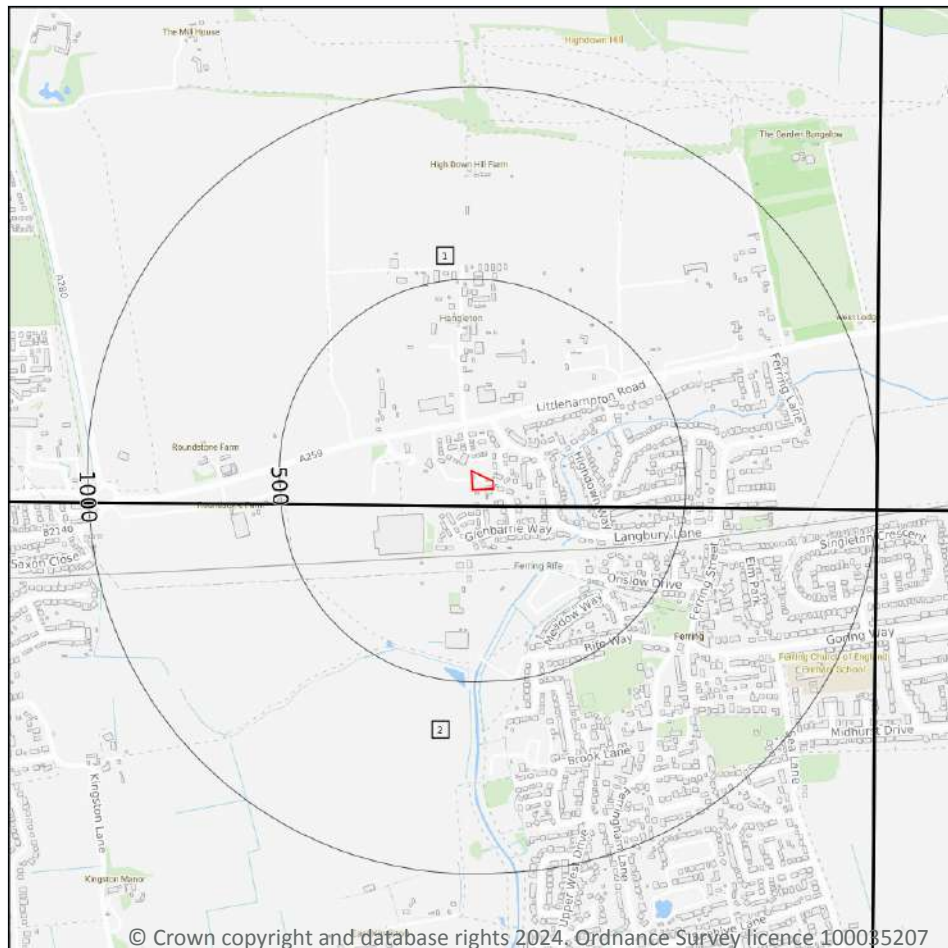
0

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

*This data is sourced from the British Geological Survey.*



## 15 Geology 1:50,000 scale - Availability



— Site Outline

Search buffers in metres (m)

□ Geological map tile

### 15.1 50k Availability

#### Records within 500m

2

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

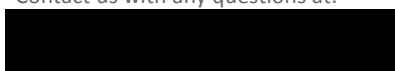
Features are displayed on the Geology 1:50,000 scale - Availability map on [page 74](#) >

| ID | Location | Artificial | Superficial | Bedrock | Mass movement | Sheet No.                          |
|----|----------|------------|-------------|---------|---------------|------------------------------------|
| 1  | On site  | Full       | Full        | Full    | Full          | EW317_332_chichester_and_bognor_v4 |
| 2  | 42m S    | Full       | Full        | Full    | Full          | EW317_332_chichester_and_          |

*This data is sourced from the British Geological Survey.*



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Date: 25 January 2024

## Geology 1:50,000 scale - Artificial and made ground

### 15.2 Artificial and made ground (50k)

Records within 500m

0

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

*This data is sourced from the British Geological Survey.*

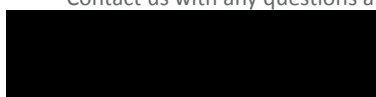
### 15.3 Artificial ground permeability (50k)

Records within 50m

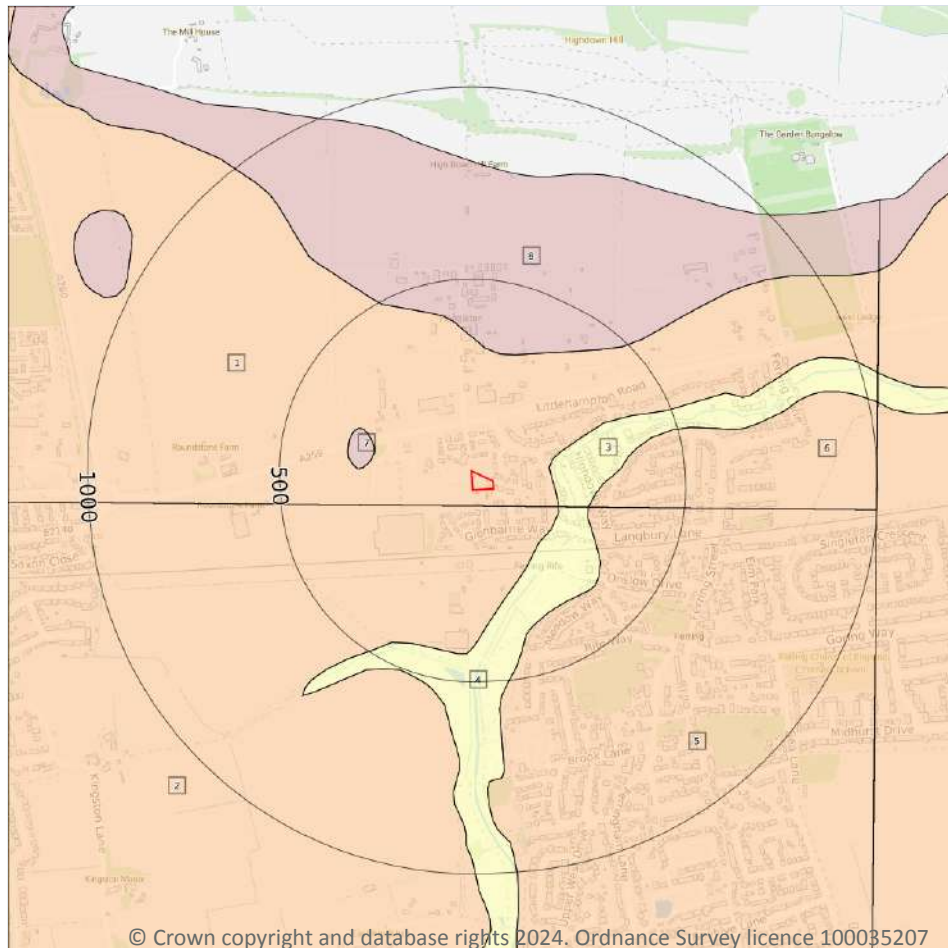
0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

*This data is sourced from the British Geological Survey.*



## Geology 1:50,000 scale - Superficial



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### 15.4 Superficial geology (50k)

#### Records within 500m

8

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on [page 76 >](#)

| ID | Location | LEX Code  | Description                               | Rock description            |
|----|----------|-----------|-------------------------------------------|-----------------------------|
| 1  | On site  | RTDU-XSZC | RIVER TERRACE DEPOSITS (UNDIFFERENTIATED) | SAND, SILT AND CLAY         |
| 2  | 42m S    | RTDU-XSZC | RIVER TERRACE DEPOSITS (UNDIFFERENTIATED) | SAND, SILT AND CLAY         |
| 3  | 150m E   | ALV-XCZSV | ALLUVIUM                                  | CLAY, SILT, SAND AND GRAVEL |
| 4  | 176m E   | ALV-XCZSV | ALLUVIUM                                  | CLAY, SILT, SAND AND GRAVEL |

| ID | Location | LEX Code   | Description                               | Rock description            |
|----|----------|------------|-------------------------------------------|-----------------------------|
| 5  | 252m E   | RTDU-XSZC  | RIVER TERRACE DEPOSITS (UNDIFFERENTIATED) | SAND, SILT AND CLAY         |
| 6  | 252m E   | RTDU-XSZC  | RIVER TERRACE DEPOSITS (UNDIFFERENTIATED) | SAND, SILT AND CLAY         |
| 7  | 257m W   | HEAD-XCZSV | HEAD                                      | CLAY, SILT, SAND AND GRAVEL |
| 8  | 314m N   | HEAD-XCZSV | HEAD                                      | CLAY, SILT, SAND AND GRAVEL |

*This data is sourced from the British Geological Survey.*

## 15.5 Superficial permeability (50k)

|                           |          |
|---------------------------|----------|
| <b>Records within 50m</b> | <b>1</b> |
|---------------------------|----------|

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

| Location | Flow type     | Maximum permeability | Minimum permeability |
|----------|---------------|----------------------|----------------------|
| On site  | Intergranular | High                 | Low                  |

*This data is sourced from the British Geological Survey.*

## 15.6 Landslip (50k)

|                            |          |
|----------------------------|----------|
| <b>Records within 500m</b> | <b>0</b> |
|----------------------------|----------|

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

*This data is sourced from the British Geological Survey.*

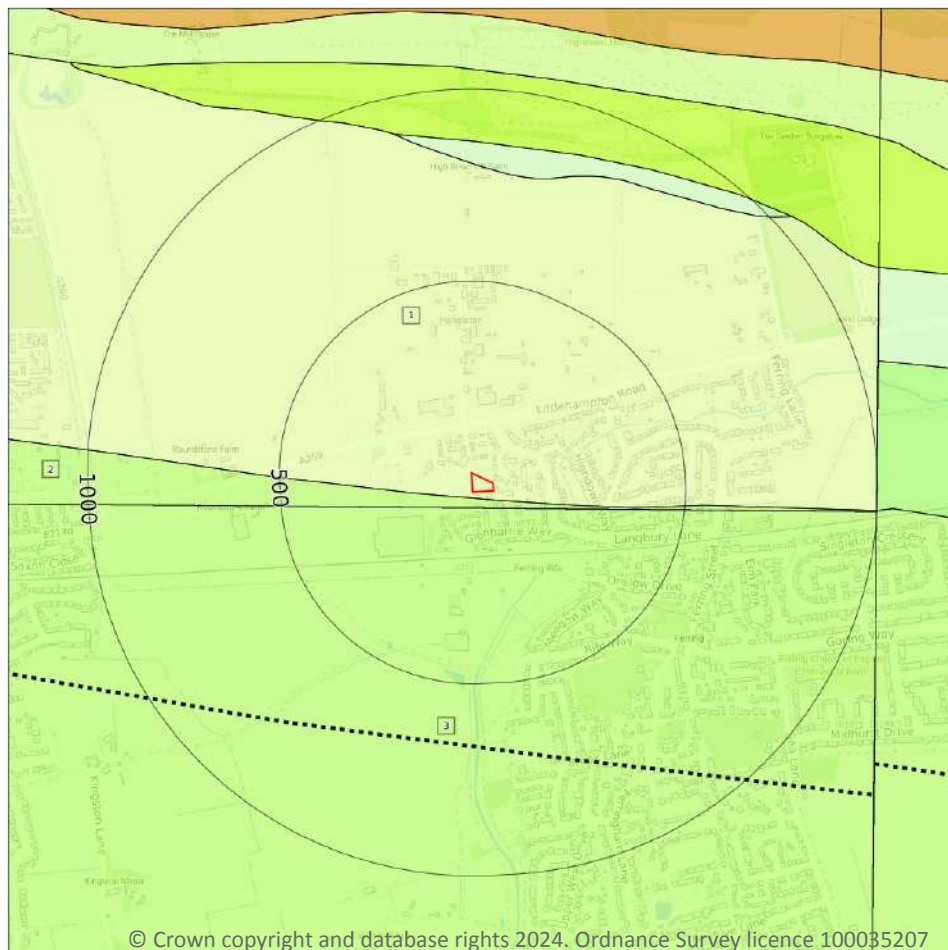
## 15.7 Landslip permeability (50k)

|                           |          |
|---------------------------|----------|
| <b>Records within 50m</b> | <b>0</b> |
|---------------------------|----------|

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

*This data is sourced from the British Geological Survey.*

## Geology 1:50,000 scale - Bedrock



**— Site Outline**

Search buffers in metres (m)

**.... Bedrock faults and other linear features (50k)**

**Bedrock geology (50k)**  
Please see table for more details.

### 15.8 Bedrock geology (50k)

Records within 500m

3

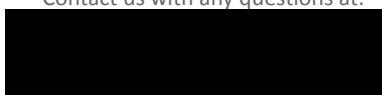
Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 78 >](#)

| ID | Location | LEX Code  | Description                                                                                                                                                       | Rock age |
|----|----------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 1  | On site  | LPCK-CHLK | LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION, NEWHAVEN CHALK FORMATION, CULVER CHALK FORMATION AND PORTSDOWN CHALK FORMATION (UNDIFFERENTIATED) - CHALK | TURONIAN |
| 2  | 16m SW   | NPCH-CHLK | NEW PIT CHALK FORMATION - CHALK                                                                                                                                   | TURONIAN |



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| ID | Location | LEX Code  | Description                     | Rock age |
|----|----------|-----------|---------------------------------|----------|
| 3  | 42m S    | NPCH-CHLK | NEW PIT CHALK FORMATION - CHALK | TURONIAN |

*This data is sourced from the British Geological Survey.*

## 15.9 Bedrock permeability (50k)

Records within 50m

2

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

| Location | Flow type | Maximum permeability | Minimum permeability |
|----------|-----------|----------------------|----------------------|
| On site  | Fracture  | Very High            | Very High            |
| 16m SW   | Fracture  | Very High            | Very High            |

*This data is sourced from the British Geological Survey.*

## 15.10 Bedrock faults and other linear features (50k)

Records within 500m

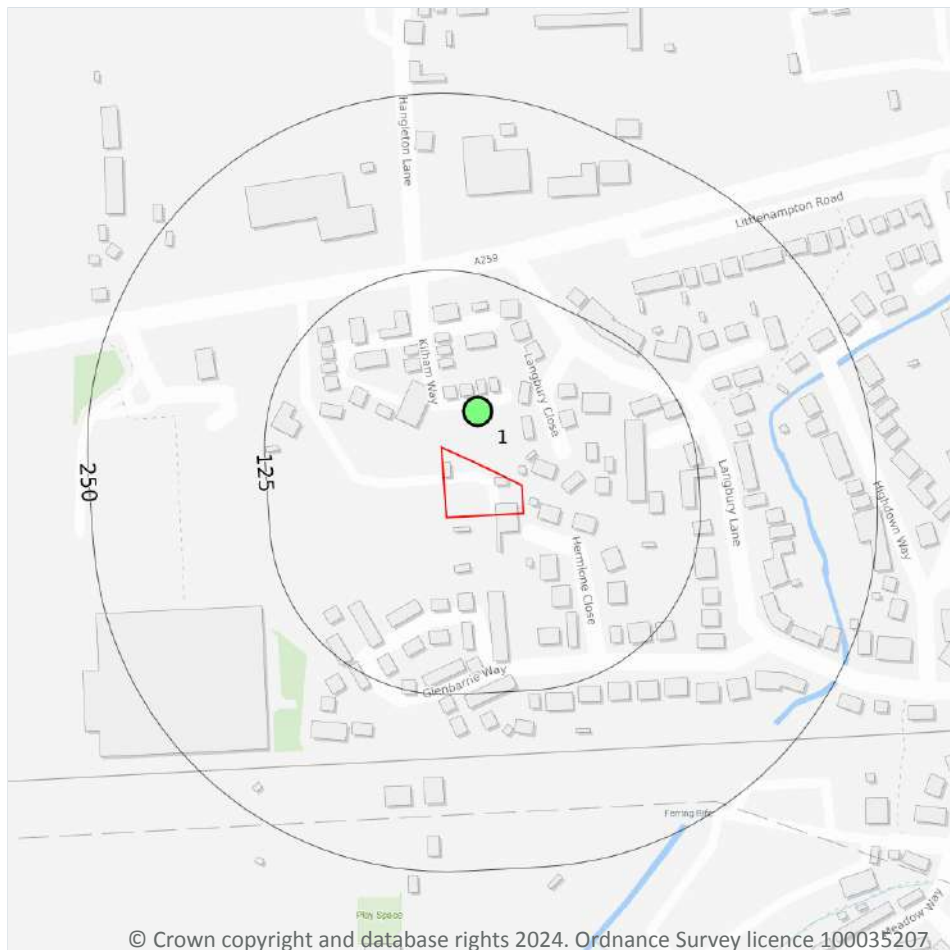
0

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

*This data is sourced from the British Geological Survey.*



## 16 Boreholes



- Site Outline
- Search buffers in metres (m)
- Confidential
  - 0 - 10m
  - 10 - 30m
  - 30m+
  - Unknown

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### 16.1 BGS Boreholes

#### Records within 250m

1

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

Features are displayed on the Boreholes map on [page 80](#) >

| ID | Location | Grid reference | Name                                 | Length | Confidential | Web link                      |
|----|----------|----------------|--------------------------------------|--------|--------------|-------------------------------|
| 1  | 34m N    | 508927 103293  | GREENSIDE LITTLEHAMPTON ROAD FERRING | 21.0   | N            | <a href="#">19978272</a><br>↗ |

This data is sourced from the British Geological Survey.

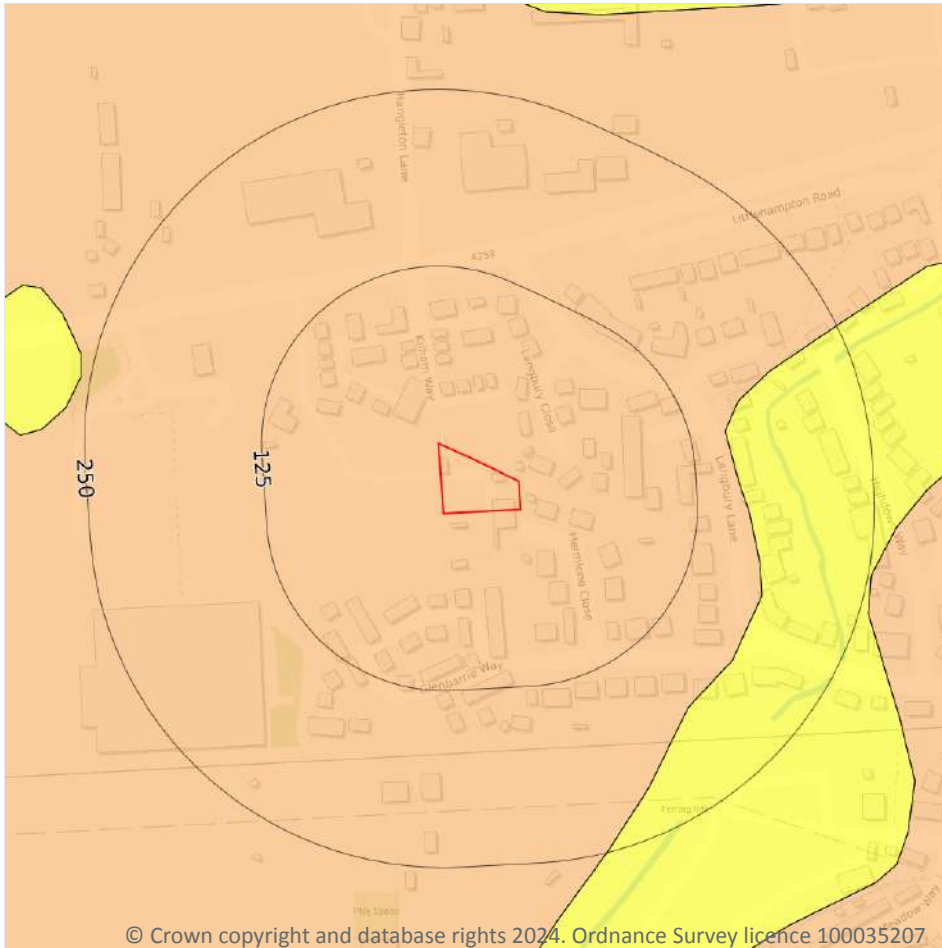


Contact us with any questions at:



Date: 25 January 2024

## 17 Natural ground subsidence - Shrink swell clays



- Site Outline
- Search buffers in metres (m)
- ☐ No data
  - ☐ Negligible
  - ☐ Very low
  - ☐ Low
  - ☐ Moderate
  - ☐ High

### 17.1 Shrink swell clays

#### Records within 50m

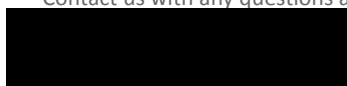
1

The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

Features are displayed on the Natural ground subsidence - Shrink swell clays map on [page 81](#) >

| Location | Hazard rating | Details                                            |
|----------|---------------|----------------------------------------------------|
| On site  | Low           | Ground conditions predominantly medium plasticity. |

*This data is sourced from the British Geological Survey.*





## Natural ground subsidence - Compressible deposits



- Site Outline
- Search buffers in metres (m)
- ☐ No data
  - ☐ Negligible
  - ☐ Very low
  - ☐ Low
  - ☐ Moderate
  - ☐ High

### 17.3 Compressible deposits

#### Records within 50m

1

The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

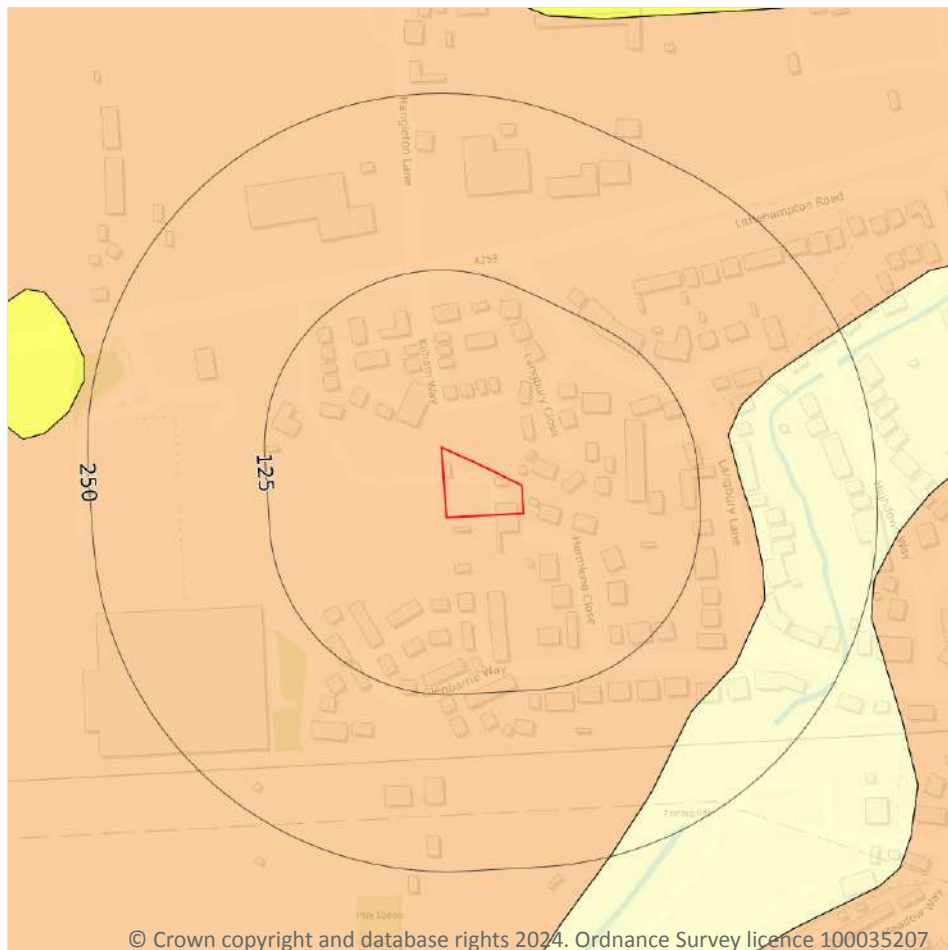
Features are displayed on the Natural ground subsidence - Compressible deposits map on [page 83](#) >

| Location | Hazard rating | Details                                       |
|----------|---------------|-----------------------------------------------|
| On site  | Negligible    | Compressible strata are not thought to occur. |

*This data is sourced from the British Geological Survey.*



## Natural ground subsidence - Collapsible deposits



- Site Outline
- Search buffers in metres (m)
- ☐ No data
  - ☐ Negligible
  - ☐ Very low
  - ☐ Low
  - ☐ Moderate
  - ☐ High

### 17.4 Collapsible deposits

#### Records within 50m

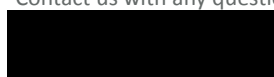
1

The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

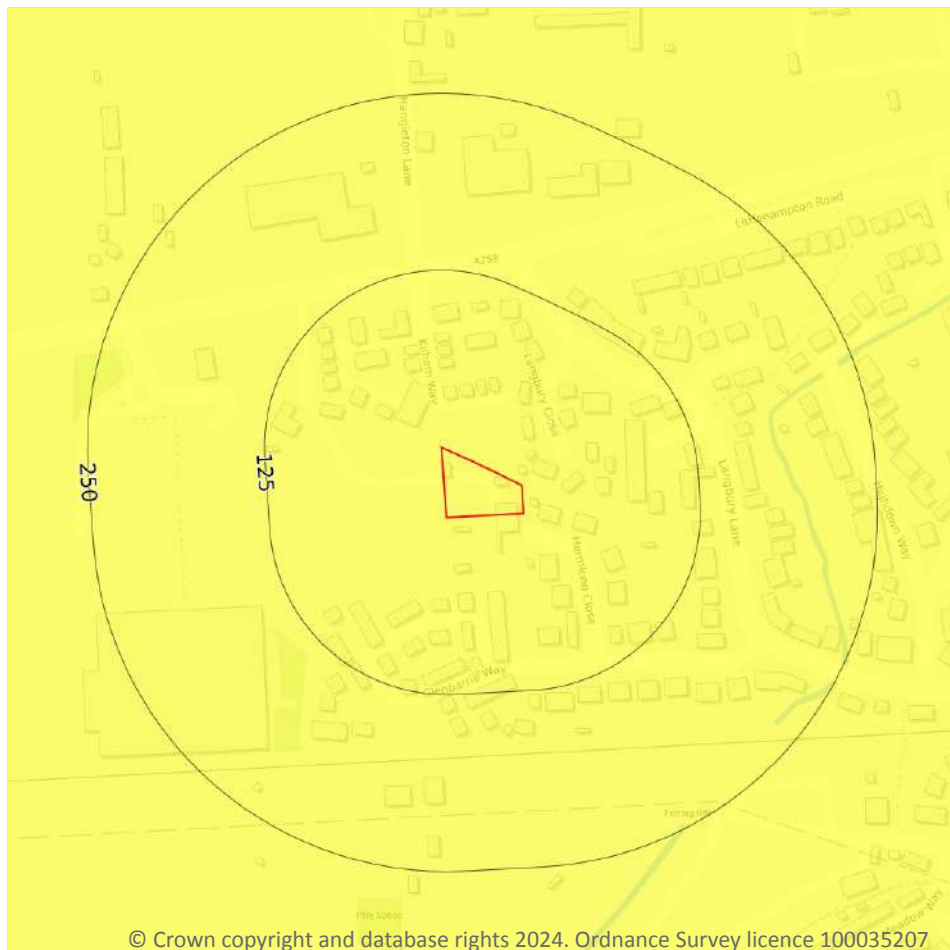
Features are displayed on the Natural ground subsidence - Collapsible deposits map on [page 84 >](#)

| Location | Hazard rating | Details                                                                                       |
|----------|---------------|-----------------------------------------------------------------------------------------------|
| On site  | Low           | Deposits with potential to collapse when loaded and saturated are possibly present in places. |

*This data is sourced from the British Geological Survey.*



## Natural ground subsidence - Landslides



- Site Outline
- Search buffers in metres (m)
- ☐ No data
  - ☐ Negligible
  - ☒ Very low
  - ☐ Low
  - ☐ Moderate
  - ☐ High

### 17.5 Landslides

#### Records within 50m

1

The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on [page 85](#) >

| Location | Hazard rating | Details                                                                                                                                                         |
|----------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| On site  | Very low      | Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered. |

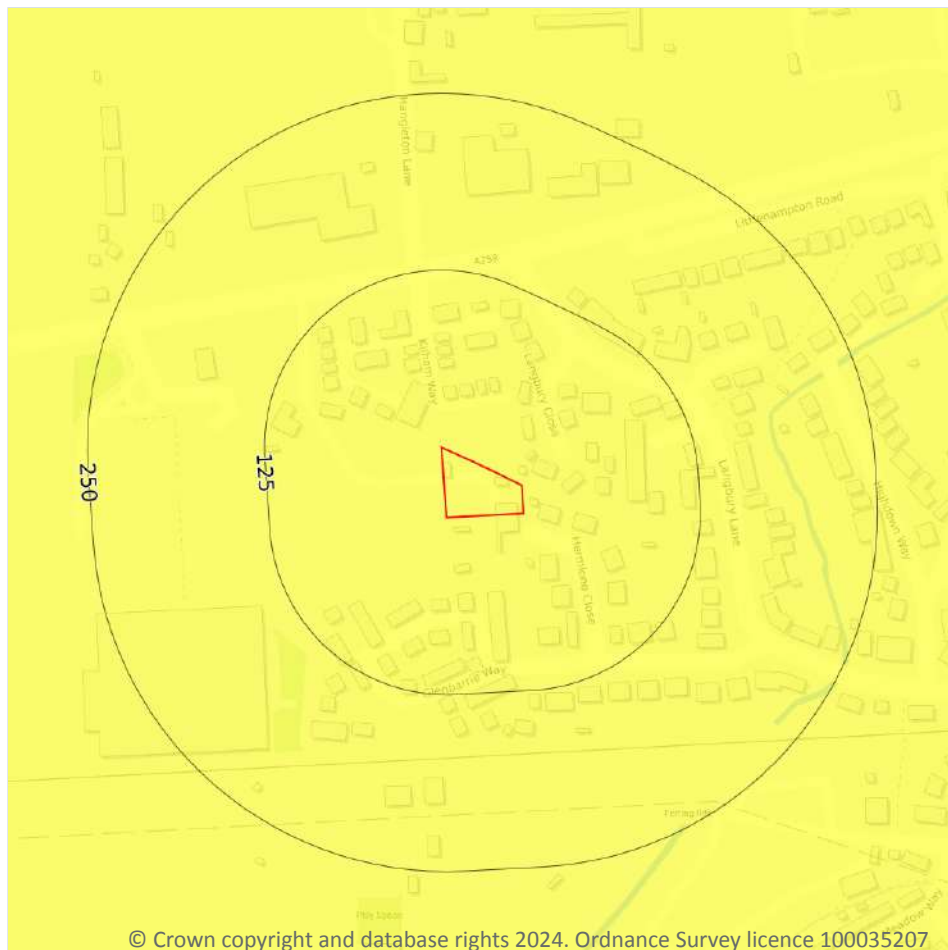
*This data is sourced from the British Geological Survey.*



ns at:

Date: 25 January 2024

## Natural ground subsidence - Ground dissolution of soluble rocks



- Site Outline
- Search buffers in metres (m)
- ☐ No data
  - ☐ Negligible
  - ☐ Very low
  - ☐ Low
  - ☐ Moderate
  - ☐ High

### 17.6 Ground dissolution of soluble rocks

#### Records within 50m

1

The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on [page 86](#)

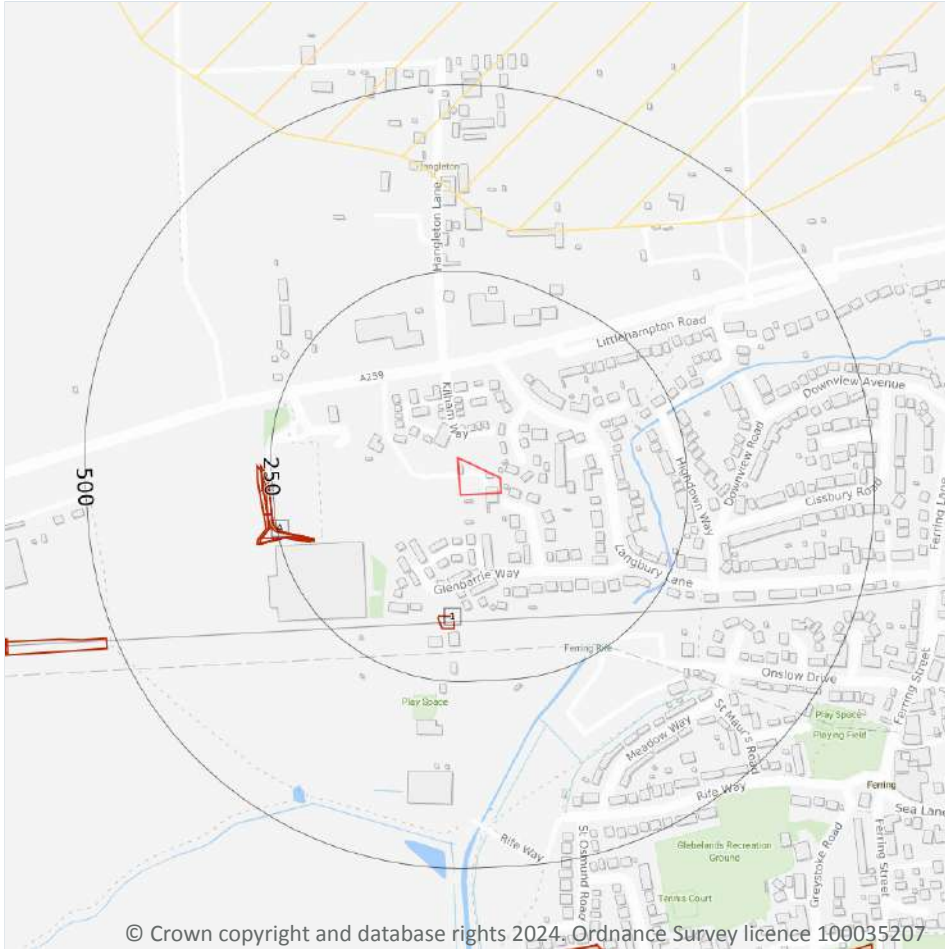
| Location | Hazard rating | Details                                                                                                                                                                                                             |
|----------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| On site  | Very low      | Soluble rocks are present within the ground. Few dissolution features are likely to be present. Potential for difficult ground conditions or localised subsidence are at a level where they need not be considered. |



*This data is sourced from the British Geological Survey.*



## 18 Mining and ground workings



- Site Outline
- Search buffers in metres (m)
- BritPits
- Surface ground workings
- Underground workings
- Underground mining extents
- Historical mineral planning areas
- TCA non-coal mining
- Non Coal Mining
  - Sporadic underground mining of restricted extent possible
  - Localised small scale underground mining possible
  - Small scale mining possible
  - Underground mining known or likely within or in close proximity
  - Underground mining known within or in very close proximity

### 18.1 BritPits

Records within 500m

0

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

*This data is sourced from the British Geological Survey.*

## 18.2 Surface ground workings

### Records within 250m

5

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining and ground workings map on [page 88](#) >

| ID | Location | Land Use | Year of mapping | Mapping scale |
|----|----------|----------|-----------------|---------------|
| 1  | 163m S   | Cuttings | 1957            | 1:10560       |
| A  | 205m W   | Pond     | 1943            | 1:10560       |
| A  | 205m W   | Pond     | 1932            | 1:10560       |
| A  | 205m W   | Pond     | 1910            | 1:10560       |
| A  | 210m W   | Pond     | 1957            | 1:10560       |

*This is data is sourced from Ordnance Survey/Groundsure.*

## 18.3 Underground workings

### Records within 1000m

0

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

*This is data is sourced from Ordnance Survey/Groundsure.*

## 18.4 Underground mining extents

### Records within 500m

0

This data identifies underground mine workings that could present a potential risk, including adits and seam workings. These features have been identified from BGS Geological mapping and mine plans sourced from the BGS and various collections and sources.

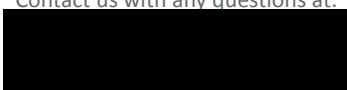
*This data is sourced from Groundsure.*

## 18.5 Historical Mineral Planning Areas

### Records within 500m

0

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.



*This data is sourced from the British Geological Survey.*

## 18.6 Non-coal mining

### Records within 1000m

**2**

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

Features are displayed on the Mining and ground workings map on [page 88 >](#)

| ID | Location | Name          | Commodity | Class | Likelihood                                                                                                                                                                                                     |
|----|----------|---------------|-----------|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2  | 314m N   | Not available | Chalk     | A     | Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered. |
| -  | 998m E   | Not available | Chalk     | A     | Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered. |

*This data is sourced from the British Geological Survey.*

## 18.7 JPB mining areas

### Records on site

**0**

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

*This data is sourced from Johnson Poole and Bloomer.*

## 18.8 The Coal Authority non-coal mining

### Records within 500m

**0**

This data provides an indication of the potential zone of influence of recorded underground non-coal mining workings. Any and all analysis and interpretation of Coal Authority Data in this report is made by Groundsure, and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be the copyright of the Coal Authority and permission should be sought from Groundsure prior to any re-use.

*This data is sourced from The Coal Authority.*



## 18.9 Researched mining

**Records within 500m****0**

This data indicates areas of potential mining identified from alternative or archival sources, including; BGS Geological paper maps, Lidar data, aerial photographs (from World War II onwards), archaeological data services, websites, Tithe maps, and various text/plans from collected books and reports. Some of this data is approximate and Groundsure have interpreted the resultant risk area and, where possible, specific areas of risk have been captured.

*This data is sourced from Groundsure.*

## 18.10 Mining record office plans

**Records within 500m****0**

This dataset is representative of Mining Record Office and/or plan extents held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

*This data is sourced from Groundsure.*

## 18.11 BGS mine plans

**Records within 500m****0**

This dataset is representative of BGS mine plans held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

*This data is sourced from Groundsure.*

## 18.12 Coal mining

**Records on site****0**

Areas which could be affected by past, current or future coal mining.

*This data is sourced from the Coal Authority.*

## 18.13 Brine areas

**Records on site****0**

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

*This data is sourced from the Cheshire Brine Subsidence Compensation Board.*



## 18.14 Gypsum areas

**Records on site****0**

Generalised areas that may be affected by gypsum extraction.

*This data is sourced from British Gypsum.*

## 18.15 Tin mining

**Records on site****0**

Generalised areas that may be affected by historical tin mining.

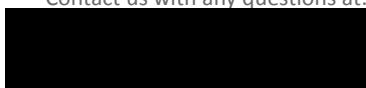
*This data is sourced from Groundsure.*

## 18.16 Clay mining

**Records on site****0**

Generalised areas that may be affected by kaolin and ball clay extraction.

*This data is sourced from the Kaolin and Ball Clay Association (UK).*



## 19 Ground cavities and sinkholes

### 19.1 Natural cavities

Records within 500m

0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

*This data is sourced from Stantec UK Ltd.*

### 19.2 Mining cavities

Records within 1000m

0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

*This data is sourced from Stantec UK Ltd.*

### 19.3 Reported recent incidents

Records within 500m

0

This data identifies sinkhole information gathered from media reports and Groundsure's own records. This data goes back to 2014 and includes relative accuracy ratings for each event and links to the original data sources. The data is updated on a regular basis and should not be considered a comprehensive catalogue of all sinkhole events. The absence of data in this database does not mean a sinkhole definitely has not occurred during this time.

*This data is sourced from Groundsure.*

### 19.4 Historical incidents

Records within 500m

0

This dataset comprises an extract of 1:10,560, 1:10,000, 1:2,500 and 1:1,250 scale historical Ordnance Survey maps held by Groundsure, dating back to the 1840s. It shows shakeholes, deneholes and other 'holes' as noted on these maps. Dene holes are medieval chalk extraction pits, usually comprising a narrow shaft with a number of chambers at the base of the shaft. Shakeholes are an alternative name for suffusion sinkholes, most commonly found in the limestone landscapes of North Yorkshire but also extensively noted around the Brecon Beacons National Park.

Not all 'holes' noted on Ordnance Survey mapping will necessarily be present within this dataset.



*This data is sourced from Groundsure.*

## 19.5 National karst database

Records within 500m

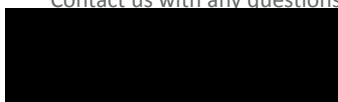
0

This is a comprehensive database of national karst information gathered from a wide range of sources. BGS have collected data on five main types of karst feature: Sinkholes, stream links, caves, springs, and incidences of associated damage to buildings, roads, bridges and other engineered works.

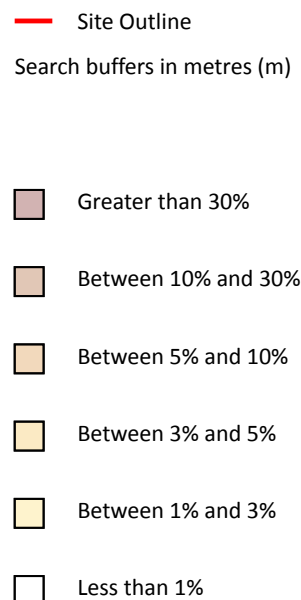
Since the database was set up in 2002 data covering most of the evaporite karst areas of the UK have now been added, along with data covering about 60% of the Chalk, and 35% of the Carboniferous Limestone outcrops. Many of the classic upland karst areas have yet to be included. Recorded so far are: Over 800 caves, 1300 stream sinks, 5600 springs, 10,000 sinkholes.

The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

*This data is sourced from the British Geological Survey.*



## 20 Radon



### 20.1 Radon

#### Records on site

1

The Radon Potential data classifies areas based on their likelihood of a property having a radon level at or above the Action Level in Great Britain. The dataset is intended for use at 1:50,000 scale and was derived from both geological assessments and indoor radon measurements (more than 560,000 records). A minimum 50m buffer should be considered when searching the maps, as the smallest detectable feature at this scale is 50m. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain (1:100,000 scale).

Features are displayed on the Radon map on [page 95](#) >

| Location | Estimated properties affected | Radon Protection Measures required |
|----------|-------------------------------|------------------------------------|
| On site  | Between 1% and 3%             | None                               |

*This data is sourced from the British Geological Survey and UK Health Security Agency.*



## 21 Soil chemistry

### 21.1 BGS Estimated Background Soil Chemistry

Records within 50m

7

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km<sup>2</sup>. In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km<sup>2</sup>; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

| Location | Arsenic       | Bioaccessible Arsenic | Lead      | Bioaccessible Lead | Cadmium   | Chromium      | Nickel        |
|----------|---------------|-----------------------|-----------|--------------------|-----------|---------------|---------------|
| On site  | 15 - 25 mg/kg | No data               | 100 mg/kg | 60 mg/kg           | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| 16m SW   | 15 - 25 mg/kg | No data               | 100 mg/kg | 60 mg/kg           | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| 41m E    | 15 - 25 mg/kg | No data               | 100 mg/kg | 60 mg/kg           | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| 41m E    | 15 - 25 mg/kg | No data               | 100 mg/kg | 60 mg/kg           | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| 42m S    | 15 - 25 mg/kg | No data               | 100 mg/kg | 60 mg/kg           | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| 49m SE   | 15 - 25 mg/kg | No data               | 100 mg/kg | 60 mg/kg           | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| 49m SE   | 15 - 25 mg/kg | No data               | 100 mg/kg | 60 mg/kg           | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |

*This data is sourced from the British Geological Survey.*

### 21.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km<sup>2</sup>).

*This data is sourced from the British Geological Survey.*



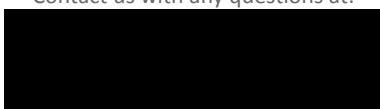
## 21.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km<sup>2</sup>.

*This data is sourced from the British Geological Survey.*





*This data is sourced from publicly available information by Groundsure.*

## 22.3 Railway tunnels

Records within 250m

0

Railway tunnels taken from contemporary Ordnance Survey mapping.

*This data is sourced from the Ordnance Survey.*

## 22.4 Historical railway and tunnel features

Records within 250m

0

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

*This data is sourced from Ordnance Survey/Groundsure.*

## 22.5 Royal Mail tunnels

Records within 250m

0

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.

*This data is sourced from Groundsure/the Postal Museum.*

## 22.6 Historical railways

Records within 250m

0

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

*This data is sourced from OpenStreetMap.*

## 22.7 Railways

Records within 250m

4

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways. Features are displayed on the Railway infrastructure and projects map on [page 99](#) >

| Location | Name               | Type        |
|----------|--------------------|-------------|
| 167m S   | West Coastway Line | rail        |
| 170m S   | Not given          | Multi Track |
| 171m S   | West Coastway Line | rail        |
| 197m SW  | Not given          | Multi Track |

*This data is sourced from Ordnance Survey and OpenStreetMap.*

## 22.8 Crossrail 1

|                            |          |
|----------------------------|----------|
| <b>Records within 500m</b> | <b>0</b> |
|----------------------------|----------|

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

*This data is sourced from publicly available information by Groundsure.*

## 22.9 Crossrail 2

|                            |          |
|----------------------------|----------|
| <b>Records within 500m</b> | <b>0</b> |
|----------------------------|----------|

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

*This data is sourced from publicly available information by Groundsure.*

## 22.10 HS2

|                            |          |
|----------------------------|----------|
| <b>Records within 500m</b> | <b>0</b> |
|----------------------------|----------|

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

*This data is sourced from HS2 Ltd.*

## Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference> ↗.

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**Client Ref:** P16455  
**Report Ref:** GS-4UI-SKV-AMV-512  
**Grid Ref:** 508930, 103242

**Map Name:** County Series

**Map date:** 1877

**Scale:** 1:2,500

**Printed at:** 1:2,500



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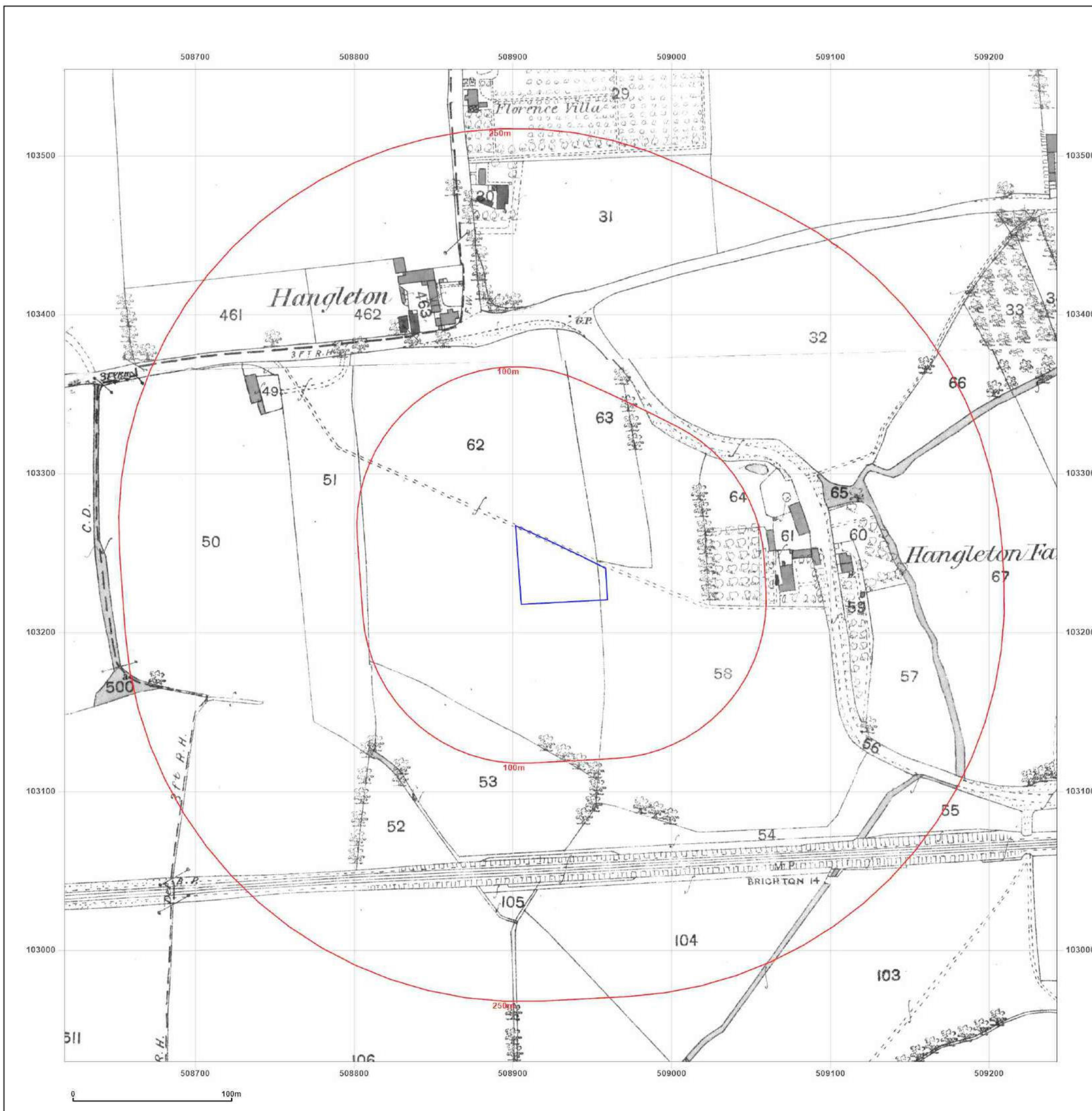


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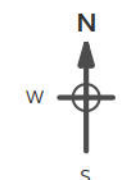
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**Report Ref:** GS-4UI-SKV-AMV-512  
**Grid Ref:** 508930, 103242

**Map Name:** National Grid

**Map date:** 1960

**Scale:** 1:1,250

**Printed at:** 1:2,000



|                                                                                            |                                                                                            |
|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| <p>Surveyed 1959<br/>Revised 1959<br/>Edition N/A<br/>Copyright 1960<br/>Levelled 1950</p> | <p>Surveyed 1959<br/>Revised 1959<br/>Edition N/A<br/>Copyright 1960<br/>Levelled 1950</p> |
|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|

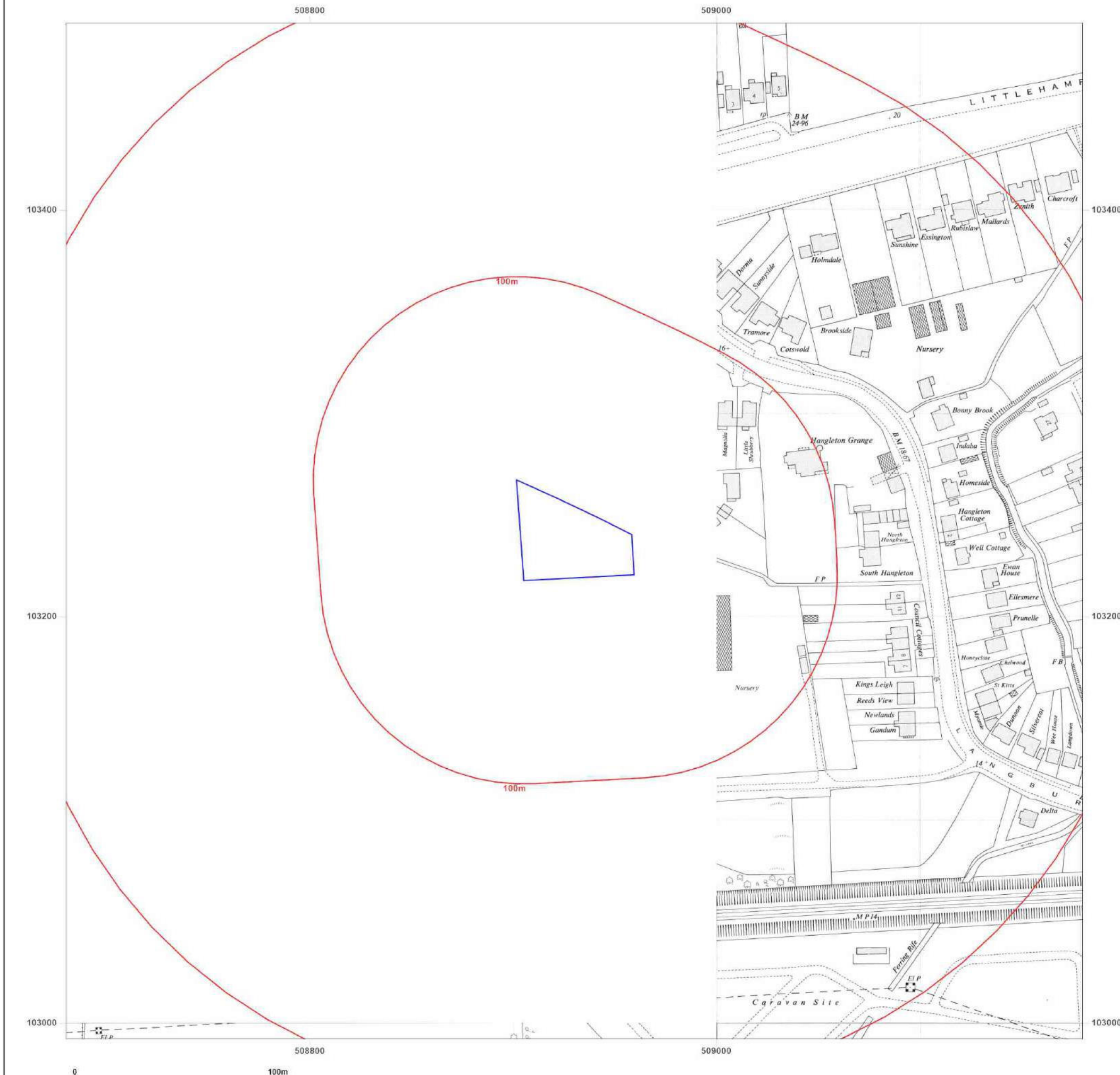


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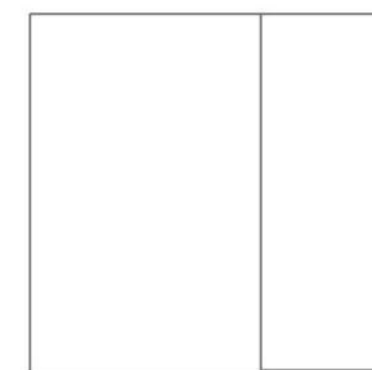
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**Grid Ref:** 508930, 103242

**Map Name:** National Grid

**Map date:** 1969

**Scale:** 1:1,250

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