



**REDROW HOMES LIMITED
AND MR FARMER**

BULLFURLONG LANE, BURBAGE

**GEO-ENVIRONMENTAL
ASSESSMENT REPORT**

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CONTENTS

1.	INTRODUCTION	1
2.	SITE DETAILS	2 - 3
3.	GEOLOGICAL SETTING	4 - 5
4.	ENVIRONMENTAL SETTING	6 - 8
5.	CONCEPTUAL SITE MODEL	9 - 13
6.	GROUND INVESTIGATION STRATEGY	14-17
7.	GROUND CONDITIONS	18 - 21
8.	GROUND CONTAMINATION ASSESSMENT	23 - 24
9.	GEOTECHNICAL ASSESSMENT	25 - 28
10.	CONCLUSIONS AND RECOMMENDATIONS	29 - 33

APPENDICES

Appendix 1 – Sources of Information

Appendix 2 – Selection of Site Photographs

Appendix 3 – Selection of Exploratory Hole Photographs

Appendix 4 – Groundsure Report

Appendix 5 – Local Authority Response

Appendix 6 – Conceptual Site Model and Preliminary Risk Assessment

Appendix 7 – Exploratory Hole Records

Appendix 8 – Gas and Groundwater Monitoring Results

Appendix 9 – CBR Test Results

Appendix 10 – Soakaway Test Results

Appendix 11 – Contamination Summary Table

Appendix 12 – Laboratory Geochemical Test Results

Appendix 13 – Laboratory Geotechnical Test Results

DRAWINGS

Drawing No.	Drawing Title	Scale
23046-GE02	Site Location Plan	NTS
23046-GE03	Site Features Plan	1:1250 @ A0
23046-GE04	Farmyard Features Plan	1:1250 @ A0
23046-GE05	Exploratory Hole Location Plan	1:1250 @ A0
23046-GE07	Parcel Designations	1:1250 @ A0
23046-GE08	Preliminary Gas Measures Plan	1:1250 @ A0

1. INTRODUCTION

1.1 Introduction

- 1.1.1 This report has been compiled in accordance with instructions received from Mr Jacob Henry on behalf of Redrow Homes Limited and Mr Farmer and in accordance with proposals detailed within Travis Baker Geo-Environmental Ltd (TBGE) letter proposal sent via email dated 4 May 2023.
- 1.1.2 This report has been prepared to provide an assessment of ground conditions and identify potential development constraints relating to ground contamination and geotechnical considerations in respect of a proposed development scheme at a parcel of land at Burbage Fields Farm off Bullfurlong Lane in Burbage, Leicestershire (hereafter referred to as 'the site'). The site location is shown on Drawing No. 23046-GE02. It is understood that development proposals for the site will likely comprise traditional two to three storey residential housing with associated gardens, landscaping and infrastructure.
- 1.1.3 The ground contamination assessment included in this report has been undertaken in accordance with the risk assessment framework presented in 'Land Contamination Risk Management (LCRM)' (Environment Agency, 2020). LCRM requires that a phased approach be followed to assess the risk of ground contamination. This phased approach involves the production of a 'preliminary risk assessment' (PRA), followed by an intrusive investigation and quantitative risk assessment, followed in turn by the design, implementation and verification of remedial works should any contaminants be found in unacceptable concentrations.
- 1.1.4 This report presents the findings of a PRA followed by an intrusive ground investigation undertaken in May and June 2023. The investigation included a series of dynamic sampling boreholes, trial pits, in-situ CBR plate load testing, soakaway testing, soil sampling, geotechnical and geochemical laboratory testing and ground gas and groundwater level monitoring. A second phase of intrusive works was undertaken in July 2023 which included four cable percussion boreholes to assist with pile design.
- 1.1.5 The PRA includes a site-specific summary of the historical, geological and environmental setting of the site and immediate area. A list of the information sources used in the preparation of this report are included in Appendix 1. TBGE have exercised reasonable care in examining and interpreting this information but cannot guarantee its authenticity.
- 1.1.6 The contamination assessment included in this report has utilised a risk-based approach that assesses any identified potential pollutant linkages that may be present between any identified contaminant sources, the local environment and end users. This approach enables the development of a Conceptual Site Model (CSM) and is consistent with the methodology contained in Part 2A of the Environmental Protection Act 1990 (as amended 1995 and 2012).
- 1.1.7 The findings of this report are based on the ground conditions identified at the individual exploratory holes and the associated laboratory testing. TBGE have used reasonable skill and diligence in interpreting the conditions between the exploratory hole locations, however we do not accept any liability for conditions that are not revealed by the exploratory holes or test data. Our recommendations on the ground conditions between or beneath exploratory hole locations are therefore for general guidance only and should be confirmed at or prior to construction.
- 1.1.8 This report has been prepared for the sole internal use and reliance of Redrow Homes Limited and Mr Farmer. This report shall not be relied upon or transferred to other parties without the written authorisation of TBGE.

2. SITE DETAILS

2.1 Site Description

Site Location and Description

- 2.1.1 The site comprises an irregular shaped parcel of agricultural land together with a farmyard covering approximately 28.1 hectares. The site, known as Burbage Fields Farm, is located off Bullfurlong Lane in Burbage, Leicestershire and is approximately centred at National Grid Reference 443895, 291705. The site location is shown on Drawing No. 23046-GE02.
- 2.1.2 TBGE carried out a detailed walkover of the site in May 2023 of Burbage Fields Farm with the landowner present for the walkover in the farmyard area.
- 2.1.3 The site has been divided along the field boundaries into parcels A to J to aid the site description and location of specific site features. Drawing 23046-GE07 illustrates the parcel areas. It should be noted parcels A to I are collectively owned by a single landowner; parcel J is owned independently by another.
- 2.1.4 Burbage Fields Farm is accessible from Bullfurlong Lane partly formed by a private road with gravel hardstanding. Pedestrian access and potential vehicular access is possible to the east off Workhouse Lane. However, the northern most field can only be accessed via a private road off Coventry Road to the north.
- 2.1.5 Parcel A (i.e. the farmyard) is located at the end of Bullfurlong Lane and slopes gradually from 116.2m AOD in the north to 115.5m AOD in the south east. The farmyard structures comprise a number of steel framed canopy buildings with metal roofs, timber framed cattle / storage sheds with metal surrounds, dilapidated agricultural buildings of brick construction with tiled roofs, a farmhouse and a grain silo. Surface ground conditions predominantly comprise compacted gravel. No floor slabs were observed within the timber or steel framed buildings however, these are anticipated below the farmhouse and brick buildings. A section of concrete was observed in the approximate area of one of the historical buildings that can be seen on the topographical survey. Further, an electricity pylon is present in the north. An area-specific site features plan has been produced for the farmyard and is included as Drawing No. 23046-GE04. A number of conifers and other trees can be seen within the farmyard area.
- 2.1.6 It is understood two houses off Coventry Road, parcel J, are included within the development, no access to these properties was available during the site walkover.
- 2.1.7 The remaining parcels comprise grassland intersected by hedgerows and sporadic trees that mark field boundaries. A tributary of Soar Brook is located in the north east of the site to the south of parcels E and F and dissecting parcels C and D. The tributary is fed by an underground drain in the north east, a surface water drain in the north of parcel D and a nearby spring located 50m east of parcel E. A section of marshland is present in the south of parcel E with established marshland grasses. A pond is present in the south west of parcel I.
- 2.1.8 Stockpiles were observed in parcels B, C and I. The stockpile in parcel B comprises grass cover and exposed soil and lies in the location of the former pond; immature self-seeded trees occupy parts of the stockpile. The stockpile in the south west of parcel C comprises cattle waste and a stockpile in the east of parcel I appears to comprise brick and concrete rubble. Several smaller mounds were noted in the south west of parcel D.
- 2.1.9 The site forms part of a rolling hillside with site levels ranging from 126.8m to 104.7m AOD. The central part (parcels B, C, G & H) gently slopes to the east and the northern part (parcels E, F and

J) gently slopes to the south. The east and south west of the site (parcels D and I) slope to the south west.

- 2.1.10 No visual or olfactory evidence of contamination has been identified during the site walkover. The 'tank' marked on the topographical survey is a grain silo. According to the landowner no petrol, diesel or oils are, or have been stored onsite; on site observations appear to corroborate this. Visual observations of the outside of the farm buildings do not indicate the presence of asbestos containing materials. However, due to the age of the buildings, asbestos containing materials may be present; an asbestos survey should be carried out prior to demolition.
- 2.1.11 No invasive weeds (such as Japanese Knotweed, Giant Hogweed or Himalayan Balsam) were noted on the site during the walkover. It should however be noted that TBGE are not ecological specialists, the site would need to be surveyed by an ecologist if Redrow Homes and Mr Farmer need confirmation that there are no invasive weeds present on site.

Surrounding Area

- 2.1.12 The site is bound by a motorway (M69) to the south with warehouses and hotels beyond. A significant portion of the site boundaries to the north, east and west are bound by undeveloped agricultural land comprising ploughed fields or recreational grassland. Residential developments form a small part of the eastern and western site boundaries with further housing beyond. Coventry Road and Bullfurlong Lane form the northern boundary of parcel J and the western boundary of parcel H, respectively.

2.2 Site History

- 2.2.1 The history of the site is shown on successive editions of Ordnance Survey County Series and National Grid maps provided in the Groundsure Report, included as Appendix 4. The pertinent features recorded on site and the surrounding area are summarised in the following paragraphs.

On Site

- 2.2.2 Generally, the earliest mapping of 1886 shows undeveloped agricultural fields across the majority of the site and a farmyard in the south east with a pump. A stream is mapped flowing to the east through the north east of the site. Several ponds and small structures have been mapped with the most significant pond in parcel B mapped in the 1980's to the 2010's with an earth bund surrounding. The structures mapped in the farmyard (parcel A) have developed through time with occasional additional structures being added but no significant changes are recorded to the footprints. 'Fieldgate Pit' is mapped in the north of parcel F from the 1880's and is no longer seen on the 1925 map edition. Electricity pylons are mapped in the 1930's and later redeveloped during the 1970's forming the present day configuration. Apart from changes to the field boundaries, the site has remained largely unchanged to the latest map edition of 2023.
- 2.2.3 In addition, publicly available online aerial imagery suggests parcel J may have been in use as a caravan park in 2008. The imagery also suggests the ground has been disturbed in the approximate centre of parcel B. Drawing Nos. 23046-GE03 and 23046-GE04 identify the locations of the pertinent site features shown in the historical maps relative to the current site layout.

Surrounding Area

- 2.2.4 The land adjacent to the north and east of the site has seen progressive residential development between the 1930's and 1980's. The current major road network, M69 directly south and surrounding A and B roads, are mapped in the 1970's with no change to the present. The warehouses to the south are mapped from the 2020's. No further significant changes are mapped to the agricultural fields located to the west.

3. GEOLOGICAL SETTING

3.1 Recorded Geology

- 3.1.1 Geological mapping for the site can be viewed online published by the British Geological Survey (BGS) map reference '*Coventry, England and Wales Sheet 169. Solid and Drift Geology. 1994.*' Descriptions of the published strata have been acquired from the 'BGS Lexicon of Named Rock Units'.
- 3.1.2 The published geological mapping shows the site to be underlain by a succession of *Quaternary* superficial deposits listed below in order of age (i.e. youngest to oldest) with a brief description.
- *Alluvium*: soft to firm compressible clay or silt which may contain layers of silt, sand and gravel;
 - *Dunsmore Gravel*: red, brown and yellow flinty gravel with lenses of coarse sand. Most deposits are poorly sorted and clay rich;
 - *Oadby Member*: diamicton, brown and grey, weathering brown clay and silt with subordinate lenses of sand and gravel with chalk and flint fragments;
 - *Wolston Sand and Gravel*: sand and gravel, locally with lenses of silt or clay.
- 3.1.3 The two youngest strata, alluvium and Dunsmore Gravel are spatially confined onsite, the alluvium on the eastern boundary of Parcel C following the stream and Dunsmore Gravel in the north of Parcel J. The Oadby Member is recorded across the majority of the site and is interpreted to extend beneath the alluvium and Dunsmore Gravel. The Wolston Sand and Gravel is the oldest strata directly mapped and is recorded in Parcel C, based on the cross sections shown on the geological maps, it is anticipated to be encountered beneath the Oadby Member.
- 3.1.4 The superficial geological mapping shows the Bosworth Clay Member (formerly Wolston Clay) recorded in the vicinity of the site. Based on the cross section provided in the geological mapping, this strata may be encountered beneath the Oadby Member and is indicated to comprise grey clay and silt.
- 3.1.5 The published bedrock geology indicates the superficial deposits are underlain by the Mercia Mudstone Group across the whole site area, these strata consist of dominantly red, less commonly green-grey, mudstones and subordinate siltstones.

3.2 Hydrology

- 3.2.1 Reference has been made to the Government's Magic Map Application and the Groundsure Report have been consulted to provide details on aquifer designation and source protection zones for the area.
- 3.2.2 The nearest surface watercourse to the site is a tributary of Soar Brook, located in the north east of the site flowing south east into Soar Brook approximately 600m from the site at its nearest point. The Water Framework Directive (WFD) has designated the tributary of Soar Brook as 'good' for its chemical and quantitative status.
- 3.2.3 The site is not indicated to be at risk of flooding from rivers however, surface water flooding is indicated to be a 1 in 30 year risk in the vicinity of the watercourse at a depth of 0.3m to 1.0m. It is recommended the flood risk is assessed by specialist consultants.
- 3.2.4 However, notwithstanding these observations, given that the site area exceeds one hectare a Flood Risk Assessment (FRA) with respect to fluvial flooding will still be required in support of any Planning application for new development on the site.

3.3 Hydrogeology

Aquifer Designation – Superficial Deposits

- 3.3.1 The Dunsmore Gravel, Wolston Sand and Gravel and alluvium are classified as Secondary A aquifers which is defined as '*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.*'
- 3.3.2 The Oadby Member which overlies the majority of the site is classified as a Secondary (Undifferentiated) aquifer which is defined as '*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 nonaquifer in different locations due to the variable characteristics of the rock type.*'

Aquifer Designation – Bedrock

- 3.3.3 The Mercia Mudstone is classified as a Secondary B aquifer which is defined as '*Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers.*'
- 3.3.4 The site does not lie within a groundwater source protection zone.

3.4 Radon

- 3.4.1 The radon risk maps for the UK by the UK Health and Security Agency were accessed on 30 June 2023 and indicate that the maximum radon potential in the western part of the site is less than 1%, for which radon protection measures are not required.

3.5 Mining

- 3.5.1 The Coal Authority Interactive Map Viewer shows the site does not lie within a defined 'Coal Mining Reporting Area'. The geology of the site is reported to comprise glacial materials deposited in the quaternary period overlying the Mercia Mudstone Formation. On this basis, no further action is considered necessary in regards to this potential development constraint.

3.6 Ground Workings

- 3.6.1 There are three records of surface ground workings adjacent to the site boundary two of which are associated with the cut undertaken to enable the development of the M69 on the southern boundary. The third is located to the north of the site associated with 'Field Gate' pit recorded on historical maps, this area is clearly defined on historical mapping and covers a larger area in the groundsure report. No further information is provided.

4. ENVIRONMENTAL SETTING

4.1 Groundsure Report

- 4.1.1 Information from the Environment Agency (EA) and other regulatory authorities has been obtained via a site-specific Groundsure report, dated 17 May 2023. The report provides environmental information up to a 2.0km buffer around the site boundary. The report includes details of nearby abstraction, discharge consents, recorded pollution incidents, licensed waste sites, and sites that have, or historically have had, potentially contaminative issues. A copy of the Groundsure report is included in Appendix 4.

4.2 Discharge Consents

- 4.2.1 There is a record for an active licensed discharge consent 87m to the north west of the site. The licence is for the discharge of sewer storm overflow into a tributary of Soar Brook.

4.3 Recorded Pollution Incidents

- 4.3.1 There are no records of any major or significant pollution incidents within 500m of the site.

4.4 Licensed Pollutant Release (Part A(2)/B)

- 4.4.1 There are no records of any licenced Part A(2) and Part B installations within 500m of the site.

4.5 Abstraction Licences

- 4.5.1 There are no records for surface water abstractions within 500m of the site. There are seven historical records for groundwater abstractions within 500m of the site boundary, the nearest is located approximately 64m to the north east. All records are for general farming and domestic use. There are no records for potable extractions within 500m of the site boundary. In addition, a pump is mapped on historical plans within the farmyard area, parcel A.

4.6 Landfill Designations

- 4.6.1 There are no recorded historical or active landfill sites recorded within 500m of the site boundary.

4.7 Other Waste Sites

- 4.7.1 No active waste transfer, treatment or disposal sites are recorded within 500m of the site.

4.8 Waste Exemptions

- 4.8.1 Various waste treatment activities that were exempt from needing permits are recorded at four locations within 500m of the site. These comprised the following:
- Disposing waste exemption - burning waste in the open approximately 265m north east;
 - Storing waste exemption - storage of sludge approximately 314m south east;
 - Using, disposing, treating and storing waste exemptions – various 407m south east.
 - Using, disposing, treating and storing waste exemptions – various 427m south east.
- 4.8.2 These activities are considered unlikely to have affected the site.

4.9 Historic Tanks

- 4.9.1 Historic tanks or similar features are recorded at 13 locations between 10m and 500m from the site. The nearest tank recorded in 1938 is located 12m to the north of the site. When the OS maps were checked no tank was identified. All other tanks are recorded greater than 60m from the site boundary and are not considered to have a significant impact to the proposed development.

4.10 Historical Industrial Land Usage

- 4.10.1 There are 14 data entries recording historical industrial land use within 250m of the site boundary. These include nurseries, unspecified works, unspecified factories and hosiery manufactory between 90m and 220m to the north and north west of the site and are recorded between the 1880's and 1980's. The nearest record is for a nursery 91m to the north west of the site. Given the stated distances these are considered unlikely to have affected the site.

4.11 Recent Industrial Land Usage

- 4.11.1 Three records indicate recent industrial land use recorded onsite that have been identified during the site walkover. These are two electricity pylons located in Parcel A and Parcel C and a grain silo in Parcel A.
- 4.11.2 There are 9 further industrial land use records within 250m of the site boundary. Five are associated with energy, water and communication features that include:
- A telecommunications mast 68m to the south;
 - Pylons and an electricity substation between 152m and 225m;
 - A water pumping station 166m to the north east.
- 4.11.3 The remaining 4 records include consumer products 122m north west, boiler repairs and servicing 176m north, business centre 176m north and foodstuffs 177m north.

4.12 Contaminated Land Register of Sites Designated under Part 2A

- 4.12.1 There are no records of any land within 500m of the site having been designed as 'Contaminated Land' under Part IIA of the Environmental Protection Act 1990.

4.13 Environmental Sensitivity

- 4.13.1 The site and the whole of the surrounding area to a radius of over 2km are recorded to lie within a defined 'Site of Special Scientific Interest' (SSSI) Impact Risk Zone. Within such zones, certain specified developments and activities require the approval of Natural England, which is typically obtained through the Planning process. However, in this case, new residential development does not appear amongst the listed types of development requiring consultation.
- 4.13.2 The closest recorded SSSI to the site is an area of ancient woodland 963m to the south of the site. However, this is considered unlikely to be affected by the proposed development.
- 4.13.3 No other major ecological receptors are recorded within 2km of the site.

4.14 Services

- 4.14.1 A full search of existing utilities has been provided by Redrow Homes Ltd, the 'Utilities Assessment' by MEC Utilities, reference 27932-UTIL-0701 is dated May 2023. In addition, TBGE have conducted a search of publicly available utility records.

- 4.14.2 The records indicate there is a 400kV overhead electricity line in the south and two overhead 11kv electricity cables in the south and the east that are reported by MEC to travel underground for a short distance across the site.
- 4.14.3 A telecommunications BT cable is recorded above and below ground in the centre orientated north south parallel to a water pipe that was communicated by the landowner.
- 4.14.4 An underground 300mm pressurised sewer pipe is also recorded in the north and north east of the site.
- 4.14.5 Drawing No. 23046-GE03 identifies the existing services beneath the site as identified on the various utility records. It should be noted that additional services may be present beneath or adjacent to the site that have not been identified by the searches undertaken to date.

4.15 Local Authority Searches

- 4.15.1 Enquiries have been made to the Environmental Health Department of Hinckley and Bosworth Borough Council in relation to any environmental information which they may hold for the site or immediate vicinity. The Local Authority (LA) response, dated 8 June 2023 is included as Appendix 5, we have summarised the pertinent points in the following text for ease of reference.
- 4.15.2 Hinckley and Bosworth Borough Council has no records of any landfill sites within a 500m radius of the site, or any pollution incidents within or in close proximity to the site. The site has not been designated as 'Contaminated Land' and the Council has no plans to carry out any investigations on the site under Part IIA of the Environmental Protection Act 1990. The Council is however aware of the presence of two former and potentially infilled ponds in the north-western part of the site, but considers that these present a generally low risk of ground contamination.

4.16 Unexploded Ordnance (UXO) Summary

- 4.16.1 The online risk map maintained by ZeticaUXO has been reviewed to determine the risk of unexploded ordnance at the site. The map indicates the site to have a low bomb risk of 1% across the site and indicates there was industry nearby to the west. It is recommended that prior to any development a preliminary UXO risk assessment should be obtained.

5. CONCEPTUAL SITE MODEL

5.1 Initial Conceptual Site Model

5.1.1 An initial Conceptual Site Model (CSM) has been developed based on the findings of the desk study researches described in the preceding sections of this report, and incorporating the accepted 'Source-Pathway-Receptor' linkage ('contaminant linkage') approach outlined in Part 2A of the Environmental Protection Act 1990. In order for a contaminant linkage to exist, a source, pathway and receptor must all be present. Land Contamination Risk Management (LCRM) (Environment Agency, 2020) defines these elements as follows:

- Source – A contaminant or pollutant that is in, on or under the land and has the potential to cause harm or pollution
- Pathway – A route by which a receptor is, or could be affected by a contaminant
- Receptor – Something that could be adversely affected by a contaminant. Examples include humans, controlled waters, ecosystems and Part 2A receptors such as buildings, crops or animals.

5.1.2 LCRM expressly states that "without a contaminant linkage, there is not a risk – even if a contaminant is present".

5.1.3 The aim of the CSM is therefore to provide a qualitative assessment of the risk posed to both human health and environmental receptors from potential on-site and off-site sources of ground contamination. Sections 5.2 to 5.4 below summarise the potential sources, pathways and receptors identified.

5.2 Sources

5.2.1 Table 1 lists the potential sources of ground contamination identified at the site and in the surrounding area, together with the contaminants that have the potential to have been generated. Contaminants arising from both current and historical land uses have been considered, and have been separated according to whether they are likely to have originated from within the development area, or from other on-site or off-site source activities.

Table 1 – Potential Contamination Sources

	Source	Potential Contaminants
<i>On site</i>		
1	Made ground associated with the infilling of former ponds on site and the pit in the north of the site	Variable depending on nature and source of infill material, but could include: metals/metalloids, polyaromatic hydrocarbons (PAH), acidity/alkalinity (low/high pH), asbestos, ground gases (carbon dioxide, methane)
2	Made ground associated with the farmyard area, the historical developments on site	Possible metals, metalloids, polyaromatic hydrocarbons, sulphates, acidity/alkalinity (low/high pH), asbestos (depending on nature and source of material)
3	Leaks and spills from storage of agricultural machinery	Total petroleum hydrocarbons
4	Maintenance of farmland	Pesticides/insecticides
5	Naturally occurring organic deposits within the Alluvium	Ground gases (carbon dioxide, methane)

	Source	Potential Contaminant
6	Materials within existing farmyard buildings and the residential development in north of site	Metals (associated with pipework and paint constituents) and asbestos
<i>Off site</i>		
7	Infill materials placed during the construction of the M69	Ground gases (carbon dioxide, methane)

5.2.2 It should however be noted that the primary responsibility for ground contamination occurring at the site from off-site sources would lie with the polluters or the respective site owners / occupiers.

5.3 Pathways

5.3.1 The list below summarises possible pathways, which could allow potential receptors to be exposed to any contamination present at the site:

- Dermal contact, ingestion or inhalation of contaminated soil and soil-derived dust by humans
- Migration of ground gases into new buildings
- Migration of contaminants via proposed service routes and foundations
- Leachate migration into pore water from soil contamination, dilution and dispersion into groundwater
- Hydrogeological flow within groundwater to surface water receptors
- Surface run-off into surface water (tributary of Soar Brook)
- Direct contact between contaminated soils and building substructures
- Flooding of surface water features.

5.4 Receptors

5.4.1 Potential receptors to any contamination identified at the site include:

- Humans – construction workers, future site users and off-site residents/occupiers
- Proposed development end use – buildings, gardens, services/utilities
- Controlled waters:
 - Underlying secondary aquifers
 - Surface water features, including the watercourse in the northeast.

5.4.2 As discussed in Section 4.13, the closest major ecological receptor to the site is a SSSI approximately 960m from the site, which is considered unlikely to be affected by site activities.

5.5 Preliminary Risk Assessment

5.5.1 We understand that the site will be developed for residential housing with associated domestic gardens, landscaping, and infrastructure. We have therefore broadly utilised the methodology presented in the EA/NHBC document 'Guidance for the Safe Development of Housing on Land Affected by Contamination' (R&D Publication 66, 2008), which has been used to evaluate a level of risk for each contaminant linkage identified in the conceptual model. This is a qualitative approach based upon the classification of the probability of occurrence and the potential consequence (severity). It is considered that this approach should provide a conservative view of any potential risks identified at the site.

5.5.2 The degree of risk is based on an assessment of consequence of an event occurring and the probability of a pollutant linkage. Table 2 is the Categorisation of Risk table from R&D 66, in which the likelihood of each pollutant linkage being realised is compared with the severity of the consequence. This provides a qualitative assessment of potentially unacceptable risks.

Table 2 – Categorisation of Risk

		Consequence			
		Severe	Medium	Mild	Minor
Probability of Pollutant Linkage	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate to Low Risk
	Likely	High Risk	Moderate Risk	Moderate to Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate to Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate to Low Risk	Low Risk	Very Low Risk	Very Low Risk

5.5.3 The definitions of the risk terms used in describing the risk levels in Table 2 are based on those provided in CIRIA 552, Contaminated Land Risk Assessment, a guide to Good Practice 2001a.

- Very High Risk - There is a probability that severe harm could arise to a designated receptor from an identified hazard at the site without appropriate remediation action.
- High Risk - Harm is likely to arise to the designated receptor from an identified hazard at the site without appropriate action.
- Moderate Risk - It is possible that without appropriate remediation action harm could arise to the designated receptor. It is relatively unlikely that such harm would be severe, and if any harm were to occur it is more likely that such harm would be relatively mild.
- Low Risk - It is possible that harm could arise to a designated receptor from an identified hazard. It is likely that, at worst if any harm were realised, any effects would be mild.
- Very Low Risk - The presence of an identified hazard does not give rise to the potential to cause harm to a designated receptor.

5.5.4 The development proposals for the Bullfurlong Lane, Burbage site will include residential properties with associated gardens, landscaping and infrastructure.

5.5.5 This assessment of the potential harm to either human health or the local environment is based on our experience and judgement.

5.6 Pollutant Linkages

5.6.1 Possible 'contaminant linkages' from each of the potential sources of contamination described above have been identified, and a risk classification assigned with respect to each. These are presented in Appendix 6. Sections 5.7 to 5.8 below summarise the level of risk identified with respect to each of the receptors.

5.7 Risk to Human Health

Future Site Residents

5.7.1 The risk to the long-term health of future site residents is generally considered generally very low to low across the majority of the site (Parcels B to J), with the low risk classification associated with

potential for organic deposits below buildings in respect to ground gas. The risk is increased in the farmyard area (Parcel A) and near the infilled ponds, to moderate where made ground may be present beneath proposed gardens and/or other landscaped areas. An intrusive investigation is considered necessary to further assess the ground conditions and extent of ground contamination beneath the site, and to enable further quantification of the potential 'contaminant linkages' identified.

Construction Workers

- 5.7.2 The potential risk to the short-term health of construction workers is considered very low to low in Parcels C to J and low to moderate in Parcel A and near the former ponds during the development phase of the site, when workers have the potential to be directly exposed to contaminated materials. However, any such exposure should normally be mitigated by taking account of normal safe working practices including the use of appropriate personal protective equipment.

5.8 Risk to Controlled Waters

- 5.8.1 There are four potential receptors that may be impacted by contaminated groundwater these include the tributary of Soar Brook and secondary aquifers alluvium, Dunsmore Gravel and Wolston Sand and Gravel. The site is overlain in part by the superficial strata of the Dunsmore Gravel and Wolston Sand and Gravel indicated to comprise coarse soils that are likely to be permeable. Based on the surface water flood risk and the recorded boggy ground conditions, these deposits may contain groundwater at shallow depths. The alluvium is likely to comprise fine soils, i.e. clay and silt, and therefore limited migration of contaminants is likely to occur through this strata and any contaminants are likely to migrate downstream.
- 5.8.2 All the receptors are recorded in areas of undeveloped agricultural land. On this basis the risk to controlled waters is considered to be low, however due to the evident vulnerability of the receptors, this should be further reviewed following a ground investigation.

5.9 Contaminants of Concern

- 5.9.1 Based on the identified potential contamination sources and development proposals the following contaminants of concern have been identified:
- metals and metalloids including arsenic, boron, cadmium, chromium, copper, lead, mercury, nickel, selenium and zinc;
 - acidity/alkalinity (low/high pH);
 - sulphate;
 - polyaromatic hydrocarbons (PAH);
 - asbestos;
 - total petroleum hydrocarbons (TPH) – however, any significant contamination by TPH would probably yield visual or olfactory evidence;
 - pesticides;
 - ground gases (carbon dioxide, methane).

5.10 Preliminary Geotechnical Assessment

- 5.10.1 The made ground or alluvium are not generally considered appropriate for direct founding, any foundations in the vicinity of significant thickness' of made ground or alluvium may need to be deepened.

5.10.2 The superficial geology indicated by the BGS 'Geoindex' data (Dunsmore Gravel, Oadby Member and Wolston Sand and Gravel) could potentially provide suitable bearing strata for conventional shallow foundations supporting lightly-loaded structures. However, foundation choice has the potential to be affected by the volume change potential of clay soils (particularly if present in the vicinity of existing or former trees). The ground investigation works need to provide geotechnical data for the proposed development, including an assessment of suitable foundation options for the proposed dwellings.

6. GROUND INVESTIGATION STRATEGY

6.1 Ground Investigation Strategy

6.1.1 The ground investigation works described in this section of the report were undertaken between 24 May and 1 June 2023 and comprised the following works:

- 12 dynamic sampling boreholes (BH01 to BH12);
- 53 mechanically excavated trial pits (TP01 to TP50 and SA01 to SA03);
- 3 soakaway tests (SA01 to SA03);
- 4 cable percussion boreholes;
- In-situ standard penetration tests (SPTs) within all of the boreholes during drilling;
- 8 in-situ CBR tests;
- Geochemical and geotechnical laboratory analysis of soil samples;
- Ground gas and groundwater monitoring from standpipes fitted to selected boreholes.

6.1.2 The ground investigation included a combination of targeted sampling locations (i.e. former ponds, structures, alluvium and boggy ground) and non-targeted sampling points to provide a general spread across the site.

6.1.3 Table 3 presents a summary of the ground investigation strategy:

Table 3 – Ground Investigation Strategy

Ref.	Objective
All Exploratory Holes Trial pits <i>TP01 to TP50</i> Dynamic sampling Boreholes <i>BH01 to BH12</i> Cable Percussion Boreholes <i>CP01 to CP04</i>	To determine ground and groundwater conditions across the site, including: - nature and depth of any made ground; - nature and depth of any superficial deposits; - obtain soil samples for laboratory chemical and geotechnical testing; - assess suitability of ground for foundation design; - undertake hand shear vane testing, if appropriate (<i>trial pits only</i>); - carry out in-situ geotechnical testing (SPTs) (<i>dynamic sampling boreholes only</i>); - install standpipes for ground gas and groundwater monitoring (<i>dynamic sampling boreholes only</i>).
In-Situ CBR Tests <i>CBR01 to CBR08</i>	To determine the california bearing ratio of the near surface soils to aid road design.
In-Situ Soakaway Testing <i>SA01 to SA03</i>	To assess groundwater infiltration rates at the site for preliminary drainage design.
Ground Gas and Groundwater Monitoring <i>BH01, BH04, BH05 to BH09 and BH11</i>	To determine the standing groundwater level across the site and measure the ground gas emissions to provide information to aid the ground gas regime.
Laboratory Testing Geotechnical	Analysis of soil samples to assist with foundation assessment.

Ref.	Objective
Laboratory Testing Contamination	Analysis of soil samples to provide test data for a Generic Quantitative Risk Assessment (GQRA) of ground contamination.

6.1.3 The number and spacing of non-targeted sampling points across the site following completion of both phases of investigation was compliant with that recommended by BS10175:2011+A2,2017 '*Investigation of potentially contaminated sites – Code of practice*' for an 'exploratory investigation'.

6.1.4 The following subsections describe the investigation in additional detail. The locations of the exploratory holes are shown in Drawing No. 23046-GE05.

Limitations

6.1.5 Limited access was obtained for Parcel J during the ground investigation however, no pedestrian access is possible thereafter for ground gas and groundwater monitoring.

6.1.6 No access is possible in the standoff zones established around services covering a significant part of the site.

6.1.7 The farmyard is in-use therefore the ground investigation was limited to dynamic sampling boreholes at locations agreed with the landowner prior to drilling.

6.2 Investigation Methodology

6.2.1 All of the ground investigation fieldwork was undertaken under the direction of a TBGE engineer.

Underground Services Avoidance

6.2.2 Prior to breaking ground the area was screened for service markers, covers or other visual identification of service locations. Each location was checked against the available utility records and MEC Utilities Report. Finally, each location was scanned using a Cable Avoidance Tool (CAT) at each location. Additionally, the boreholes locations were discussed with the landowner prior to drilling to avoid localised unrecorded services.

Trial Pits

6.2.3 The trial pits were dug using JCB 3CX excavator supplied by Colden Plant Hire. The trial pits were excavated to depths of between 0.8m and 3.4m bgl. After detailed examination, measurement and sampling the pits were backfilled with arisings and nominally compacted with the machine bucket to minimise (as far as possible) the risk of post-reinstatement settlement.

Dynamic Sampling Boreholes

6.2.4 Boreholes were drilled by Boreworx to depths of between 3.45m and 5.45m bgl depending on borehole stability and refusal (i.e. SPT 'N' value of 50). All of the boreholes were drilled using drive-in windowless sampling techniques and included in situ Standard Penetration Tests (SPTs), typically at 1m intervals.

Cable Percussion Boreholes

6.2.5 A total of four cable percussion boreholes were drilled by Des Dowman Drilling to depths of between 12.5m and 20.5m. All of the boreholes included in situ Standard Penetration Tests (SPTs), typically at 1m intervals.

Soil Sampling

6.2.6 Samples of the soil arisings recovered from the trial pits and boreholes were collected by a TBGE Engineer. The guidance in BS10175:2011+A2,2017 '*Investigation of potentially contaminated sites*

– *Code of practice* was followed during the recovery of samples for chemical analysis. All samples were collected using a stainless-steel trowel, which was cleaned prior to the collection of each sample. The samples were stored in new clean containers (plastic tubs or amber jars, as appropriate to the laboratory analysis) and transported to the laboratory in insulated, refrigerated cool boxes under complete chain of custody documentation.

- 6.2.7 Samples from the dynamic sampling boreholes were collected in new clean 1m length plastic liners, which were opened on site by the drillers and sub-sampled by the TBGE Engineer using the above procedures.

Ground Gas and Groundwater Monitoring

- 6.2.8 Following completion of the fieldwork, ground gas and groundwater-monitoring standpipes were fitted into selected boreholes (BH01, BH04, BH05 to BH09 and BH11).

- 6.2.9 Measurements of the concentrations of methane (CH₄), carbon dioxide (CO₂) and oxygen (O₂) ground gases, together with the standing groundwater levels, barometric pressures and gas flow rates from the standpipes were measured on three occasions between 6 July and 30 July 2023.

Records of Fieldwork

- 6.2.10 Detailed records of the boreholes and trial pits have been produced in accordance with BS5930:2015+A1,2020 '*Code of practice for ground investigations*' and are included in Appendix 7. The SPT results and details of the monitoring standpipes are included on the respective borehole logs. Selected photographs of the trial pit excavations, arisings and borehole cores are included in Appendix 3. The ground gas and groundwater monitoring results from both phases of investigation are included as Appendix 8.

6.3 Laboratory Testing

Chemical Testing

- 6.3.1 Selected soil samples were subjected to laboratory tests for a range of contaminants, as identified by the CSM in the Sections 3.13 to 3.15 above and also taking account of observations made during the fieldwork. Table 4 summarises the laboratory tests performed.

Table 4 - Contamination Laboratory Tests Performed on Soil Samples

Test	Topsoil	Made Ground	Natural Strata
Greenfield Suite ♦	21	7	17
Polyaromatic Aromatic Hydrocarbons (PAHs) #	21	5	3
Total Petroleum Hydrocarbons (TPH) (CWG) ⊕	1	2	0
Pesticides	6	-	-
Asbestos screen	10	5	3
Total Organic Carbon (TOC)	2	2	12
pH and water soluble sulphate	-	-	18

Notes on

Table 4:

(♦): Suite includes: arsenic, cadmium, total chromium, copper, lead, mercury, selenium, copper, nickel, zinc, water-soluble boron, water-soluble sulphate and pH.

(#): USEPA16 PAH includes:- naphthalene, acenaphthylene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(123-cd)pyrene, benzo(ghi)perylene and dibenzo(a,h)anthracene.

(⊕): TPH (CWG) includes:- benzene, toluene, ethylbenzene, m/p-xylene, o-xylene, MTBE, aliphatic fractions C₅-C₆, C₆-C₈, C₈-C₁₀, C₁₀-C₁₂, C₁₂-C₁₆, C₁₆-C₂₁, C₂₁-C₃₅ and aromatic fractions C₆-C₇, C₇-C₈, C₈-C₁₀, C₁₀-C₁₂, C₁₂-C₁₆, C₁₆-C₂₁, C₂₁-C₃₅.

- 6.3.2 The tests were performed by i2 Analytical to UKAS and MCERTS accreditation where applicable. The results are included as Appendix 12.

Geotechnical Testing

- 6.3.3 Fifteen samples of naturally occurring clay and silt soil recovered from selected boreholes and trial pits were subjected to geotechnical laboratory tests to measure their natural water content, liquid limit, plastic limit and plasticity indices.
- 6.3.4 Specific geotechnical testing comprising particle size distribution was undertaken on a sample of silt representative of the Wolston Sand and Gravel and two samples of clay representative of the Oadby Member and Bosworth Clay Member.

7. GROUND CONDITIONS

7.1 Succession of Strata

- 7.1.1 Generally, a surface covering of topsoil is present overlying superficial deposits of clay with layers of silt, sand and gravel. Made ground is encountered locally in the farmyard area and the location of the former pond.

7.2 Topsoil

- 7.2.1 Topsoil was encountered in all exploratory holes in Parcels B to J not including TP36 in Parcel B to depths of between 0.3m and 0.9m (typically 0.45m). The topsoil comprises a combination of brown to dark brown slightly sandy to sandy slightly gravelly clay and slightly clayey to clayey slightly gravelly sand. The gravel content comprises quartzite, chert, coal, chalk, mudstone, sandstone, limestone and locally in TP32 with anthropogenic materials of brick and ceramic.

7.2 Made Ground

- 7.2.1 Made ground was encountered in the farmyard to depths of between 0.8m and 1.0m comprising a combination of brown and dark brown slightly clayey slightly sandy to sandy gravel (hardcore) and typically overlying clay with varying proportions of sand and gravel of brick, concrete, plastic, chalk, mudstone and quartzite.
- 7.2.3 In the area of the former pond in Parcel B made ground was encountered in TP36 to 2.85m. These soils comprise dark brown slightly organic slightly gravelly sandy clay with a gravel content of concrete, brick, chert and tree debris. Together with rare cobbles of whole brick and concrete slab.
- 7.2.4 The ponds identified in the locations of TP12, TP18 or TP38 within the groundsure report were targeted however, no pond fill materials are observed in the trial pits. It is considered further ground investigation may be required to locate and identify any potential pond fill materials in these areas.

7.3 Natural Superficial Soils

- 7.3.1 The ground investigation revealed poorly defined boundaries between the recorded superficial deposits and the encountered strata. This variability extends into the competency of near surface soils which vary between soft to stiff clays and very loose to medium dense sands. Generally, the softened and loosened strata are located in the north east of the site, Parcels D, E, F and in the north east corner of G. However, the encountered strata can be broadly defined on the descriptions provided below.
- 7.3.2 Materials consistent with alluvium are encountered in TP38 and TP39, in Parcel C, to depths of between 1.2m and 1.8m below ground level (bgl) and comprises soft brown slightly sandy to sandy slightly gravelly clay with a gravel content of mudstone and quartzite.
- 7.3.3 Further, softened materials are encountered in Parcel E, outside of the BGS mapped extents of the alluvium. However, it is considered these are representative of the Oadby Member and softened by groundwater.
- 7.3.4 At one location, TP01, in the north of Parcel J to a depth of 1.2m bgl a material comprising light brown slightly gravelly clayey sand is present with a gravel content of mudstone and quartzite. These materials are considered representative of the Dunsmore Gravel.

- 7.3.5 Typically, beneath the topsoil, the superficial deposits comprise an upper layer of very soft to firm grey, orangish brown and reddish brown clay with subordinate silt, sand and gravel in variable proportions and local cobbles of mudstone encountered to depths of between 0.9m and 3.2m bgl where proven. The gravel content comprises sandstone, limestone, chalk, slate, chert, coal and quartzite. These deposits are generally consistent with the Oadby Member.
- 7.3.6 Locally, layers of slightly gravelly clayey sand, lenses of sand and pockets of sand typical of the Wolston Sand and Gravel are recorded within the materials consistent with the Oadby Member. Other localised layers of firm to stiff reddish brown and grey clay typical of the Oadby Member and Bosworth Clay Member are recorded in the Wolston Sand and Gravel. Observations of the boundary between the superficial deposits indicate the boundaries overlying and underlying the Wolston Sand and Gravel are poorly defined.
- 7.3.7 Beneath the Oadby Member, layers of very loose to medium dense brown and grey slightly gravelly to gravelly sand with variable proportions of clay and silt are present to depths of between 1.0m and 5.45m bgl. The gravel content comprises chalk, sandstone, limestone, mudstone and quartzite. These materials are considered to be representative of the Wolston Sand and Gravel. Layers of very sandy clay (TP07), slightly clayey gravel (TP28) and soft to firm clayey very sandy silt (TP02) are also present within this strata.
- 7.3.8 Underlying the above strata's to a maximum penetrated depth of 5.45m bgl layers comprising a combination of firm to stiff grey slightly gravelly silty clay and firm grey sandy silt are present. These materials are consistent with the Bosworth Clay Member. The gravel comprises chalk, quartzite, sandstone and mudstone and occasional cobbles of mudstone. Locally, in TP20, a layer of clayey sandy gravel of mudstone is present between 2.5m to 3.2m bgl.
- 7.3.9 The BGS recorded superficial geology is broadly consistent with the ground conditions encountered during the investigation.

7.4 Bedrock Geology

- 7.4.1 Bedrock was encountered in two of the four cable percussion boreholes i.e. CP03 at approximately 12.0m and CP04 at approximately 16.0m. At CP04 Mercia Mudstone was almost completely weathered to form a very stiff reddish dark brown silty clay. At CP03 the identified strata was a very stiff reddish brown silty clay with fragments of mudstone and siltstone.

7.5 Groundwater

- 7.5.1 The weather the time of the ground investigation in May to June 2023 was warm and the surface ground conditions were generally dry with the exception of the boggy ground in the north east (Parcel E). On this basis, considering the desk study information in Section 3.2, it is considered the following recorded groundwater levels are likely to be at the lower end of its typical seasonal range.
- 7.5.2 It is considered that groundwater levels have the potential to fluctuate throughout the year and between years due to the dynamic balance between groundwater recharge, storage and discharge.
- 7.5.3 Typically, the majority of the exploratory holes were recorded dry (30 of 62) with a lower portion (15 of 62) indicating seepages or very slow to slow inflow between depths of 1.1m to 3.1m bgl or 103.6m to 115.8m AOD.
- 7.5.2 Rapid and steady groundwater inflow is recorded in TP07 at 2.1m bgl (109.5m AOD) in Parcel E, in TP14 at 2.0m bgl (113.0m AOD) in parcel G and in TP29 at 1.8m (109.6m AOD) in parcel D.

- 7.5.3 Groundwater was encountered in less exploratory holes (10 of 32) in BH03, BH12, TP06, TP08, TP10, TP21, TP23, TP34, TP47 and TP49 relating to Parcels C, D, E, F, G, H and I. The entries vary between 1.5m to 3.0m bgl or 106.9m to 115.2m AOD.
- 7.5.4 Post-fieldwork monitoring of standing groundwater levels during June 2021 showed groundwater levels to vary between 0.6m bgl and 4.7m bgl or 105.8m to 120.1m AOD between borehole positions.
- 7.5.5 It is noted that the available topographical survey drawing for the site produced by GP Surveying (dated November 2019) indicates a surface water level of between 105.3m AOD downstream and 114.8m AOD upstream.

Discussion

- 7.5.6 It is considered the groundwater levels do not show any depth or spatial correlation and are typical of a series of localised perched water bodies within the more granular soils.
- 7.5.7 The boreholes designated BH05 and BH07 comprise clay soils with lenses of sand. No groundwater was recorded during the ground investigation. Groundwater was recorded during the subsequent monitoring and rises gradually throughout the monitoring period. On this basis, the water recorded in BH05 and BH07 is indicative of perched water accumulations within the observation wells.
- 7.5.8 It is considered the granular deposits representative of the Wolston Sand and Gravel are capable of bearing groundwater. The variable groundwater level is likely constrained by the variability in thickness and depth of the superficial coarse soils. It is considered possible localised perched groundwater horizon is present within this strata. Where the groundwater level exceeds the level of the granular strata, (i.e. within in Parcels D and E), it appears that the overlying clay soils are locally softened.
- 7.5.9 It is considered that for the majority of the site (in the south east) localised sump pumping will be sufficient to control any perched water encountered in the excavations. It is reiterated that the ground investigation was undertaken during a dry spell. It is recommended that further ground investigation or monitoring is undertaken between October to January to determine the worst case groundwater conditions.

7.6 Stability

- 7.6.1 The majority of the exploratory holes remained stable during drilling or excavation and for a short time afterwards. However, instability is recorded in 17 of the 50 trial pits and 2 of the 12 boreholes.
- 7.6.2 Pit side collapse is recorded at the following locations where groundwater is either absent or at a greater depth than the unstable materials (3 of 50):
- TP01 (in parcel J) records slight pit side collapse between 1.2m and 2.0m bgl within firm clay representative of the Oadby Member;
 - TP25 (in parcel H) records pit side collapse below 1.8m bgl within sand representative of the Wolston Sand and Gravel;
 - TP28 (in parcel D) records side wall collapse from 2.2m bgl within sand representative of the Wolston Sand and Gravel.
- 7.6.3 Pit side collapse is recorded at the following locations where groundwater is a contributing factor at the following locations (7 of 50):

- (Parcel E) TP06 records side wall collapse below 1.8m bgl, TP07 records side wall collapse below 2.3 m bgl and TP50 records side wall collapse below 1.3m bgl within soft clay and sand representative of the Wolston Sand and Gravel;
- (Parcel G) TP08 (in parcel G) records side wall collapse below 2.45m bgl and TP49 records complete side wall collapse below 1.5m bgl within soft clay representative of the Oadby Member and sand representative of the Wolston Sand and Gravel;
- (Parcel D) TP29 records instability below 1.8m bgl followed by continuous collapse and TP47 records pit side collapse between 1.3m and 1.6m bgl within sand representative of the Wolston Sand and Gravel.

7.6.4 Further stability issues are recorded in the following trial pits with groundwater as a contributing factor (7 of 50):

- (Parcel H) TP10 records spalling of pit sides below 1.7m within gravel representative of the Wolston Sand and Gravel and TP45 records spalling of pit sides between 1.2m and 1.8m within firm clay representative of the Oadby Member;
- (Parcel G) TP14 records slurring of sandy bands at 2.0m bgl and TP21 records slurring of coarse soils and spalling of pit sides below 1.3m within firm clay, sand and gravel representative of the Wolston Sand and Gravel;
- TP23 (in parcel C) records spalling of pit sides at 1.8m within firm clay representative of the Oadby Member;
- TP34 (in parcel I) records spalling of pit sides at 1.8m within sand representative of the Wolston Sand and Gravel;
- TP35 (in parcel B) records localised slurry at 1.4m bgl within clay representative of the Oadby Member.

7.6.5 Borehole collapse is recorded in BH11 and BH12 below 3.5m during drilling.

7.6.6 On this basis, it is considered any excavations extending through the superficial soft to firm clays, sands and gravels will likely be unstable exceeding 1.0m in Parcels D, E, F, north east of Parcel G, north east of Parcel H and J.

7.6.7 Shallow excavations across the remainder of the site in natural soils will generally remain stable in the short-term. However, allowance should be made for the provision of trench support if any excavations are to be left open for an extended period of time, or if man entry is required.

8. GROUND CONTAMINATION ASSESSMENT

8.1 Assessment Methodology

8.1.1 The ground contamination has been undertaken using a risk-based approach and incorporating the accepted 'contaminant linkage' approach introduced in Section 5 of this report.

8.1.2 The detailed assessment of ground contamination at the site has followed the tiered approach adopted in LCRM and presented below:

- **Preliminary risk assessment** – Development of a CSM, presenting the identified contaminant linkages at the site.
- **Generic quantitative risk assessment** – Selection of appropriate Generic Assessment Criteria (GAC) and comparison to the measured contaminant concentrations.
- **Detailed quantitative risk assessment** – Derivation of Site-specific Assessment Criteria (SSAC) where appropriate if the measured contaminant concentrations exceed the respective GAC.

8.2 Preliminary Risk Assessment

8.2.1 An initial conceptual site model (CSM) for the site is presented in Section 5 of this report.

8.2.2 The succession of natural strata encountered during the investigation broadly aligns with that indicated by the geological map of the area and anticipated in the CSM.

8.2.3 The groundwater identified across the site is considered to be controlled by a groundwater table present within the superficial deposits associated with the Wolston Sand and Gravel. Local perched groundwater is associated with formed pockets and bands of coarse soil within the Oadby Member and to a lesser extent extending into the Bosworth Clay Member.

8.2.4 No visual or olfactory evidence of significant ground contamination was noted during either the fieldwork or subsequent monitoring. However, due to the age of the buildings within the farmyard there is the potential for asbestos containing materials (ACM) to have been used within the constructed therefore, it is recommended an asbestos survey is completed prior to demolition.

8.3 Generic Quantitative Risk Assessment: Long-term Human Health (Future Site Users) and Proposed Development End Use

8.3.1 The risk to long-term human health has been assessed using a combination of published Generic Assessment Criteria (GAC) for a residential development end use with homegrown produce. This is considered appropriate for the proposed development of residential housing with associated garden areas.

8.3.2 The contamination laboratory test results (included in Appendix 12) have been compared directly to GAC obtained from the following sources (listed in order of preference):

- Category 4 Screening Levels (C4SL). LCRM specifies that these should be used in preference to other published GAC where available
- Suitable for Use Levels (S4UL) published by the Chartered Institute of Environmental Health (CIEH) and Land Quality Management (LQM)¹

¹ S4ULs have been used in accordance with the following: "Copyright Land Quality Management Ltd reproduced with permission; Publication number S4UL3689. All rights reserved".

- 8.3.3 A summary table, which compares the maximum detected concentrations of each of the tested determinants to the respective adopted GAC is included as Appendix 11.
- 8.3.3 Where appropriate, a soil organic matter (SOM) content of 1% has been assumed.
- 8.3.4 The test results, as summarised in Appendix 12 show that the maximum detected concentrations of heavy metals, polyaromatic hydrocarbons and asbestos screen are below the respective GAC.
- 8.3.5 Specific geochemical testing comprising total petroleum hydrocarbons was carried on selected samples from TP02, BH02 and BH09 to target features highlighted in the CSM. The majority of tests results are recorded below the laboratory limit of detection with the exception of aromatic hydrocarbons C21 to C35 in the farmyard area of 18mg/kg to 34mg/kg in BH09 and BH02 respectively. However, these test results are below the respective GAC.
- 8.3.6 Specific geochemical testing comprising pesticides were undertaken on selected samples providing general site coverage. A total of 6 samples were tested and all determinands are recorded below the laboratory limit of detection.

Summary

- 8.3.7 The levels of ground contamination detected in the soil samples tested are considered to be within acceptable limits for retention beneath the proposed development of residential dwellings with private gardens.

8.4 Generic Quantitative Risk Assessment: Short-term Human Health (Construction Workers)

- 8.4.1 It is considered that the risk of short-term exposure by construction workers to the soils would be suitably mitigated by the use of normal personal protective equipment (PPE). Further advice on PPE is given in HSE Publication HS(G)66 (1991) '*Protection of workers and the general public during the development of contaminated land*'.
- 8.4.2 A Health and Safety Hazard Assessment for the detailed undertakings should be undertaken as stipulated under the Construction Design and Management (CDM) Regulations 2015, with due regard to the laboratory test results presented in Appendix 12 and also taking account of the relevant Workplace Exposure Limits (EH40/2005, 4th Edition 2020). In addition, procedures should be identified for dealing with any unforeseen hazardous conditions. A Working Health and Safety Plan should be prepared, which mitigates the potential risks to site workers from the specific undertakings as identified in the Hazard Assessment.

8.5 Generic Quantitative Risk Assessment: Controlled Waters

- 8.5.1 All of the test results for the tested determinands are recorded below the representative GAC. The low levels of aromatic C21 to C35 hydrocarbons are considered to have very low potential sorption and mobility rating as indicated by CL:AIRE *Petroleum Hydrocarbons in Groundwater version 1.1 March 2017*.
- 8.5.2 Therefore, on the basis of the foregoing it is considered that no further risk assessment is required with respect to controlled waters.

8.6 Ground Gas Risk Assessment

- 8.6.1 Measurements of the concentrations of methane, carbon dioxide and oxygen concentrations, together with gas flow rates, standing groundwater levels and barometric pressures have been made from the following locations:

- Boreholes BH01, BH04 to BH09 and BH11, on four occasions in June 2023, at atmospheric pressures of between 999mb and 1013mb.

8.6.2 The results (included in Appendix 8) indicate the following:

- Methane concentrations have been recorded between 0.1% and 4.1% by volume (typically <0.1%) with concentrations exceeding 1% (2.9% to 4.1%) in BH09 on three occasions.
- Carbon dioxide concentrations are recorded below the limit of detection and 10.5% by volume (typically 1.4%) with concentrations exceeding 5% (9.8% to 10.5%) in BH09 on two occasions.
- Positive gas flow rates have been recorded between 0.1l/hr and 0.2l/hr.

8.6.3 CIRIA Report C665 (2007) recommends that the gas risk classification for a new development be assessed based on a 'gas screening value' (GSV), calculated by multiplication of the maximum 'steady state' concentration of either methane or carbon dioxide (whichever is the higher) by the corresponding gas flow rate. Based on the monitoring data obtained, the maximum calculated GSV is 0.021 litres/hour, which falls into 'Characteristic Situation' Classification 'CS-1' (according to the modified 'Wilson and Card' classification method detailed in the CIRIA guidance) or 'Green' in accordance with the NHBC 'Traffic Light' system. However, the CIRIA guidance also recommends that consideration be given to increasing the gas risk classification to 'CS-2' or 'Amber 1' if either methane or carbon dioxide are detected at concentrations in excess of 1% and 5% respectively.

8.6.4 As discussed above, methane and carbon dioxide has been measured at concentrations in excess of 5% in borehole BH09 during the monitoring period. No significant anthropogenic or organic matter was recorded in the borehole within the response zone (i.e. >1.0m).

8.6.5 In the adjacent boreholes faint organic odours are recorded in grey sandy clay that is representative of the Bosworth Clay Member between 3.5m and 5.45m bgl. Specific geochemical testing comprising total organic carbon (TOC) indicate the natural superficial deposits to have a TOC range between <0.1% and 0.6% (sampled between 1.1m and 4.0m bgl) typical of a 'CS-1' / 'Green' classification. The made ground recorded a TOC concentration of 2.9% therefore this material has a gas generating potential. However, the made ground is not within the response zone of BH09.

8.6.5 On one occasion groundwater is recorded above the gravel representative of the Wolston Sand and Gravel when both methane and carbon dioxide are recorded below 1% and 5% respectively. As no source is identified in the borehole or neighbouring boreholes (BH02 and BH10), it is considered likely that ground gases have migrated from a nearby source through the gravel.

8.6.6 On the basis of the foregoing, the gas risk classification at the site has been provisionally assessed as follows:

- Further investigation is recommended surrounding BH09 to establish the gas regime alternatively a CS-2 / Amber 1 classification should apply for a significant portion of the site (generally covering parcels A, B, I and south of G).
- A 'CS-1' or 'Green' risk classification is recommended for the proposed buildings in the vicinity of BH01, BH04 to BH08 and BH11, generally parcels C, D, E, F, H, J and northern part of G.

8.6.7 Recommendations regarding the gas protection measures for the plots in each classification are included in Section 10.

9. GEOTECHNICAL ASSESSMENT

- 9.1.1 The site has been divided based on the localised preponderance of loosened and softened strata that are recorded in parcels D, E and F with overlap into the north east corner of parcel G. The remainder of the site has identified relatively consistent and competent superficial deposits.

9.2 In-Situ Testing

Standard Penetration Tests

- 9.2.1 Standard penetration tests (SPT's) were undertaken within the dynamic sampling boreholes at one metre intervals to the base of each borehole. A summary of the SPT results against depth is presented within Table 5.

Table 5 - SPT Summary of Dynamic Sampling Boreholes

Ref.	SPT 'N' Value				
	1m	2m	3m	4m	5m
Parcels A to C & G to J					
BH01	9	14	29	50	-
BH02	17	11	36	32	42
BH05	13	20	22	26	27
BH06	12	16	27	-	-
BH07	14	19	19	34	39
BH08	11	15	18	21	28
BH09	10	11	21	18	21
BH10	9	18	20	29	30
Parcels D, E & F					
BH03	13	25	2	10	11
BH04	2	11	48	-	-
BH11	7	12	3	25	-
BH12	6	15	19	12	-

Key:

	Superficial Deposits (Clay)
	Superficial Deposits (Silt)
	Superficial Deposits (Sand)
	Superficial Deposits (Fine & Coarse Soil)

- 9.2.2 The SPT N-values measured within the clay and silt encountered in Parcels A to C & G to J range between 9 and 50 generally indicating firm to very stiff consistencies consistent with field observations. The SPTs undertaken in the superficial sand in Parcels A to C & G to J range between 12 and 30 indicating strengths of medium dense and dense.
- 9.2.2 However, the SPT N-values measured within the clay and silt in Parcels D, E & F range between 2 and 25 generally indicating very soft to stiff consistencies, this variability is observed within the exploratory holes. The SPTs undertaken in the superficial sands in Parcels D, E & F range between 2 and 48 indicating strengths of very loose to very dense.

Hand Shear Vane Tests

- 9.2.3 Hand Shear Vane Tests (HSV) were undertaken in situ in fine soils, where encountered in trial pits at depths not greater than 0.9m bgl. Additional HSVs were attempted on arisings recovered from the trial pits at greater depths, where suitable specimens of clay soil could be recovered.

9.2.4 The test results in the recorded alluvium in the north east of Parcel C (trial pits TP38 and TP39) recorded shear strengths of 35kPa and 37kPa indicating soft consistencies.

9.2.5 The test results within Parcels A to C & G to J, not including the alluvium, at a depth range of 0.5m to 0.9m bgl recorded shear strengths of between 43kPa and 132kPa indicating firm to stiff consistencies. Shear strengths of 45kPa to 126kPa corresponding to a firm to stiff consistency are recorded between depths of 1.0m to 3.0m bgl. It is possible that disturbance of the soils during excavation may have distorted at least some of these tests.

9.3 Laboratory Geotechnical Testing

9.3.1 Given the presence of existing and former trees on the site, selected samples of fine soils have been tested to determine their Atterberg Limits and natural moisture contents. The results have been compared to the NHBC Standards Chapter 4.2 '*Building near Trees*' to determine their potential for volume change due to the influence of trees.

9.3.2 Selected samples of coarse soils have been subjected to particle size distribution (PSD) tests by wet sieving to determine their relative proportions of clay, silt, sand and gravel. The results of these tests have been used to confirm field descriptions.

9.3.3 The geotechnical laboratory results are presented in Appendix 13 and discussed in the following.

Natural Water Content and Plasticity Index

9.3.4 Table 6 summarises the results of the Atterberg Limit tests performed on nine samples of fine soils.

Table 6 – Summary of Laboratory Plasticity Index Test Results

Location	Depth (m bgl)	Plasticity Index % (Ip)	Modified Plasticity Index % (I'p)	Volume Change Potential
Parcels A to C & G to J				
BH01	3.2 to 3.6	28	27	Medium
BH02	1.5 to 1.8	16	16	Low
BH03	1.5 to 2.0	21	21	Medium
BH05	1.8 to 2.0	21	21	Medium
BH06	2.0 to 2.5	21	21	Medium
BH07	1.4 to 1.6	26	23	Medium
BH08	1.3 to 1.6	27	25	Medium
BH10	2.4 to 2.6	17	17	Low
TP25	1.1	25	25	Medium
TP35	1.6	20	16	Low
TP45	1.5	24	14	Low
Parcels D, E & F				
BH04	1.4 to 1.7	23	22	Medium
BH11	1.4 to 1.8	16	16	Low
BH12	2.0 to 2.5	22	22	Medium

Key:

	Superficial Deposits (Clay)
	Superficial Deposits (Silt)

- 9.3.5 The results of the laboratory testing indicate that the natural clay soils have modified plasticity indexes of between 14% to 27% (i.e. low to medium volume change potential). The samples were taken of the fine soils within the near surface superficial deposits (materials representative of Oadby Member, Wolston Sand and Gravel and the Bosworth Clay Member).

Particle Size Distribution Tests

- 9.3.6 PSD analyses were performed on two samples generally representative of the fine soils within the superficial deposits. The results show that the superficial deposits are dominated fines (clay and silt) between 51% and 95% by mass. The recorded silt is reported to comprise 60% sand, 17% silt and 23% clay indicative of a clayey silty sand.

9.4 Buried Concrete Classification

- 9.4.1 Measurements of the water-soluble sulphate content and pH-values have been made for forty one samples of natural soils and twenty of topsoil recovered from across the site. The water soluble sulphate contents ranged between 1.7mg/l and 900mg/l. In accordance with the recommendations of BRE Special Digest 1 (3rd Edition, 2005) a characteristic value has been calculated from the mean of the highest 20% of the test results. This gives a characteristic value of approximately 160mg/l, which falls into Design Sulphate Class DS-1.
- 9.4.2 The measured pH values ranged between 4.7 and 8.6, with a characteristic value (calculated from the mean of the lowest 20% of the results) of 5.4. This indicates an Aggressive Chemical Environment for Concrete (ACEC) Class of AC-2z.

9.5 Hard Strata / Obstructions

- 9.5.1 Bedrock of the Mercia Mudstone Formation was not encountered in any of the trial pit or dynamic sampling borehole locations to a maximum penetrated depth of 5.45m bgl. The Mercia Mudstone was however identified in 2 of the 4 cable percussion boreholes between 12m and 16m. On this basis, it is considered unlikely that the use of heavy breaking equipment will be required for the construction of new foundations and other excavations across the majority of the site.
- 9.5.2 Suitable allowances will need to be made for the removal of the foundations, floor slabs, services and hardstanding associated with the buildings within the farmyard area.

9.6 Founding Horizon

- 9.6.1 Based solely on the geotechnical properties of the test soils, it is considered that the proposed structures could be supported by conventional strip or trench fill foundations bearing in naturally occurring clay of at least *firm* consistency, or in coarse-grained soil that is at least *medium dense*. However, no foundation should bear in made ground or other unsuitable material.
- 9.6.2 The trial pit and borehole records indicate that a foundation level of 1.0m below present ground level is considered suitable across the majority of the site, but that this will need to be locally deepened at some locations. These include areas of locally deep made ground (as encountered at TP01 and TP105), locally soft clay (including at DS03) and in the vicinity of the land drain encountered adjacent TP106.
- 9.6.3 However, consideration also requires to be given to the presence of existing and former trees within the site, particularly where these are located above fine-grained soils beneath the north-western and central parts of the site.
- 9.6.4 A further geotechnical assessment is included in Section 9 of this report, with foundation choice discussed in more detail in Section 10.

9.7 Soakaway Drainage Potential

- 9.7.1 Soakaway testing was conducted in three locations (SA01, SA02, and SA03).
- 9.7.2 The aim of the soakaway testing was to establish soil infiltration rates of the near surface superficial deposits. Two tests, SA01 and SA03, were located within fine soils and one test, SA03, was conducted within the coarse soils. Detailed descriptions of the soils encountered at each location are included in the trial pit logs included in Appendix 7. The findings of the soakaway testing are summarised in the following text.
- 9.7.3 The soakaway testing was conducted at the same time as the ground investigation in June 2023. It is considered the weather conditions (warm and dry) were representative of summer conditions relating to the groundwater level. At each test location clean water was added to the test pit via a water bowser and then fenced off. The soakaways were dug to depths of approximately 1.3m to 2.0m bgl and left for a period of at least 24 hours.
- 9.7.4 To calculate the soil infiltration rate in accordance with BRE Digest 365, it is necessary to monitor the time taken for the water level to reduce from 25% to 75% of the effective depth of the pit. The maximum fall in water level was 0.11m. None of the soakaways drained sufficiently to be able to provide an accurate estimation of infiltration rate. To fully assess the permeability of the soils, each test pit should be allowed to fully drain three times on the same or consecutive days.
- 9.7.5 Given the preponderance of clay soakaway drainage is unlikely to be viable. Although coarse sands and gravels are present, the extent of soils is unlikely to be sufficiently consistent to allow soakaway drainage for the site. Furthermore, shallow groundwater has been recorded, even during a relatively dry period which is likely to preclude the use of soakaway drainage.
- 9.7.6 If soakaway drainage is considered further, specific soakaway tests would need to be undertaken at the locations being considered.

9.8 Site Infrastructure

- 9.8.1 Eight plate CBR tests have been undertaken in situ on the formation material along the proposed access roads. Table 7 presents a summary of the results.

Table 7 – Summary of In Situ CBR Test Results

Location	Test CBR-value	Formation Material
CBR01	6.9%	Firm slightly gravelly sandy CLAY
CBR02	5.2%	Firm slightly sandy slightly gravelly CLAY
CBR03	6.3%	Firm slightly sandy gravelly CLAY
CBR04	12.0%	Stiff sandy CLAY
CBR05	5.5%	Stiff slightly gravelly CLAY
CBR06	3.4%	Firm slightly sandy slightly gravelly CLAY
CBR07	12.0%	Stiff slightly sandy gravelly CLAY
CBR08	3.4%	Firm slightly sandy slightly gravelly CLAY

- 9.8.2 It is recommended that the formation level be prepared by proof-rolling. Any soft, loose or otherwise unsuitable materials should be removed and replaced with suitably compacted granular fill material. On this basis, the above results indicate that a CBR-value of 3.0% is appropriate for initial road design. In-situ CBR testing will be needed at the proposed road formation to confirm the design requirements.

10. CONCLUSIONS AND RECOMMENDATIONS

10.1 Potential Development Constraints

10.1.1 Based on the findings of the PRA and ground investigation works documented in this report, it is considered that the following issues relating to ground contamination, geotechnical considerations and other potential development constraints will need to be addressed prior to redevelopment of the Bullfurlong Lane, Burbage site:

- The presence of a number of buildings and above ground structures associated with the farm yard area in the south of the site.
- The likely presence of floor slabs, hardstanding, buried obstructions, including foundations within the existing farmyard and associated underground services that will require grubbing out.
- The presence of localised 'boggy ground' within localised areas of the site.
- The presence of localised areas of slightly deeper made ground associated with the farm yard and former pond areas.
- Presence of soft and loosened natural superficial strata in Parcels D, E, F and north east corner of G that are not suitable for direct founding;
- The presence of clay soil of medium volume change potential at shallow depth beneath much of the site, which has the potential to be influenced by current and former trees. This will necessitate increasing the depth to foundation level and/or the use of non-standard foundation solutions for some of the proposed plots;
- Elevated concentrations of methane and carbon dioxide in one of the borehole monitoring standpipes;
- The presence of shallow groundwater.
- Unstable ground conditions for both shallow and deep excavations.

10.1.2 Each of these issues is discussed in further detail below.

10.2 Demolition / Grubbing Out Works

10.2.1 The farmyard area in Parcel A includes an existing farmyard, farmhouse and associated lightly loaded buildings, for which demolition is proposed. A pre-demolition asbestos survey will be required to identify any asbestos containing materials within the building construction. Any identified asbestos will need to be removed prior to dismantling the buildings.

10.2.2 Following demolition the floor slabs and any external hardstanding will need to be removed and any below ground structures such as foundations, basements, services, etc grubbed out. Demolition arisings could potentially be processed and stockpiled for re-use within any future development.

10.3 Boggy Ground Conditions

10.3.1 Localised areas of the site were noted to be quite boggy underfoot despite the site investigations being undertaken following a dry period. If rainfall and associated surface water is not carefully controlled during wetter periods it is likely the site will quickly become very boggy.

10.4 Foundations

10.4.1 The trial pits and boreholes have identified localised areas of made ground mainly associated with the farm yard area or the infilled ponds. The made ground and pond infill materials will not be suitable for direct founding without some form of ground improvement technique.

- 10.4.2 Underlying the top soil and made ground materials (where present) are quite variable glacial sand. Generally, these natural soils appear to be suitable for founding; however, there are a few areas (typically in the east and locally in the north) that are considered unsuitable for direct founding. There are two main issues, i.e.:
- presence of soft clays at variable depths
 - presence of groundwater within granular soils leading to instability / collapse.
- 10.4.3 Outside of the areas of soft clay and shallow groundwater, it is recommended that an allowable bearing pressure of 100kN/m² is used for initial design purposes for shallow strip / trench fill foundations founding on the superficial deposits to limit total settlements to less than 25mm. All strip / trench fill foundations should extend a minimum of 0.9m below ground level (both existing and proposed ground level - whichever is deepest) based on medium volume change potential clays. All foundations should extend a minimum of 0.2m into undisturbed competent material. In areas of potential tree influence, foundations should be extended in accordance with the NHBC Standards. Localised heave protection measures are also likely to be required.
- 10.4.4 At the minimum depth of 0.9m bgl it is unlikely that shallow groundwater will be present, however, where foundations are extended deeper due to tree influence, groundwater may be present (particularly if granular lenses are present). Trench support is unlikely to be required for minimum depth foundations in cohesive soils; however, allowances for trench support may be necessary if foundation excavations are to be left open for long periods, particularly along localised areas where granular materials have been identified.
- 10.4.5 Due to the variable nature of the glacial deposits overlying the site, there is the potential for a combination of clay and sand based materials to be present within the base of future foundation excavations. To accommodate any minor settlement between the clay and sand fractions the groundworker could either:
- i. Extend the foundation deeper in parts to ensure the whole foundation lies on a consistent soil type, or;
 - ii. Provide a layer of mesh reinforcement (say B385) across the join of the two material types.
- 10.4.6 Alternatively if there are frequent changes in the nature of the soils at founding level the foundation designs could include light mesh reinforcement (say, B385) across the whole foundation to accommodate any potential minor differential settlement between cohesive and granular fractions.
- 10.4.7 If any made ground, loose sands or soft clays are encountered at the proposed founding level, the excavation should be extended into underlying competent materials. Alternatively, any materials deemed unsuitable for founding should be removed and replaced lean mix concrete.
- 10.4.8 Groundwater was typically encountered at depths >2m bgl during the ground investigation but there are several areas where groundwater was recorded within the top metre. Around half of the monitoring standpipes also recorded shallow groundwater (at say less than 1m) during recent monitoring. We note that the monitoring has been undertaken during a period of relatively warm and dry weather conditions; therefore groundwater levels may be higher during the construction of the site. Where foundations are either extended beyond the minimum depth due to tree influence or poor ground conditions, the likelihood of encountering groundwater and potential stability issues increases. In such circumstances, strip / trench fill foundations are unlikely to be appropriate.
- 10.4.9 Alternative founding options such as vibro improvement or piled foundations could be potentially considered where there is no tree influence. In areas of tree influence, it is recommended that

allowances are made for steel tube, CFA or precast concrete piles designed to withstand heave forces. Outside of tree influence, driven precast piles should be suitable. Four cable percussion boreholes have been undertaken to assist with pile design, the logs are included in Appendix 7.

10.4.6 A preliminary foundation zoning plan has been provided under separate cover.

10.4.7 Buried concrete should conform to Design Sulphate Class DS-1 and ACEC Class AC-2z of Special Digest 1 (3rd Edition, BRE, 2005).

10.5 Floor Slabs

10.5.1 Suspended / beam and block floor slabs will be required in localised areas due to tree influence, where plots are being raised or in areas of made ground. Ground bearing floor slabs are likely to be appropriate elsewhere at the site.

10.6 Ground Contamination

10.6.1 The risk assessment included in Section 8 of this report identified that the levels of ground contamination in all of the soil samples tested are within acceptable limits for the proposed residential development. The topsoil is considered suitable for re-use as part of the proposed development.

Unforeseen Contamination

10.6.2 In addition, and in accordance with normal practice for the redevelopment of Brownfield sites (parcel A), procedures should be identified for dealing with unforeseen contamination in the event that this becomes apparent during development. Specifically, works in the affected area(s) should cease and arrangements made for the suspected contamination to be inspected by a suitably qualified environmental specialist, followed by sampling and testing as appropriate. If these works identify the requirement for remediation, proposals should be communicated to the Local Planning Authority prior to implementation.

10.7 Ground Gas

10.7.1 The results of the ground gas monitoring have generally identified low carbon dioxide and methane concentrations at the site. This was generally as expected as there is a general absence of potential ground gas sources. (i.e. made ground, recorded landfill sites, organic materials etc). On this basis gas protection measures are not generally considered necessary for majority of proposed plots. However, slightly elevated concentrations of carbon dioxide were identified at a single location (B09) within the farmyard area in the southern part of the site.

10.7.2 It would be prudent to allow for further investigation / monitoring in relation to BH09 to provide a robust assessment of the ground gas regime at this location and identify which plots could potentially need ground gas protection measures.

10.7.3 In the absence of this additional monitoring it is suggested that allowances are made for inclusion ground gas protection for an Amber 1 / CS2 classification in the proposed plots around BH09 (as shown on Drawing 23045-GE08).

- A 'CS-2' / 'Amber 1' classification indicates gas protection measures should be fitted affording a minimum point score of 3.5, in accordance with the classification adopted in BS8485:2015+A1,2019. For new residential buildings, the required level of protection is commonly achieved by the following (though other foundation and floor slab options could also be considered):

Protection	Description	Point Score
Ventilation	- Passive sub-slab venting to achieve a minimum of 'good' performance, in accordance with Table 6 of BS8485. To include venting of 150mm sub floor open void to external brickwork	1.5
Membrane	- Proprietary gas resistant membrane to entire building footprint, with welded joints and seals around services penetrations. Membrane to extend across the cavity. Installation to be fully verified and tested in accordance with CIRIA C735 - 2014. Table 7 BS8485	2.0
Total		3.5

10.7.4 The passive ventilation should be designed to provide a minimum of one complete volume change per 24 hours, and be installed in accordance with BRE 414. The gas membrane should be confirmed by the manufacturer as providing suitable protection to residential buildings in a 'CS-2' / 'Amber 1' risk classification and be placed continuously across the entire building footprint and all cavity walls. Any joins between sections of membrane should be overlapped and sealed in accordance with the manufacturer's requirements and the Contractor's method statements. Penetration of the floor slabs by services should be minimised and all utility entry points appropriately sealed.

10.7.5 As discussed in Section 3.4, radon gas protection measures are not required.

10.8 Groundwater

10.8.1 Groundwater was typically encountered at depths >2m bgl during the ground investigation but there are several areas where groundwater was recorded within the top metre. Around half of the monitoring standpipes also recorded shallow groundwater (at say less than 1m) during recent monitoring. It should be noted that the monitoring has been undertaken during period of relatively warm and dry weather conditions therefore groundwater levels may be higher during the construction of the site.

10.8.2 It is likely that any deep sewer will encounter groundwater and subsequent excavation instability. Appropriate allowances will need to be made for trench support and dewatering for deep excavations.

10.9 Topography

10.9.1 The existing topographical survey indicates that ground levels vary between 104.7m and 126.8m AOD comprising rolling hillsides. Therefore, it is likely that an element of 'cut and fill' construction will be required to achieve finished site levels.

10.9.2 Earthworks-related testing did not form part of the scope of the present investigation. It is understood the proposed cut and fill levels are -0.7m and +1.6m respectively, the level of cut is anticipated to be approximately -2.0m in the area of the proposed attenuation ponds. Based on the geotechnically variable superficial deposits encountered across the site, an earthworks assessment of the suitability of proposed 'cut' materials for re-use as engineered fill is recommended.

10.10 UXO

10.10.1 The online risk map maintained by ZeticaUXO has been reviewed to determine the risk of unexploded ordnance at the site. The map indicates the site to have a low bomb risk of 1% across

the site and indicates there was industry nearby to the west. It is recommended that prior to any development a preliminary UXO risk assessment should be obtained.

10.11 Recommendations for Further Investigation

10.11.1 The following elements of further ground investigations are recommended on the site, to enable more detailed assessments to be made with respect to the potential development constraints identified above:

- Further assessment of possible ground gas risk identified at BH09 i.e. delineation monitoring;
- Further groundwater monitoring or ground investigation is recommended between October to January following a period of significant rainfall to determine worst case groundwater levels;
- Further ground investigation in the areas of the historical ponds in the vicinity of TP12, TP18 and TP38;
- Further in-situ CBR testing following formation of appropriate levels;
- Compaction testing if earthworks operations are required;

APPENDICES

APPENDIX 1
Sources of Information

BULLFURLONG LANE, BURBAGE

Appendix 1 – List of Information Sources

The following principal sources of information have been consulted in the preparation of this report:

- Environment Agency (2020). Contaminated Land Risk Management (LCRM). Accessed at www.gov.uk/government/publications;
- British Standards Institution. BS10175:2011 + A2:2017 'Investigation of Potentially Contaminated Sites – Code of practice';
- Groundsure 'Enviro + Geo-Insight' Report No. GS-75X-ICA-NPU-ET8, dated 17 May 2023;
- British Geological Survey 'Onshore GeoIndex', including digitised geological map information and borehole records. Accessed at <https://mapapps2.bgs.ac.uk/geoindex>;
- British Geological Survey map reference '*Coventry. England and Wales Sheet 169. Solid and Drift Geology. 1994.*'
- Mewies Engineering Consultants Limited (MEC) Report 'Coventry Road, Burbage, Leicestershire – Utilities Assessment' reference 27932-UTIL-0701, dated May 2023;
- Local Authority (Hinckley and Bosworth Borough Council) in-house records;
- Environment Agency (2008). R&D Publication 66 : 2008 Guidance for the Safe Development of Housing on Land Affected by Contamination Volume 1 and 2
- British Standards Institution. BS5930:2015+A1,2020 'Code of Practice for Ground Investigations';
- British Standards Institution. BS1377-2:1990 'Methods of test for soils for civil engineering purposes';
- British Standards Institution. BS EN ISO 14688-2:2018 'Geotechnical Investigation and Testing. Principles for Classification';
- Chartered Institute of Environmental Health (CIEH) and Land Quality Management (LQM) S4ULs for Human Health Risk Assessment (2015) – Publication Number S4UL3689;
- Department for Environment, Food and Rural Affairs (2014) Report SP1010 'Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Final Project Report (Revision 2)';
- Health and Safety Executive. 'EH40/2005 Workplace Exposure Limits' (4th Edition, 2020);
- Statutory Instrument 2002 No. 2676 'The Control of Lead at Work Regulations 2002';
- CIRIA (2007) Report C665 'Assessing Risks Posed by Hazardous Ground Gases to Buildings';
- British Standards Institution. BS8485:2015+A1,2019 'Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings';
- BRE. 'Concrete in Aggressive Ground'. 3rd Edition, 2005;
- Statutory Instrument 2004 No. 1375. 'The Landfill (England and Wales) (Amendment) Regulations 2004.

APPENDIX 2
Selection of Site Photographs

BULLFURLONG LANE, BURBAGE

Appendix 2 – Selection of Site Photographs

Parcel A (farmyard)



Entrance to the farmyard from Bullfurlong Lane



Showing the footprint of the electricity pylon at the end of Bullfurlong Lane



Showing the cattle shed in the north of the farmyard



Looking east showing a selection of empty IBC's in the farmyard



Looking east showing the adjoining hay store and cattle shed



Looking south showing a hay store to the south of the electricity pylon



Looking south showing farm buildings



Looking south west showing the grain silo and equipment storage



Looking south from the south of the farmyard showing plant storage to the south



Looking south from the south of the farmyard area



Looking north across the farmyard area

Parcel B (*immediately east of farmyard*)



Looking west from the south west showing the farmhouse and garden



Looking east from the south west



Looking north from the south west

Parcel C (*southern central field*)



Looking north from centre of the north boundary



Looking south from the north of the site



Looking north east at the north eastern site boundary



Looking at the stream on the north eastern boundary



Looking south from the eastern boundary



Looking west from the south east along the southern boundary



Looking south at a concrete drainage structure passing beneath the M69



Looking north west at a muck stockpile in the south west



Looking north from the south west

Parcel D (*eastern field*)



Looking west from the north west showing trees on the boundary



Looking south across the field and M69



Looking south east from the north west



Looking north showing covered ditch blocked with plant debris



Looking from the centre showing the electricity pylon, hedgerow and trees on the north boundary



Looking south from the south west looking at the elevated motorway



Looking north east from the south west



Looking south east from the southern centre showing the motorway levels relative to the field



Looking west at a dry concrete drainage structure passing beneath the motorway



Looking north in the centre at a small patch of shrubs



Looking east from the east at an access road off Workhouse Lane

Parcel E (*north eastern field*)



Looking east from the south across boggy ground



Looking west from the south across boggy ground



Looking east across the boggy ground from the centre of the western boundary



Looking south from the centre of the southern boundary



Looking at the stream on the southern boundary



Looking down showing concrete and brick used to strengthen the ground to the south of the bog



Looking south east from the north west



Looking down showing rabbit holes



Looking east from the north east at the adjacent field



Looking down at a manhole cover on the eastern boundary



Looking south at the drainage outlet to the stream



Looking south east at the eastern boundary



Looking east from the south east at a stream

Parcel F (*north field*)



Looking east along the southern boundary



Looking north from the southern boundary



Looking east along the northern boundary

Parcel G (*central field*)



Looking east from the south west along the field boundary



Looking north from the centre of the southern field boundary



Looking from the centre of the field

Parcel H (*north western field*)



Looking south from the centre of the east boundary



Looking east from the north west corner



Looking south from the centre of the field across the pedestrian right of way

Parcel I (*west of the farmyard*)



Looking east from the north east of the field adjacent to Bullfurlong Lane



Looking south from the north east showing the field and farmyard



Looking west from the north west at trees on the site boundary



Looking south along the hedgerow to the west



Looking west at the location of a pond



Looking south at a brick and concrete stockpile in the south east



Showing surface ash in front of the stockpile



Looking east in the south east showing an area of gravel hardstanding



Looking north across the field and trailer storage

APPENDIX 3

Selection of Exploratory Hole Photographs

BULLFURLONG LANE, BURBAGE

Appendix 3 – Selection of Exploratory Hole Photographs

Dynamic Sampling Boreholes



BH01



BH02



BH03



BH04



BH05



BH06



BH07



BH08



BH09



BH10



BH11



BH12

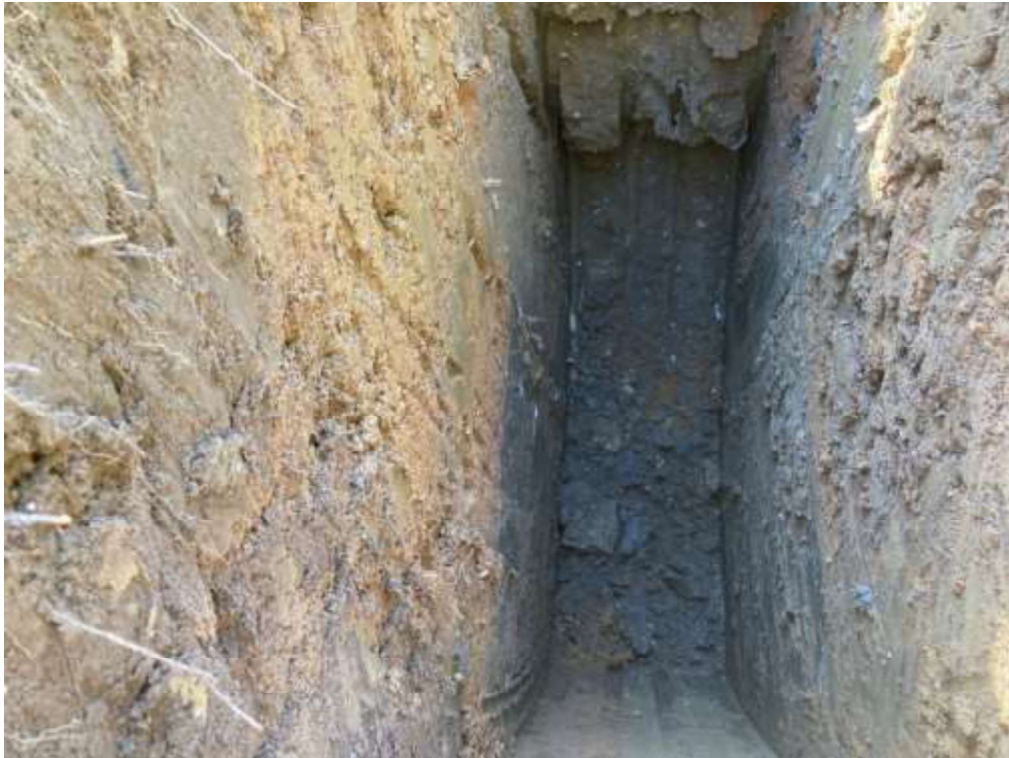
Trial Pits



TP01 – Trial Pit



TP01 – Arisings



TP02 – Trial Pit



TP02 – Arisings



TP03 – Trial Pit



TP03 – Arisings



TP04 – Trial Pit



TP04 – Arisings



TP05 – Trial Pit



TP05 – Arisings



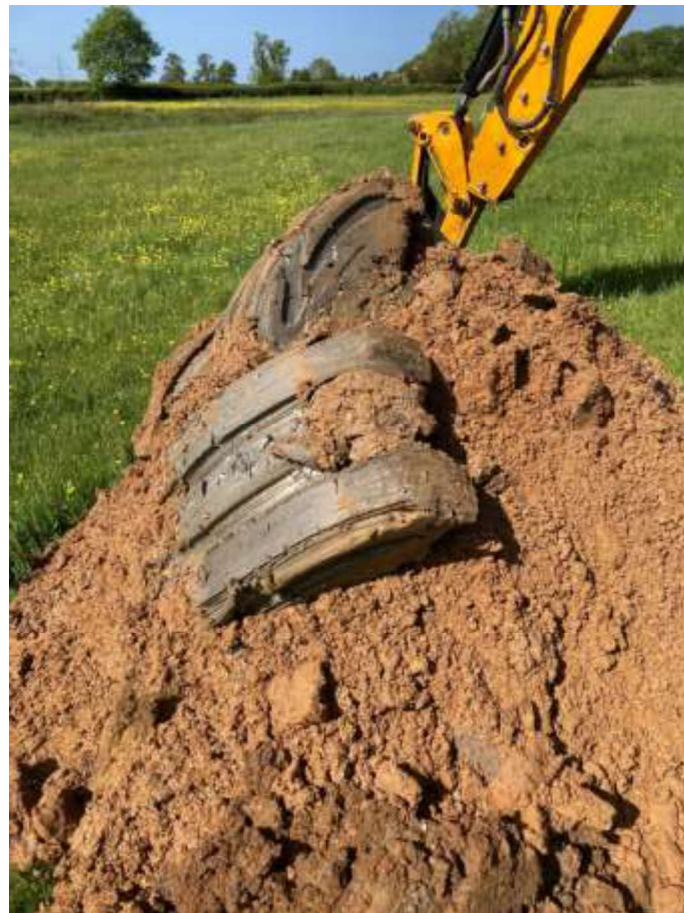
TP06 – Trial Pit



TP06 – Arisings



TP07 – Trial Pit



TP07 – Arisings



TP08 – Trial Pit



TP08 – Arisings



TP09 – Trial Pit



TP09 – Arisings



TP10 – Trial Pit



TP10 – Arisings



TP11 – Trial Pit



TP11 – Arisings



TP12 – Trial Pit



TP12 – Arisings



TP13 – Trial Pit



TP13 – Arisings



TP14 – Trial Pit



TP14 – Arisings



TP15 – Trial Pit



TP15 – Arisings



TP16 – Trial Pit



TP16 – Arisings



TP17 – Trial Pit



TP18 – Trial Pit



TP18 – Arisings



TP19 – Trial Pit



TP19 – Arisings



TP20 – Trial Pit



TP20 – Arisings



TP21 – Trial Pit



TP21 – Arisings



TP22 – Trial Pit



TP22 – Arisings



TP23 – Trial Pit



TP23 – Arisings



TP24 – Trial Pit



TP24 – Arisings



TP26 – Trial Pit



TP26 – Arisings



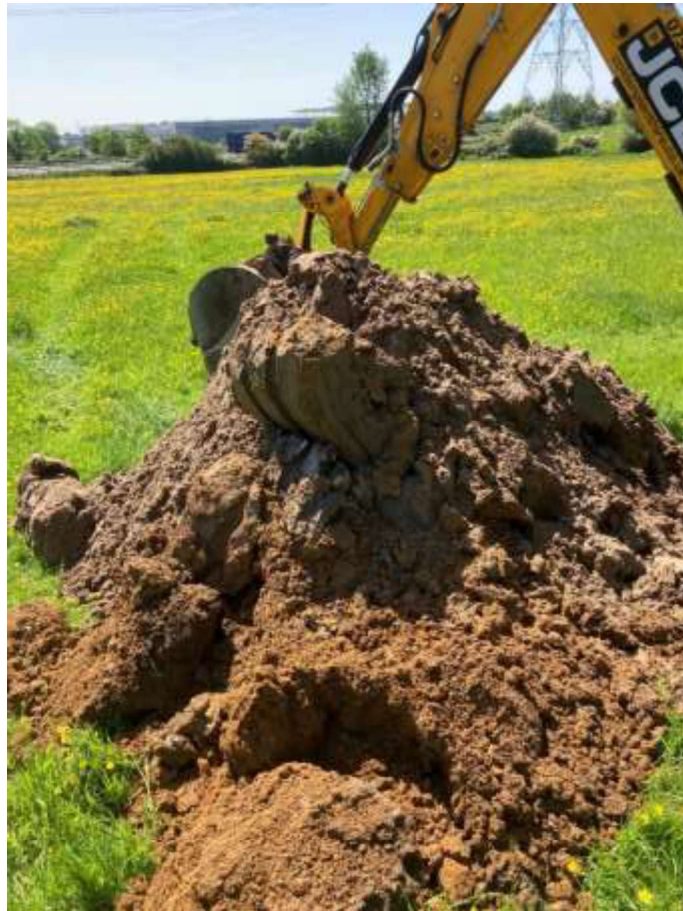
TP27 – Trial Pit



TP27 – Arisings



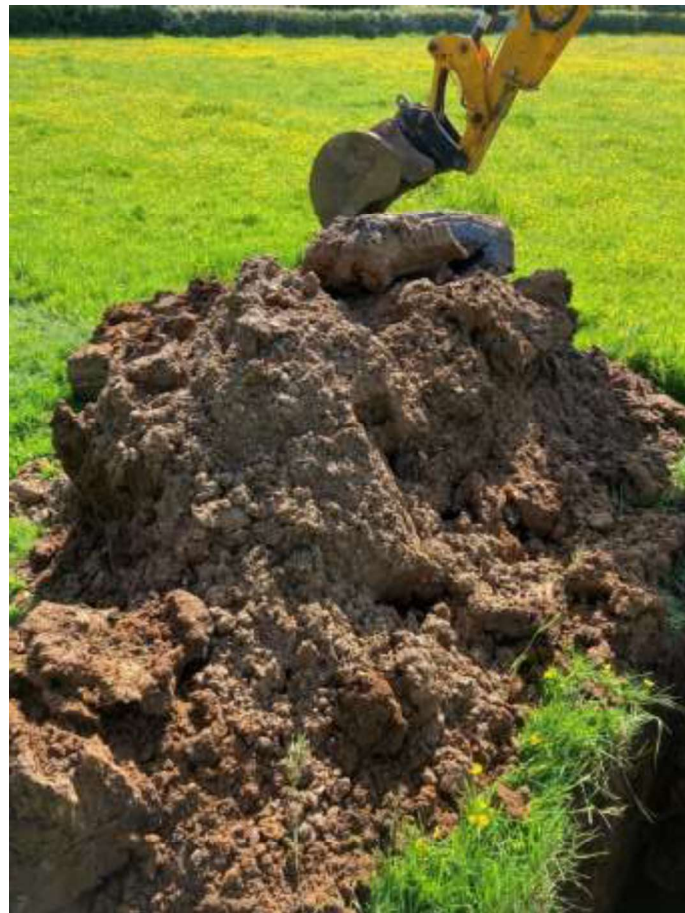
TP28 – Trial Pit



TP28 – Arisings



TP29 – Trial Pit



TP29 – Arisings



TP30 – Trial Pit



TP30 – Arisings



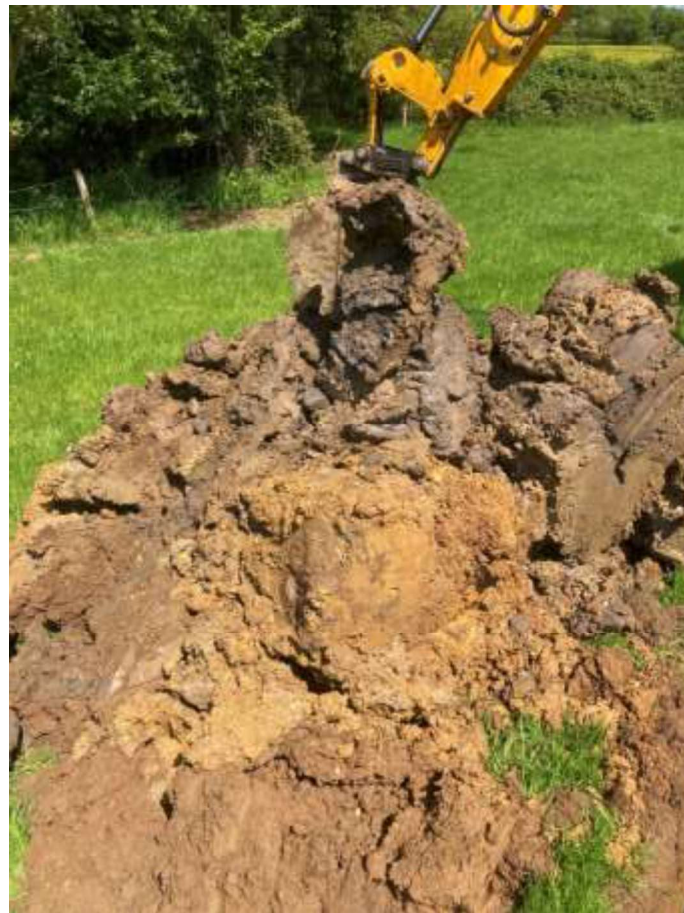
TP31 – Trial Pit



TP31 – Arisings



TP32 – Trial Pit



TP32 – Arisings



TP33 – Trial Pit



TP33 – Arisings



TP34 – Trial Pit



TP34 – Arisings



TP35 – Trial Pit



TP35 – Arisings



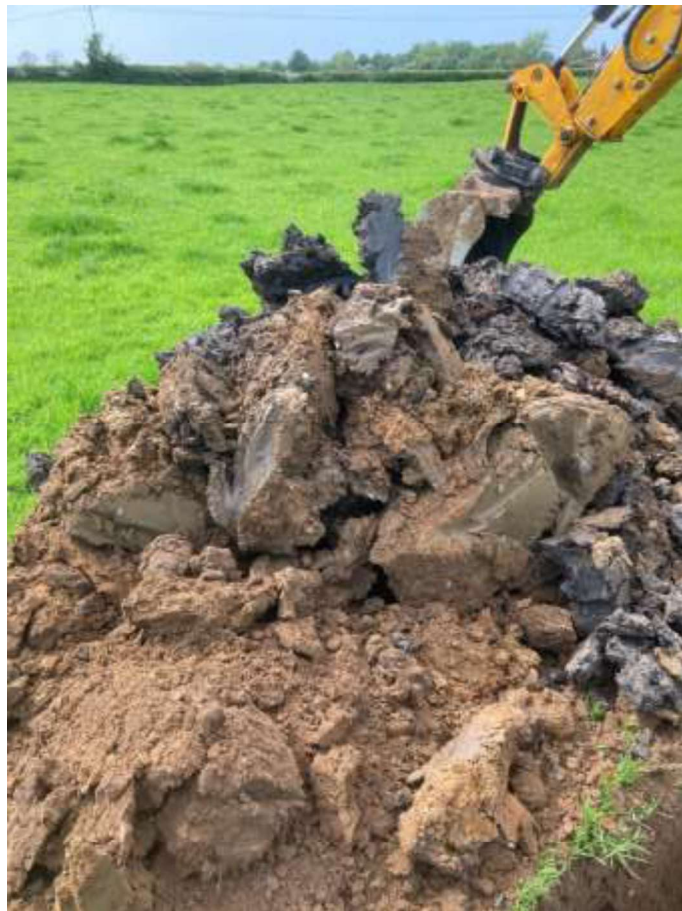
TP36 – Trial Pit



TP36 – Arisings



TP37 – Trial Pit



TP37 – Arisings



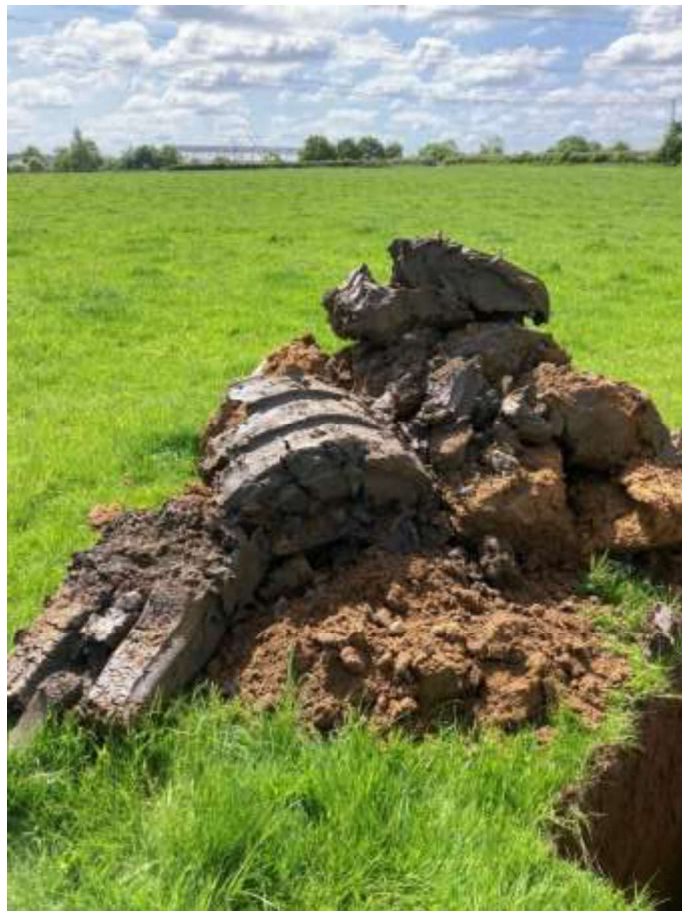
TP39 – Trial Pit



TP39 – Arisings



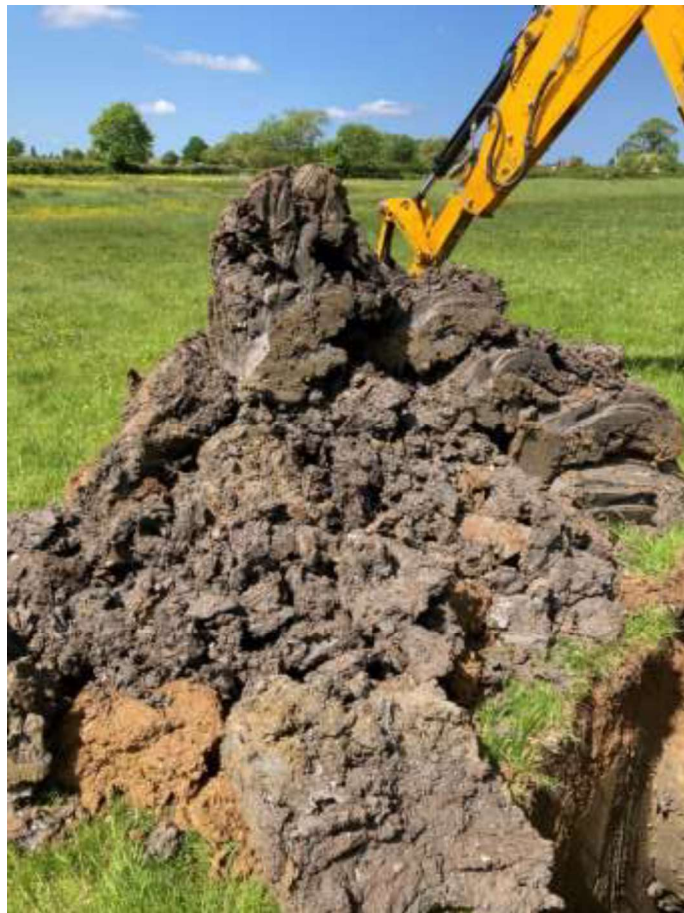
TP40 – Trial Pit



TP40 – Arisings



TP41 – Trial Pit



TP41 – Arisings



TP42 – Trial Pit



TP42 – Arisings



TP43 – Trial Pit



TP43 – Arisings



TP44 – Trial Pit



TP44 – Arisings



TP45 – Trial Pit



TP45 – Arisings



TP46 – Trial Pit



TP46 – Arisings



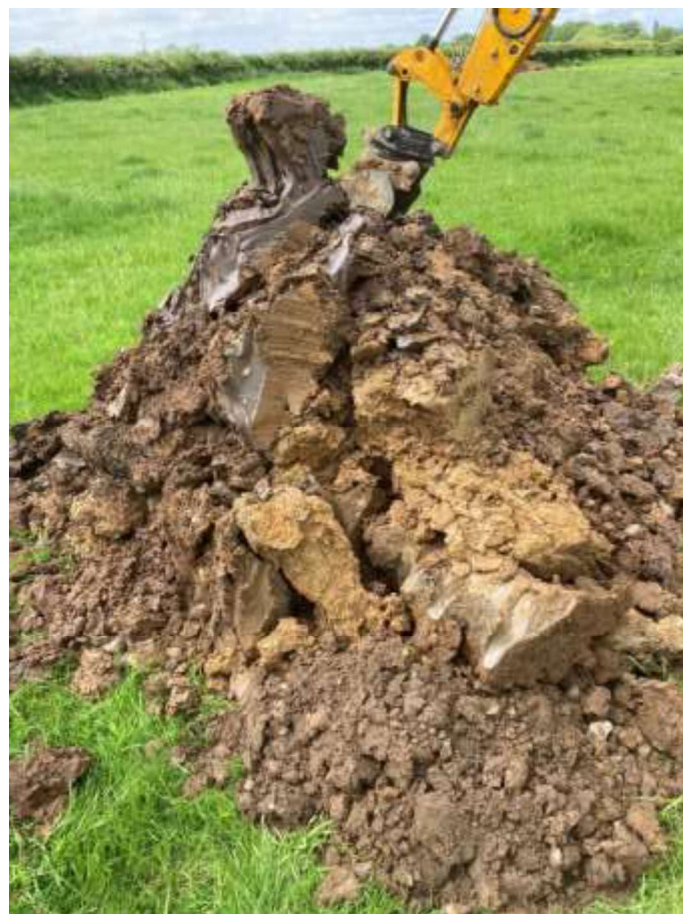
TP47 – Trial Pit



TP47 – Arisings



TP48 – Trial Pit



TP48 – Arisings



TP49 – Trial Pit



TP49 – Arisings



TP50 – Trial Pit



TP50 – Arisings

Soakaway Trial Pits



SA01 – Trial Pit



SA01 – Arisings



SA02 – Trial Pit



SA02 – Arisings



SA03 – Trial Pit



SA03 – Arisings

CBR Trial Pits



CBR01 – Trial Pit



CBR02 – Trial Pit



CBR03 – Trial Pit



CBR04 – Trial Pit



CBR05 – Trial Pit



CBR06 – Trial Pit



CBR07 – Trial Pit



CBR08 – Trial Pit

APPENDIX 4
Groundsure Report

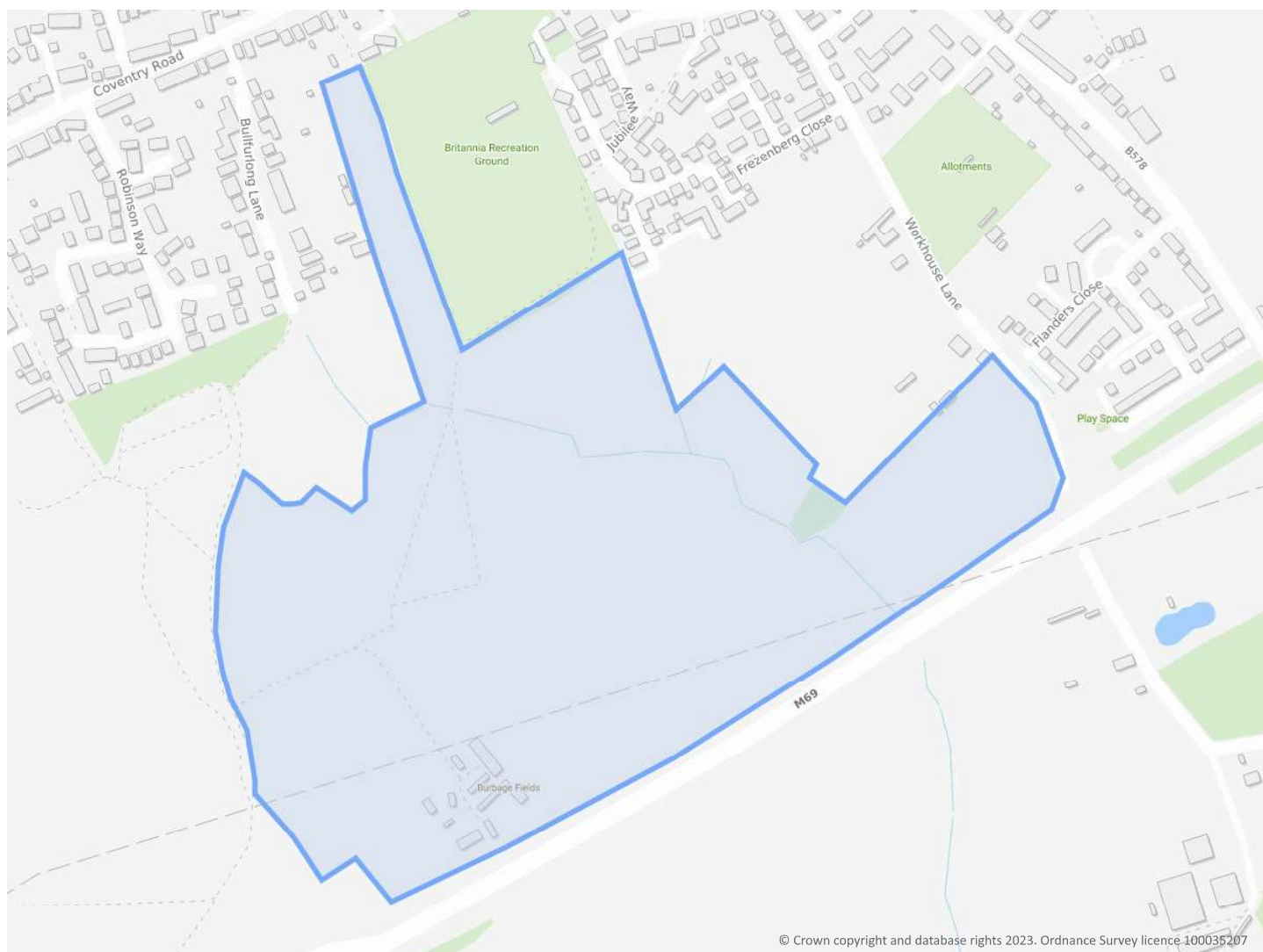
443987, 291578,

Order Details

Date: 17/05/2023
Your ref: 23046-Bullfurlong_Ln-Burbage-3458G
Our Ref: GS-75X-ICA-NPU-ET8

Site Details

Location: 443895 291707
Area: 28.09 ha
Authority: [Hinckley and Bosworth Borough Council](#) ↗



Summary of findings

[p. 2 >](#)

Aerial image

[p. 8 >](#)

OS MasterMap site plan

N/A: >10ha

groundsure.com/insightuserguide ↗

Contact us with any questions at:

info@groundsure.com ↗

01273 257 755

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
13 >	1.1 >	Historical industrial land uses >	4	0	16	22	-
15 >	1.2 >	Historical tanks >	0	1	8	10	-
16 >	1.3 >	Historical energy features >	0	0	0	7	-
17 >	1.4 >	Historical petrol stations >	0	0	0	0	-
17 >	1.5 >	Historical garages >	0	0	0	11	-
18 >	1.6 >	Historical military land >	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
19 >	2.1 >	Historical industrial land uses >	5	0	24	33	-
22 >	2.2 >	Historical tanks >	0	1	11	15	-
23 >	2.3 >	Historical energy features >	0	0	0	18	-
24 >	2.4 >	Historical petrol stations >	0	0	0	0	-
24 >	2.5 >	Historical garages >	0	0	0	16	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
26 >	3.1 >	Active or recent landfill >	0	0	0	0	-
26 >	3.2 >	Historical landfill (BGS records) >	0	0	0	0	-
27 >	3.3 >	Historical landfill (LA/mapping records) >	0	0	0	0	-
27 >	3.4 >	Historical landfill (EA/NRW records) >	0	0	0	0	-
27 >	3.5 >	Historical waste sites >	0	0	0	0	-
27 >	3.6 >	Licensed waste sites >	0	0	0	0	-
27 >	3.7 >	Waste exemptions >	0	0	0	25	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
30 >	4.1 >	Recent industrial land uses >	3	0	9	-	-
31 >	4.2 >	Current or recent petrol stations >	0	0	0	0	-
31 >	4.3 >	Electricity cables >	0	0	0	0	-
32 >	4.4 >	Gas pipelines >	0	0	0	0	-
32 >	4.5 >	Sites determined as Contaminated Land >	0	0	0	0	-



32	>	4.6	>	Control of Major Accident Hazards (COMAH)	>	0	0	0	0	-
32	>	4.7	>	Regulated explosive sites	>	0	0	0	0	-
32	>	4.8	>	Hazardous substance storage/usage	>	0	0	0	0	-
33	>	4.9	>	Historical licensed industrial activities (IPC)	>	0	0	0	0	-
33	>	4.10	>	Licensed industrial activities (Part A(1))	>	0	0	0	0	-
33	>	4.11	>	Licensed pollutant release (Part A(2)/B)	>	0	0	0	0	-
33	>	4.12	>	Radioactive Substance Authorisations	>	0	0	0	0	-
33	>	4.13	>	Licensed Discharges to controlled waters	>	0	0	3	0	-
34	>	4.14	>	Pollutant release to surface waters (Red List)	>	0	0	0	0	-
34	>	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	-
35	>	4.19	>	Pollution inventory substances	>	0	0	0	0	-
35	>	4.20	>	Pollution inventory waste transfers	>	0	0	0	0	-
36	>	4.21	>	Pollution inventory radioactive waste	>	0	0	0	0	-
Page	Section	Hydrogeology >								
37	>	5.1	>	Superficial aquifer	>	Identified (within 500m)				
39	>	5.2	>	Bedrock aquifer	>	Identified (within 500m)				
41	>	5.3	>	Groundwater vulnerability	>	Identified (within 50m)				
43	>	5.4	>	Groundwater vulnerability- soluble rock risk	>	None (within 0m)				
43	>	5.5	>	Groundwater vulnerability- local information	>	None (within 0m)				
44	>	5.6	>	Groundwater abstractions	>	0	0	4	3	5
47	>	5.7	>	Surface water abstractions	>	0	0	0	0	3
48	>	5.8	>	Potable abstractions	>	0	0	0	0	0
48	>	5.9	>	Source Protection Zones	>	0	0	0	0	-
49	>	5.10	>	Source Protection Zones (confined aquifer)	>	0	0	0	0	-
Page	Section	Hydrology >								
50	>	6.1	>	Water Network (OS MasterMap)	>	10	4	0	-	-



52 >	6.2 >	Surface water features >	1	2	4	-	-
52 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
52 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
53 >	6.5 >	WFD Groundwater bodies >	2	-	-	-	-
Page	Section	River and coastal flooding >	On site	0-50m	50-250m	250-500m	500-2000m
54 >	7.1 >	Risk of flooding from rivers and the sea >	None (within 50m)				
54 >	7.2 >	Historical Flood Events >	0	0	0	-	-
54 >	7.3 >	Flood Defences >	0	0	0	-	-
55 >	7.4 >	Areas Benefiting from Flood Defences >	0	0	0	-	-
55 >	7.5 >	Flood Storage Areas >	0	0	0	-	-
56 >	7.6 >	Flood Zone 2 >	None (within 50m)				
56 >	7.7 >	Flood Zone 3 >	None (within 50m)				
Page	Section	Surface water flooding >					
57 >	8.1 >	Surface water flooding >	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding >					
59 >	9.1 >	Groundwater flooding >	Moderate (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
60 >	10.1 >	Sites of Special Scientific Interest (SSSI) >	0	0	0	0	0
61 >	10.2 >	Conserved wetland sites (Ramsar sites) >	0	0	0	0	0
61 >	10.3 >	Special Areas of Conservation (SAC) >	0	0	0	0	0
61 >	10.4 >	Special Protection Areas (SPA) >	0	0	0	0	0
61 >	10.5 >	National Nature Reserves (NNR) >	0	0	0	0	0
62 >	10.6 >	Local Nature Reserves (LNR) >	0	0	0	0	0
62 >	10.7 >	Designated Ancient Woodland >	0	0	0	0	1
62 >	10.8 >	Biosphere Reserves >	0	0	0	0	0
62 >	10.9 >	Forest Parks >	0	0	0	0	0
63 >	10.10 >	Marine Conservation Zones >	0	0	0	0	0
63 >	10.11 >	Green Belt >	0	0	0	1	0
63 >	10.12 >	Proposed Ramsar sites >	0	0	0	0	0



63 >	10.13 >	Possible Special Areas of Conservation (pSAC) >	0	0	0	0	0
64 >	10.14 >	Potential Special Protection Areas (pSPA) >	0	0	0	0	0
64 >	10.15 >	Nitrate Sensitive Areas >	0	0	0	0	0
64 >	10.16 >	Nitrate Vulnerable Zones >	2	1	0	0	2
65 >	10.17 >	SSSI Impact Risk Zones >	1	-	-	-	-
66 >	10.18 >	SSSI Units >	0	0	0	0	0
Page	Section	Visual and cultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
67 >	11.1 >	World Heritage Sites >	0	0	0	-	-
67 >	11.2 >	Area of Outstanding Natural Beauty >	0	0	0	-	-
67 >	11.3 >	National Parks >	0	0	0	-	-
67 >	11.4 >	Listed Buildings >	0	0	0	-	-
68 >	11.5 >	Conservation Areas >	0	0	0	-	-
68 >	11.6 >	Scheduled Ancient Monuments >	0	0	0	-	-
68 >	11.7 >	Registered Parks and Gardens >	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
69 >	12.1 >	Agricultural Land Classification >	Grade 3a (within 250m)				
71 >	12.2 >	Open Access Land >	0	0	0	-	-
71 >	12.3 >	Tree Felling Licences >	0	0	0	-	-
71 >	12.4 >	Environmental Stewardship Schemes >	0	0	1	-	-
72 >	12.5 >	Countryside Stewardship Schemes >	0	0	1	-	-
Page	Section	Habitat designations >	On site	0-50m	50-250m	250-500m	500-2000m
73 >	13.1 >	Priority Habitat Inventory >	0	2	2	-	-
74 >	13.2 >	Habitat Networks >	0	0	0	-	-
74 >	13.3 >	Open Mosaic Habitat >	0	0	0	-	-
74 >	13.4 >	Limestone Pavement Orders >	0	0	0	-	-
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
75 >	14.1 >	10k Availability >	Identified (within 500m)				
76 >	14.2 >	Artificial and made ground (10k) >	0	0	1	1	-
77 >	14.3 >	Superficial geology (10k) >	4	0	2	5	-

78 >	14.4 >	Landslip (10k) >	0	0	0	0	-
79 >	14.5 >	Bedrock geology (10k) >	1	0	0	1	-
80 >	14.6 >	Bedrock faults and other linear features (10k) >	0	0	0	0	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
81 >	15.1 >	50k Availability >	Identified (within 500m)				
82 >	15.2 >	Artificial and made ground (50k) >	0	0	0	0	-
82 >	15.3 >	Artificial ground permeability (50k) >	0	0	-	-	-
83 >	15.4 >	Superficial geology (50k) >	4	0	2	4	-
84 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
84 >	15.6 >	Landslip (50k) >	0	0	0	0	-
85 >	15.7 >	Landslip permeability (50k) >	None (within 50m)				
86 >	15.8 >	Bedrock geology (50k) >	1	0	0	0	-
87 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
87 >	15.10 >	Bedrock faults and other linear features (50k) >	0	0	0	0	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
88 >	16.1 >	BGS Boreholes >	2	3	13	-	-
Page	Section	Natural ground subsidence >					
90 >	17.1 >	Shrink swell clays >	Low (within 50m)				
92 >	17.2 >	Running sands >	Low (within 50m)				
94 >	17.3 >	Compressible deposits >	Moderate (within 50m)				
96 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
97 >	17.5 >	Landslides >	Low (within 50m)				
99 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities >	On site	0-50m	50-250m	250-500m	500-2000m
101 >	18.1 >	Natural cavities >	0	0	0	0	-
102 >	18.2 >	BritPits >	0	0	0	0	-
102 >	18.3 >	Surface ground workings >	9	4	11	-	-
103 >	18.4 >	Underground workings >	0	0	0	0	0
103 >	18.5 >	Historical Mineral Planning Areas >	0	0	0	0	-



103 >	18.6 >	Non-coal mining >	0	0	0	0	0
104 >	18.7 >	Mining cavities >	0	0	0	0	0
104 >	18.8 >	JPB mining areas >	None (within 0m)				
104 >	18.9 >	Coal mining >	None (within 0m)				
104 >	18.10 >	Brine areas >	None (within 0m)				
104 >	18.11 >	Gypsum areas >	None (within 0m)				
105 >	18.12 >	Tin mining >	None (within 0m)				
105 >	18.13 >	Clay mining >	None (within 0m)				
Page	Section	Radon >					
106 >	19.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
108 >	20.1 >	BGS Estimated Background Soil Chemistry >	15	4	-	-	-
109 >	20.2 >	BGS Estimated Urban Soil Chemistry >	0	0	-	-	-
109 >	20.3 >	BGS Measured Urban Soil Chemistry >	0	0	-	-	-
Page	Section	Railway infrastructure and projects >	On site	0-50m	50-250m	250-500m	500-2000m
110 >	21.1 >	Underground railways (London) >	0	0	0	-	-
110 >	21.2 >	Underground railways (Non-London) >	0	0	0	-	-
111 >	21.3 >	Railway tunnels >	0	0	0	-	-
111 >	21.4 >	Historical railway and tunnel features >	0	0	3	-	-
111 >	21.5 >	Royal Mail tunnels >	0	0	0	-	-
111 >	21.6 >	Historical railways >	0	0	0	-	-
112 >	21.7 >	Railways >	0	0	0	-	-
112 >	21.8 >	Crossrail 1 >	0	0	0	0	-
112 >	21.9 >	Crossrail 2 >	0	0	0	0	-
112 >	21.10 >	HS2 >	0	0	0	0	-

Recent aerial photograph



Capture Date: 16/04/2020

Site Area: 28.09ha



Recent site history - 2017 aerial photograph



Capture Date: 22/09/2017

Site Area: 28.09ha



Recent site history - 2010 aerial photograph



Capture Date: 03/06/2010

Site Area: 28.09ha



Recent site history - 2008 aerial photograph



Capture Date: 20/09/2008

Site Area: 28.09ha



Recent site history - 1999 aerial photograph



Capture Date: 05/10/1999

Site Area: 28.09ha



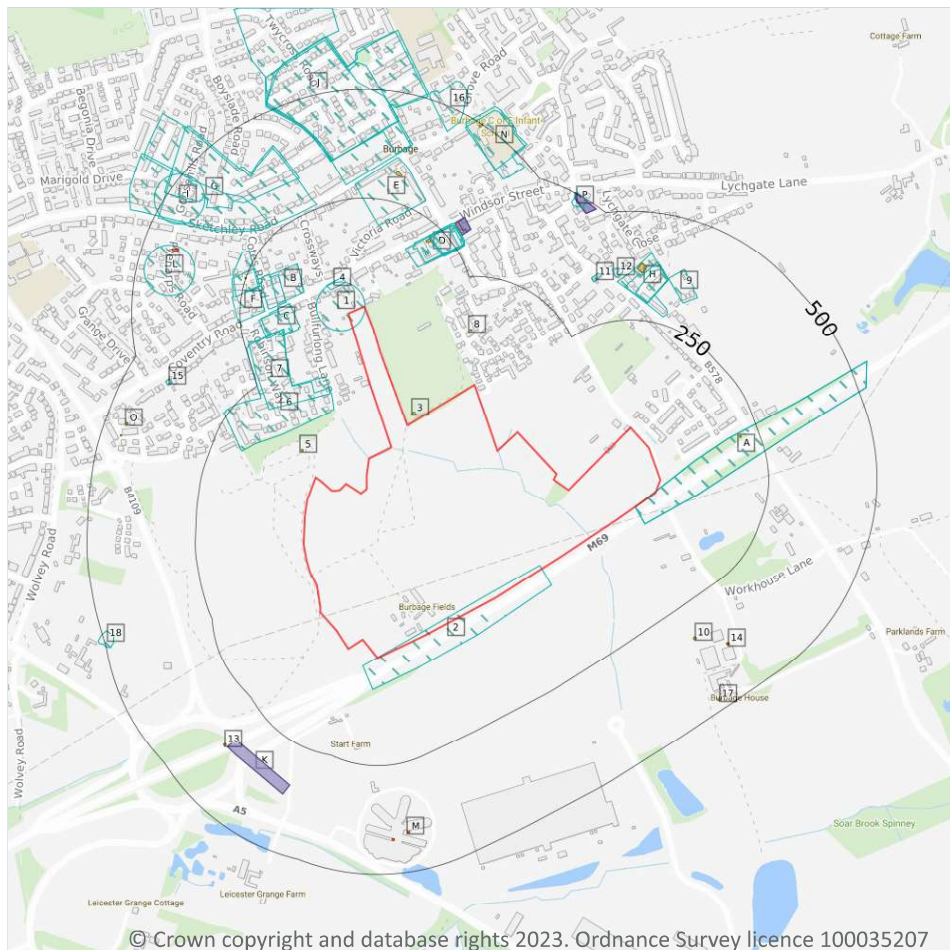
Contact us with any questions at:

info@groundsure.com

01273 257 755

Date: 17 May 2023

1 Past land use



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features
- Historical garages

1.1 Historical industrial land uses

Records within 500m

42

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 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 un-grouped 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 13](#) >

ID	Location	Land use	Dates present	Group ID
1	On site	Unspecified Pit	1901	1777103



ID	Location	Land use	Dates present	Group ID
2	On site	Cuttings	1977 - 1983	1812863
A	On site	Cuttings	1983	1781370
A	On site	Cuttings	1977	1804154
4	66m NW	Unspecified Pits	1886	1759681
6	91m NW	Nursery	1938 - 1950	1805548
7	94m NW	Nursery	1968 - 1983	1814899
B	113m NW	Unspecified Works	1977 - 1983	1783515
C	115m NW	Hosiery Manufactory	1938 - 1950	1834587
C	134m NW	Unspecified Works	1983	1771276
B	146m NW	Unspecified Factory	1923	1765600
D	152m N	Hosiery Manufactory	1950	1803551
D	172m N	Hosiery Manufactory	1938	1849288
D	185m N	Unspecified Tanks	1938 - 1950	1788640
E	190m N	Nursery	1886	1772188
F	193m NW	Unspecified Factory	1938 - 1950	1837346
D	213m N	Unspecified Works	1977 - 1983	1844341
D	215m N	Hosiery Manufactory	1923	1799834
F	217m NW	Unspecified Works	1983	1771274
D	218m N	Hosiery Manufactory	1901	1795815
G	257m NW	Nursery	1923	1849834
H	268m NE	Hosiery Manufactory	1950	1781488
I	275m NW	Nursery	1886	1820024
J	284m N	Nursery	1901	1772191
H	291m NE	Hosiery Manufactory	1923	1798302
H	292m NE	Unspecified Works	1968 - 1983	1796502
9	313m NE	Hosiery Manufactory	1938	1758090
G	331m NW	Nursery	1938 - 1950	1810730
J	344m N	Nurseries	1938 - 1950	1831637



ID	Location	Land use	Dates present	Group ID
J	345m N	Nurseries	1968	1810148
J	346m N	Nurseries	1923	1832508
11	347m NE	Bus Depot	1977 - 1983	1804995
12	349m NE	Unspecified Pit	1886	1777104
H	359m NE	Unspecified Tank	1977 - 1983	1788253
L	366m NW	Nursery	1901	1772187
15	398m NW	Unspecified Tank	1968 - 1983	1805379
I	412m NW	Nursery	1901	1814372
N	435m N	Nursery	1886 - 1901	1807443
N	437m N	Nursery	1923	1811647
16	447m N	Nursery	1901	1772189
P	472m N	Smithy	1886 - 1901	1794226
18	476m W	Unspecified Pit	1977 - 1983	1848735

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

19

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 un-grouped 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 13 >](#)

ID	Location	Land use	Dates present	Group ID
3	12m N	Unspecified Tank	1938	283226
5	67m NW	Unspecified Tank	1904 - 1918	301165
8	126m N	Unspecified Tank	1904 - 1918	293056
A	206m E	Unspecified Tank	1918	289787
A	206m E	Unspecified Tank	1938	298296



ID	Location	Land use	Dates present	Group ID
D	206m N	Tanks	1938	287096
F	249m NW	Unspecified Tank	1995	295403
F	249m NW	Unspecified Tank	1995	297678
F	249m NW	Unspecified Tank	1986	300250
E	312m N	Tanks	1938	287095
10	324m SE	Unspecified Tank	1918	283236
13	359m SW	Unspecified Tank	1904	283237
H	359m NE	Unspecified Tank	1973 - 1990	293959
O	449m W	Unspecified Tank	1938	294935
O	449m W	Unspecified Tank	1904 - 1918	300209
O	453m W	Unspecified Tank	1904 - 1918	288719
O	453m W	Unspecified Tank	1938	293016
17	474m SE	Unspecified Tank	1963	283235
N	491m N	Unspecified Tank	1925	283227

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

7

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 un-grouped 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 13 >](#)

ID	Location	Land use	Dates present	Group ID
D	280m N	Electricity Substation	1990	175467
D	282m N	Electricity Substation	1967 - 1997	185173
14	378m SE	Electricity Substation	1986 - 1993	178488
M	408m S	Electricity Substation	1995	181507



ID	Location	Land use	Dates present	Group ID
L	417m NW	Electricity Substation	1972 - 1993	183315
M	418m S	Electricity Substation	1992 - 1995	182144
L	420m NW	Electricity Substation	1989	186953

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	0
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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 un-grouped 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	11
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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 un-grouped 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 13 >](#)

ID	Location	Land use	Dates present	Group ID
D	279m N	Garage	1990	55974
D	280m N	Garage	1988	57337
D	288m N	Garage	1997	55309
D	288m N	Garage	1963 - 1987	59965
D	288m N	Garage	1959 - 1973	59301
K	329m SW	Carriage Shed	1890	55621
K	329m SW	Carriage Shed	1904	55884
P	472m NE	Garage	1988	56517



ID	Location	Land use	Dates present	Group ID
P	472m NE	Garage	1967 - 1973	59765
P	472m NE	Garage	1990	55035
P	473m NE	Garage	1987 - 1997	58668

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

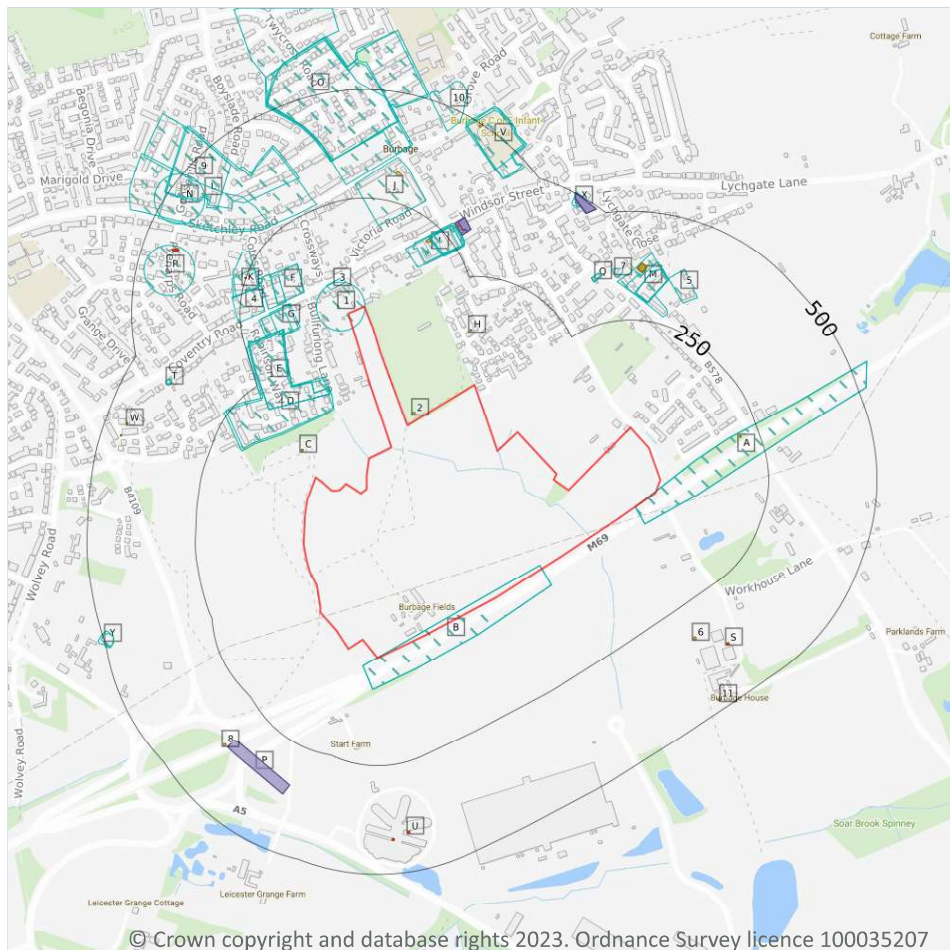
0

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.



2 Past land use - un-grouped



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features
- Historical garages

2.1 Historical industrial land uses

Records within 500m

62

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 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
1	On site	Unspecified Pit	1901	1777103
A	On site	Cuttings	1977	1804154
A	On site	Cuttings	1983	1781370



ID	Location	Land Use	Date	Group ID
B	On site	Cuttings	1977	1812863
B	On site	Cuttings	1983	1812863
3	66m NW	Unspecified Pits	1886	1759681
D	91m NW	Nursery	1938	1805548
E	94m NW	Nursery	1977	1814899
E	94m NW	Nursery	1983	1814899
E	94m NW	Nursery	1968	1814899
D	98m NW	Nursery	1950	1805548
F	113m NW	Unspecified Works	1977	1783515
F	113m NW	Unspecified Works	1983	1783515
G	115m NW	Hosiery Manufactory	1938	1834587
G	120m NW	Hosiery Manufactory	1950	1834587
G	134m NW	Unspecified Works	1983	1771276
F	146m NW	Unspecified Factory	1923	1765600
I	152m N	Hosiery Manufactory	1950	1803551
I	172m N	Hosiery Manufactory	1938	1849288
I	185m N	Unspecified Tanks	1950	1788640
J	190m N	Nursery	1886	1772188
I	190m N	Unspecified Tanks	1938	1788640
4	193m NW	Unspecified Factory	1950	1837346
I	213m N	Unspecified Works	1977	1844341
I	213m N	Unspecified Works	1983	1844341
K	213m NW	Unspecified Factory	1938	1837346
I	215m N	Hosiery Manufactory	1923	1799834
K	217m NW	Unspecified Works	1983	1771274
I	218m N	Hosiery Manufactory	1901	1795815
L	257m NW	Nursery	1923	1849834
M	268m NE	Hosiery Manufactory	1950	1781488



ID	Location	Land Use	Date	Group ID
N	275m NW	Nursery	1886	1820024
O	284m N	Nursery	1901	1772191
M	291m NE	Hosiery Manufactory	1923	1798302
M	292m NE	Unspecified Works	1977	1796502
M	292m NE	Unspecified Works	1983	1796502
M	292m NE	Unspecified Works	1968	1796502
5	313m NE	Hosiery Manufactory	1938	1758090
L	331m NW	Nursery	1938	1810730
O	344m N	Nurseries	1950	1831637
O	345m N	Nurseries	1968	1810148
O	346m N	Nurseries	1938	1831637
O	346m N	Nurseries	1923	1832508
Q	347m NE	Bus Depot	1977	1804995
Q	347m NE	Bus Depot	1983	1804995
7	349m NE	Unspecified Pit	1886	1777104
M	359m NE	Unspecified Tank	1977	1788253
M	359m NE	Unspecified Tank	1983	1788253
R	366m NW	Nursery	1901	1772187
9	388m NW	Nursery	1950	1810730
T	398m NW	Unspecified Tank	1977	1805379
T	398m NW	Unspecified Tank	1983	1805379
T	398m NW	Unspecified Tank	1968	1805379
N	412m NW	Nursery	1901	1814372
V	435m N	Nursery	1886	1807443
V	436m N	Nursery	1901	1807443
V	437m N	Nursery	1923	1811647
10	447m N	Nursery	1901	1772189
X	472m N	Smithy	1886	1794226



ID	Location	Land Use	Date	Group ID
Y	476m W	Unspecified Pit	1977	1848735
X	477m NE	Smithy	1901	1794226
Y	477m W	Unspecified Pit	1983	1848735

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

27

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
2	12m N	Unspecified Tank	1938	283226
C	67m NW	Unspecified Tank	1904	301165
C	67m NW	Unspecified Tank	1918	301165
H	126m N	Unspecified Tank	1904	293056
H	126m N	Unspecified Tank	1918	293056
A	206m E	Unspecified Tank	1918	289787
A	206m E	Unspecified Tank	1938	298296
I	206m N	Tanks	1938	287096
K	249m NW	Unspecified Tank	1995	295403
K	249m NW	Unspecified Tank	1995	297678
K	249m NW	Unspecified Tank	1986	300250
K	249m NW	Unspecified Tank	1986	300250
J	312m N	Tanks	1938	287095
6	324m SE	Unspecified Tank	1918	283236
8	359m SW	Unspecified Tank	1904	283237
M	359m NE	Unspecified Tank	1988	293959
M	359m NE	Unspecified Tank	1973	293959



ID	Location	Land Use	Date	Group ID
M	359m NE	Unspecified Tank	1990	293959
M	359m NE	Unspecified Tank	1987	293959
W	449m W	Unspecified Tank	1904	300209
W	449m W	Unspecified Tank	1918	300209
W	449m W	Unspecified Tank	1938	294935
W	453m W	Unspecified Tank	1904	288719
W	453m W	Unspecified Tank	1918	288719
W	453m W	Unspecified Tank	1938	293016
11	474m SE	Unspecified Tank	1963	283235
V	491m N	Unspecified Tank	1925	283227

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

18

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
I	280m N	Electricity Substation	1990	175467
I	282m N	Electricity Substation	1997	185173
I	284m N	Electricity Substation	1988	185173
I	284m N	Electricity Substation	1987	185173
I	285m N	Electricity Substation	1973	185173
I	285m N	Electricity Substation	1967	185173
S	378m SE	Electricity Substation	1993	178488
S	380m SE	Electricity Substation	1986	178488
U	408m S	Electricity Substation	1995	181507
U	408m S	Electricity Substation	1995	181507



ID	Location	Land Use	Date	Group ID
R	417m NW	Electricity Substation	1987	183315
R	418m NW	Electricity Substation	1979	183315
R	418m NW	Electricity Substation	1972	183315
R	418m NW	Electricity Substation	1993	183315
U	418m S	Electricity Substation	1995	182144
U	418m S	Electricity Substation	1995	182144
R	420m NW	Electricity Substation	1989	186953
U	420m S	Electricity Substation	1992	182144

This data is sourced from Ordnance Survey / Groundsure.

2.4 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. 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

Records within 500m

16

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'.

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

ID	Location	Land Use	Date	Group ID
I	279m N	Garage	1990	55974
I	280m N	Garage	1988	57337
I	288m N	Garage	1997	55309
I	288m N	Garage	1987	59965
I	288m N	Garage	1963	59965

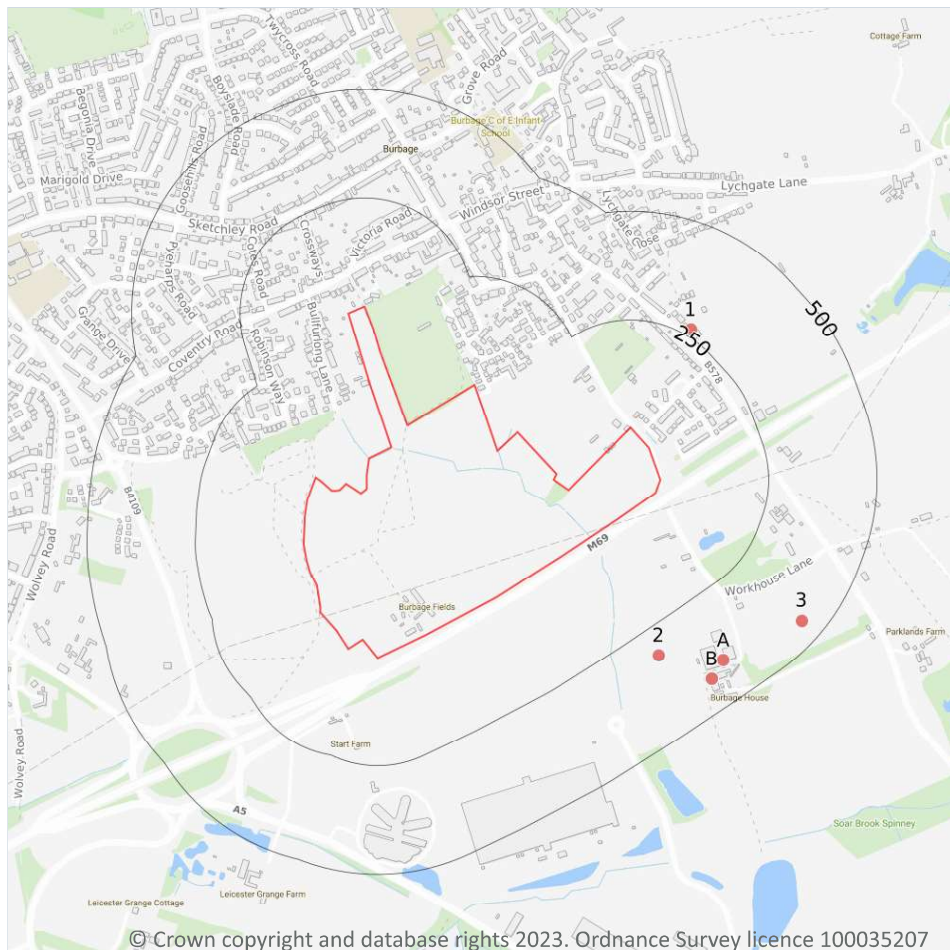


ID	Location	Land Use	Date	Group ID
I	288m N	Garage	1967	59301
I	288m N	Garage	1973	59301
I	288m N	Garage	1959	59301
P	329m SW	Carriage Shed	1890	55621
P	329m SW	Carriage Shed	1904	55884
X	472m NE	Garage	1988	56517
X	472m NE	Garage	1967	59765
X	472m NE	Garage	1973	59765
X	472m NE	Garage	1990	55035
X	473m NE	Garage	1997	58668
X	473m NE	Garage	1987	58668

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**25**

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 26](#) >

ID	Location	Site	Reference	Category	Sub-Category	Description
1	265m NE	131, LUTTERWORTH ROAD, BURBAGE, HINCKLEY, LE10 2DL	WEX177606	Disposing of waste exemption	Not on a farm	Burning waste in the open



ID	Location	Site	Reference	Category	Sub-Category	Description
2	314m SE	-	WEX193743	Storing waste exemption	On a Farm	Storage of sludge
A	407m SE	Burbage House Farm Lutterworth Road HINCKLEY Leicestershire LE10 3AH	EPR/ZH0279H Q/A001	Using waste exemption	Agricultural Waste Only	Use of waste in construction
A	407m SE	Burbage House Farm Lutterworth Road HINCKLEY Leicestershire LE10 3AH	EPR/ZH0279H Q/A001	Using waste exemption	Agricultural Waste Only	Spreading waste on agricultural land to confer benefit
A	407m SE	Burbage House Farm Lutterworth Road HINCKLEY Leicestershire LE10 3AH	EPR/ZH0279H Q/A001	Using waste exemption	Agricultural Waste Only	Burning of waste as a fuel in a small appliance
A	407m SE	Burbage House Farm Lutterworth Road HINCKLEY Leicestershire LE10 3AH	EPR/ZH0279H Q/A001	Disposing of waste exemption	Non-Agricultural Waste Only	Deposit of waste from dredging of inland waters
A	407m SE	Burbage House Farm Lutterworth Road HINCKLEY Leicestershire LE10 3AH	EPR/ZH0279H Q/A001	Disposing of waste exemption	Non-Agricultural Waste Only	Burning waste in the open
A	407m SE	Burbage House Farm Lutterworth Road HINCKLEY Leicestershire LE10 3AH	EPR/ZH0279H Q/A001	Storing waste exemption	Non-Agricultural Waste Only	Storage of sludge
A	407m SE	Burbage House Farm Lutterworth Road HINCKLEY Leicestershire LE10 3AH	EPR/ZH0279H Q/A001	Treating waste exemption	Non-Agricultural Waste Only	Cleaning, washing, spraying or coating relevant waste
A	407m SE	Burbage House Farm Lutterworth Road HINCKLEY Leicestershire LE10 3AH	EPR/ZH0279H Q/A001	Using waste exemption	Non-Agricultural Waste Only	Use of waste for a specified purpose
B	427m SE	BURBAGE HOUSE FARM, LUTTERWORTH ROAD, HINCKLEY, LE10 3AH	WEX182062	Storing waste exemption	On a farm	Storage of sludge
B	427m SE	BURBAGE HOUSE FARM, LUTTERWORTH ROAD, HINCKLEY, LE10 3AH	WEX182062	Using waste exemption	On a farm	Spreading waste on agricultural land to confer benefit

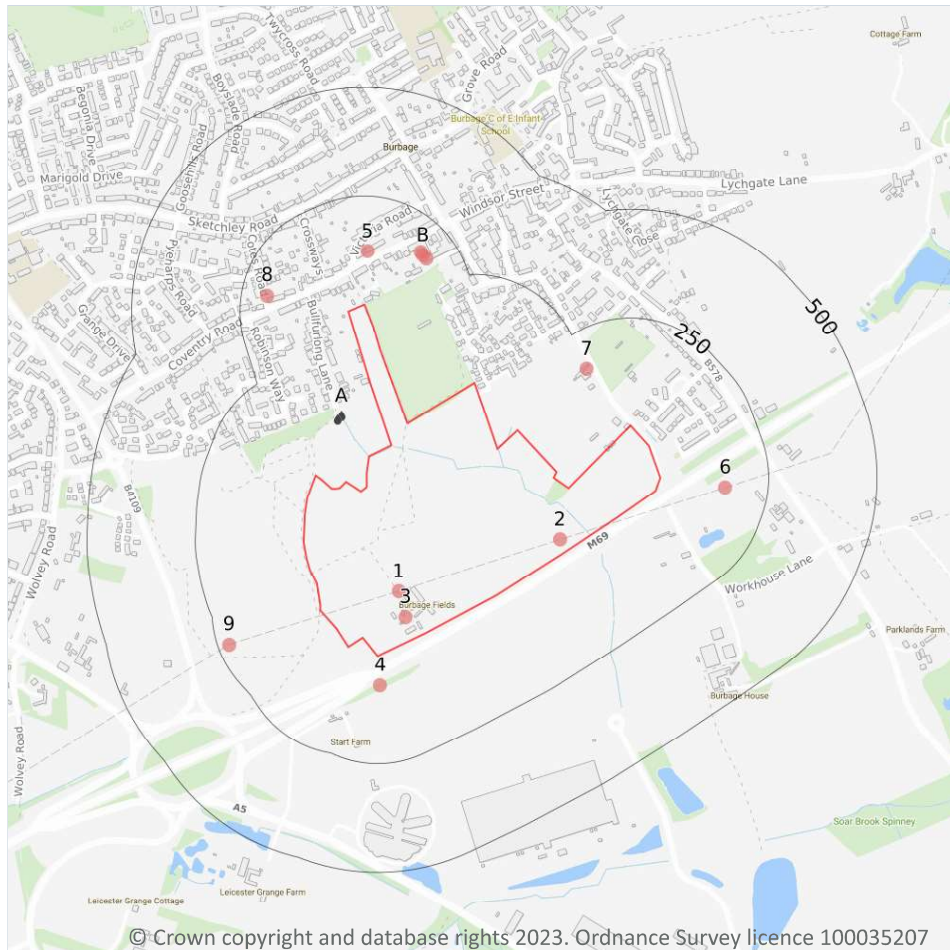


ID	Location	Site	Reference	Category	Sub-Category	Description
B	427m SE	BURBAGE HOUSE FARM, LUTTERWORTH ROAD, HINCKLEY, LE10 3AH	WEX182062	Using waste exemption	On a farm	Use of waste in construction
B	427m SE	BURBAGE HOUSE FARM, LUTTERWORTH ROAD, HINCKLEY, LE10 3AH	WEX182062	Using waste exemption	On a farm	Burning of waste as a fuel in a small appliance
B	427m SE	BURBAGE HOUSE FARM, LUTTERWORTH ROAD, HINCKLEY, LE10 3AH	WEX182062	Disposing of waste exemption	On a farm	Deposit of waste from dredging of inland waters
B	427m SE	BURBAGE HOUSE FARM, LUTTERWORTH ROAD, HINCKLEY, LE10 3AH	WEX182062	Disposing of waste exemption	On a farm	Burning waste in the open
B	427m SE	BURBAGE HOUSE FARM, LUTTERWORTH ROAD, HINCKLEY, LE10 3AH	WEX182062	Treating waste exemption	On a farm	Cleaning, washing, spraying or coating relevant waste
B	427m SE	BURBAGE HOUSE FARM, LUTTERWORTH ROAD, HINCKLEY, LE10 3AH	WEX020598	Disposing of waste exemption	On a farm	Deposit of waste from dredging of inland waters
B	427m SE	BURBAGE HOUSE FARM, LUTTERWORTH ROAD, HINCKLEY, LE10 3AH	WEX020598	Disposing of waste exemption	On a farm	Burning waste in the open
B	427m SE	BURBAGE HOUSE FARM, LUTTERWORTH ROAD, HINCKLEY, LE10 3AH	WEX020598	Storing waste exemption	On a farm	Storage of sludge
B	427m SE	BURBAGE HOUSE FARM, LUTTERWORTH ROAD, HINCKLEY, LE10 3AH	WEX020598	Treating waste exemption	On a farm	Cleaning, washing, spraying or coating relevant waste
B	427m SE	BURBAGE HOUSE FARM, LUTTERWORTH ROAD, HINCKLEY, LE10 3AH	WEX020598	Using waste exemption	On a farm	Use of waste in construction
B	427m SE	BURBAGE HOUSE FARM, LUTTERWORTH ROAD, HINCKLEY, LE10 3AH	WEX020598	Using waste exemption	On a farm	Spreading waste on agricultural land to confer benefit
B	427m SE	BURBAGE HOUSE FARM, LUTTERWORTH ROAD, HINCKLEY, LE10 3AH	WEX020598	Using waste exemption	On a farm	Burning of waste as a fuel in a small appliance
3	448m E	-	WEX245531	Storing waste exemption	On a Farm	Storage of sludge

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
- Licensed Discharges to controlled waters

4.1 Recent industrial land uses

Records within 250m

12

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 30](#) >

ID	Location	Company	Address	Activity	Category
1	On site	Pylon	Leicestershire, LE10	Electrical Features	Infrastructure and Facilities
2	On site	Pylon	Leicestershire, LE10	Electrical Features	Infrastructure and Facilities
3	On site	Silo	Leicestershire, LE10	Hoppers and Silos	Farming



ID	Location	Company	Address	Activity	Category
4	68m S	Mast	Leicestershire, LE10	Telecommunications Features	Infrastructure and Facilities
5	122m N	Service Commemoratives	30, Coventry Road, Burbage, Leicestershire, LE10 2HP	Medals, Trophies, Ceremonial and Religious Goods	Consumer Products
6	152m E	Pylon	Leicestershire, LE10	Electrical Features	Infrastructure and Facilities
7	166m NE	Pump	Leicestershire, LE10	Water Pumping Stations	Industrial Features
B	176m N	E T Boiler Services	Unit 3a Coventry Road, Burbage, Hinckley, Leicestershire, LE10 2HL	Industrial Repairs and Servicing	Repair and Servicing
B	176m N	Business Centre	Leicestershire, LE10	Business Parks and Industrial Estates	Industrial Features
B	177m N	Tracey's Cakecraft	Unit 3b Fairway Centre 13, Coventry Road, Burbage, Leicestershire, LE10 2HL	Baking and Confectionery	Foodstuffs
8	191m NW	Electricity Sub Station	Leicestershire, LE10	Electrical Features	Infrastructure and Facilities
9	225m SW	Pylon	Leicestershire, LE10	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	0
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Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0
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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

0

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.

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

3

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 30](#) >

ID	Location	Address	Details	
A	87m NW	BULLFURLONG LANE CSO, BULLFURLONG LANE, BURBAGE, HINCKLEY, LEICESTERSHIRE, LE10 2HQ	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: T/50/45424/O Permit Version: 3 Receiving Water: TRIBUTARY OF SOAR BROOK	Status: VARIED UNDER EPR 2010 Issue date: 21/11/2017 Effective Date: 31/03/2018 Revocation Date: -
A	87m NW	BULLFURLONG LANE CSO, BULLFURLONG LANE, BURBAGE, HINCKLEY, LEICESTERSHIRE, LE10 2HQ	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: T/50/45424/O Permit Version: 2 Receiving Water: TRIBUTARY OF SOAR BROOK	Status: VARIED UNDER EPR 2010 Issue date: 21/11/2017 Effective Date: 21/11/2017 Revocation Date: 30/03/2018
A	99m NW	BULLFURLONG LANE CSO, BULLFURLONG LANE, BURBAGE, HINCKLEY, LEICESTERSHIRE, LE10 2HQ	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: T/50/45424/O Permit Version: 1 Receiving Water: TRIB OF RIVER SOAR	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 10/01/2001 Effective Date: 10/01/2001 Revocation Date: 20/11/2017

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

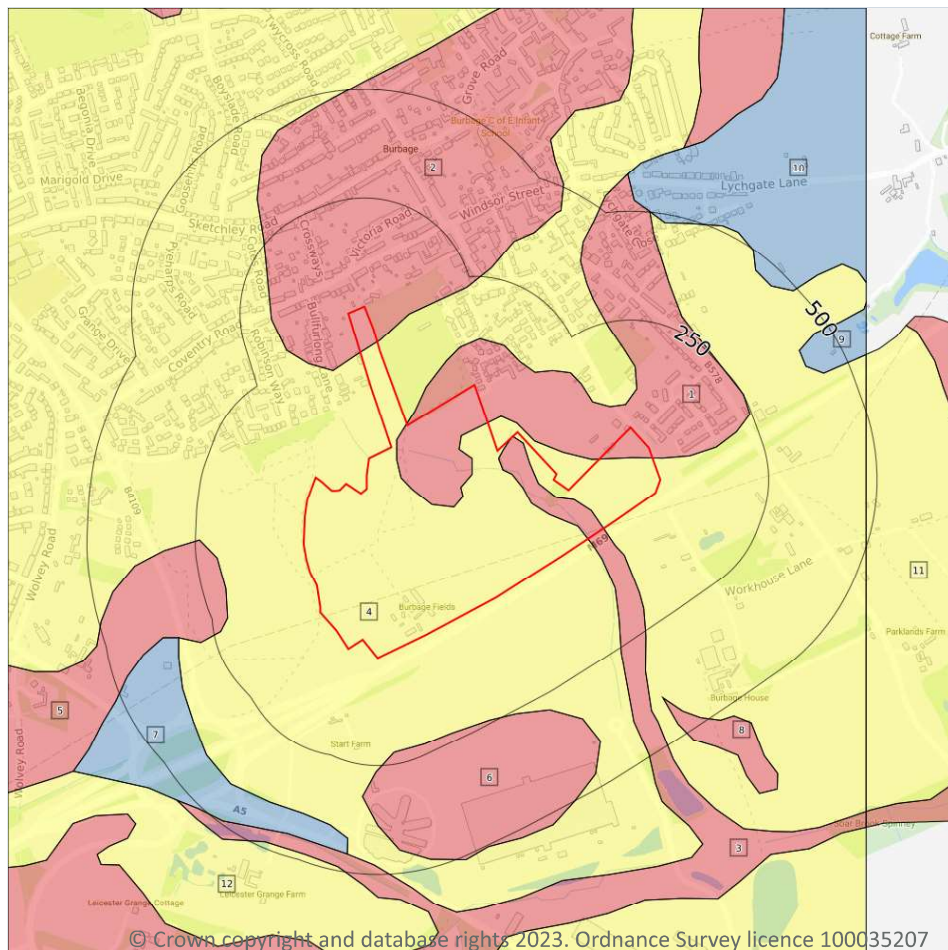
0

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

12

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	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

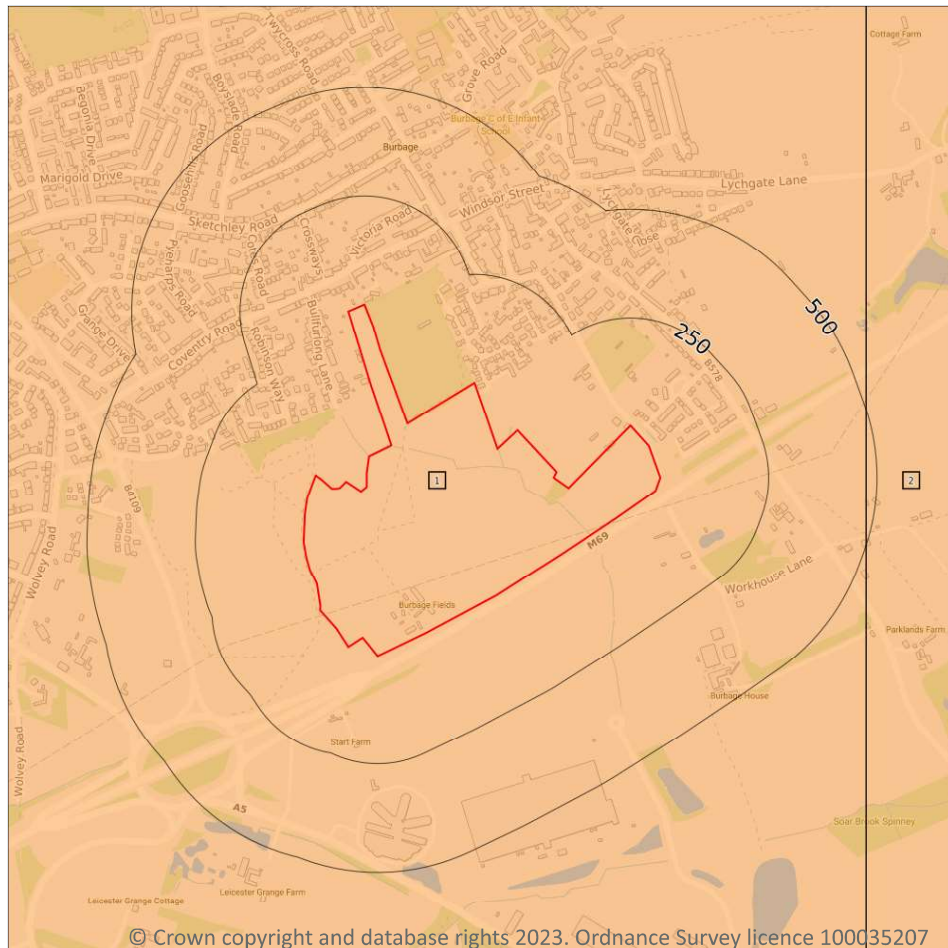


ID	Location	Designation	Description
3	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	On site	Secondary 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
5	197m W	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
6	221m S	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
7	332m SW	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
8	401m SE	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
9	409m NE	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
10	461m NE	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
11	475m E	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
12	483m SW	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

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



Bedrock aquifer



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

5.2 Bedrock aquifer

Records within 500m

2

Aquifer status of groundwater held within bedrock geology.

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

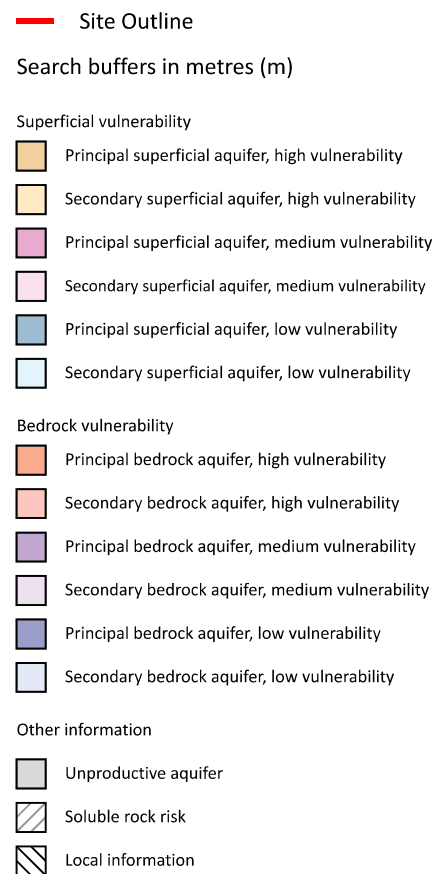
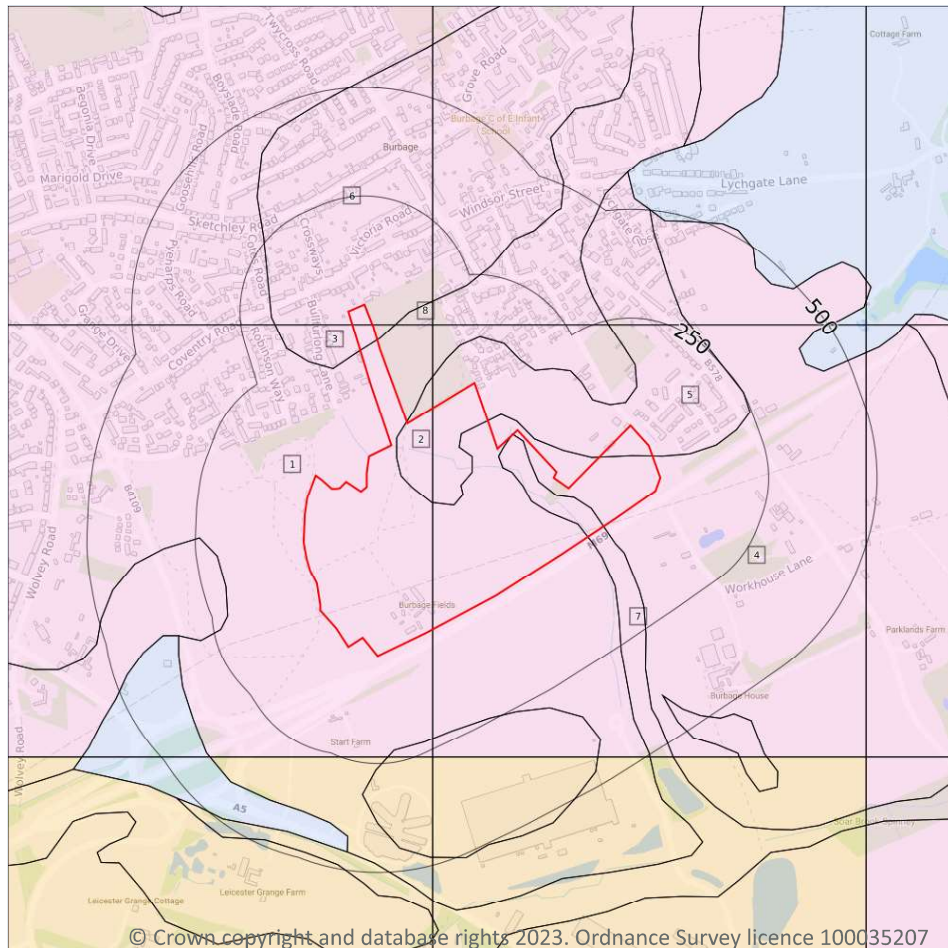
ID	Location	Designation	Description
1	On site	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers
2	475m E	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers



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

8

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 41](#) >



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Intermediate Infiltration value: 40- 70% Dilution value: <300mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: High	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
2	On site	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Intermediate Infiltration value: 40- 70% Dilution value: <300mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: High	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
3	On site	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Intermediate Infiltration value: 40- 70% Dilution value: <300mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: High	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
4	On site	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Intermediate Infiltration value: 40- 70% Dilution value: <300mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: High	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
5	On site	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Intermediate Infiltration value: 40- 70% Dilution value: <300mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: High	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
6	On site	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Intermediate Infiltration value: 40-70% Dilution value: <300mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: High	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
7	On site	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Intermediate Infiltration value: 40-70% Dilution value: <300mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: High	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
8	49m N	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Intermediate Infiltration value: 40-70% Dilution value: <300mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: High	Vulnerability: Low Aquifer type: Secondary Flow mechanism: 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

Records on site

0

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

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

5.5 Groundwater vulnerability- local information

Records on site

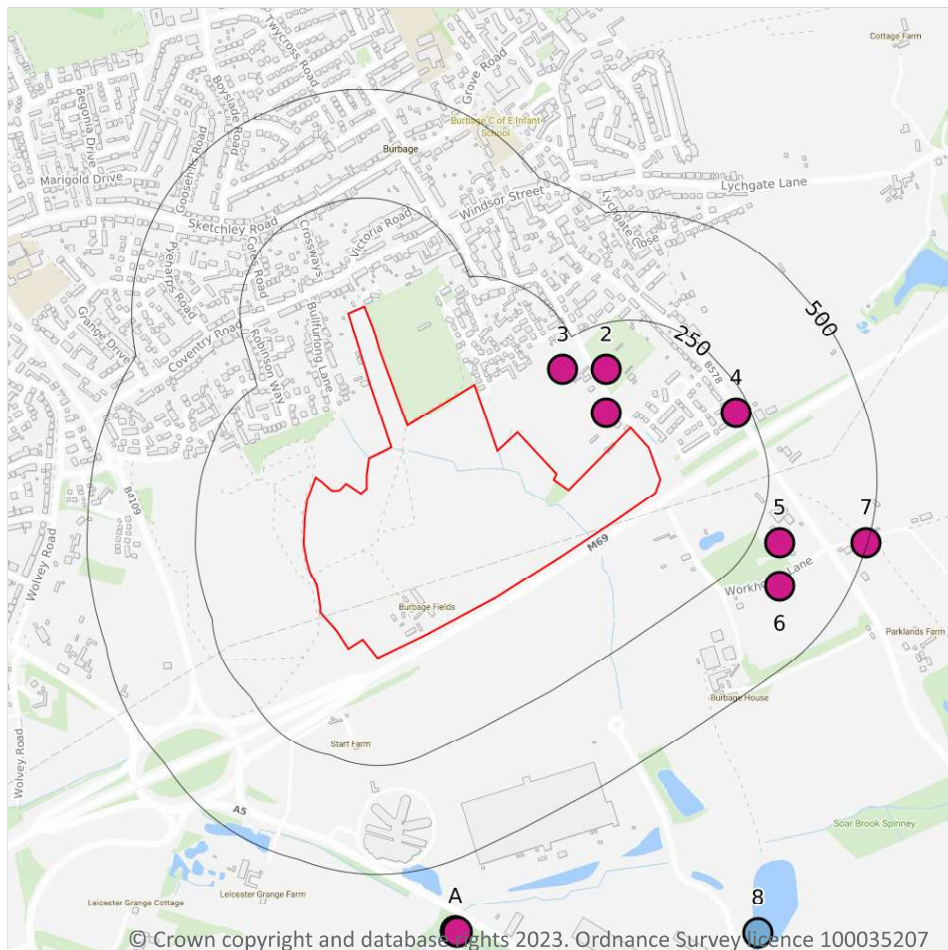
0

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 03798 506 506 or by email on enquiries@environment-agency.gov.uk ↗.

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

12

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 44](#) >



ID	Location	Details	
1	64m NE	Status: Historical Licence No: 03/28/50/0120 Details: General Farming & Domestic Direct Source: Groundwater Midlands Region Point: 88 LUTTERWORTH ROAD - WELL (2) Data Type: Point Name: JUDKINS Easting: 444400 Northing: 291800	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/07/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2000 Version End Date: -
2	145m NE	Status: Historical Licence No: 03/28/50/0120 Details: General Farming & Domestic Direct Source: Groundwater Midlands Region Point: 88 LUTTERWORTH ROAD - WELL (3) Data Type: Point Name: JUDKINS Easting: 444400 Northing: 291900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/07/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2000 Version End Date: -
3	178m NE	Status: Historical Licence No: 03/28/50/0120 Details: General Farming & Domestic Direct Source: Groundwater Midlands Region Point: 88 LUTTERWORTH ROAD - WELL (1) Data Type: Point Name: JUDKINS Easting: 444300 Northing: 291900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/07/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2000 Version End Date: -
4	216m E	Status: Historical Licence No: 03/28/50/0058 Details: General Farming & Domestic Direct Source: Groundwater Midlands Region Point: DEEPDALE FARM - WELL (1) Data Type: Point Name: MOORE Easting: 444700 Northing: 291800	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2000 Version End Date: -
5	308m E	Status: Historical Licence No: 03/28/50/0119 Details: General Farming & Domestic Direct Source: Groundwater Midlands Region Point: GREENLEA FARM - BOREHOLE Data Type: Point Name: PK & J PATERSON Easting: 444800 Northing: 291500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/11/1965 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2000 Version End Date: -



ID	Location	Details	
6	358m E	Status: Historical Licence No: 03/28/50/0119 Details: General Farming & Domestic Direct Source: Groundwater Midlands Region Point: GREENLEA FARM - WELL Data Type: Point Name: PK & J PATERSON Easting: 444800 Northing: 291400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/11/1965 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2000 Version End Date: -
7	496m E	Status: Historical Licence No: 03/28/50/0058 Details: General Farming & Domestic Direct Source: Groundwater Midlands Region Point: DEEPDALE FARM - WELL (2) Data Type: Point Name: MOORE Easting: 445000 Northing: 291500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2000 Version End Date: -
A	656m S	Status: Active Licence No: MD/028/0050/003 Details: Spray Irrigation - Storage Direct Source: Groundwater Midlands Region Point: WELLPOINT 4 AT COPSTON LODGE FARM, WOLVEY Data Type: Point Name: P A Wright & Sons Limited Easting: 444052 Northing: 290604	Annual Volume (m ³): 34560 Max Daily Volume (m ³): 192 Original Application No: NPS/WR/007701 Original Start Date: 22/05/2012 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 03/12/2018 Version End Date: -
A	657m S	Status: Active Licence No: MD/028/0050/003 Details: Spray Irrigation - Storage Direct Source: Groundwater Midlands Region Point: WELLPOINT 3 AT COPSTON LODGE FARM, WOLVEY Data Type: Point Name: P A Wright & Sons Limited Easting: 444053 Northing: 290603	Annual Volume (m ³): 34560 Max Daily Volume (m ³): 192 Original Application No: NPS/WR/007701 Original Start Date: 22/05/2012 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 03/12/2018 Version End Date: -
A	658m S	Status: Active Licence No: MD/028/0050/003 Details: Spray Irrigation - Storage Direct Source: Groundwater Midlands Region Point: WELLPOINT 2 AT COPSTON LODGE FARM, WOLVEY Data Type: Point Name: P A Wright & Sons Limited Easting: 444055 Northing: 290602	Annual Volume (m ³): 34560 Max Daily Volume (m ³): 192 Original Application No: NPS/WR/007701 Original Start Date: 22/05/2012 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 03/12/2018 Version End Date: -



ID	Location	Details	
A	660m S	Status: Active Licence No: MD/028/0050/003 Details: Spray Irrigation - Storage Direct Source: Groundwater Midlands Region Point: WELLPOINT 1 AT COPSTON LODGE FARM, WOLVEY Data Type: Point Name: P A Wright & Sons Limited Easting: 444057 Northing: 290601	Annual Volume (m ³): 34560 Max Daily Volume (m ³): 192 Original Application No: NPS/WR/007701 Original Start Date: 22/05/2012 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 03/12/2018 Version End Date: -
-	1900m SE	Status: Historical Licence No: 03/28/50/0127 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Groundwater Midlands Region Point: RED LION FARM Data Type: Point Name: HUNT BROS LTD Easting: 445370 Northing: 289900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 28/10/1987 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2000 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m

3

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.

Features are displayed on the Abstractions and Source Protection Zones map on [page 44](#) >

ID	Location	Details	
8	976m SE	Status: Active Licence No: 03/28/50/0128 Details: Spray Irrigation - Storage Direct Source: Surface Water Midlands Region Point: BURBAGE HOUSE FARM - TRIB OF SOAR BROOK Data Type: Point Name: BURBAGE FARMS Easting: 444750 Northing: 290600	Annual Volume (m ³): 45461 Max Daily Volume (m ³): 1559 Original Application No: - Original Start Date: 09/01/1989 Expiry Date: - Issue No: 100 Version Start Date: 03/12/2018 Version End Date: -



ID	Location	Details	
-	1503m NW	Status: Historical Licence No: 03/28/19/0043 Details: Process Water Direct Source: Surface Water Midlands Region Point: RICHARD ROBERTS HOLDINGS LTD - TRIB OF SKETCHLEY BROOK Data Type: Point Name: RICHARD ROBERTS HOLDINGS LTD Easting: 443000 Northing: 293300	Annual Volume (m ³): 83105.4 Max Daily Volume (m ³): 280.94 Original Application No: - Original Start Date: 10/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 24/10/1978 Version End Date: -
-	1687m NW	Status: Historical Licence No: 03/28/19/0042 Details: Laundry Use Direct Source: Surface Water Midlands Region Point: SKETCHLEY LTD - SKETCHLEY BROOK Data Type: Point Name: JOHNSON TEXTILE SERVICES LTD Easting: 442500 Northing: 293100	Annual Volume (m ³): 772820 Max Daily Volume (m ³): 10910.4 Original Application No: - Original Start Date: 02/02/1971 Expiry Date: - Issue No: 101 Version Start Date: 22/06/2000 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m

0

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

Records within 500m

0

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.



ID	Location	Type of water feature	Ground level	Permanence	Name
A	On site	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	On site	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	On site	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
A	2m NW	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	2m NW	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
H	4m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
I	17m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.



6.2 Surface water features

Records within 250m

7

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 50](#) >

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 50](#) >

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	On site	River	Soar Brook from Source to Soar	GB104028042590	Soar River	Soar

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

6.4 WFD Surface water bodies

Records identified

1

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 50](#) >



ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	1429m NE	River	Soar Brook from Source to Soar	GB104028042590 ↗	Poor	Fail	Poor	2019

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

6.5 WFD Groundwater bodies

Records on site	2
------------------------	----------

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 50 >](#)

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
2	On site	Soar - Secondary Combined	GB40402G990600 ↗	Good	Good	Good	2019
3	On site	Tame Anker Mease - Secondary Combined	GB40402G990800 ↗	Good	Good	Good	2019

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



7 River and coastal flooding

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

0

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.

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

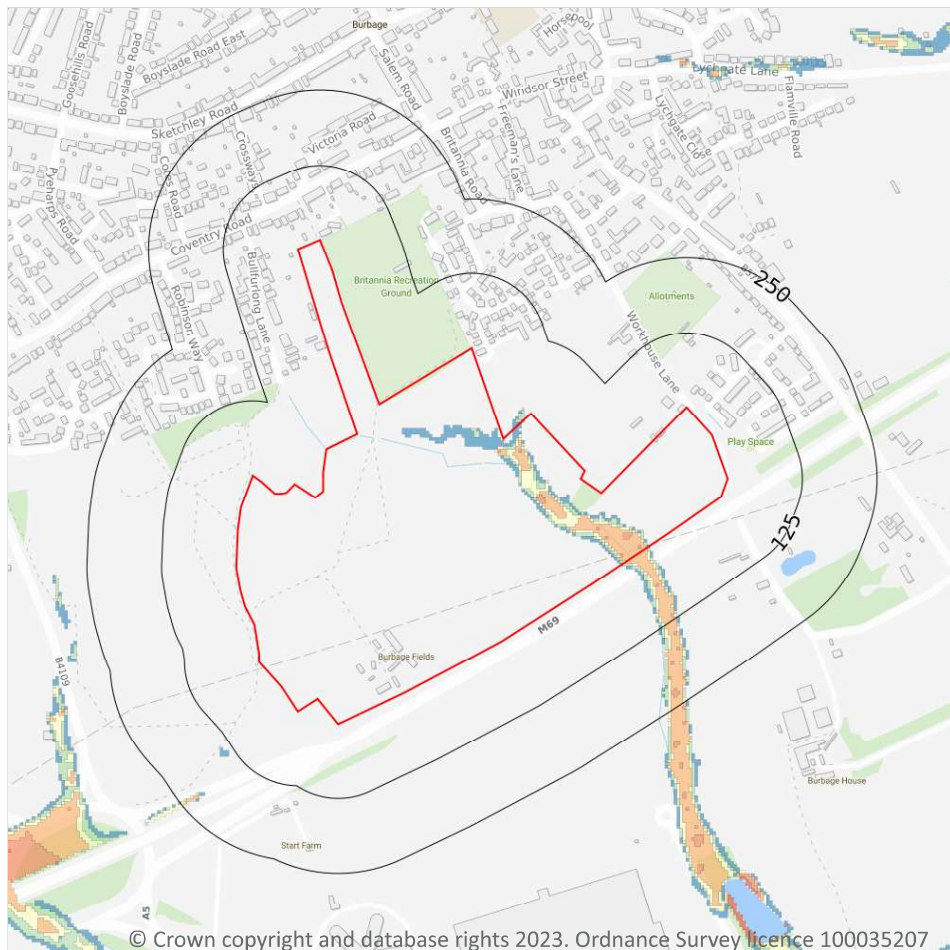
0

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 30 year, 0.3m - 1.0m

Highest risk within 50m

1 in 30 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 57 >](#)

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

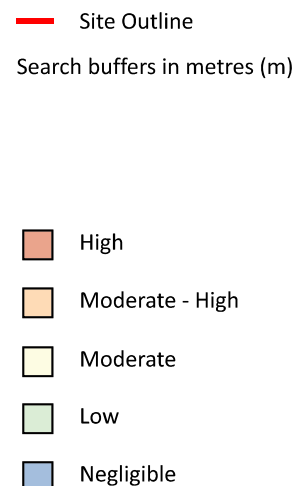
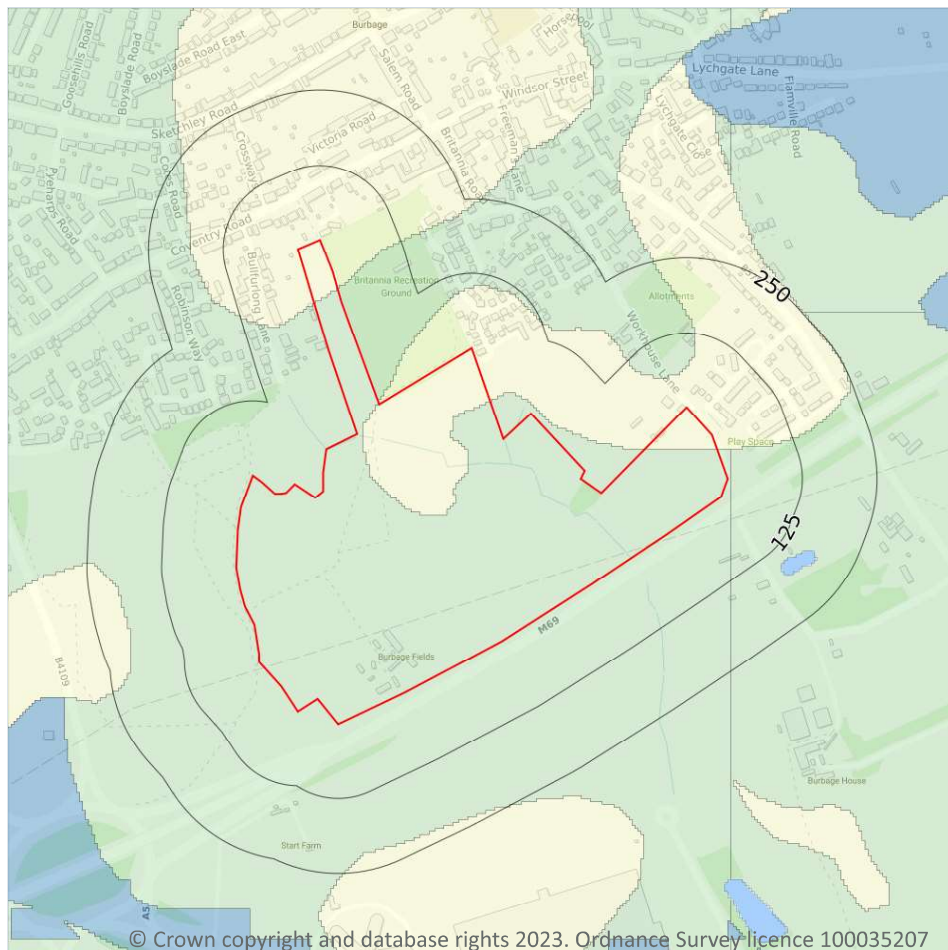
a site. The table below shows the maximum flood depths for a range of return periods for the site.

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

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



9.1 Groundwater flooding

Highest risk on site

Moderate

Highest risk within 50m

Moderate

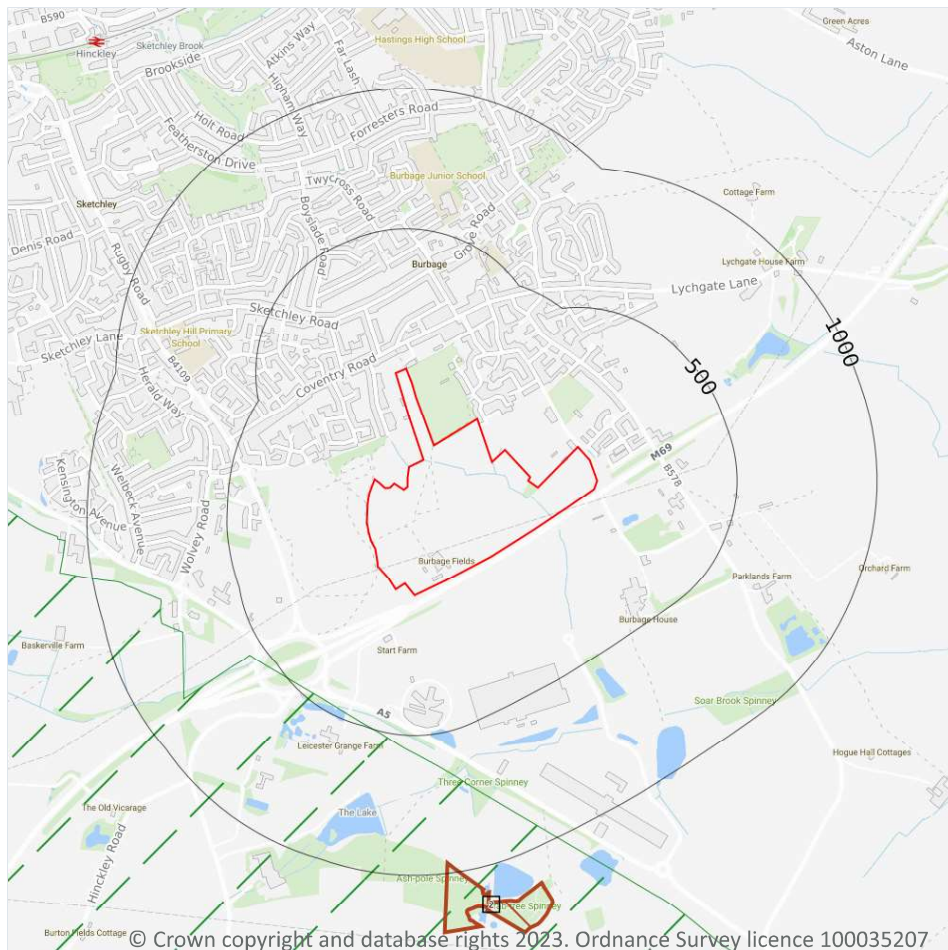
Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks 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 59](#) >

This data is sourced from Ambiantal Risk Analytics.



10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Sites of Special Scientific Interest (SSSI)
- + Local Nature Reserves (LNR)
- Designated Ancient Woodland
- Green Belt

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**1**

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 60](#) >

ID	Location	Name	Woodland Type
2	963m S	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

1

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

Features are displayed on the Environmental designations map on [page 60](#) >

ID	Location	Name	Local Authority name
1	469m SW	Birmingham	Rugby

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

5

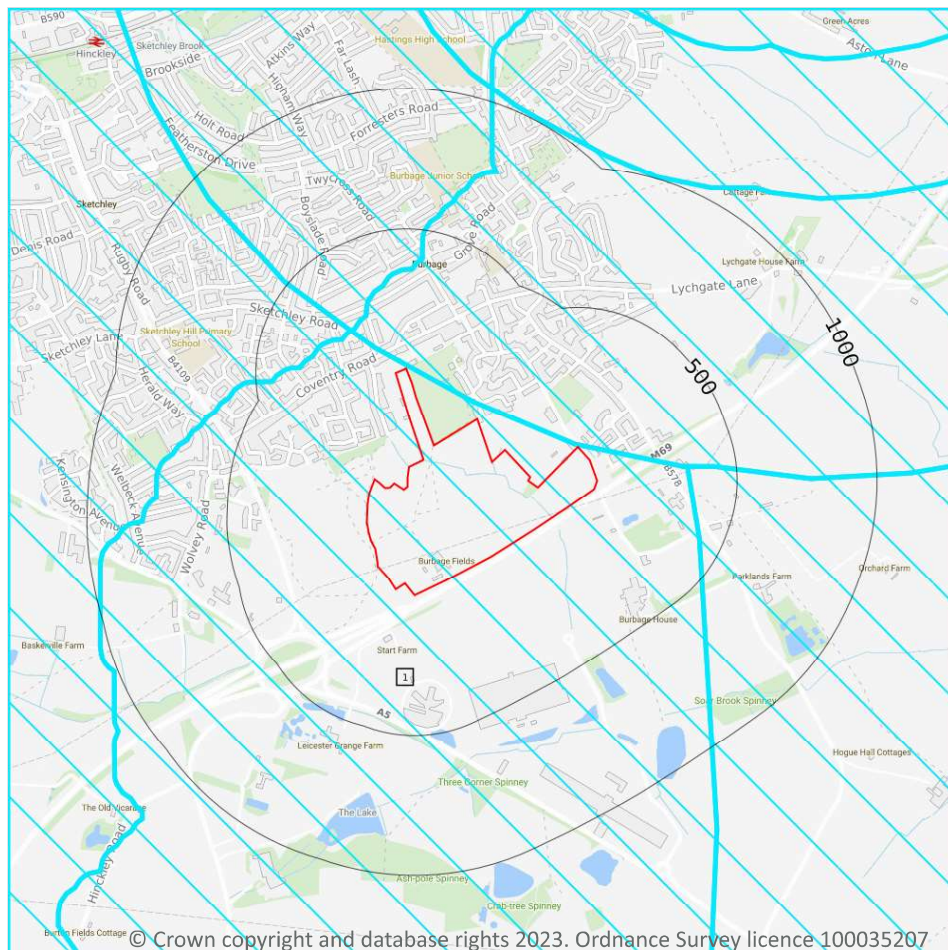
Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
On site	SOAR R NVZ	Surface Water	309	Existing
On site	SOAR R NVZ	Surface Water	309	Existing
20m NW	River Trent (source to confluence with Derwent)	Surface Water	308	Existing
518m N	River Trent (source to confluence with Derwent)	Surface Water	308	Existing
830m N	SOAR R NVZ	Surface Water	309	Existing

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



SSSI Impact Zones and Units



- Site Outline
- Search buffers in metres (m)
- SSSI Impact Risk Zones
- SSSI Units
- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

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 65](#) >

ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Airports, helipads and other aviation proposals. Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 750m², manure stores > 3500t. Combustion - General combustion processes >50mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Discharges - Any discharge of water or liquid waste of more than 20m³/day to ground (ie to seep away) or to surface water, such as a beck or stream.

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	0
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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

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

0

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.



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

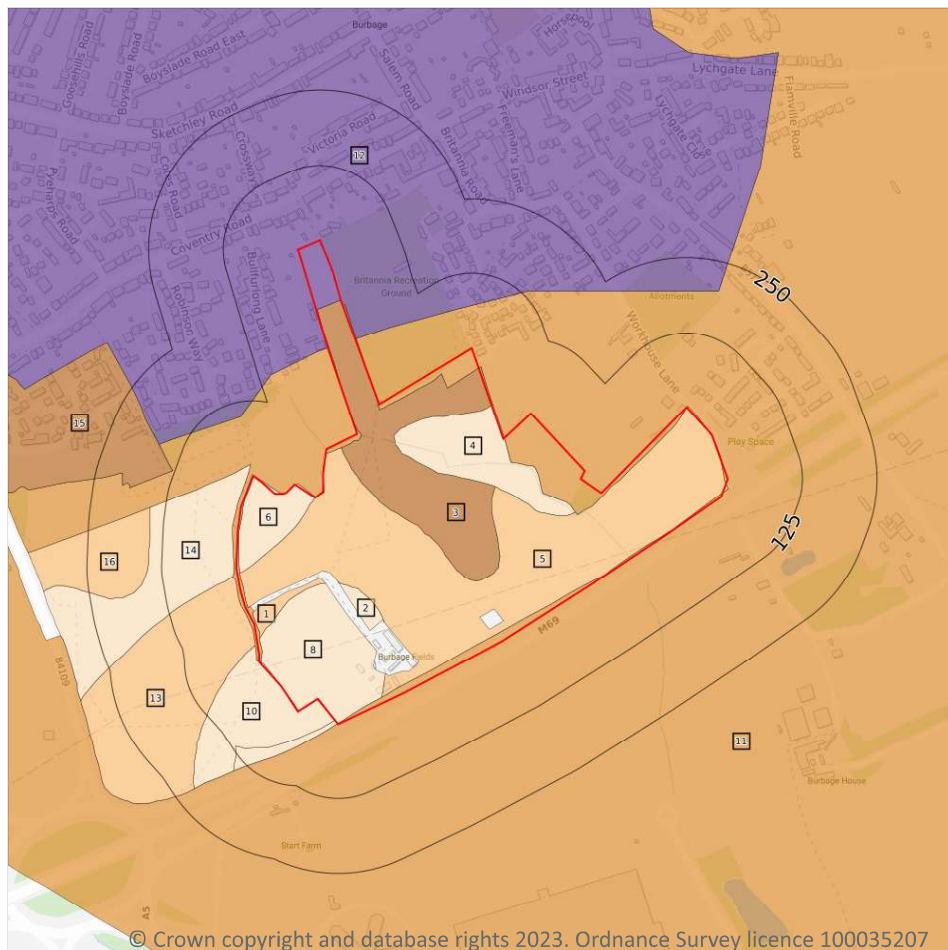
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Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, 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

14

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 69](#) >

ID	Location	Classification	Description
1	On site	Grade 3a	Good quality agricultural land. Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.



ID	Location	Classification	Description
2	On site	Grade 3b	Moderate quality agricultural land. Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.
3	On site	Grade 2	Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.
4	On site	Grade 3b	Moderate quality agricultural land. Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.
5	On site	Grade 3a	Good quality agricultural land. Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.
6	On site	Grade 3b	Moderate quality agricultural land. Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.
8	On site	Grade 3b	Moderate quality agricultural land. Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.
10	On site	Grade 3b	Moderate quality agricultural land. Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.
11	On site	Grade 3	Good to moderate quality agricultural land. Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.
12	On site	Urban	-
13	4m SW	Grade 3a	Good quality agricultural land. Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.
14	4m W	Grade 3b	Moderate quality agricultural land. Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.



ID	Location	Classification	Description
15	128m W	Grade 2	Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.
16	146m W	Grade 3a	Good quality agricultural land. Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

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

1

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.

Location	Reference	Scheme	Start Date	End date
118m SE	AG00307944	Entry Level plus Higher Level Stewardship	01/08/2010	31/07/2020



This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m

1

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.

Location	Reference	Scheme	Start Date	End Date
231m SE	1081206	Countryside Stewardship (Middle Tier)	01/01/2021	31/12/2025

This data is sourced from Natural England.



13 Habitat designations



- Site Outline
- Search buffers in metres (m)
- Priority Habitat Inventory
- Open Mosaic Habitat
- Limestone Pavement Orders
- Habitat Networks
- Primary Habitat
- Restorable Habitat
- Associated Habitats
- Habitat Restoration-Creation
- Network Enhancement Zone 1
- Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m

4

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

Features are displayed on the Habitat designations map on [page 73](#) >

ID	Location	Main Habitat	Other habitats
1	4m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	49m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
3	84m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
4	243m E	Traditional orchard	Overruled by Traditional Orchards HAP Inventory dataset



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

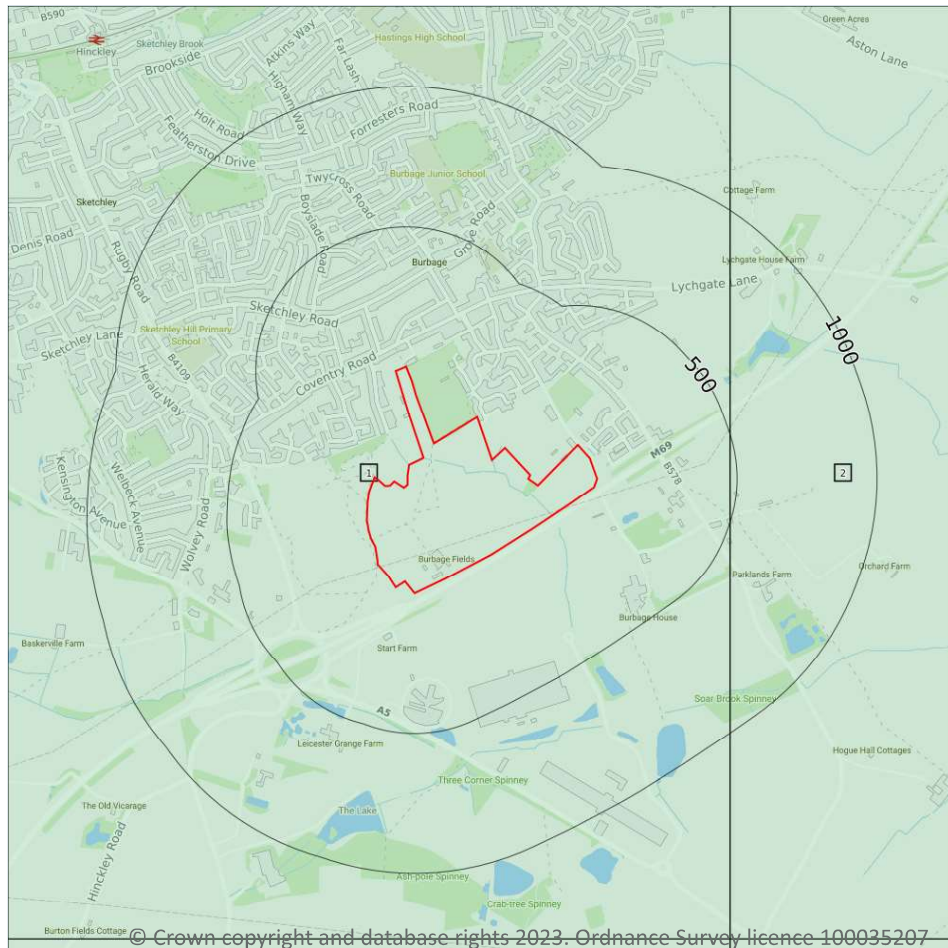
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Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable 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

2

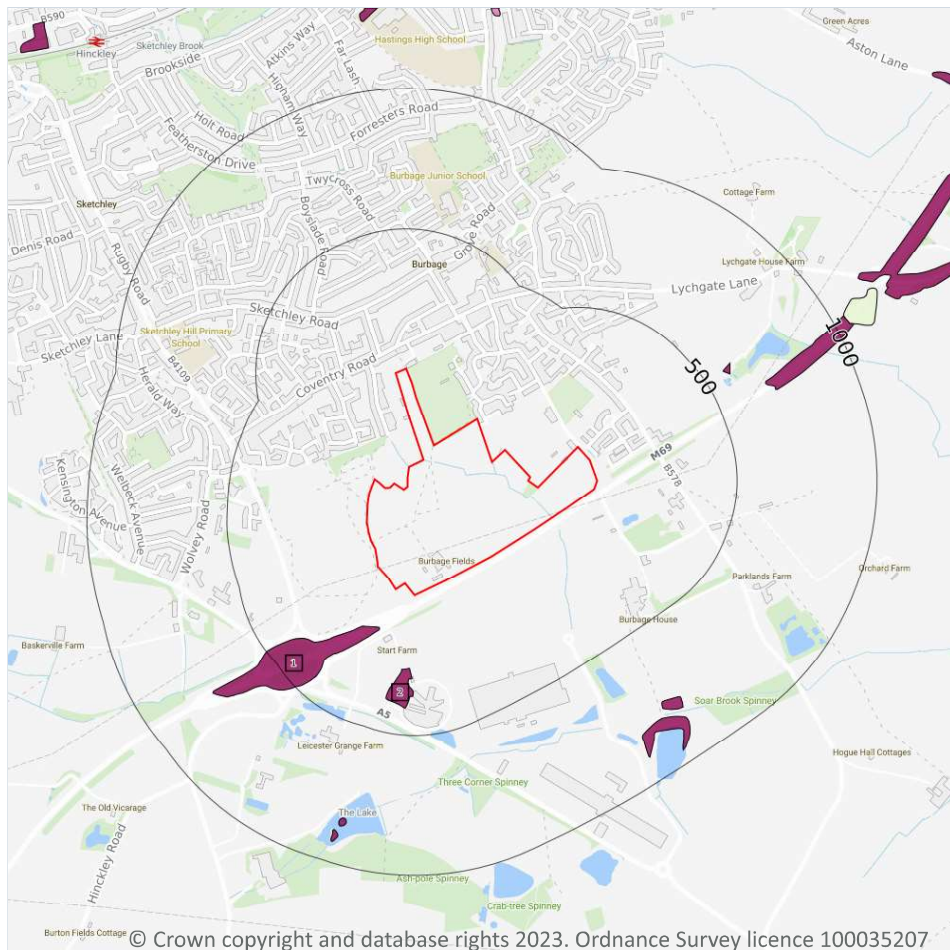
An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme. Features are displayed on the Geology 1:10,000 scale - Availability map on [page 75](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	No coverage	SP49SW
2	475m E	Full	Full	Full	No coverage	SP49SE

This data is sourced from the British Geological Survey.



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



- Site Outline**
- Search buffers in metres (m)**
- Reclaimed ground
 - Made ground
 - Worked ground
 - Infilled ground
 - Disturbed ground
 - Landscaped ground

14.2 Artificial and made ground (10k)

Records within 500m

2

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.

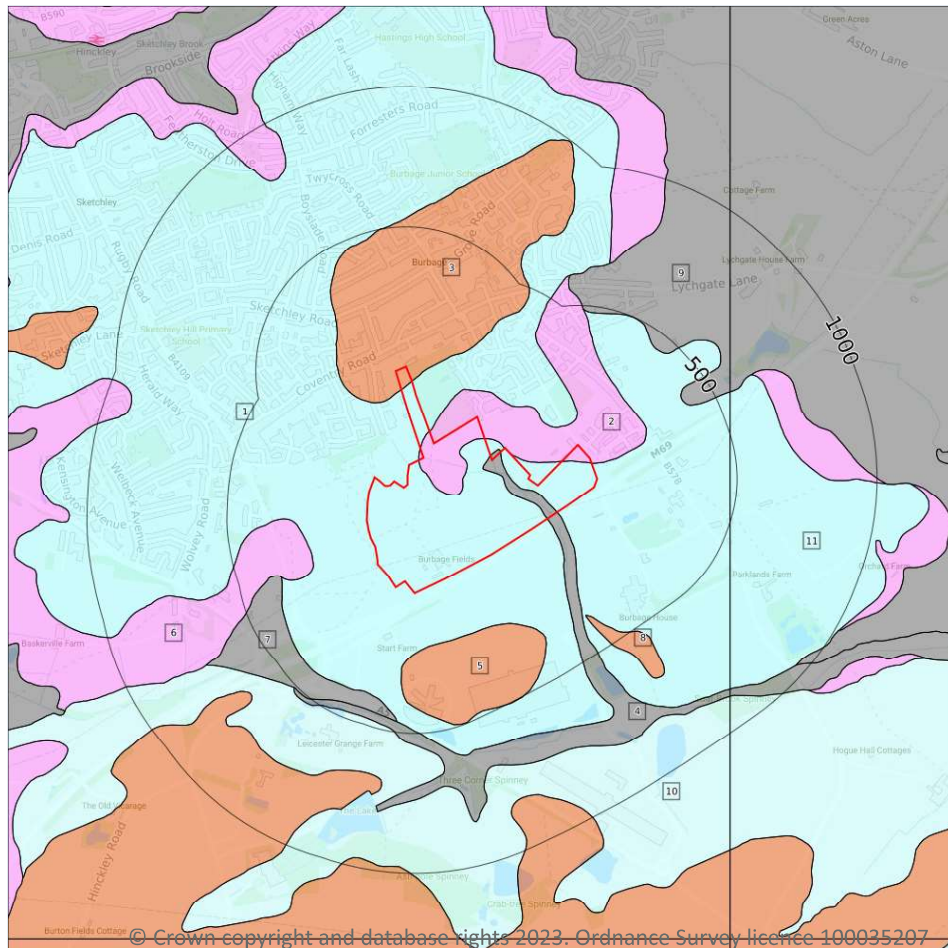
Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on [page 76](#) >

ID	Location	LEX Code	Description	Rock description
1	147m SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	262m S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

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

14.3 Superficial geology (10k)

Records within 500m

11

Superficial geological deposits at 1:10,000 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 1:10,000 scale - Superficial map on [page 77](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	ODT-DMTN	Oadby Member - Diamicton	Diamicton
2	On site	WOSG-XSV	Wolston Sand And Gravel - Sand And Gravel	Sand And Gravel
3	On site	DMG-XSV	Dunsmore Gravel - Sand And Gravel	Sand And Gravel



ID	Location	LEX Code	Description	Rock description
4	On site	ALV-XSWCV	Alluvium - Sand With Clay And Gravel	Sand With Clay And Gravel [unlithified Deposits Coding Scheme - Extended]
5	194m S	DMG-XSV	Dunsmore Gravel - Sand And Gravel	Sand And Gravel
6	219m W	WOSG-XSV	Wolston Sand And Gravel - Sand And Gravel	Sand And Gravel
7	347m SW	WOC-XCZ	Wolston Clay - Clay And Silt	Clay And Silt
8	364m SE	DMG-XSV	Dunsmore Gravel - Sand And Gravel	Sand And Gravel
9	391m NE	WOC-XCZ	Wolston Clay - Clay And Silt	Clay And Silt
10	475m SW	THT-DMTN	Thrussington Member - Diamicton	Diamicton
11	475m E	ODT-DMTN	Oadby Member - Diamicton	Diamicton

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

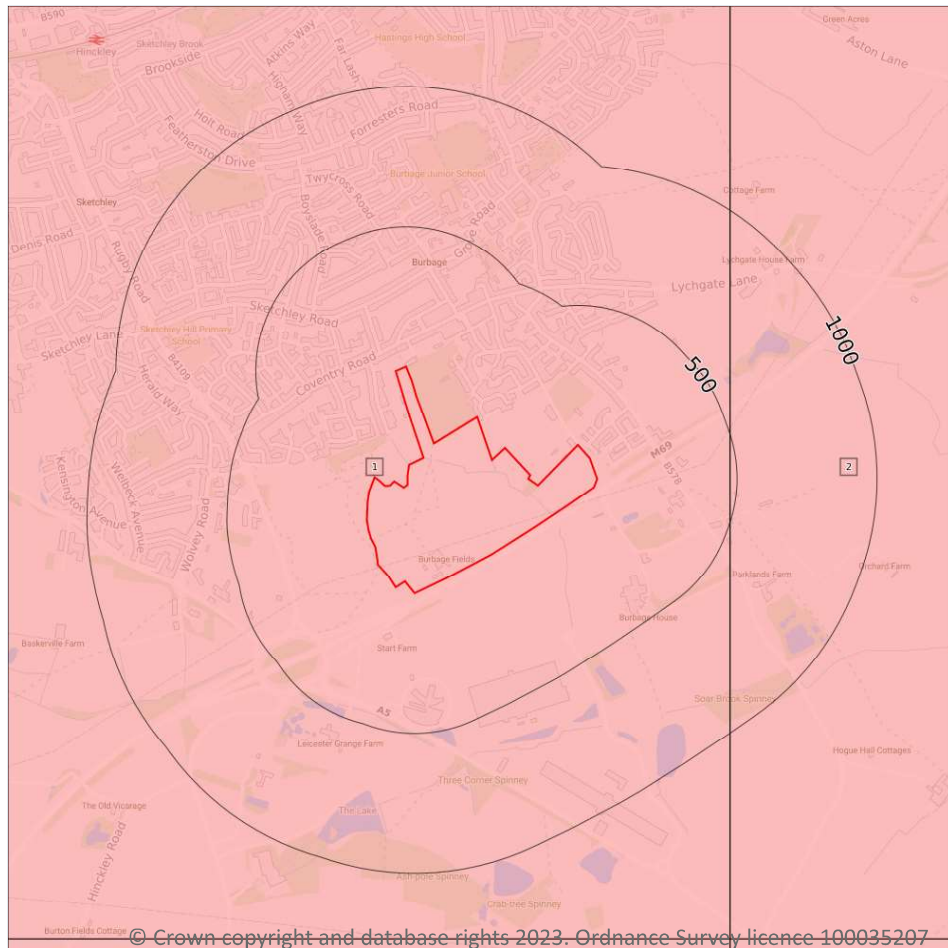
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Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

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 79 >](#)

ID	Location	LEX Code	Description	Rock age
1	On site	MMG-MDST	Mercia Mudstone Group - Mudstone	Rhaetian Age - Early Triassic Epoch
2	475m E	MMG-MDST	Mercia Mudstone Group - Mudstone	Rhaetian Age - Early Triassic Epoch

This data is sourced from the British Geological Survey.



14.6 Bedrock faults and other linear features (10k)

Records within 500m

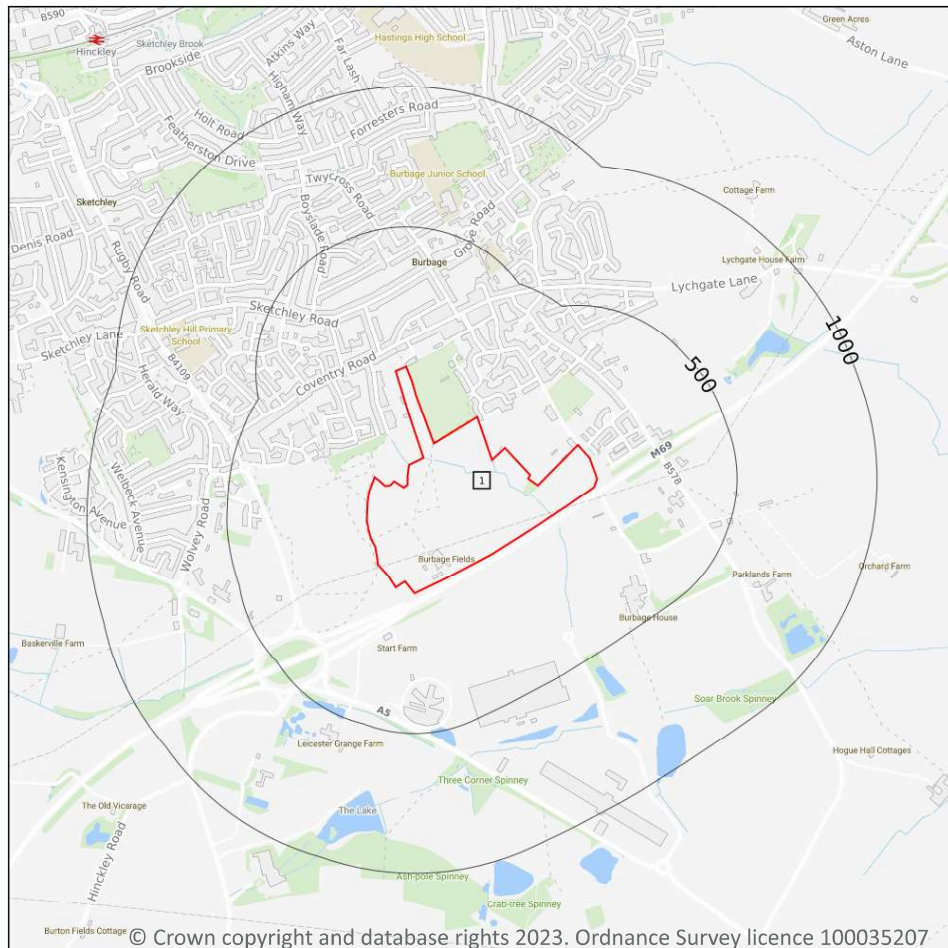
0

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



15.1 50k Availability

Records within 500m

1

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 81](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	No coverage	EW169_coventry_v4

This data is sourced from the British Geological Survey.



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

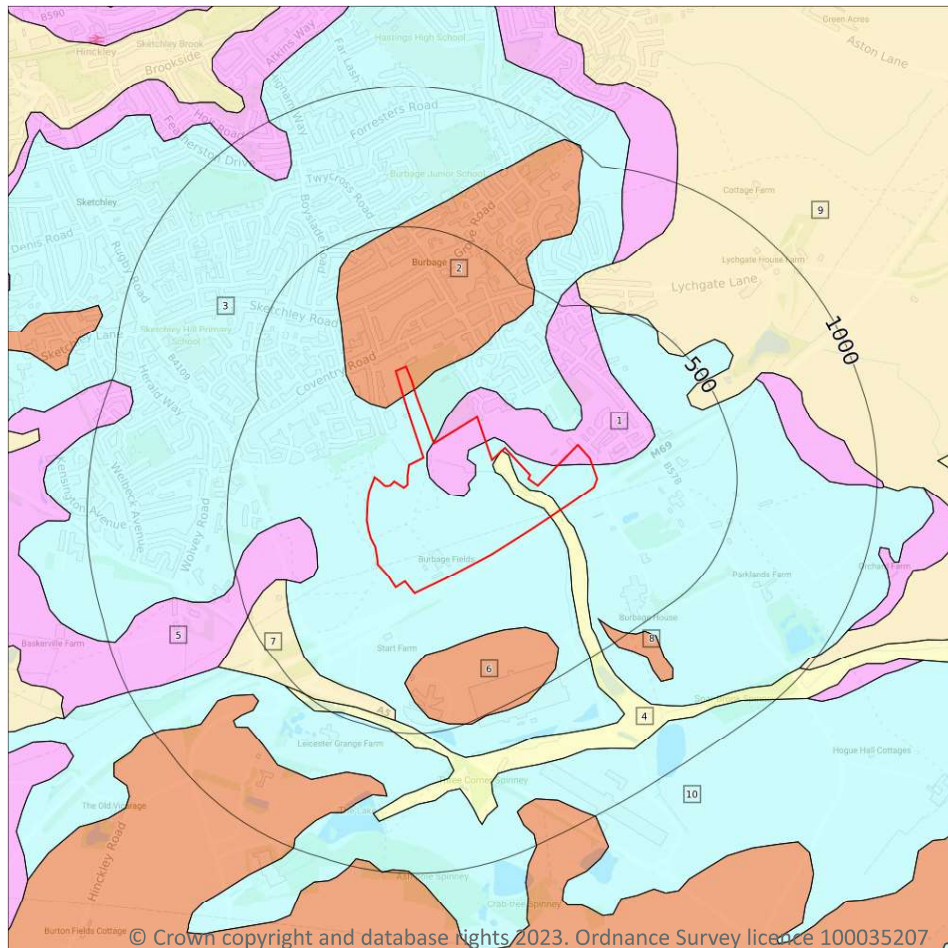
0

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



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m

10

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 83](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	WOSG-XSV	WOLSTON SAND AND GRAVEL	SAND AND GRAVEL
2	On site	DMG-XSV	DUNSMORE GRAVEL	SAND AND GRAVEL
3	On site	ODT-DMTN	OADBY MEMBER	DIAMICTON
4	On site	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL



ID	Location	LEX Code	Description	Rock description
5	197m W	WOSG-XSV	WOLSTON SAND AND GRAVEL	SAND AND GRAVEL
6	221m S	DMG-XSV	DUNSMORE GRAVEL	SAND AND GRAVEL
7	332m SW	BOSW-XCZ	BOSWORTH CLAY MEMBER	CLAY AND SILT
8	401m SE	DMG-XSV	DUNSMORE GRAVEL	SAND AND GRAVEL
9	409m NE	BOSW-XCZ	BOSWORTH CLAY MEMBER	CLAY AND SILT
10	483m SW	ODT-DMTN	OADBY MEMBER	DIAMICTON

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m

4

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	Very Low
On site	Intergranular	Very High	High
On site	Mixed	Moderate	Low
On site	Intergranular	Very High	High

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m

0

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)

Records within 50m

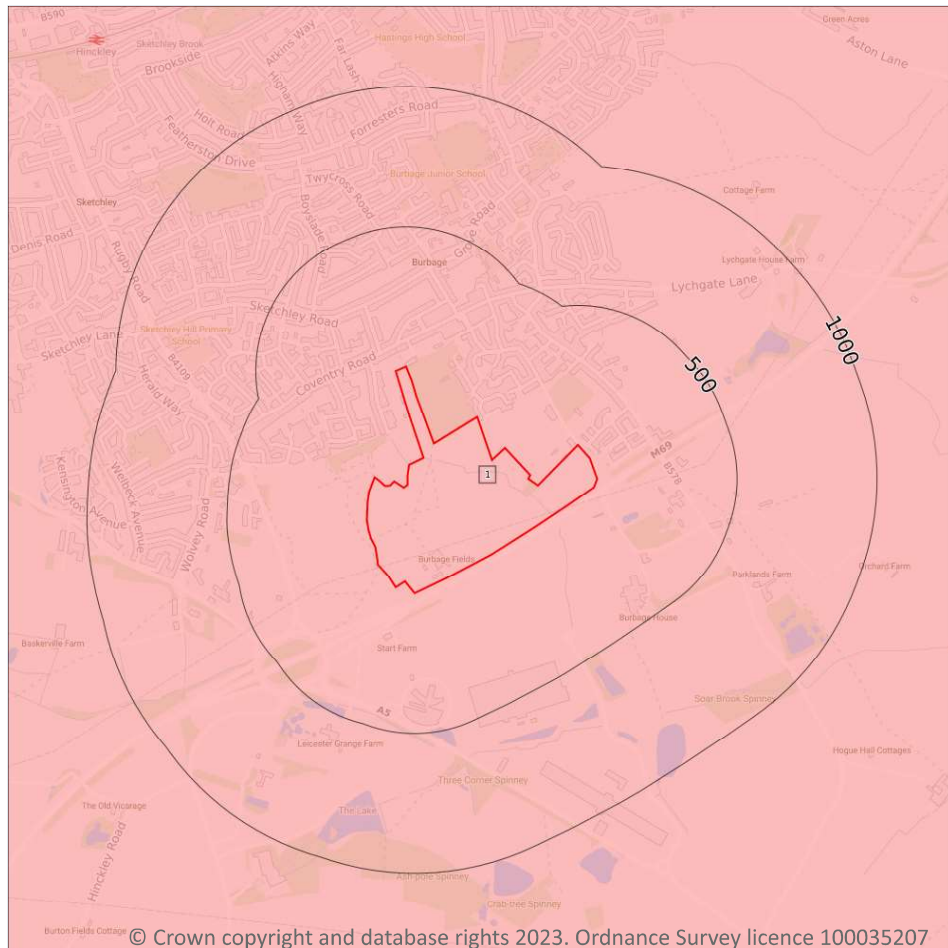
0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any 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

1

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 86](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	MMG-MDST	MERCIA MUDSTONE GROUP - MUDSTONE	-

This data is sourced from the British Geological Survey.



15.9 Bedrock permeability (50k)

Records within 50m**1**

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	Low	Low

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

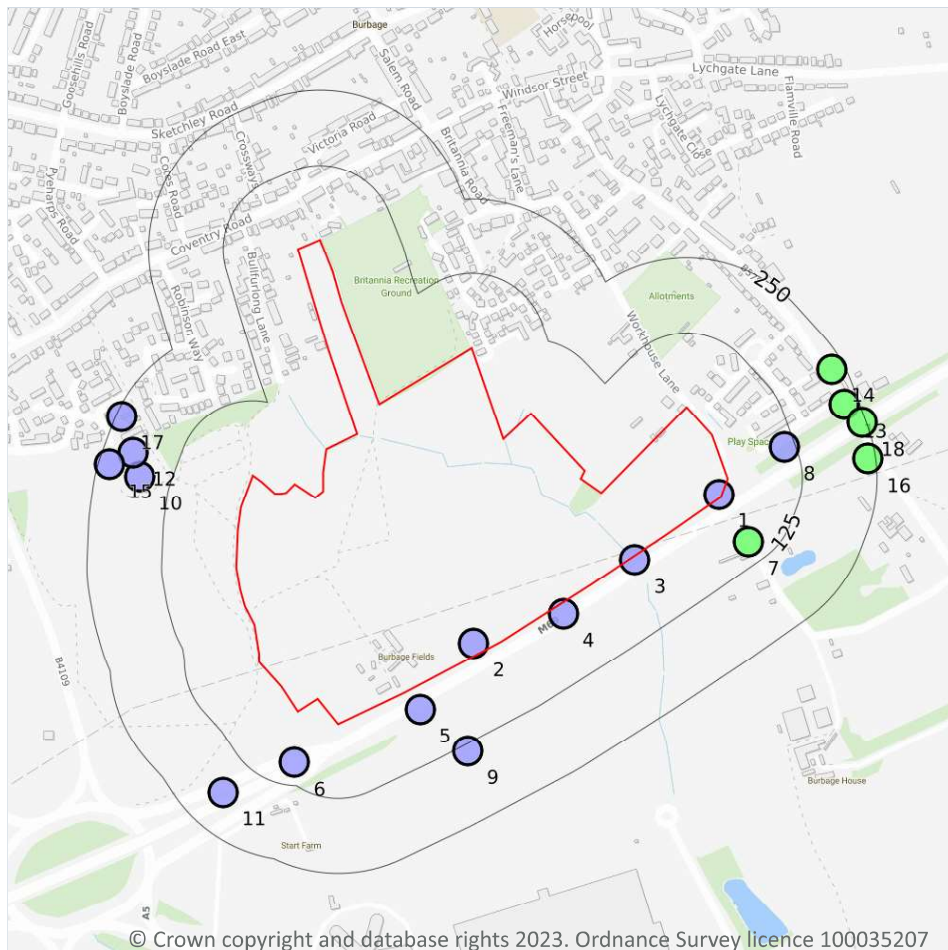
Records within 500m**0**

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

16.1 BGS Boreholes

Records within 250m

18

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 88](#) >

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	On site	444510 291620	COVENTRY-LEICESTER M69 BH217	5.5	N	334249 ↗
2	On site	444100 291370	COVENTRY-LEICESTER M69 BH214	9.0	N	334246 ↗

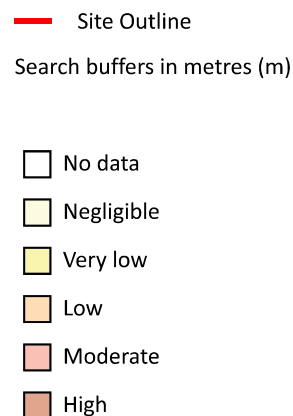


ID	Location	Grid reference	Name	Length	Confidential	Web link
3	6m E	444370 291510	COVENTRY-LEICESTER M69 TH H	2.0	N	334248 ↗
4	16m SE	444250 291420	COVENTRY-LEICESTER M69 BH215Z	4.0	N	334247 ↗
5	37m S	444010 291260	COVENTRY-LEICESTER M69 BH212	8.5	N	334245 ↗
6	86m SW	443800 291170	COVENTRY-LEICESTER M69 THG	1.0	N	334244 ↗
7	89m E	444560 291540	COVENTRY-LEICESTER M69 BH218	17.0	N	334250 ↗
8	107m E	444620 291700	COVENTRY-LEICESTER M69 BH219	7.0	N	334251 ↗
9	136m S	444090 291190	COVENTRY-LEICESTER NEW ROUTE BH33	6.6	N	334220 ↗
10	178m W	443540 291650	RUGBY ROAD/COVENTRY ROAD BURBAGE	3.5	N	334575 ↗
11	185m SW	443680 291120	COVENTRY-LEICESTER M69 TH211Z	4.0	N	334243 ↗
12	201m W	443530 291690	RUGBY ROAD/COVENTRY ROAD BURBAGE	3.5	N	334574 ↗
13	225m E	444720 291770	COVENTRY-LEICESTER M69 BH221	22.0	N	334252 ↗
14	230m E	444700 291830	COVENTRY-LEICESTER M69 BH223	20.6	N	334255 ↗
15	231m W	443490 291670	RUGBY ROAD/COVENTRY ROAD BURBAGE	3.5	N	334577 ↗
16	237m E	444760 291680	COVENTRY-LEICESTER M69 BH222	22.5	N	334253 ↗
17	241m W	443510 291750	RUGBY ROAD/COVENTRY ROAD BURBAGE	3.5	N	334573 ↗
18	243m E	444750 291740	COVENTRY-LEICESTER M69 BH222A	17.15	N	334254 ↗

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



17.1 Shrink swell clays

Records within 50m

3

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 90 >](#)

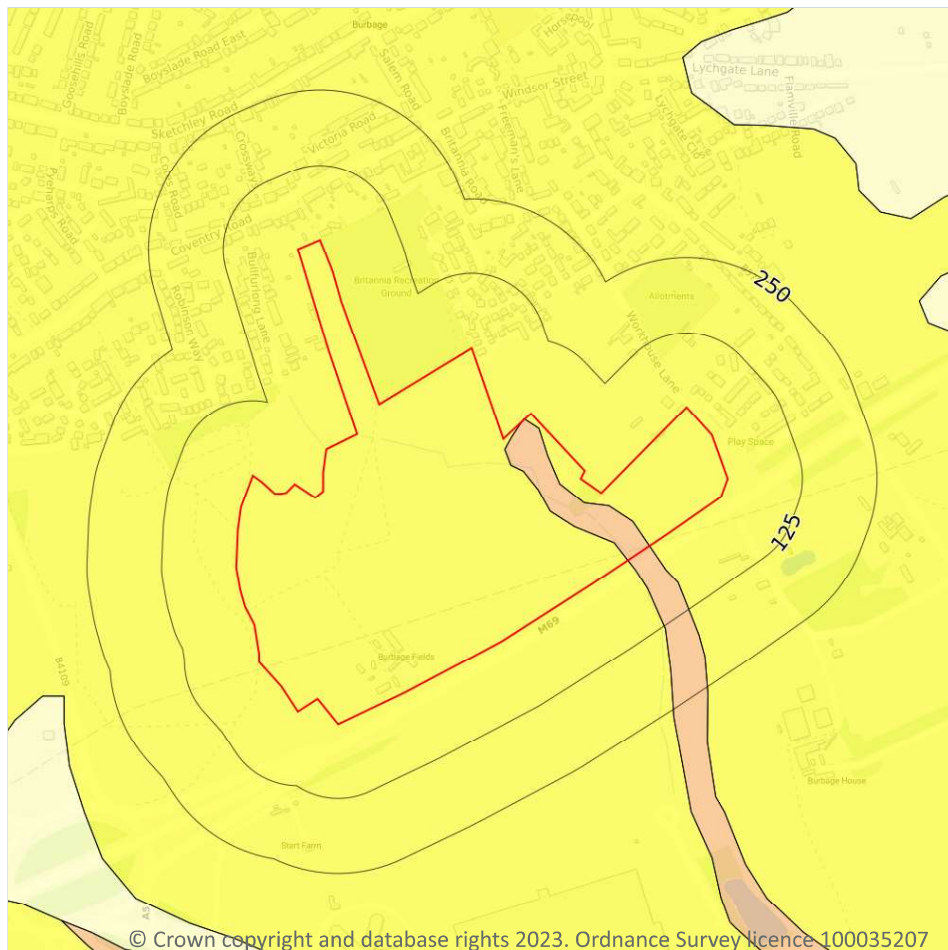
Location	Hazard rating	Details
On site	Negligible	Ground conditions predominantly non-plastic.
On site	Very low	Ground conditions predominantly low plasticity.
On site	Low	Ground conditions predominantly medium plasticity.



This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



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

17.2 Running sands

Records within 50m

2

The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on [page 92](#) >

Location	Hazard rating	Details
On site	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

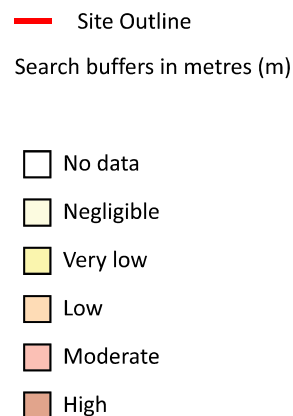
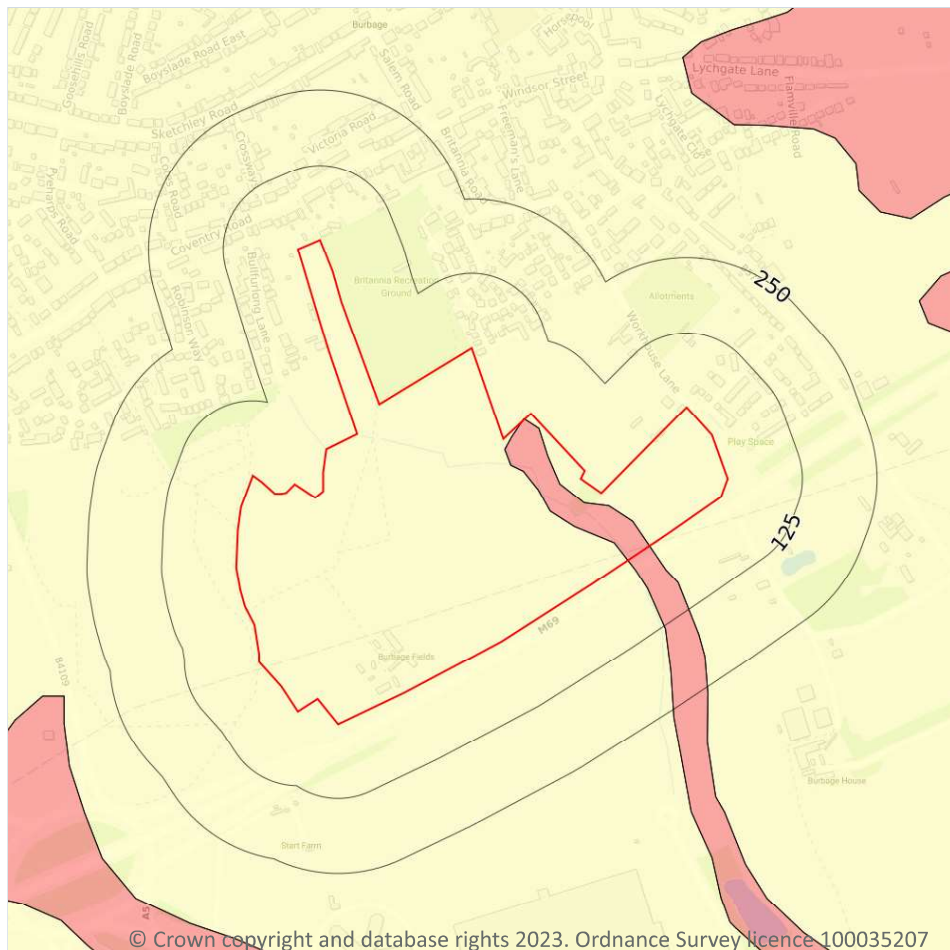


Location	Hazard rating	Details
On site	Low	Running sand conditions may be present. Constraints may apply to land uses involving excavation or the addition or removal of water.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



17.3 Compressible deposits

Records within 50m

2

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 94](#) >

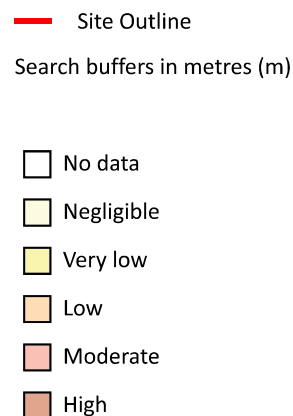
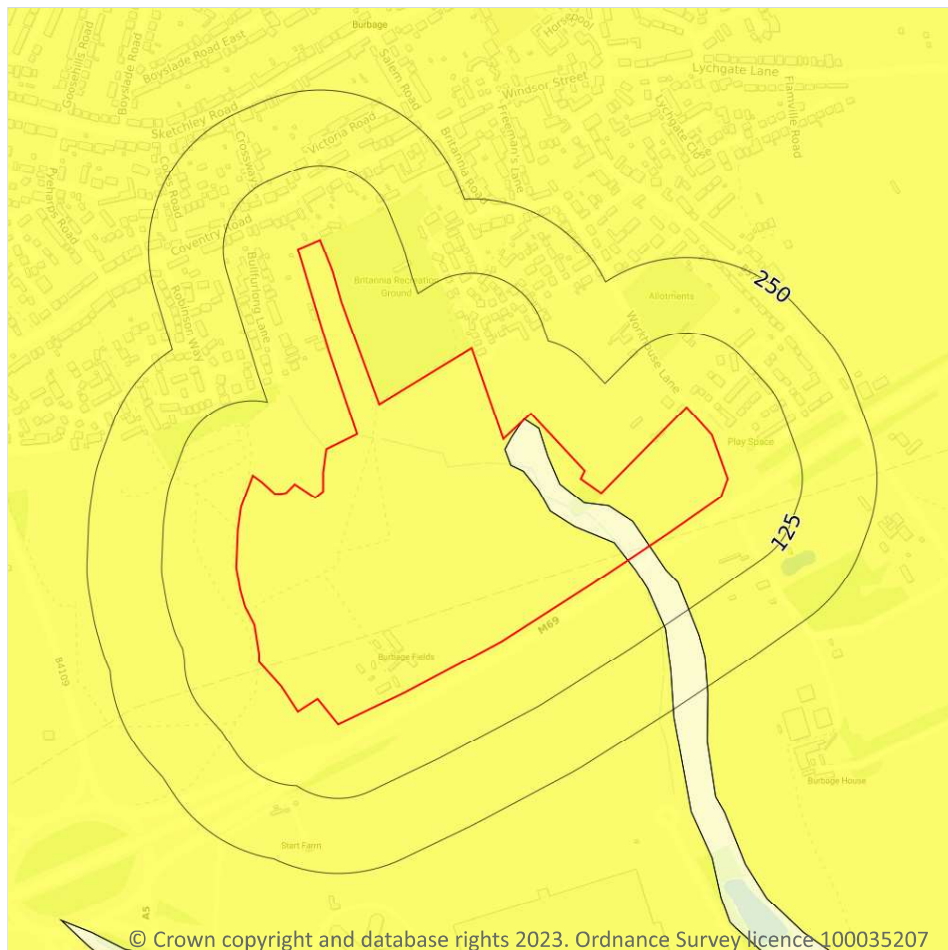
Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.
On site	Moderate	Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the site.



This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



17.4 Collapsible deposits

Records within 50m

2

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.

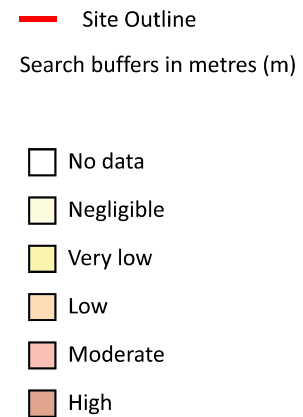
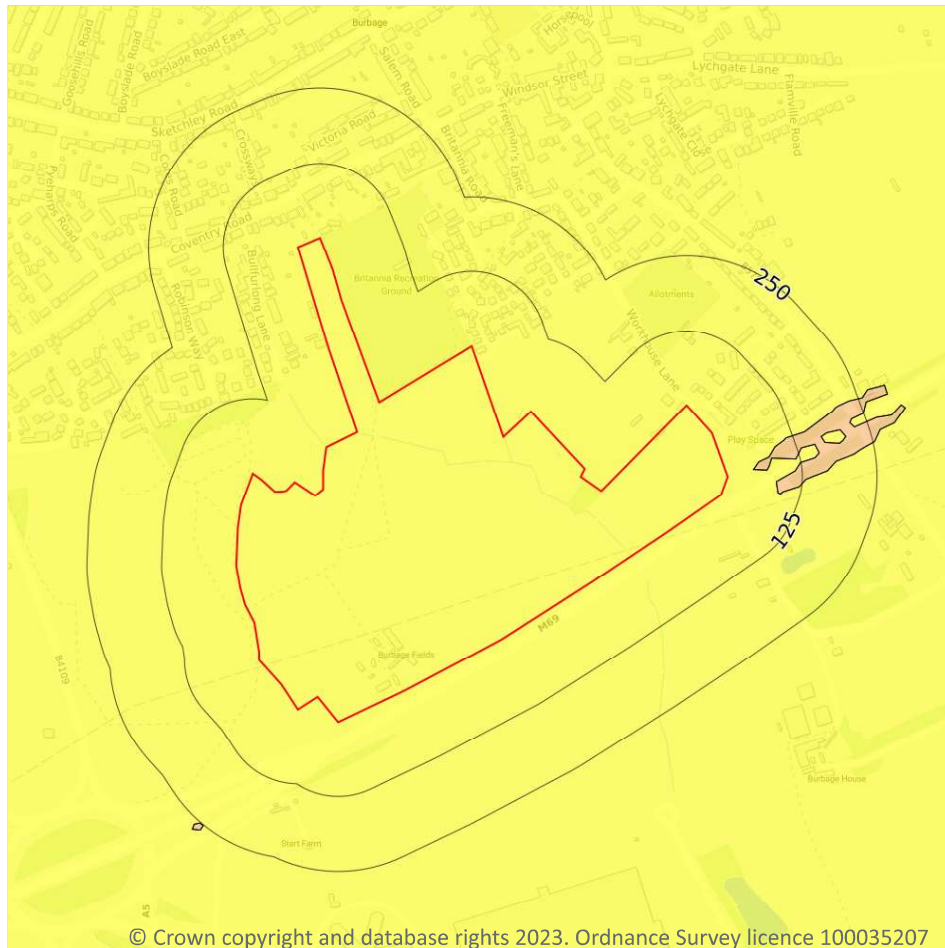
Features are displayed on the Natural ground subsidence - Collapsible deposits map on [page 96](#) >

Location	Hazard rating	Details
On site	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.
On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



17.5 Landslides

Records within 50m

2

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 97](#) >

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.

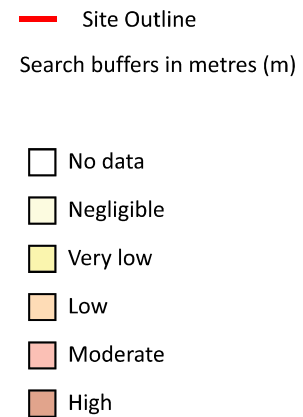
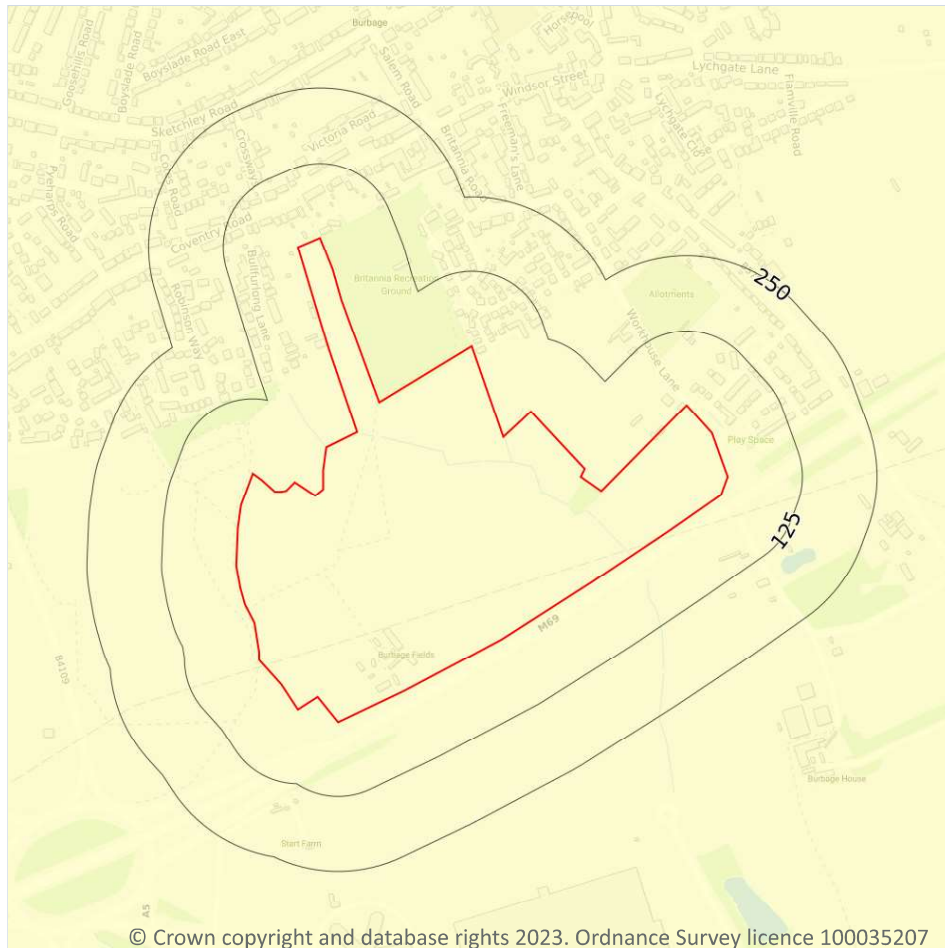


Location	Hazard rating	Details
45m E	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



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 99](#) >

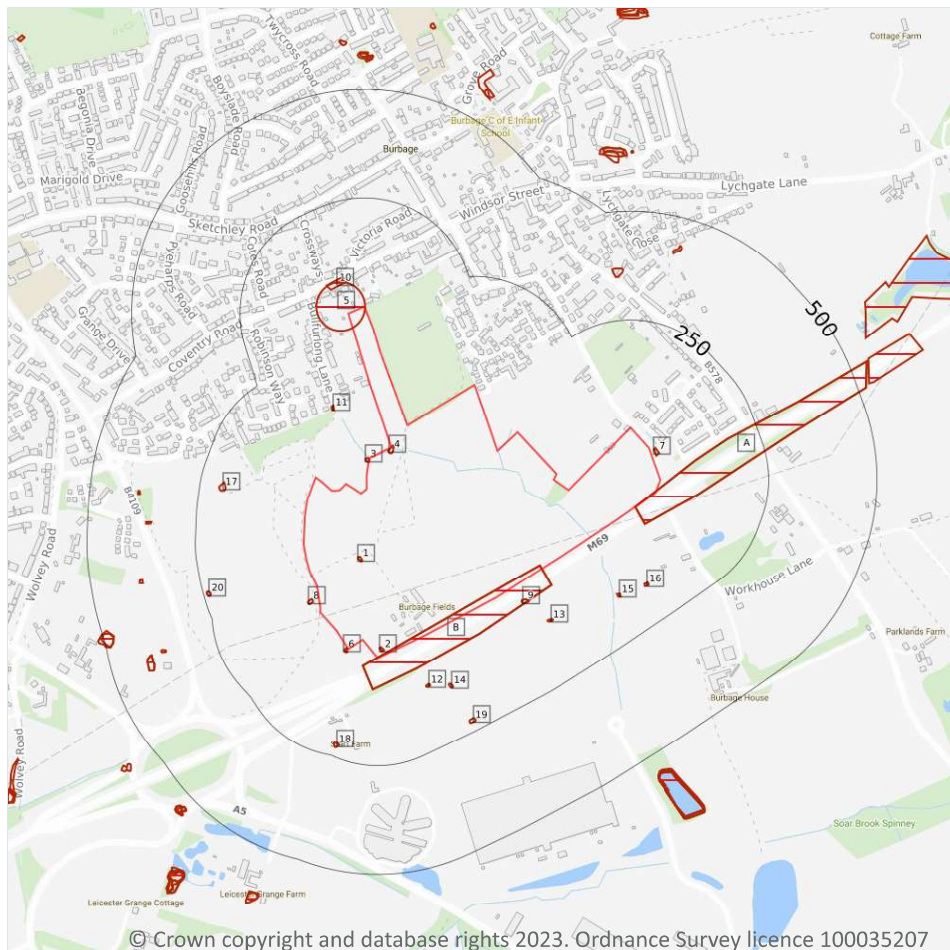
Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.



This data is sourced from the British Geological Survey.



18 Mining, ground workings and natural cavities



- Site Outline
- Search buffers in metres (m)
- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities
- 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 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.



18.2 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.

18.3 Surface ground workings

Records within 250m

24

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, ground workings and natural cavities map on [page 101 >](#)

ID	Location	Land Use	Year of mapping	Mapping scale
1	On site	Pond	1938	1:10560
2	On site	Pond	1938	1:10560
3	On site	Pond	1938	1:10560
4	On site	Pond	1938	1:10560
5	On site	Unspecified Pit	1901	1:10560
A	On site	Cuttings	1977	1:10000
A	On site	Cuttings	1983	1:10000
B	On site	Cuttings	1977	1:10000
B	On site	Cuttings	1983	1:10000
6	1m SW	Pond	1938	1:10560
7	9m E	Pond	1938	1:10560
8	15m SW	Pond	1938	1:10560
9	37m SE	Pond	1938	1:10560
10	66m NW	Unspecified Pits	1886	1:10560
11	96m NW	Pond	1938	1:10560
12	105m S	Pond	1938	1:10560
13	108m SE	Pond	1938	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
14	125m S	Pond	1938	1:10560
15	144m SE	Pond	1938	1:10560
16	159m E	Pond	1938	1:10560
17	190m W	Ponds	1938	1:10560
18	218m SW	Pond	1938	1:10560
19	222m S	Pond	1938	1:10560
20	234m W	Pond	1938	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.4 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 data is sourced from Ordnance Survey/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 **0**

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).

This data is sourced from the British Geological Survey.



18.7 Mining cavities

Records within 1000m	0
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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.

18.8 JPB mining areas

Records on site	0
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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.

18.9 Coal mining

Records on site	0
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Areas which could be affected by past, current or future coal mining.

This data is sourced from the Coal Authority.

18.10 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.

18.11 Gypsum areas

Records on site	0
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Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0
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Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.13 Clay mining

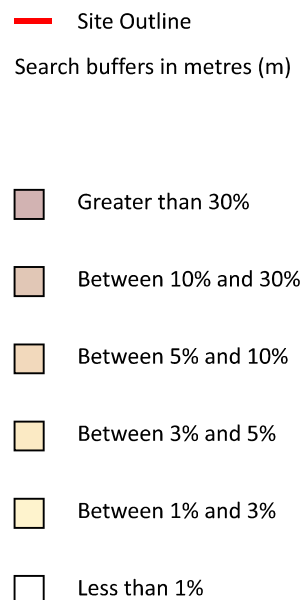
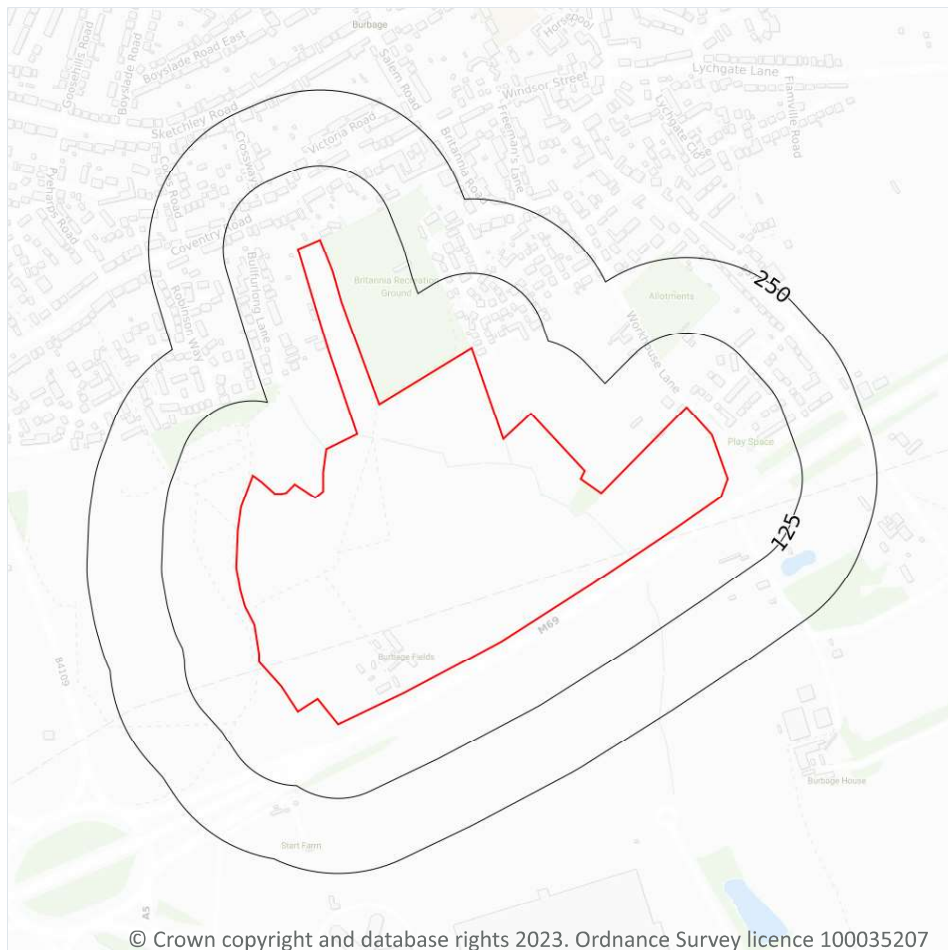
Records on site	0
-----------------	---

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 Radon



19.1 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 106](#) >

Location	Estimated properties affected	Radon Protection Measures required
On site	Less than 1%	None



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



20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m

19

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 km². 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 km²; 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 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
12m E	15 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 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
50m N	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg



Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
50m N	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 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 km²).

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m

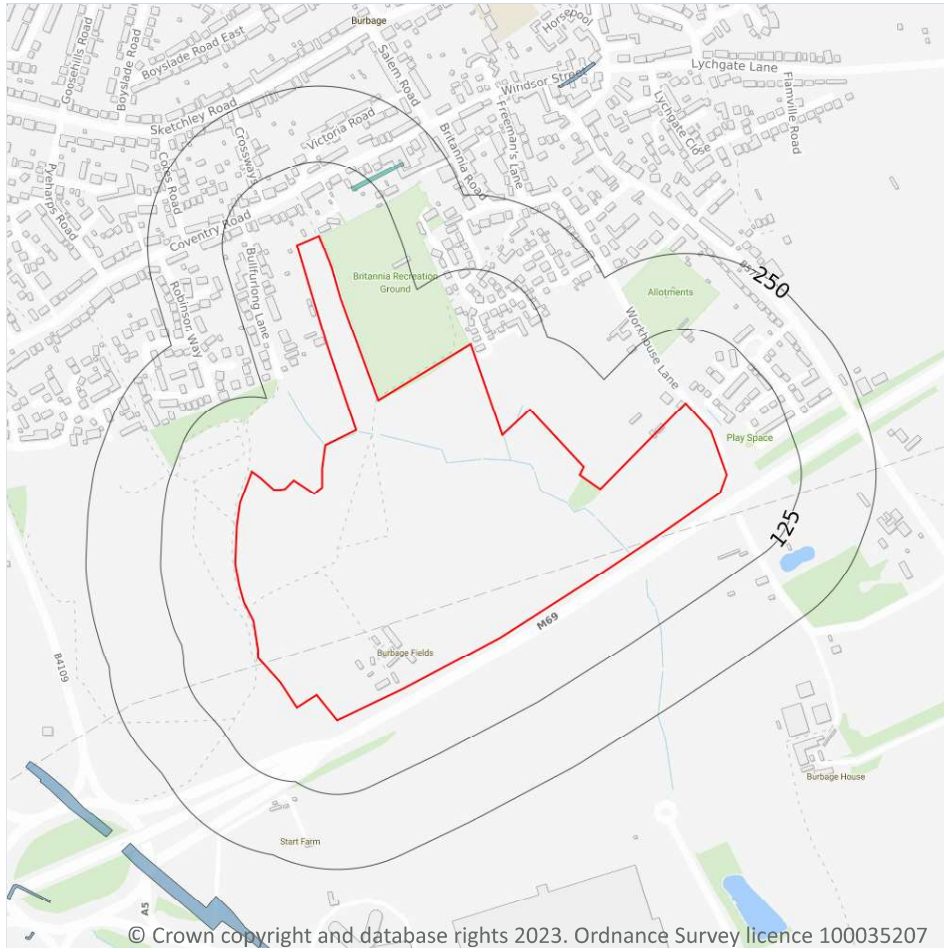
0

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 km².

This data is sourced from the British Geological Survey.



21 Railway infrastructure and projects



- Site Outline
- Search buffers in metres (m)
- C1 Crossrail 1 Stations
- Crossrail 1 Route
- C2 Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

21.1 Underground railways (London)

Records within 250m

0

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m

0

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.



This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m

0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m

3

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.

Features are displayed on the Railway infrastructure and projects map on [page 110 >](#)

Location	Land Use	Year of mapping	Mapping scale
94m N	Tunnel	1904	2500
94m N	Tunnel	1918	2500
94m N	Tunnel	1938	2500

This data is sourced from Ordnance Survey/Groundsure.

21.5 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.

21.6 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.



21.7 Railways

Records within 250m

0

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m

0

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.

21.9 Crossrail 2

Records within 500m

0

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.

21.10 HS2

Records within 500m

0

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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