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Birtle Riding Centre,

Elbut Lane,

Birtle

Geo-Environmental

Phase 1 Desk Study

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1.0 Introduction

1.1 Background

Scott Hughes Design (SHD) have been commissioned by Birtle Riding Centre to produce a Geo-Environmental Phase 1 Desk Top Study and Preliminary Risk Assessment for the proposed residential development at a site known as Birtle Riding Centre, Elbut Lane, Birtle.

This report assesses the existing information for the site and presents a conceptual site model identifying preliminary levels of risk associated with potential and known contamination. This report also recommends where further intrusive investigation works would provide improved certainty on the extent and associated levels of risk from contamination at the site and the potential requirement for any remedial action.

1.2 Objectives

The primary objective of the desk study is to assess whether the site has the potential to be affected by contamination.

This study includes a review of the available geological, historical and environmental information in order to establish the likely ground conditions at the site. The review is based on the following information:

- To assess historical activities, referring to past Ordnance Survey maps at the site with respect to their potential impact on the site environment;
- To characterise the environmental setting of the site, identify migration pathways and vulnerable receptors for contamination originating at the site, focusing on potential soil and groundwater liabilities;
- To assess historical and current surrounding land use, referring to past Ordnance Survey maps, in relation to known or potential off-site contamination issues that may impact the subject property;
- Prepare a conceptual site model identifying the potential risk to human health and controlled water by virtue of known and potential contamination at the site.

1.3 Limitations

The summary report and the assessment within are based on the information available at the time of production. The study area (the 'Site') is limited to the areas of interest as shown in Appendix 1. Scott Hughes Design have used their best professional endeavours in collating and interpreting this information but can take no responsibility for information for which they were not aware, or inaccuracies of information obtained.

2.0 Site Description and Proposals

2.1 Site Location Description and Walkover

At the time of the site inspection on 27th January 2020, the site comprised an outdoor manège surfaced with rubber chippings, an indoor arena and external hardstanding areas with minimal soft landscaping. Access to the site was gained via Elbut Lane.

Birtle Road borders the site to the east, beyond which lies pastureland. Pastureland also borders the site to the west and north. Further buildings associated with Birtle Riding Centre border the site to the south, with residential properties beyond.

Figure 1 – Site Plan (from Google Maps)



2.2 Site Photographs

Photo 1: Photo looking southeast across the site from the north-western corner.



Photo 2: Taken looking north across the site showing outdoor ménage and indoor arena.



Photo 3: Existing access road off Elbut Lane



2.3 Development Proposal

The application proposal is for the construction of 8 residential dwellings, with associated access and landscaping., there is also provision for a new car park for the livery associated with Birtle Riding Centre. Figure 2 shows an extract of the site layout. Full details can be found in Appendix A.

Figure 2 – Architect's Proposed Site Plan



3.0 Site History

3.1 Summary of Site History

The desk study findings based on a review of Historical Ordnance Survey Maps are shown below.

MAP DATE	ON THE SITE	IN THE VICINITY OF THE SITE
1851	The site is shown to be open fields.	The surrounding area is open fields. A clay pit is shown to the west of the site. Unnamed watercourse to the east of the site.
1894	No significant changes.	Birtle Bleach Works are shown to the northeast of the site. Three reservoirs are located to the north of the site. Another reservoir is shown to the southeast. Higher Elbut Farm and associated buildings are shown to the south of the site. Two ponds shown directly to the west of the site.
1910	A footpath is now shown on the southern boundary of the site.	No significant changes. Watercourse to the east is now known as Tack Lee Brook.
1930	No significant changes.	Birtle Bleach Works to the north have expanded. Residential properties have been built on Weythorne Drive, along Birtle Road and Rochdale Old Road. Recreation Ground now shown to the south of Rochdale Old Road.
1937	No significant changes	No significant changes
1957 – 1963	No significant changes	Higher Elbut Farm has expanded. Large increase in the number of properties to the south of the site.
1967 – 1968	No significant changes	Surrounding area has become generally more built-up.
1984 -1993	No significant changes	No significant changes
From 1993	Outdoor ménage and farm building constructed	No significant changes

4.0 Geo-Environmental Setting

4.1 Geology

Superficial Geology

The superficial geology at the site is noted as being Glaciofluvial Deposits, comprised of sand and gravel, as well as Till, comprised of diamicton.

Solid Geology

The solid geology/bedrock at the site is identified as the Pennine Lower Coal Measures Formation, comprised of mudstone, siltstone and sandstone.

Faults

There are no records of any fault lines on the site, however, that is not to say none exist. There is an inferred normal fault approximately 224m to the west.

Radon

According to the Health Protection Agency (HPA) Radon Atlas of England and Wales (2007), the property is not in Radon Affected Area, with less than 1% of properties above the Action Level. As such, radon protection measures are not considered necessary.

4.2 Local Geotechnical Data

Reviewing the British Geological Society (BGS) website, a borehole is located approximately 146m to the northeast of the site. In summary it indicates rock and shale to depths of 59m.

4.3 Hydrology

According to the Environment Agency indicative flood maps, the site is located in Low Risk Flood Zone 1, as shown in figure 3 below.

Figure 3: EA Indicative Flood Maps



EA's 100-year Indicative Floodplain

EA's 1000-year Indicative Floodplain

4.4 Hydrogeology

Groundwater Vulnerability

The superficial deposits of the site have been classified as Secondary Undifferentiated Aquifer. This classification is assigned in cases where it has not been possible to attribute either category A or B rock type.

The bedrock deposits have been classified as a Secondary A Aquifer. These are 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.

It is to be noted that the soils on site have high leaching potential (H3/HU).

Source Protection Zone

There are no Environment Agency defined Source Protection Zones within 500m of the study site.

Groundwater Abstraction

There were 26 licensed groundwater abstractions within 2000m of the site, with four lying within 250m of the site.

4.5 Ground Stability

Detailed below is the potential risk from a variety of ground stability sources.

Table 2 Ground Stability

Hazard	Risk
Natural Ground Subsidence - Shrink Swell Clay	Very Low
Landslides	Very Low
Ground Dissolution Soluble Rocks	Negligible
Compressible Deposits	Negligible
Collapsible Deposits	Very Low

4.6 Coal Mining

The site is located within the specified search distance of an identified mining area, therefore a Coal Mining Search Report has been procured and reviewed.

The site is not situated within the boundary of a former opencast coal mining site, nor is it within 200m of the boundary of a currently operating open cast coal mining site.

The site is not within 800m of the boundary of an opencast site from which coal has been removed, or from which a license to extract coal by opencast methods has been granted of a license to do so is currently being determined.

The Coal Authority has no knowledge of any mine entries within the site or within 20m of the boundary of the property. Records may be incomplete. Consequently, there may exist in the local area, mine entries of which the Coal Authority has no knowledge.

The site is not located in the vicinity of the recorded worked coalfield, and there are no coal related mine gas emissions relevant to the property. The Coal Authority has no record of any damage notice or coal mining related subsidence claims in relation to the property for the past 14 years.

The Coal Authority's conclusion is it is unlikely that coal will be worked in the foreseeable future and the site can be treated as no coal mining risk.

4.7 Waste Management Facilities

There are no known records of waste treatment, transfer or disposal sites within 500m of the study site. However there are 6 identified Environment Agency licensed waste sites within 1500m of the site, with the nearest being located 1272m to the south of the site.

4.8 Sensitive Land Use

Nitrate Vulnerable Zone

The site is not located within a Nitrate Sensitive Area (which is described as an area where sensitive waters exist that may be at risk of becoming polluted by nitrates).

Industrial Land Use

There are 96 records of sites which hold a potentially contaminative past land use within 500m of the site. The majority relate to unspecified pits or mills and are predominantly to the west/northwest/northwest of the site, which are situated at a lower ground level.

There are 5 records of potentially contaminative industrial sites currently located within 250m of the site. The closest of these are filter beds, located approximately 117m to the east of the site.

There are records of no historic Integrated Pollution Control (IPC) Authorisations and no records of Dangerous Substances Inventories within 500m of the site. There are 6 records of Licensed Discharge Consents within 500m of the site boundary.

There are no records of Environment Agency landfill data within 1000m of the study site. However, there are records of 13 historic landfill sites within 1500m of the study site, these are predominantly to the south.

4.9 Infilled Land

There are 121 records of potentially infilled land within 500m of the site, mostly relating to ponds and reservoirs.

4.10 Pollution Incidents

There are 11 recorded pollution incidents within 500m of the study site. The closest was 10m to the south of the site relating to atmospheric pollutants; this incident had no impact on the land or water.

4.11 Ecology

The site is currently used by Birtle Riding Centre, there are minimal areas of soft landscaping on site. There are 9 records of ancient woodland within 2000m of the study site. There are two Greenbelt Land designations for the site, one from Bury Council and the other for Rochdale Council, as well as two further designations within 2000m of the study site.

The site does not lie within 2000m of one of the following Sensitive Sites: Site of Special Scientific Interest (SSSI), National Nature Reserve, Special Areas of Conservation, Special Protection Areas or Ramsar Sites. The study site is within 2000m of the Local Nature Reserve - Chesham Woods. Refer to site-specific Ecological report for full details.

4.12 Tree Preservation Orders

The site is within the Birtle Conservation Area and therefore information suggests that all trees in the vicinity of the site will have tree preservation orders.

4.13 Unexploded Ordnance (UXO) Risk

Available information indicates the site is shown to be located in a 'Low' bomb risk area.

4.14 Existing Services

There is an existing ductile trunk main that runs through the southern portion of the site. The required easement for this has been adhered to with the site layout.

5.0 Preliminary Conceptual Site Model

5.1 Introduction

In line with the requirements of CLR-11 guidance, a preliminary conceptual site model is presented. The conceptual site model represents a development and refinement of the conceptual models relating to the site. The conceptual model takes consideration of information within the historic records and the findings of the geo-environmental report. The conceptual model has been developed to assess potential contamination sources, receptors and potential contaminant linkages identified at the site.

5.2 Potential Contamination Sources

This desk top study indicates that the site has only recently been developed for use by the Riding School. The presence of the indoor arena means foundations, will be present on the site. The adjacent existing access road and car parking areas mean the site may be contaminated with hydrocarbon leakage and potentially asbestos.

There are numerous historical industrial land uses in the vicinity of the site, the majority relate to mills and unspecified pits; both of which could be a source of potential contamination. Additionally, the number and proximity of areas of potentially infilled land, together with the high leaching potential of the underlying ground may also be a cause of contamination. There are however no are no known records of waste treatment, transfer or disposal sites within 500m of the study site. As such the contamination risk is considered to be moderate. All of these factors must be considered in light of the site being at a higher level to all of its surroundings.

Table 3: Summary of Identified Contamination Sources

Potential Source	Associated Potential Contaminants		Likelihood of Presence (Known/Likely/Possible/Unlikely)
	Type	Name	
Nearby historical landfills/refuse heaps	Heavy Metals, Asbestos, Organics, Land Gas		Possible
Made Ground to form current ground levels	Heavy Metals	Cadmium, Lead, Zinc, Nickel, Copper, Chromium, Mercury,	Likely
Previous Buildings	Heavy Metals, Asbestos		Likely
Road/Car Park Surfaces	Organics	Oil/fuel hydrocarbons	Likely
Infilling of land	Organics, Ground Gas		Likely
Historical Industrial Uses	Organics		Possible
Ground Gases	-	Carbon Dioxide and Methane	Likely

5.3 Potential Pathways

The potential exposure pathways to the identified receptors are detailed in Table 4 and 5

Table 4: Exposure Pathways to Human Health

Exposure Pathway	Present
Ingestion of soil and dust	Possible
Ingestion of home grown vegetables and soil attached to vegetables	Possible
Dermal contact with soil and dust	Possible
Inhalation of outdoor dust	Possible

Exposure Pathway	Present
Inhalation if outdoor air from soil volatilisation, ground volatilisation and ground gas	Possible
Inhalation of asbestos fibres	Possible

Table 5: Exposure Pathways to Controlled Waters

Exposure Pathway	Present
Leaching of contaminants in soils by infiltrating rainfall and migration, or direct migration of dissolved contaminants into groundwater.	Possible

5.4 Pollution Receptor

Potential key receptors that may be at risk from contamination within the soils beneath the site include the following:

- Existing and future residents and contractors;
- Groundwater;
- Neighbouring land users;
- Flora and Fauna;
- Building material.

Construction workers are not considered as receptors for the purpose of this assessment as it is considered that their exposure will be short term and will be mitigated through the adoption of Safe Systems of Work including Risk Assessments, Method Statements and the use of Personnel Protective Equipment (PPE).

5.5 Potential Contaminant Linkage and need for further ground investigation

Table 6 details the potential contaminant linkages, taking into account each of the contamination sources, pathways and receptors identified, and provides an indication of the risk level and potential need for further investigation.

Table 6 Summary of Potential Contaminant Linkages

Contamination Source	Pathway	Receptors					Likelihood of contaminant source being present	Risk Level to Potential Receptors	Need for Investigation
		Controlled Waters	End users	Construction workers	Flora	Building material			
Metals/metalloids and inorganics in **SOIL**	Direct Ingestion		✓	✓			Unlikely	Low	Yes
	Dermal Contact		✓	✓			Unlikely	Low	
	Inhalation		✓	✓			Unlikely	Low	
	Leaching/ direct movement	✓			✓	✓	Unlikely	Low	
Asbestos containing material in **SOIL**	Inhalation		✓	✓			Possible	Low	Potential screening test may be needed if identified during investigation
Organics in **SOIL** (hydrocarbons)	Direct Ingestion		✓	✓			Possible/Likely	Low	Yes
	Dermal Contact		✓	✓			Possible/Likely	Moderate	
	Inhalation		✓	✓			Possible/Likely	Low	
	Leaching/ direct movement	✓	✓	✓	✓	✓	Possible/Likely	Moderate	
GROUND GAS (Carbon Dioxide and Methane)	Direct Ingestion						n/a	n/a	Yes
	Dermal Contact						n/a	n/a	
	Inhalation		✓	✓			Possible/Likely	Moderate	
	Leaching/ direct movement		✓			✓	Possible/Likely	Moderate	

NB: The potential significant linkages listed above are based on the available data during the desk the features noted during the site walkover. Therefore, the linkages identified are tentative and subjected to the following uncertainties - Actual presence of significant contamination in soil, significant ground gas and depth of controlled water.

6.0 Conclusions and Recommendations

6.1 Summary of the Geo-Environmental Findings

- Historically the Application Site has predominantly been used as pastureland, the information from the old maps indicated this was still the case up to 1993. There are no records beyond this data and it is assumed that the indoor arena and ménage were built sometime between then and the present day.
- There are no coal mining or brine affected areas within 75m of the study site.
- The site is not within a radon affected area.
- It is anticipated that made ground and potential hydrocarbons (due to the indoor arena and access roads/car parking) may exist at the site and could give rise to potential environmental risks.
- The potential presence of asbestos in the building could also give rise to an environmental risk.
- There are no known records of waste treatment, transfer or disposal sites within 500m of the study site.
- There are 13 records of historic landfills within 1000m of the study site. There are also 121 records of potentially infilled land within 500m of the site, which could give risk to ground gases and other organic contaminants.
- There are no records of Dangerous Substances Inventories.
- There are 6 records of Licensed Discharge Consents within 500m of the site boundary.
- Foundations to buildings located on the site will still exist at the site and will need to be investigated and removed.
- The underlying ground is considered to be predominantly made ground, on sand and gravels.
- The site is not located in a Radon Affected Area.
- The site is within the Birtle Conservation Area and therefore information suggests that all trees in the vicinity of the site will have tree preservation orders.
- The site is located in a low risk fluvial Flood Zone 1 (annual flood risk probability of less than 1:1000).
- The site is at very low risk from landslides and very low or negligible from all other ground stability measures.
- The site is underlain by a Secondary A Aquifer. Hence there is potential for migration pathways to exist through the porous ground to the aquifers.
- The conceptual site model has indicated a moderate from a number of sources to receptors, which will require further investigation, testing and reporting.
- A full Phase 2 Site Investigation is required to determine the levels of contamination (if any) and provide geotechnical data for defining foundation and external works design options.

6.2 Recommendations Further Investigation to Support Proposed Development

The following outline Phase 2 Site Investigation proposals are based on the Geo-Environmental Phase 1 Desk Study interpretation above and the proposed development intent. The objective is to identify the geotechnical and environmental status of the site to enable an economic foundation design to be achieved, and to address the source - pathway - receptor model such that any identified linkages can be broken at development stage.

The following site investigation works are proposed, but subject to coordination with specialist contractor:

- Boreholes (circa 8-10m deep) and / or Window Sampling to provide understanding on ground conditions and receipt of samples for contamination testing (exact number to be agreed to suit final development intent).
- One day's trial pitting to understand extent of existing foundation depths & size and additional high-level sampling across the site.
- Sampling from boreholes and trial pits for appropriate chemical and geotechnical testing in line with the standard suite of tests. But at a minimum to include metals, pH and Sulphates, TPH's and PAH's and asbestos.
- Installation of four monitoring wells for ground water and gas (plus ongoing testing over a minimum of 6 weeks).
- A full ground penetrating radar (GPR) survey to determine the location of and any drainage and sluices.

The Phase 2 works will include a fully documented factual report along with an interpretive report giving recommendations on:

- Foundation design parameters and types.
- Recommendations on ground slabs.
- Ground classification for land fill. (WAC testing).
- Reviewing of Environmental findings to define if a remediation strategy is required to ensure the source - receptor linkage is broken.
- Gas Protection recommendations.
- Ground Water protection measures.

Note that further desk study work will be required to identify any on site services or easements, any Rights of Way across the site, Party Wall issues and any Highways Issues or adjoining Planning Consents which might impact on this site. These items are outside the scope of this Desk Study.

7.0 References

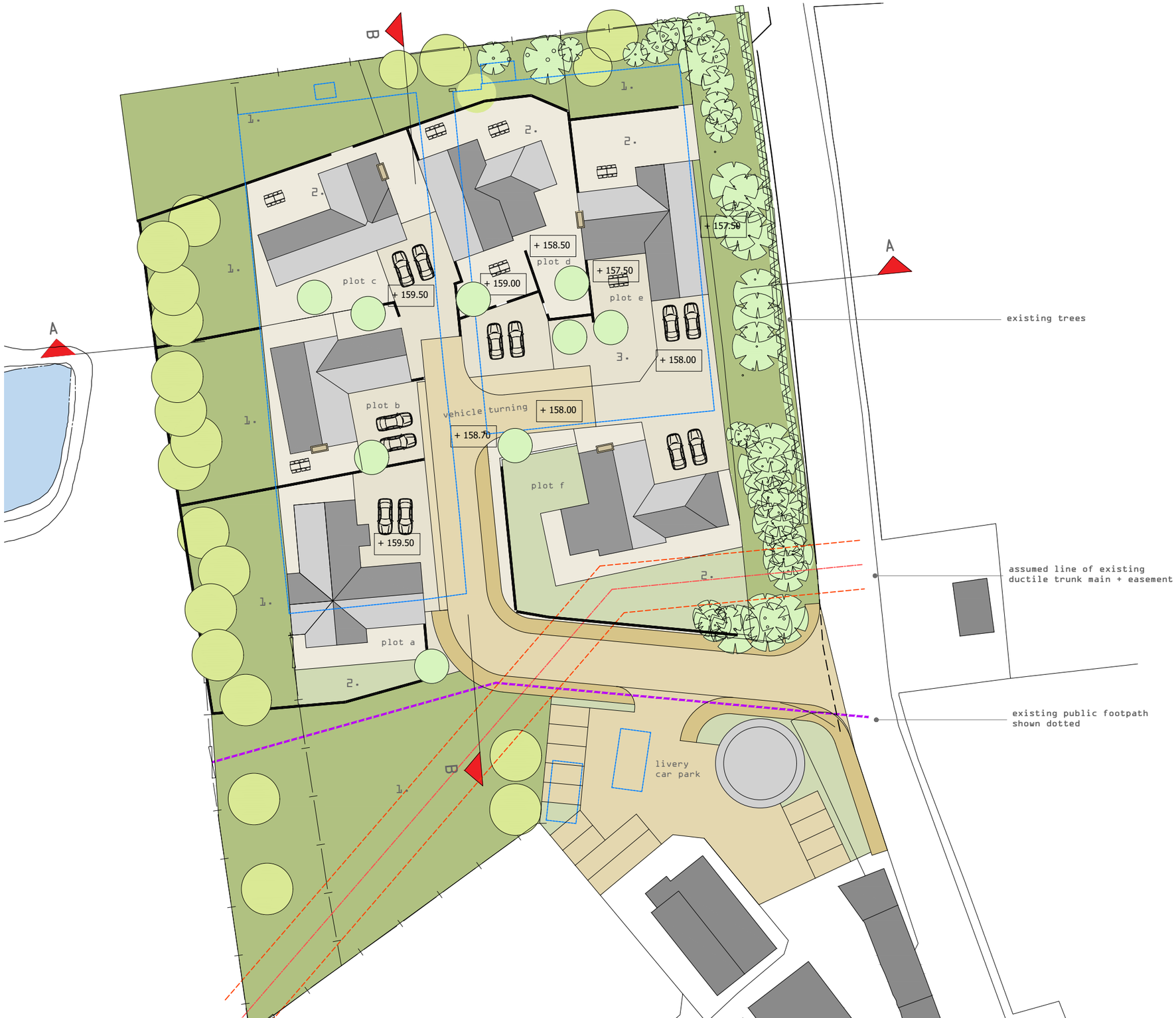
Groundsure Report – Ref: CMAPS-CM-755799-23462-121118EDR

DEFRA and Environment Agency (2004). Model Procedures for the Management of Contaminated Land, R&D Publication CLR11.

British Standards Institution, BS10175:2011 Investigation of potentially Contaminated Sites

British Standards Institution, BS EN 1997-2: Part 2 Ground Investigation and Testing

Appendix A – Outline Site Plan



legend

1.Improved natural Pennine grassland landscape, with additional planting of native upland species.
Low dry stone walls/native hedgerows (Hawthorn) to boundaries.

2.Small domestic gardens, to be planted with native species of shrubs and trees.
Low dry stone walls/native hedgerows (Hawthorn) to boundaries

3.Hard landscaped farm yard-style courtyard.Materials to compliment the natural materials of the proposed houses.Some native species planting indicated.

Birtle Riding Centre
Residential Development
Elbut Lane
Birtle
Heywood

Proposed Site Layout SK01
Draft Planning 02

work to figured dimensions

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contract no	drawing no	revision
3549	02	E
drawn by	date	scale @ A3
PDC	August 2019	1:500

planning

Revisions:
A. Highways amendments added and stables car park area increased.PDC.February 2020
B. Trees added to West boundary, and outdoor manege shown dotted.PDC February 2020
C.Draft
D.Site layout amended and plots g and h replaced by a single dwelling.PDC.July 2020
E. Plot g deleted and the remaining plots spaced out to create a more open feel.Footpath to north of the proposed highway added. PDC.August 2020

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CJPARTNERSHIP
ENVIRONMENTAL ARCHITECTS

Appendix B - Groundsure Report

CENTREMAPS

Open Space, Upper Interfields,
Worcester, WR14 1UT

Groundsure Reference:	CMAPS-CM-768008-23462-040119EDR
Your Reference:	23462
Report Date	4 Jan 2019
Report Delivery Method:	Email - pdf

Enviro Insight

Address: Birtle RC

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Enviro Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 01886 832972 quoting the above CENTREMAPS reference number.

Yours faithfully,

CENTREMAPS

Enc.
Groundsure Enviroinsight

Enviro Insight

Address:	**Birtle RC**
Date:	**4 Jan 2019**
Reference:	**CMAPS-CM-768008-23462-040119EDR**
Client:	**CENTREMAPS**

NW N NE



W E

SW S SE

Aerial Photograph Capture date:	26-Mar-2012
Grid Reference:	383541,412202
Site Size:	0.76ha

Report Reference: CMAPS-CM-768008-23462-040119EDR
Client Reference: 23462

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Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	0	6	27	63
1.2 Additional Information – Historical Tank Database	0	0	3	17
1.3 Additional Information – Historical Energy Features Database	0	0	2	0
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	0	0
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	0	14	36	71

Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	1
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	2	4
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	1	10	0
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	1	4	4	4
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	1	1
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	1	0	3	2
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	0	6

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	0	5	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	1
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Records of Artificial Ground and Made Ground present beneath the study site	None identified
5.2 Records of Superficial Ground and Drift Geology present beneath the study site	Identified
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology	0-500m
6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site	Identified
6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site	Identified

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	4	1	8	13
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	6	0	0	11
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	2
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	2	0	#250GWV #	#500GWV #	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

	0-500m					
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site	No	No	No	No	No	Yes
6.10 Ordnance Survey MasterMap Water Network entries within 500m of the site	0	0	26	20	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	Yes	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Enviroment Agency Zone 2 floodplains within 250m of the study site	None identified
7.2 Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	None identified
7.3 Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site	Very Low
7.4 Flood Defences within 250m of the study site	None identified
7.5 Areas benefiting from Flood Defences within 250m of the study site	None identified
7.6 Areas used for Flood Storage within 250m of the study site	None identified
7.7 Maximum BGS Groundwater Flooding susceptibility within 50m of the study site	Potential at Surface
7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas	Low

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	1	2	6
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	1
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	0	0	0	0	0	0
8.14 Records of Green Belt land	2	0	0	1	0	1

Section 9: Natural Hazards

9.1 Maximum risk of natural ground subsidence	Very Low
9.1.1 Maximum Shrink-Swell hazard rating identified on the study site	Very Low
9.1.2 Maximum Landslides hazard rating identified on the study site	Very Low
9.1.3 Maximum Soluble Rocks hazard rating identified on the study site	Negligible
9.1.4 Maximum Compressible Ground hazard rating identified on the study site	Negligible
9.1.5 Maximum Collapsible Rocks hazard rating identified on the study site	Very Low
9.1.6 Maximum Running Sand hazard rating identified on the study site	Very Low
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary.

Section 10: Mining

10.1 Coal mining areas within 75m of the study site	Identified
10.2 Non-Coal Mining areas within 50m of the study site boundary	None identified
10.3 Brine affected areas within 75m of the study site	None identified

Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure gas pipelines and underground electricity transmission lines.

5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licences, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

7. Flooding

Provides information on river and coastal flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

9. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon..

10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

11. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

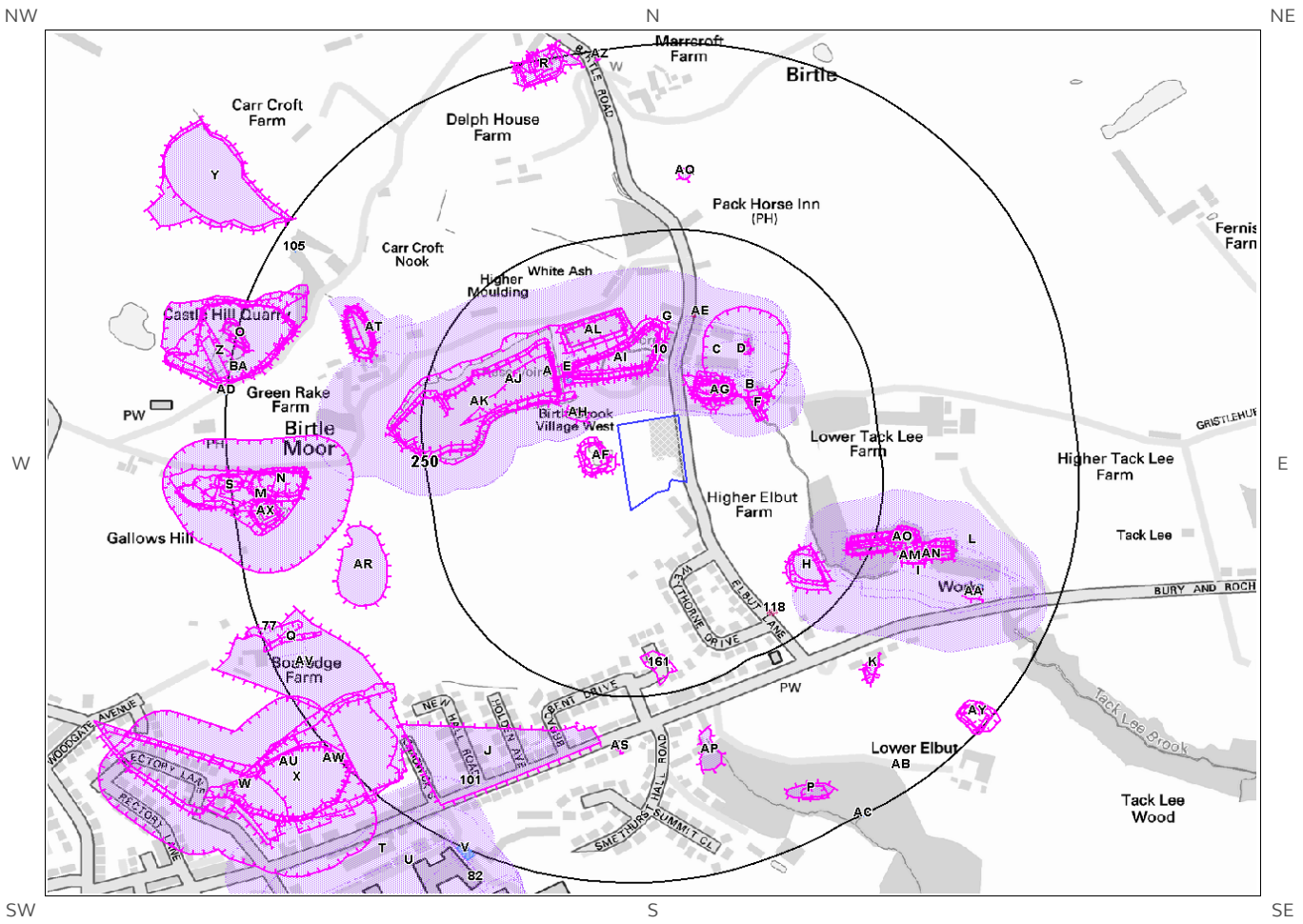
Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier “A” on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as “Not Shown”.

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

1. Historical Land Use



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Site Outline

250
500
Search Buffers (m)

Historical 1:10,000 and 1:10,560 scale mapping

Industrial Land Use

Potentially Infilled Land

Historical 1:2,500, 1:1,250 and 1:500 scale mapping

Energy Features

Petrol Stations

Historical military sites

Tanks

Garages

1. Historical Industrial Sites

1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 96

ID	Distance [m]	Direction	Use	Date
1AG	3	E	Disused Wash Mill	1956
2A	6	N	Bleach Works	1928
3A	6	N	Bleach Works	1908
4B	34	NE	Unspecified Disused Mill	1928
5B	34	NE	Unspecified Disused Mill	1908
6AH	37	W	Unspecified Ground Workings	1983
7C	58	N	Bleach Works	1891
8C	60	N	Bleach Works	1938
9C	67	N	Bleach Works	1956
10	67	N	Unspecified Mill	1851
11D	71	N	Unspecified Works	1983
12D	71	N	Unspecified Works	1967
13E	81	NW	Unspecified Tanks	1938
14E	83	NW	Unspecified Tanks	1928
15E	86	NW	Unspecified Tanks	1956
16B	86	NE	Unspecified Disused Mill	1938
17F	88	E	Filter Beds	1938
18F	90	E	Filter Beds	1928
19B	90	NE	Spindle Mill	1851
20B	93	E	Filter Beds	1956
21G	124	N	Chimney	1983
22G	124	N	Chimney	1967
23I	164	E	Bleach Works	1938
24H	165	SE	Unspecified Pit	1956
25H	167	SE	Unspecified Pit	1928
26H	168	SE	Unspecified Pit	1983
27H	168	SE	Unspecified Pit	1967
28I	196	E	Unspecified Works	1983
29I	196	E	Unspecified Works	1967
30I	212	E	Bleach Works	1928
31I	212	E	Bleach Works	1908
32AN	213	E	Bleach Works	1956
33AM	224	E	Bleach Works	1891

34AT	274	W	Cotton Moulding Mill	1851
35J	295	S	Brick Works	1891
36AP	306	S	Refuse Heap	1967
37J	307	S	Railway Sidings	1891
38AQ	318	N	Sandstone Quarry	1851
39AR	318	W	Clay Pit	1851
40AS	318	S	Coal Pit	1851
41K	333	SE	Unspecified Pit	1956
42K	336	SE	Unspecified Pit	1928
43K	338	SE	Unspecified Pit	1938
44M	343	W	Unspecified Quarry	1891
45L	366	E	Chimney	1983
46L	366	E	Chimney	1967
47AU	381	SW	Brick Works	1956
48AA	384	E	Filter Beds	1908
49AV	390	SW	Brick Works	1891
50M	399	W	Unspecified Heaps	1938
51N	400	W	Unspecified Heap	1956
52N	402	W	Unspecified Heap	1983
53N	403	W	Unspecified Heap	1967
54N	403	W	Unspecified Heap	1928
55M	405	W	Unspecified Old Quarry	1908
56AW	419	SW	Clay Pit	1967
57O	422	W	Unspecified Quarry	1956
58T	425	SW	Unspecified Workhouse	1908
59P	425	SE	Unspecified Heap	1967
60Q	426	W	Unspecified Ground Workings	1908
61O	427	W	Unspecified Quarry	1938
62O	428	W	Unspecified Old Quarries	1908
63S	430	W	Sandstone Quarry	1851
64O	430	W	Unspecified Quarry	1928
65O	432	NW	Unspecified Quarry	1983
66O	432	NW	Unspecified Quarry	1967
67P	434	SE	Unspecified Heap	1983
68Q	451	SW	Pottery	1851
69U	457	SW	Hospital	1938
70R	468	N	Unspecified Ground Workings	1938
71R	470	N	Unspecified Ground Workings	1928
72R	472	N	Unspecified Ground Workings	1956
73W	474	SW	Brick Works	1908
74S	475	W	Unspecified Heap	1983
75S	475	W	Unspecified Heap	1967
76T	475	SW	Hospital	1928

77	480	W	Unspecified Tank	1967
78S	483	W	Unspecified Heap	1928
79AZ	489	N	Coal Pit	1851
80X	489	SW	Clay Pit	1956
81U	493	SW	General Hospital	1983
82	493	S	Hospital	1908
83V	493	SW	Unspecified Tanks	1956
84Z	494	W	Railway Sidings	1983
85V	494	SW	Unspecified Tanks	1938
86W	495	SW	Brick Works	1938
87X	495	SW	Clay Pit	1938
88W	495	SW	Brick Works	1928
89X	495	SW	Clay Pit	1928
90Y	498	NW	Unspecified Pit	1956
91Y	498	NW	Unspecified Pit	1967
92U	499	SW	General Hospital	1967
93Y	499	NW	Unspecified Pits	1938
94U	499	SW	General Hospital	1956
95Z	499	W	Railway Sidings	1956
96Z	500	W	Quarry Siding	1928

1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary: 20

ID	Distance (m)	Direction	Use	Date
97E	83	NW	Tanks	1937
98E	88	NW	Tanks	1930
99AE	137	N	Unspecified Tank	1961
100AA	395	E	Tanks	1937
101	419	SW	Unspecified Tank	1890
102AB	469	SE	Unspecified Tank	1958
103AB	469	SE	Unspecified Tank	1973
104AB	469	SE	Unspecified Tank	1958
105	471	NW	Unspecified Tank	1961
106BA	487	W	Unspecified Tank	1937
107Z	488	W	Unspecified Tank	1930
108V	494	SW	Tanks	1958
109V	495	SW	Tanks	1958
110AD	499	W	Unspecified Tank	1961
111AC	500	SE	Unspecified Tank	1958

112AC	500	SE	Unspecified Tank	1992
113AC	500	SE	Unspecified Tank	1992
114AC	500	SE	Unspecified Tank	1958
115AC	500	SE	Unspecified Tank	1973
116AD	500	W	Unspecified Tank	1992

1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary: 2

ID	Distance (m)	Direction	Use	Date
117AE	134	N	Electricity Substation	1992
118	201	SE	Electricity Substation	1992

1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary: 0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 0

Database searched and no data found.

1.6 Historical military sites

Certain military installations were not noted on historic mapping for security reasons. Whilst not all military land is necessarily of concern, Groundsure has researched and digitised a number of Ordnance Factories and other military industrial features (e.g. Ordnance Depots, Munitions Testing Grounds) which may be of contaminative concern. This research was drawn from a number of different sources, and should not be regarded as a definitive or exhaustive database of potentially contaminative military installations. The boundaries of sites within this database have been estimated from the best evidence available to Groundsure at the time of compilation.

Records of historical military sites within 500m of the search boundary: 0

Database searched and no data found.

1.7 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 121

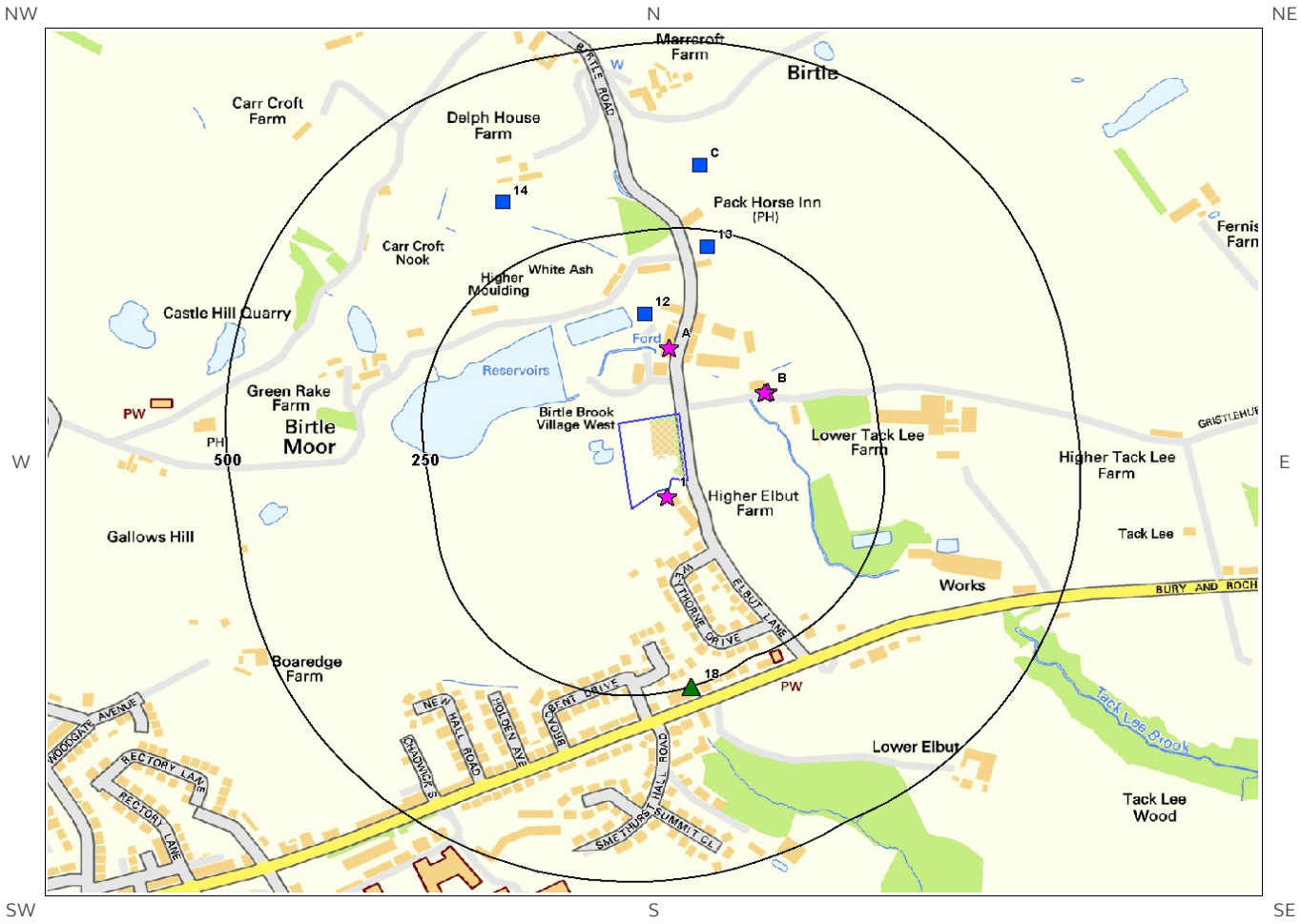
The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date
119AF	9	W	Ponds	1891
120AF	16	W	Ponds	1956
121AF	18	W	Ponds	1938
122AF	20	W	Ponds	1928
123AF	20	W	Ponds	1908
124AG	31	NE	Reservoir	1908
125AG	34	NE	Reservoirs	1928
126AG	34	NE	Pond	1851
127AG	34	NE	Reservoirs	1938
128AG	36	NE	Reservoirs	1891
129AH	37	W	Unspecified Ground Workings	1983
130AG	41	NE	Reservoirs	1956
131AG	45	NE	Pond	1983
132AG	45	NE	Pond	1967
133D	61	NE	Reservoir	1908
134D	61	NE	Reservoir	1928
135AI	62	N	Reservoir	1891
136AI	63	N	Reservoir	1908
137AI	64	N	Reservoir	1938
138AJ	64	NW	Ponds	1983
139AJ	64	NW	Ponds	1967
140AI	64	N	Reservoir	1928
141AI	70	N	Pond	1851
142AI	70	N	Reservoir	1956
143AK	80	W	Reservoir	1938
144AK	81	W	Reservoir	1908
145AK	81	W	Reservoir	1928
146AK	82	NW	Reservoir	1956
147F	88	E	Filter Beds	1938
148AJ	89	NW	Reservoir	1891
149F	90	E	Filter Beds	1928
150B	93	E	Filter Beds	1956
151AL	111	N	Reservoir	1928
152AL	111	N	Reservoir	1908
153AL	111	N	Reservoir	1938

154AL	118	N	Reservoir	1956
155D	118	NE	Reservoir	1956
156D	126	NE	Reservoir	1938
157H	165	SE	Unspecified Pit	1956
158H	167	SE	Unspecified Pit	1928
159H	168	SE	Unspecified Pit	1983
160H	168	SE	Unspecified Pit	1967
161	191	S	Pond	1983
162AM	219	E	Reservoirs	1928
163AM	219	E	Reservoirs	1908
164AN	221	E	Ponds	1956
165AM	221	E	Reservoirs	1938
166AO	221	E	Ponds	1983
167AO	221	E	Ponds	1967
168AM	227	E	Reservoirs	1891
169J	295	S	Brick Works	1891
170AP	306	S	Refuse Heap	1967
171AQ	318	N	Sandstone Quarry	1851
172AR	318	W	Clay Pit	1851
173AS	318	S	Coal Pit	1851
174AT	325	W	Reservoir	1891
175AT	325	W	Reservoir	1938
176AT	326	W	Pond	1967
177AT	326	W	Pond	1983
178AT	326	W	Reservoir	1928
179AT	326	W	Reservoir	1908
180AT	327	W	Reservoir	1956
181AT	333	W	Pond	1851
182K	333	SE	Unspecified Pit	1956
183K	336	SE	Unspecified Pit	1928
184K	338	SE	Unspecified Pit	1938
185M	343	W	Unspecified Quarry	1891
186AU	381	SW	Brick Works	1956
187AA	384	E	Filter Beds	1908
188AV	390	SW	Brick Works	1891
189S	399	W	Unspecified Heaps	1938
190N	400	W	Unspecified Heap	1956
191N	402	W	Unspecified Heap	1983
192N	403	W	Unspecified Heap	1967
193M	403	W	Unspecified Heap	1928
194M	405	W	Unspecified Old Quarry	1908
195AW	419	SW	Clay Pit	1967
196O	422	W	Unspecified Quarry	1956
197P	425	SE	Unspecified Heap	1967
198Q	426	W	Unspecified Ground Workings	1908

199O	427	W	Unspecified Quarry	1938
200O	428	W	Unspecified Old Quarries	1908
201S	430	W	Sandstone Quarry	1851
202O	430	W	Unspecified Quarry	1928
203O	432	NW	Unspecified Quarry	1967
204O	432	NW	Unspecified Quarry	1983
205P	434	SE	Unspecified Heap	1983
206M	441	W	Pond	1967
207M	441	W	Pond	1983
208M	441	W	Pond	1956
209AX	443	W	Pond	1938
210AX	444	W	Pond	1908
211AX	444	W	Pond	1928
212Q	445	W	Reservoirs	1891
213AY	461	SE	Pond	1956
214AY	462	SE	Pond	1908
215AY	462	SE	Pond	1928
216AY	463	SE	Pond	1938
217AY	463	SE	Pond	1891
218AY	467	SE	Ponds	1983
219R	468	N	Unspecified Ground Workings	1938
220R	470	N	Unspecified Ground Workings	1928
221R	472	N	Unspecified Ground Workings	1956
222W	474	SW	Brick Works	1908
223S	475	W	Unspecified Heap	1967
224S	475	W	Unspecified Heap	1983
225R	478	N	Reservoir	1891
226O	479	W	Pond	1938
227O	481	W	Pond	1956
228O	481	W	Pond	1928
229S	483	W	Unspecified Heap	1928
230AZ	489	N	Coal Pit	1851
231X	489	SW	Clay Pit	1956
232W	495	SW	Brick Works	1938
233X	495	SW	Clay Pit	1938
234W	495	SW	Brick Works	1928
235X	495	SW	Clay Pit	1928
236Y	498	NW	Unspecified Pit	1967
237Y	498	NW	Unspecified Pit	1956
238Y	499	NW	Unspecified Pits	1938
239BA	500	W	Quarry Siding	1928

2. Environmental Permits, Incidents and Registers Map



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

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

2.1.1 Records of historic IPC Authorisations within 500m of the study site:

0

Database searched and no data found.

2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

0

Database searched and no data found.

2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

Database searched and no data found.

2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

1

The following Part A(2) and Part B Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
18	252	S	383589 411897	Address: Hooley Bridge Service Station (Formerly Save Service Station), Hooley Bridge, 602-621 Rochdale Old Road, Bury, BL9 7TL Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

2.1.8 Records of Licensed Discharge Consents within 500m of the study site:

6

The following Licensed Discharge Consents records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
12	140	N	383530 412400	Address: WHITE ASH STP, WHITE ASH/WHITE ASH TERRACE, BIRTLE, BURY, GREATER MANCHESTER Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 016993194 Permit Version: 1	Receiving Water: TRIB TACK LEA BROOK Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: Effective Date: 28-Aug-1997 Revocation Date:
13	227	N	383610 412490	Address: PACK HORSE INN, ELBUT LANE, BIRTLE, BURY, GREATER MANCHESTER Effluent Type: SEWAGE & TRADE COMBINED - UNSPECIFIED Permit Number: 016991241 Permit Version: 3	Receiving Water: TRIB TACK LEA BROOK Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 20/06/2001 Effective Date: 20-Jun-2001 Revocation Date:
14	331	NW	383350 412550	Address: STP DERVING DELPH HOUSE FM, ELBUT LANE, BIRTLE, BURY, BL9 7TU Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 016983359 Permit Version: 1	Receiving Water: TACK LEE BROOK Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 02/09/1999 Effective Date: 02-Sep-1999 Revocation Date:
15C	336	N	383600 412600	Address: PACK HORSE INN, ELBUT LANE, BIRTLE, BURY, GREATER MANCHESTER	Receiving Water: TRIB TACK LEE BROOK Status: NEW CONSENT (WRA 91, S88 &

ID	Distance (m)	Direction	NGR	Details	
				Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 016993234 Permit Version: 1	SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 23/01/1998 Effective Date: 01-Apr-1997 Revocation Date: 01/04/1997
16C	336	N	383600 412600	Address: PACK HORSE INN, ELBUT LANE, BIRTLE, BURY, GREATER MANCHESTER Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 016991241 Permit Version: 2	Receiving Water: TRIB TACK LEA BROOK Status: CONSENT REVOKED OR REVISED - NEW CONSENT ISSUED (37(1)) Issue date: Effective Date: 16-Apr-1992 Revocation Date: 19/06/2001
17C	336	N	383600 412600	Address: PACK HORSE INN, ELBUT LANE, BIRTLE, BURY, GREATER MANCHESTER Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 016991241 Permit Version: 1	Receiving Water: TRIB TACK LEA BROOK Status: REVOKED - UNSPECIFIED Issue date: Effective Date: 26-Feb-1988 Revocation Date: 15/04/1992

2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

0

Database searched and no data found.

2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site: 0

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

11

The following NIRS List 2 records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
1	10	S	383558 412155	Incident Date: 02-May-2002 Incident Identification: 76240 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
2A	89	N	383561 412354	Incident Date: 25-Nov-2002 Incident Identification: 122805 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
3A	89	N	383561 412354	Incident Date: 25-Nov-2002 Incident Identification: 122805 Pollutant: Specific Waste Materials Pollutant Description: Commercial Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
4A	89	N	383561 412354	Incident Date: 25-Nov-2002 Incident Identification: 122805 Pollutant: Atmospheric Pollutants and Effects:Specific Waste Materials Pollutant Description: Smoke:Commercial Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
5B	112	E	383682 412294	Incident Date: 20-Jan-2003 Incident Identification: 132193 Pollutant: Atmospheric Pollutants and Effects:Specific Waste Materials Pollutant Description: Smoke:Commercial Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
6B	112	E	383682 412294	Incident Date: 20-Jan-2003 Incident Identification: 132193 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
7B	112	E	383682 412294	Incident Date: 20-Jan-2003 Incident Identification: 132193 Pollutant: Specific Waste Materials Pollutant Description: Commercial Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
8B	116	E	383686 412296	Incident Date: 27-Mar-2003 Incident Identification: 146622 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Fumes	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 2 (Significant)
9B	116	E	383686 412296	Incident Date: 27-Mar-2003 Incident Identification: 146622 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 2 (Significant)
10B	116	E	383686 412296	Incident Date: 27-Mar-2003 Incident Identification: 146622 Pollutant: Atmospheric Pollutants and Effects	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 2 (Significant)

ID	Distance (m)	Direction	NGR	Details	
				Pollutant Description: Soot/Smuts	
11B	116	E	383686 412296	Incident Date: 27-Mar-2003 Incident Identification: 146622 Pollutant: Atmospheric Pollutants and Effects:Atmospheric Pollutants and Effects:Atmospheric Pollutants and Effects Pollutant Description: Fumes:Smoke:Soot/Smuts	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 2 (Significant)

2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

0

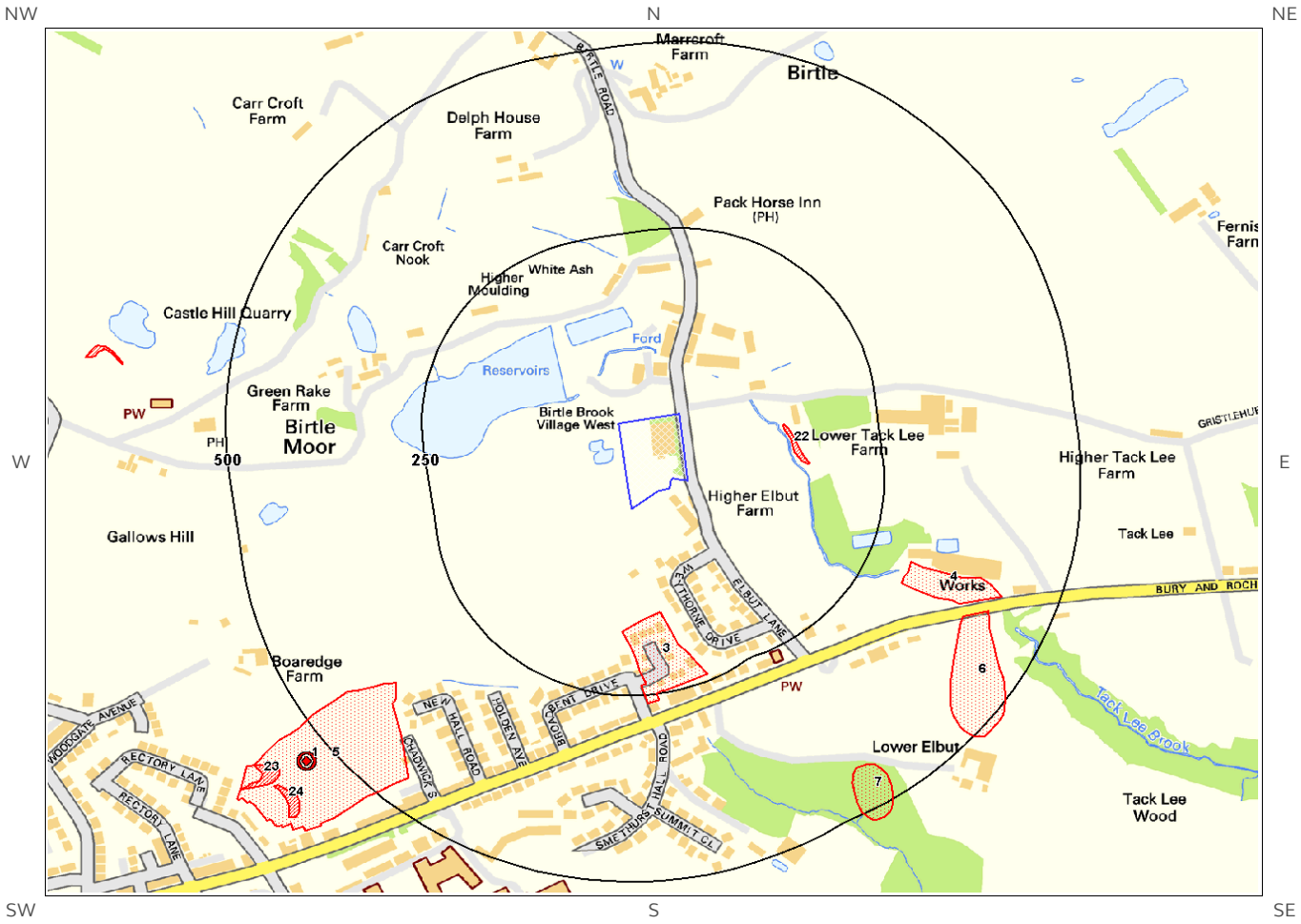
Database searched and no data found.

2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

Records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site 0

Database searched and no data found.

3. Landfill and Other Waste Sites Map



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Site Outline

250 / 500 Search Buffers (m)

EA/NRW Active Landfill

EA/NRW Historic Landfill

BGS / DoE Survey Landfill

Historic and Planned Waste Sites

EA/NRW Licensed Waste Site

Local Authority/Historical Mapping Landfill Records

3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

13

The following landfill records are represented as either points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
3	143	S		Site Address: Rochdale Old Road, Jericho, Bury, Greater Manchester Waste Licence: Yes Site Reference: RD/LIC/014/76, C042 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 25-Oct-1977 Licence Surrendered: 31-Dec-1985 Licence Holder Address: Rochdale Old Road, Jericho, Bury Operator: - Licence Holder: J Timperley First Recorded: 25-Oct-1977 Last Recorded: 31-Dec-1985
4	304	E		Site Address: Bury And Rochdale Old Road, Birtle Waste Licence: Yes Site Reference: RD/LIC/153/78 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 02-Jul-1979 Licence Surrendered: 06-Nov-1985 Licence Holder Address: - Operator: - Licence Holder: Tack Lea Works Limited First Recorded: 31-Dec-1971 Last Recorded: 31-Dec-1980
5	379	SW		Site Address: Rochdale Old Road, Jericho, Bury, Greater Manchester Waste Licence: - Site Reference: C035 Waste Type: Industrial, Commercial, Household, Liquid sludge Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: County Borough of Bury Cleansing Department Licence Holder: - First Recorded: 31-Oct-1966 Last Recorded: 31-Dec-1975
6	395	SE		Site Address: Lower Elbut Farm, Heywood, Greater Manchester Waste Licence: - Site Reference: D105 Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -
7	441	SE		Site Address: Elbut Wood, Lower Elbut	Licence Issue:

ID	Distance (m)	Direction	NGR	Details	
				Farm, Heywood, Greater Manchester Waste Licence: - Site Reference: D106 Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -
Not shown	641	SE		Site Address: Transparent Paper Limited, Broad Oak Terrace, Jericho, Bury Waste Licence: Yes Site Reference: C007, RD/LIC/015/76 Waste Type: Inert, Industrial, Special, Liquid sludge Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 08-May-1978 Licence Surrendered: 21-Apr-1993 Licence Holder Address: Bridge Hall Mills, Bury Operator: - Licence Holder: Transparent Paper Limited First Recorded: 31-Dec-1974 Last Recorded: 31-Dec-1986
Not shown	957	S		Site Address: Prettywood West Extension Landfill Site, Bury New Road, Rochdale, Heywood, Lancashire Waste Licence: Yes Site Reference: - Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 12-Nov-1991 Licence Surrendered: Licence Holder Address: Bury New Road, Rochdale, Heywood, Lancashire Operator: T Kaberry & Sons Ltd Licence Holder: T Kaberry & Sons Ltd First Recorded: - Last Recorded: -
Not shown	959	S		Site Address: Former Sludge Pits, Prettywood, Bury New Road, Hey, Greater Manchester Waste Licence: - Site Reference: D104 Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -
Not shown	959	S		Site Address: Prettywood Sand Quarry, Boo Hole, Off Bury New Road, Heywood, Rochdale, Greater Manchester Waste Licence: Yes Site Reference: 0209, 0387, 0058, 0889, RD/LIC/139/78, D113, RD/LIC/499/87 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 05-Aug-1980 Licence Surrendered: Licence Holder Address: Boo-Hole Sand Quarry, Bury New Road, Heywood, Rochdale Operator: - Licence Holder: Thomas Kaberry and Sons Limited First Recorded: 01-Mar-1988 Last Recorded: -
Not shown	1224	S		Site Address: Bury New Road, Bury New Road, Prettywood, Heywood, Lancashire Waste Licence: Yes Site Reference: D035, RD/LIC/017/76 Waste Type: Inert, Industrial, Special, Liquid sludge Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 24-Nov-1977 Licence Surrendered: 31-Dec-1985 Licence Holder Address: Heap Bridge Paper Mills, Bury, Lancashire Operator: Yates Duxbury and Sons Limited Licence Holder: Yates Duxbury and Sons Limited First Recorded: 31-Dec-1910 Last Recorded: 31-Dec-1985
Not shown	1331	E		Site Address: Roach Mill, Peel Lane, Greater Manchester Waste Licence: Yes Site Reference: D037, 0068 Waste Type: Industrial, Household Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 06-Jun-1978 Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: Globegrove Limited / Rochdale Metropolitan Borough Council First Recorded: - Last Recorded: -
Not shown	1366	S		Site Address: Boo-Hole Sand Quarry Extension, Bury New Road, Heywood, Rochdale Waste Licence: Yes Site Reference: RD/LIC/387/85, RD/LIC/139/78, D011, WML/0058,	Licence Issue: 02-Jul-1979 Licence Surrendered: 18-Jan-1991 Licence Holder Address: Boo-Hole Sand Quarry, Bury New Road, Heywood, Rochdale Operator: Thomas Kaberry and sons

ID	Distance (m)	Direction	NGR	Details	
				RD/LIC/058/76, RD/LIC/209/80, 4200/9201, 4200/9118 Waste Type: Inert, Industrial, Commercial, Household, Special, Liquid sludge Environmental Permitting Regulations (Waste) Reference: -	Limited Licence Holder: T Kaberry and Sons Limited First Recorded: 31-Dec-1960 Last Recorded: 31-Dec-1990
Not shown	1394	SE		Site Address: Peel Lane, Heywood, Greater Manchester Waste Licence: Yes Site Reference: D023 Waste Type: Inert, Industrial, Commercial, Household, Liquid sludge Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 01-Jan-1974 Licence Surrendered: Licence Holder Address: - Operator: Heywood Corporation Licence Holder: Rochdale Metropolitan Borough Council First Recorded: 31-Dec-1900 Last Recorded: 26-Apr-1975

3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

2

The following landfill records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
1	534	SW	383100.0 411800.0	Address: Land off Roughill Lane, Jericho, Bury BGS Number: 1082.0	Risk: Risk to minor aquifer Waste Type: N/A
Not shown	1400	S	383100.0 410800.0	Address: Off Bury New Road, Heywood BGS Number: 309.0	Risk: No risk to aquifer Waste Type: N/A

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

6

The following landfill records are represented as points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
22	129	E	383723 412225	Refuse Tip	1961 mapping	Polygon
23	568	SW	383053 411779	Refuse Tip	1963 mapping	Polygon
24	574	SW	383083 411746	Refuse Tip	1963 mapping	Polygon
25	636	W	382827 412345	Refuse Tip	1961 mapping	Polygon
Not shown	1465	SE	384805 411228	Refuse Tip	1974 mapping	Polygon
Not shown	1475	SE	384851 411288	Refuse Tip	1974 mapping	Polygon

3.2 Other Waste Sites

3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

0

Database searched and no data found.

3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

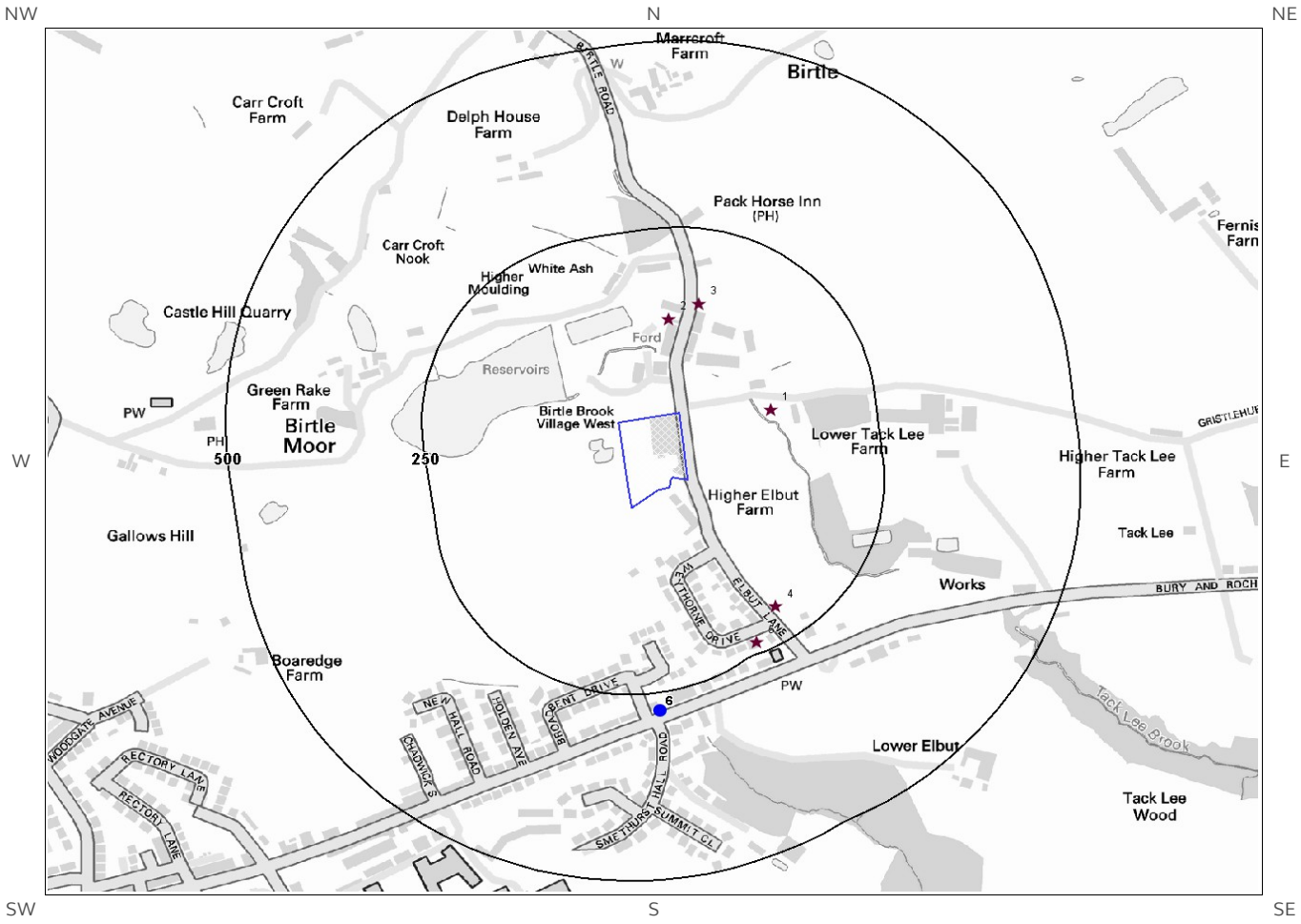
6

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1272	S	383060 410950	Site Address: Bury New Road, Heywood, Rochdale, Lancashire, OL10 Type: Landfill taking Non-Biodegradeable Wastes Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TKS002 EPR reference: - Operator: T Kaberry & Sons Ltd Waste Management licence No: 53879 Annual Tonnage: 0.001	Issue Date: 12/11/1991 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Prettywood West Extension Landfill Site Correspondence Address: Boo Hole, Bury New Road, Heywood, Rochdale, Lancashire, OL10 3JY
Not shown	1272	S	383060 410950	Site Address: Bury New Road, Heywood, Rochdale, Lancashire, OL10 Type: Landfill taking Non-Biodegradeable Wastes Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TKS002 EPR reference: EA/EPR/YP3496CC/A001 Operator: T Kaberry & Sons Ltd Waste Management licence No: 53879 Annual Tonnage: 0.001	Issue Date: 12/11/1991 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Revoked Site Name: Prettywood West Extension Landfill Site Correspondence Address: -
Not shown	1283	S	383246 410883	Site Address: Bury New Road, Heywood, Rochdale, Lancashire, OL10 Type: Landfill taking Non-Biodegradeable Wastes Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TKS001 EPR reference: - Operator: T Kaberry & Sons Ltd Waste Management licence No: 53647 Annual Tonnage: 11916.67	Issue Date: 11/08/1995 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Prettywood Easterly Extension Landfill Site Correspondence Address: Boo Hole, Bury New Road, Heywood, Lancashire, OL10 3JY
Not shown	1283	S	383246 410883	Site Address: Prettywood Easterly Extension Landfill Site, Bury New Road, Heywood, Lancashire, OL10 3JY Type: Landfill taking Non-Biodegradeable Wastes Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TKS001	Issue Date: 11/08/1995 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Closure Site Name: Prettywood Easterly Extension

ID	Distance (m)	Direction	NGR	Details	
				EPR reference: EA/EPR/PP3096CR/A001 Operator: Kaberry Homes Limited Waste Management licence No: 53647 Annual Tonnage: 11916.67	Landfill Site Correspondence Address: -
Not shown	1283	S	383246 410883	Site Address: Bury New Road, Heywood, Rochdale, Lancashire, OL10 3JY Type: Landfill taking Non-Biodegradeable Wastes Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TKS001 EPR reference: EA/EPR/PP3096CR/A001 Operator: T Kaberry & Sons Ltd Waste Management licence No: 53647 Annual Tonnage: 11916.67	Issue Date: 11/08/1995 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Closure Site Name: Prettywood Easterly Extension Landfill Site Correspondence Address: -
Not shown	1283	S	383246 410883	Site Address: Prettywood Easterly Extension Landfill Site, Bury New Road, Heywood, Lancashire, OL10 3JY Type: Landfill taking Non-Biodegradeable Wastes Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TKS001 EPR reference: EA/EPR/PP3096CR/A001 Operator: Kaberry Homes Limited Waste Management licence No: 53647 Annual Tonnage: 11916.67	Issue Date: 11/08/1995 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Closure Site Name: Prettywood Easterly Extension Landfill Site Correspondence Address: -

4. Current Land Use Map



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Site Outline

Search Buffers (m)
250
500

Current Industrial Sites

Petrol & Fuel Sites

Electricity Transmission Cables

Gas Transmission Pipelines

4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 5

The following records are represented as points on the Current Land Uses map.

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	117	E	Filter Beds	383691 412271	Greater Manchester, BL9	Waste Storage, Processing and Disposal	Infrastructure and Facilities
2	128	N	Chimney	383560 412393	Greater Manchester, BL9	Chimneys	Industrial Features
3	150	N	Electricity Sub Station	383599 412413	Greater Manchester, BL9	Electrical Features	Infrastructure and Facilities
4	203	SE	Electricity Sub Station	383697 412007	Greater Manchester, BL9	Electrical Features	Infrastructure and Facilities
5	234	S	Little White Books	383672 411959	1, Weythorne Drive, Bury, Greater Manchester, BL9 7TX	Published Goods	Industrial Products

4.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site: 1

The following petrol or fuel site records provided by Catalist are represented as points on the Current Land Use map:

ID	Distance (m)	Direction	NGR	Company	Address	LPG	Status
6	273	S	383549 411867	TEXACO	602-621, Rochdale Old Road, Bury, Greater Manchester, BL9 7TL	No	Open

4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site: 0

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site: 0

Database searched and no data found.

---

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

5.2 Superficial Ground and Drift Geology

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON

5.3 Bedrock and Solid Geology

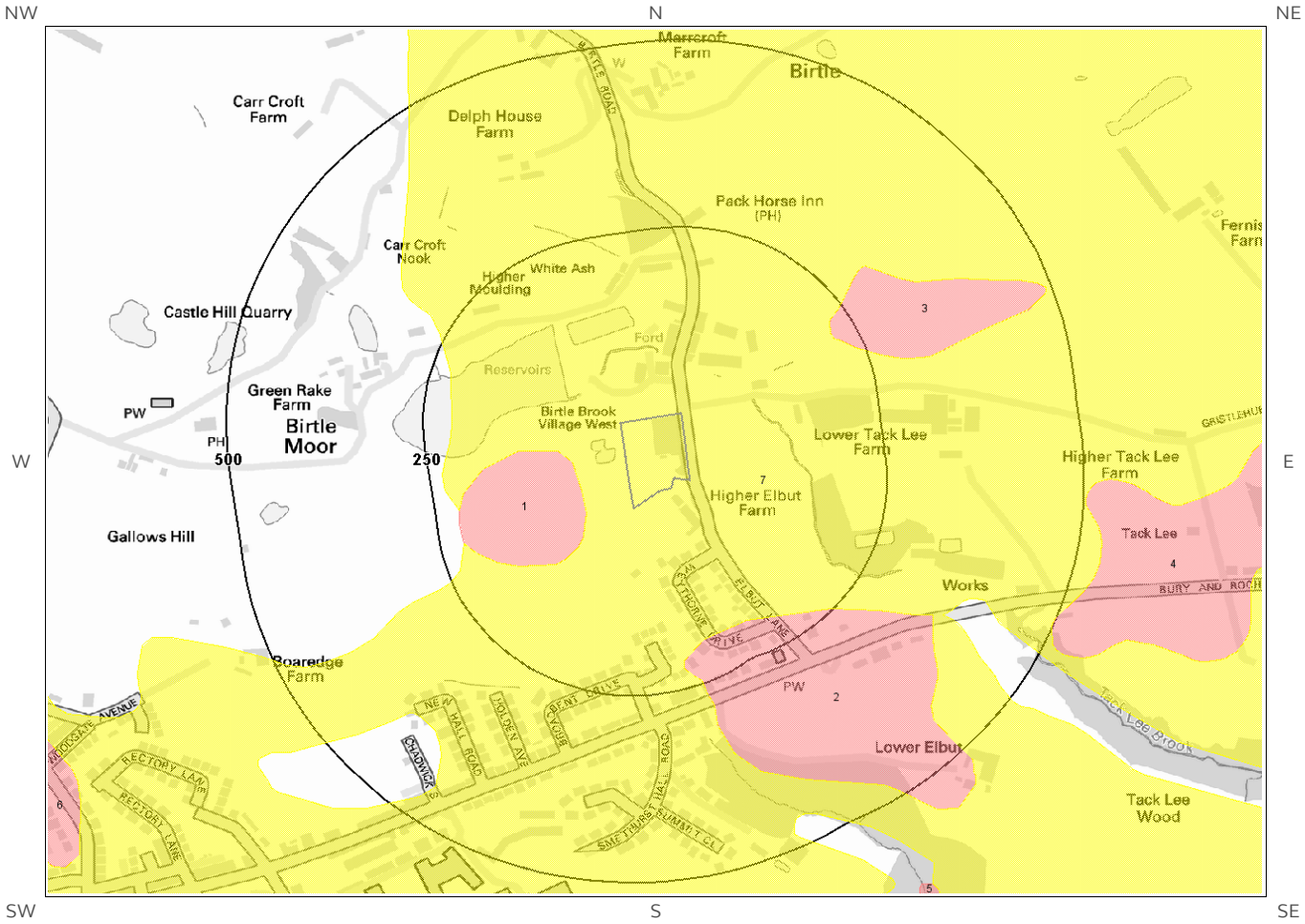
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION	MUDSTONE, SILTSTONE AND SANDSTONE

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

6a. Aquifer Within Superficial Geology



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Site Outline

250
500
Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

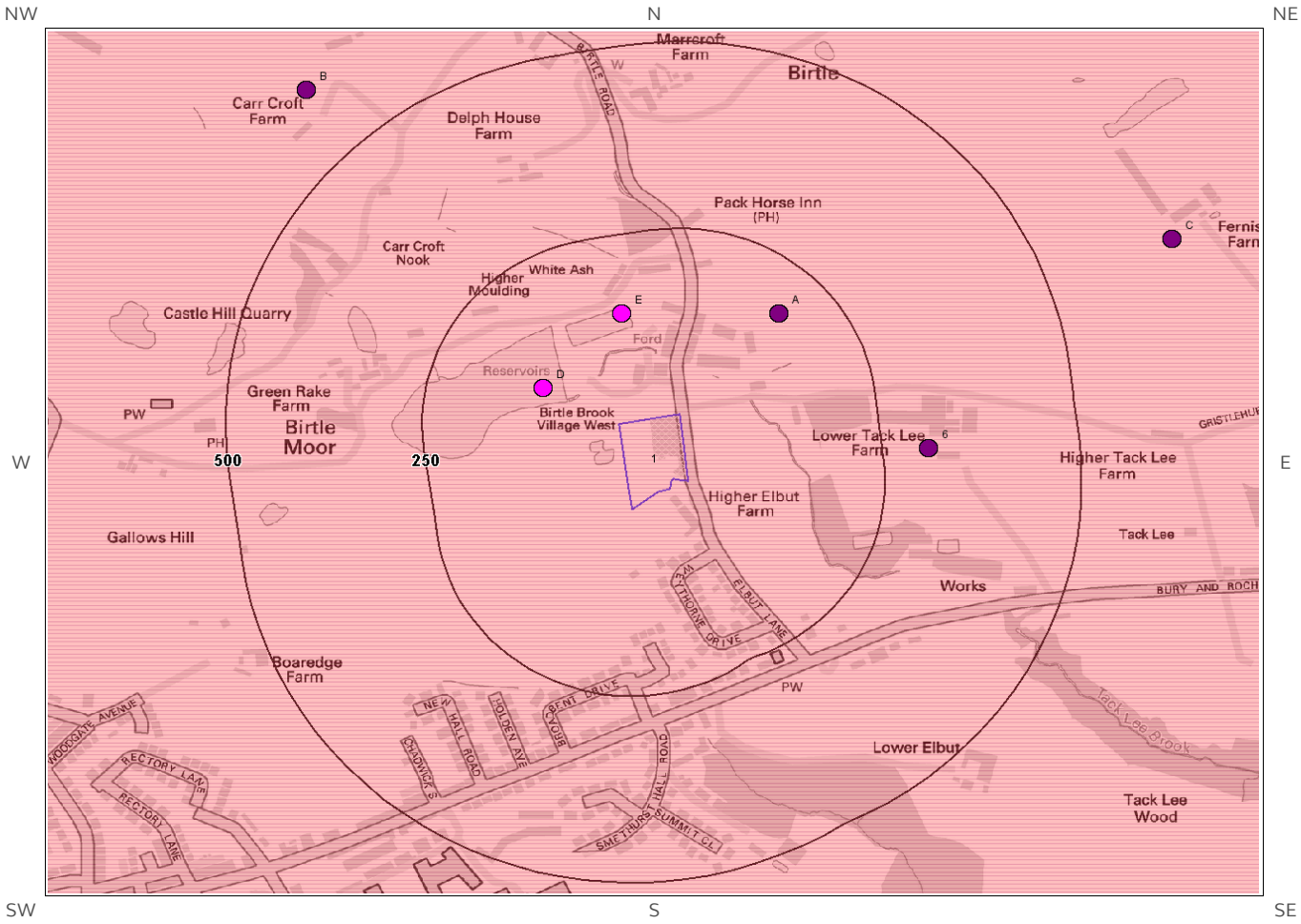
Secondary (B) Aquifer - Lower Permeability Layers

Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

6b. Aquifer Within Bedrock Geology and Abstraction Licences



Site Outline

250

500

Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

Secondary (B) Aquifer - Lower Permeability Layers

Groundwater Abstraction Licence

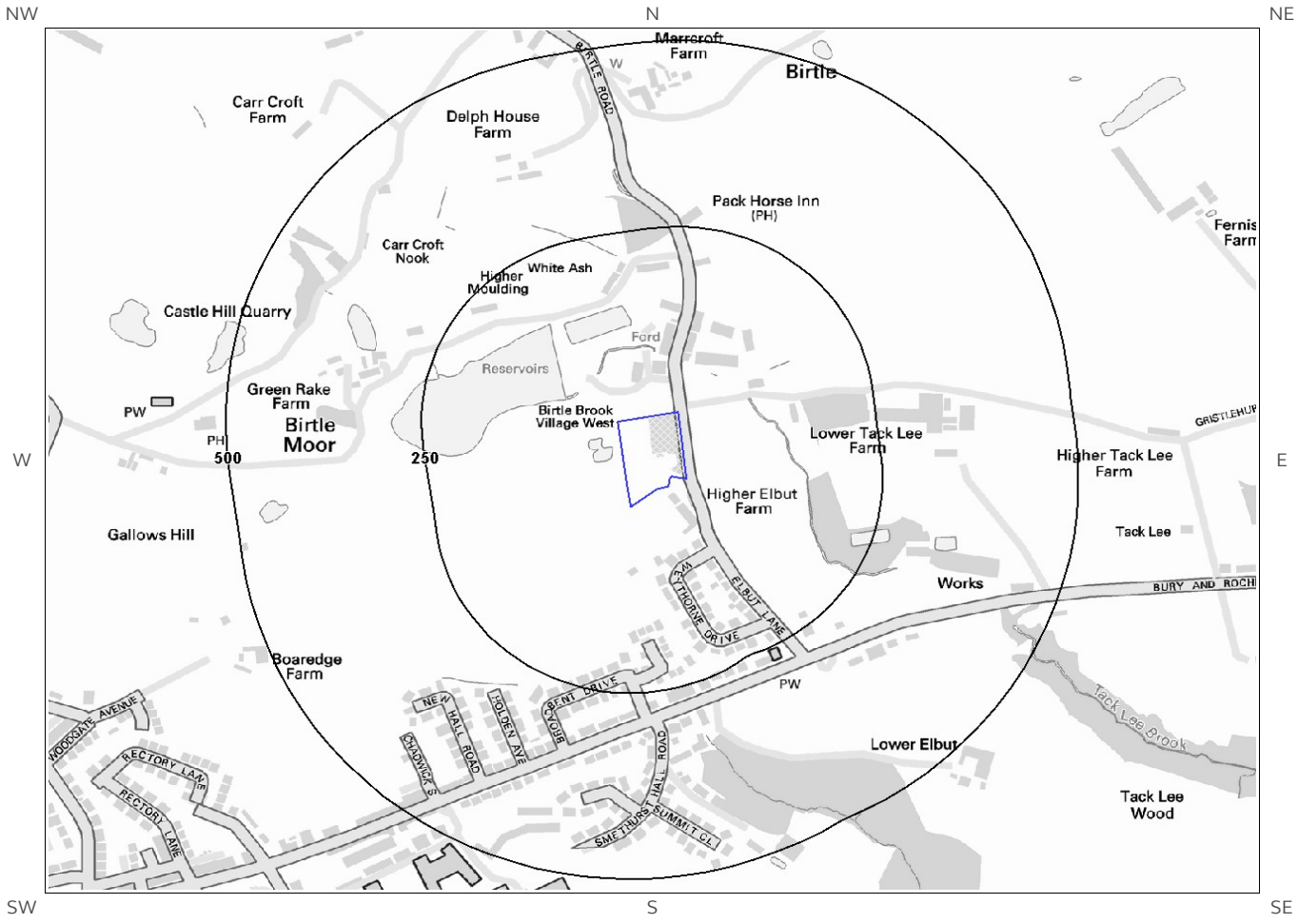
Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

Surface Water Abstraction Licence

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



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Site Outline

250
500
Search Buffers (m)

Source Protection Zone 1 - Inner Catchment

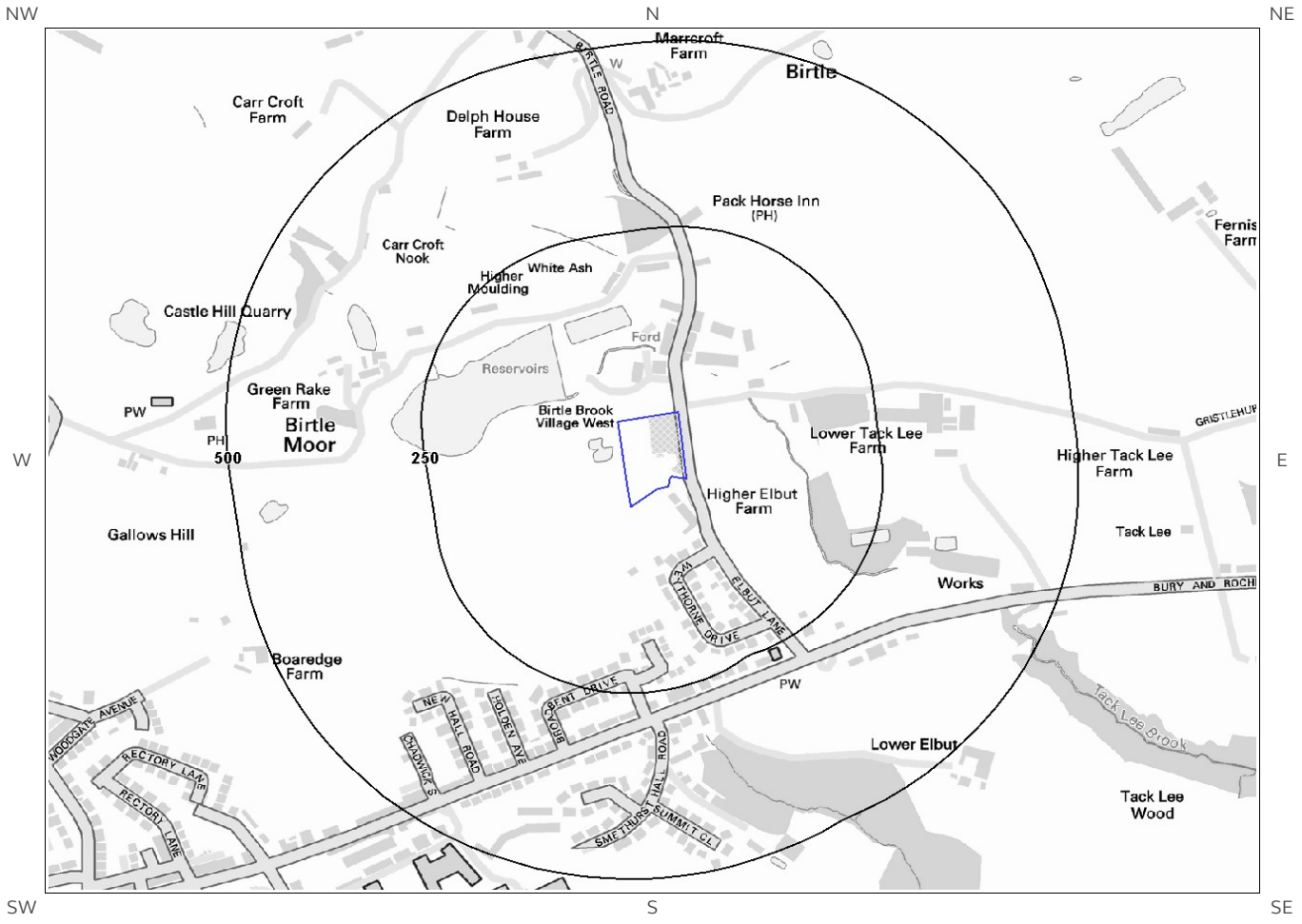
Source Protection Zone 2 - Outer Catchment

Source Protection Zone 3 - Total Catchment

Source Protection Zone 4 - Zone of Special Interest

Potable Water Abstraction Licence

6d. Hydrogeology – Source Protection Zones within confined aquifer



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Site Outline

250 / 500 Search Buffers (m)

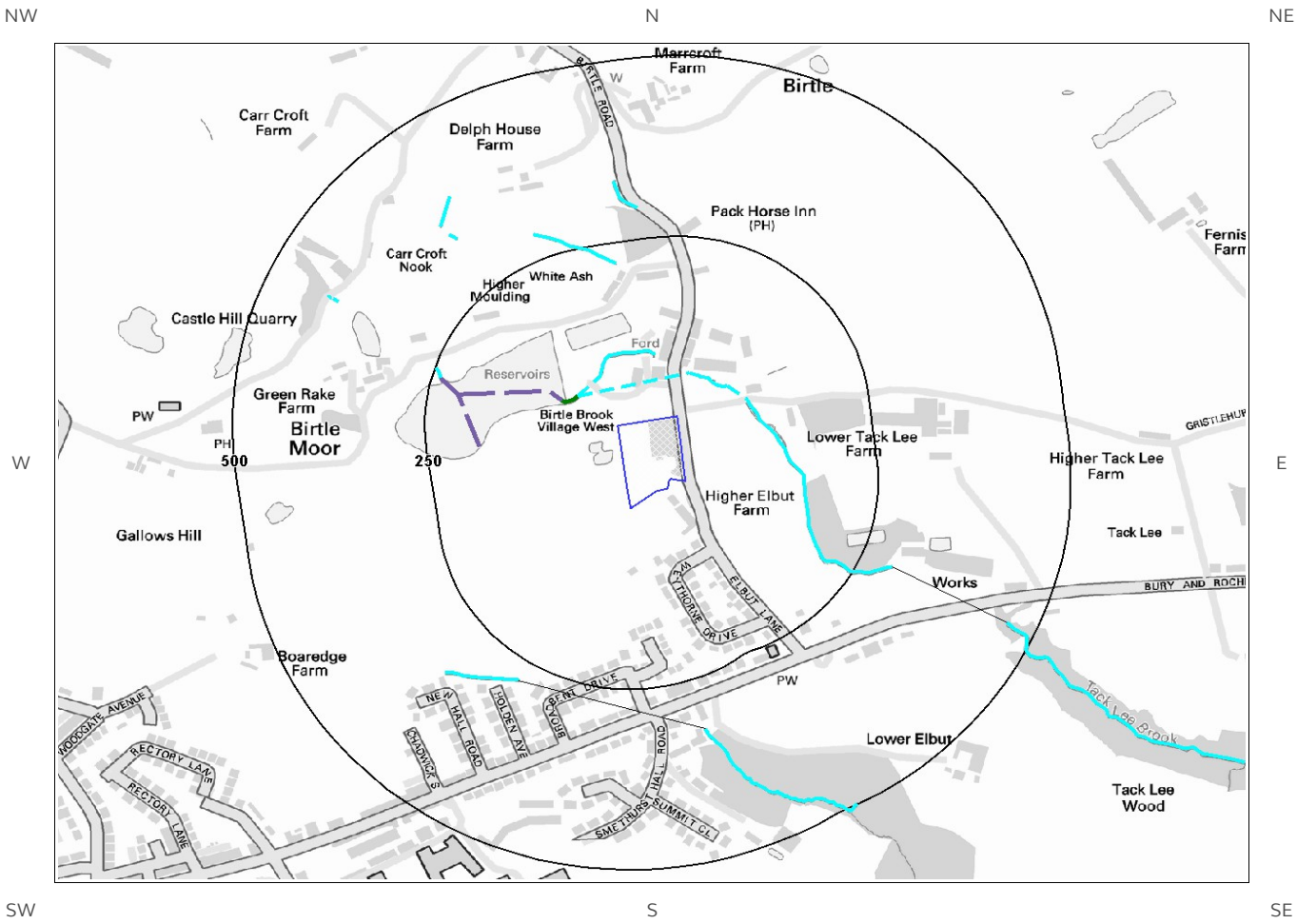
Source Protection Zone 1 - Inner Catchment

Source Protection Zone 2C - Outer Catchment within Confined Aquifer

Source Protection Zone 3C - Total Catchment within Confined Aquifer

Potable Water Abstraction Licence

6e. Hydrology – Watercourse Network and River Quality



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Site Outline

250
500
Search Buffers (m)

Tidal River
Inland River
Underground or Elevated Tidal River
Underground or Elevated Inland River
Foreshore
General Quality Assessment: Chemistry

Canal
Underground or Elevated Canal
Lock or Flight of Locks
Lake, Reservoir, or Marsh
Drain or Transfer
General Quality Assessment: Biology

6.Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Records of strata classification within the superficial geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

ID	Distance (m)	Direction	Designation	Description
7	0	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
1	60	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
2	196	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
3	217	NE	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	498	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

6.2 Aquifer within Bedrock Deposits

Records of strata classification within the bedrock geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
1	0	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

6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site — Identified

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details	
2A	184	NE	383700 412400	Status: Historical Licence No: 2569002142 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, BIRTLE BURY" Data Type: Point Name: WILLS FABRICS LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 29/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 29/03/1966 Version End Date:
3A	184	NE	383700 412400	Status: Historical Licence No: 2569002142 Details: Boiler Feed Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, BIRTLE BURY Data Type: Point Name: WILLS FABRICS LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 29/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 29/03/1966 Version End Date:
4A	184	NE	383700 412400	Status: Historical Licence No: 2569002142 Details: Process water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, BIRTLE BURY Data Type: Point Name: WILLS FABRICS LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 29/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 29/03/1966 Version End Date:
5A	184	NE	383700 412400	Status: Historical Licence No: 2569002142 Details: Boiler Feed Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, BIRTLE BURY" Data Type: Point Name: WILLS FABRICS LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 29/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 29/03/1966 Version End Date:
6	308	E	383890 412220	Status: Historical Licence No: 2569002267 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT LOWER TACK LEA FARM BURY Data Type: Point Name: A CLEASBY LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 22/05/1998 Expiry Date: 05/02/2008 Issue No: 100 Version Start Date: 22/05/1998 Version End Date:
7B	598	NW	383100 412700	Status: Historical Licence No: 2569002056 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: SPRING FED STORAGE TANK AND CATCHPIT AT CARRCROFT FARM, BIRT Data Type: Point Name: CHADWICK	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 14/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 14/02/1966 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
8B	598	NW	383100 412700	Status: Historical Licence No: 2569002056 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "SPRING FED STORAGE TANK AND CATCHPIT AT CARRCROFT FARM, BIRT" Data Type: Point Name: CHADWICK	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 14/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 14/02/1966 Version End Date:
9C	668	E	384200 412500	Status: Historical Licence No: 2569002248 Details: General Farming & Domestic Direct Source: Ground Water - North West Region Point: BOREHOLE AT FERNISES FARM , GRIFEL HURST LANE Data Type: Point Name: THOMPSON	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 12/06/1991 Expiry Date: - Issue No: 100 Version Start Date: 12/06/1991 Version End Date:
10C	668	E	384200 412500	Status: Historical Licence No: 2569002248 Details: General Farming & Domestic Direct Source: Ground Water - North West Region Point: "BOREHOLE AT FERNISES FARM , GRIFEL HURST LANE" Data Type: Point Name: THOMPSON	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 12/06/1991 Expiry Date: - Issue No: 100 Version Start Date: 12/06/1991 Version End Date:
Not show n	676	NW	383100 412800	Status: Historical Licence No: 2569002057 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: SPRING FED INTERCONNECTED TANKS (2),AT MOUNT PLEASANT FARM, Data Type: Point Name: CHADWICK	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 14/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 14/02/1966 Version End Date:
Not show n	676	NW	383100 412800	Status: Historical Licence No: 2569002057 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "SPRING FED INTERCONNECTED TANKS (2),AT MOUNT PLEASANT FARM, " Data Type: Point Name: CHADWICK	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 14/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 14/02/1966 Version End Date:
Not show n	937	NE	384000 413100	Status: Historical Licence No: 2569002189 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT THORNHURST FARM, HEYWOOD Data Type: Point Name: OVENDEN	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 21/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 21/02/1966 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	937	NE	384000 413100	Status: Historical Licence No: 2569002189 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT THORNHURST FARM, HEYWOOD" Data Type: Point Name: OVENDEN	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 21/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 21/02/1966 Version End Date:
Not shown	1167	NW	382600 413000	Status: Historical Licence No: 2569001195 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE ON PREMISES AT BIRTLE, BURY Data Type: Point Name: ROBINSON	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 27/11/1974 Expiry Date: - Issue No: 100 Version Start Date: 27/11/1974 Version End Date:
Not shown	1167	NW	382600 413000	Status: Historical Licence No: 2569001195 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE ON PREMISES AT BIRTLE, BURY" Data Type: Point Name: ROBINSON	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 27/11/1974 Expiry Date: - Issue No: 100 Version Start Date: 27/11/1974 Version End Date:
Not shown	1523	W	382080 412810	Status: Historical Licence No: 2569001284 Details: General Farming & Domestic Direct Source: Ground Water - North West Region Point: BOREHOLE AT SILLINGHURST FARM BIRTLE BURY Data Type: Point Name: RAYMOND TAYLOR	Annual Volume (m^3): 10950 Max Daily Volume (m^3): 30 Original Application No: - Original Start Date: 30/11/2004 Expiry Date: 31/03/2015 Issue No: 1 Version Start Date: 01/04/2008 Version End Date:
Not shown	1540	NW	382100 412900	Status: Historical Licence No: 2569001196 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "SPRING FED COLLECTING TANK AT BIRTLE, BURY" Data Type: Point Name: TAYLOR	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 25/11/1974 Expiry Date: - Issue No: 100 Version Start Date: 25/11/1974 Version End Date:
Not shown	1540	NW	382100 412900	Status: Historical Licence No: 2569001196 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: SPRING FED COLLECTING TANK AT BIRTLE, BURY Data Type: Point Name: TAYLOR	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 25/11/1974 Expiry Date: - Issue No: 100 Version Start Date: 25/11/1974 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1652	NW	382700 413700	Status: Historical Licence No: 2569002116 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: SPRING FED CATCHPIT AT DEEP MOSS FARM, SHUTTLEWORTH, RAMS Data Type: Point Name: OVENDEN	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 03/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 03/03/1966 Version End Date:
Not shown	1652	NW	382700 413700	Status: Historical Licence No: 2569002116 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "SPRING FED CATCHPIT AT DEEP MOSS FARM, SHUTTLEWORTH, RAMS" Data Type: Point Name: OVENDEN	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 03/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 03/03/1966 Version End Date:
Not shown	1910	NW	381900 413300	Status: Historical Licence No: 2569001194 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Ground Water - North West Region Point: BOREHOLE ON PREMISES AT BIRTLE, BURY Data Type: Point Name: STONE	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 20/06/1974 Expiry Date: - Issue No: 100 Version Start Date: 12/09/1986 Version End Date:
Not shown	1910	NW	381900 413300	Status: Historical Licence No: 2569001194 Details: Make-Up or Top Up Water Direct Source: Ground Water - North West Region Point: "BOREHOLE ON PREMISES AT BIRTLE, BURY" Data Type: Point Name: STONE	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 20/06/1974 Expiry Date: - Issue No: 100 Version Start Date: 12/09/1986 Version End Date:
Not shown	1910	NW	381900 413300	Status: Historical Licence No: 2569001194 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household" Direct Source: Ground Water - North West Region Point: "BOREHOLE ON PREMISES AT BIRTLE, BURY" Data Type: Point Name: STONE	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 20/06/1974 Expiry Date: - Issue No: 100 Version Start Date: 12/09/1986 Version End Date:
Not shown	1910	NW	381900 413300	Status: Historical Licence No: 2569001194 Details: Make-Up or Top Up Water Direct Source: Ground Water - North West Region Point: BOREHOLE ON PREMISES AT BIRTLE, BURY Data Type: Point Name: STONE	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 20/06/1974 Expiry Date: - Issue No: 100 Version Start Date: 12/09/1986 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not show n	1943	NW	381800 413200	Status: Historical Licence No: 2569001178 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, NINEVAH FARM, BURY" Data Type: Point Name: MOORE	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 14/01/1969 Expiry Date: - Issue No: 100 Version Start Date: 14/01/1969 Version End Date:
Not show n	1943	NW	381800 413200	Status: Historical Licence No: 2569001178 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, NINEVAH FARM, BURY Data Type: Point Name: MOORE	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 14/01/1969 Expiry Date: - Issue No: 100 Version Start Date: 14/01/1969 Version End Date:

6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site — Identified

The following Surface Water Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details	
28D	108	NW	383400 412300	Status: Historical Licence No: 2569002141 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIRS (3) FED BY SPRINGS AND SURFACE DRAINAGE AT PREM Data Type: Point Name: WILLS FABRICS LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: - Original Start Date: 14/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 14/02/1966 Version End Date:
29D	108	NW	383400 412300	Status: Historical Licence No: 2569002141 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIRS (3) FED BY SPRINGS AND SURFACE DRAINAGE AT PREM Data Type: Point Name: WILLS FABRICS LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: - Original Start Date: 14/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 14/02/1966 Version End Date:
30E	144	N	383500 412400	Status: Historical Licence No: 2569002141 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIRS (3) FED BY SPRINGS AND SURFACE DRAINAGE AT102 Data Type: Point Name: WILLS FABRICS LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: - Original Start Date: 14/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 14/02/1966 Version End Date:
31E	144	N	383500 412400	Status: Historical Licence No: 2569002141 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: - Original Start Date: 14/02/1966

ID	Distance (m)	Direction	NGR	Details	
				Region Point: RESERVOIRS (3) FED BY SPRINGS AND SURFACE DRAINAGE AT$102 Data Type: Point Name: WILLS FABRICS LTD	Expiry Date: - Issue No: 100 Version Start Date: 14/02/1966 Version End Date:
32E	144	N	383500 412400	Status: Historical Licence No: 2569002141 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIRS (3) FED BY SPRINGS AND SURFACE DRAINAGE AT102 Data Type: Point Name: WILLS FABRICS LTD	Annual Volume (m³): - Max Daily Volume (m³): - Application No: - Original Start Date: 14/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 14/02/1966 Version End Date:
33E	144	N	383500 412400	Status: Historical Licence No: 2569002141 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIRS (3) FED BY SPRINGS AND SURFACE DRAINAGE AT$102 Data Type: Point Name: WILLS FABRICS LTD	Annual Volume (m³): - Max Daily Volume (m³): - Application No: - Original Start Date: 14/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 14/02/1966 Version End Date:
Not shown	1729	E	385300 412400	Status: Historical Licence No: 2569002166 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: CHEESDEN BRK AT SIMPSON CLOUGH, HEYWOOD Data Type: Point Name: J R CROMPTON LTD	Annual Volume (m³): - Max Daily Volume (m³): - Application No: - Original Start Date: 24/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 21/05/2001 Version End Date:
Not shown	1729	E	385300 412400	Status: Historical Licence No: 2569002166 Details: Boiler Feed Direct Source: "Surface, Non-Tidal - North West Region" Point: "CHEESDEN BRK AT SIMPSON CLOUGH, HEYWOOD" Data Type: Point Name: J R CROMPTON LTD	Annual Volume (m³): - Max Daily Volume (m³): - Application No: - Original Start Date: 24/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 21/05/2001 Version End Date:
Not shown	1729	E	385300 412400	Status: Historical Licence No: 2569002166 Details: Process water Direct Source: "Surface, Non-Tidal - North West Region" Point: "CHEESDEN BRK AT SIMPSON CLOUGH, HEYWOOD" Data Type: Point Name: J R CROMPTON LTD	Annual Volume (m³): - Max Daily Volume (m³): - Application No: - Original Start Date: 24/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 21/05/2001 Version End Date:
Not shown	1729	E	385300 412400	Status: Historical Licence No: 2569002166 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: CHEESDEN BRK AT SIMPSON CLOUGH, HEYWOOD Data Type: Point Name: J R CROMPTON LTD	Annual Volume (m³): - Max Daily Volume (m³): - Application No: - Original Start Date: 24/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 21/05/2001 Version End Date:
Not shown	1729	E	385300 412400	Status: Active Licence No: 2569002166 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: CHEESDEN BROOK AT SIMPSON CLOUGH HEYWOOD	Annual Volume (m³): 2.13662e+006 Max Daily Volume (m³): 12437.9 Application No: - Original Start Date: 24/01/1966 Expiry Date: - Issue No: 101 Version Start Date: 13/08/2007

ID	Distance (m)	Direction	NGR	Details	
				Data Type: Point Name: UNION PAPERTECH LIMITED	Version End Date:
Not shown	1729	E	385300 412400	Status: Active Licence No: 2569002166 Details: Process Water Direct Source: Surface, Non-Tidal - North West Region Point: CHEESDEN BROOK AT SIMPSON CLOUGH HEYWOOD Data Type: Point Name: UNION PAPERTECH LIMITED	Annual Volume (m^3): 2.13662e+006 Max Daily Volume (m^3): 12437.9 Application No: - Original Start Date: 24/01/1966 Expiry Date: - Issue No: 101 Version Start Date: 13/08/2007 Version End Date:
Not shown	1767	SW	382536 410666	Status: Active Licence No: NW/069/0002/002 Details: Hydroelectric Power Generation Direct Source: Surface, Non-Tidal - North West Region Point: RIVER ROCH AT HEAP BRIDGE WEIR Data Type: Point Name: Brother Investments Ltd	Annual Volume (m^3): 7.6032e+007 Max Daily Volume (m^3): 345600 Application No: - Original Start Date: 17/09/2010 Expiry Date: 31/03/2026 Issue No: 2 Version Start Date: 18/09/2015 Version End Date:
Not shown	1776	E	385360 412230	Status: Historical Licence No: 2569002255 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Surface, Non-Tidal - North West Region Point: NADEN BROOK AT SIMPSON CLOUGH, HEYWOOD 112 Data Type: Point Name: J R CROMPTON LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: - Original Start Date: 12/02/1993 Expiry Date: - Issue No: 101 Version Start Date: 10/10/2000 Version End Date:
Not shown	1776	E	385360 412230	Status: Historical Licence No: 2569002255 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Surface, Non-Tidal - North West Region Point: NADEN BROOK AT SIMPSON CLOUGH, HEYWOOD $112 Data Type: Point Name: J R CROMPTON LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: - Original Start Date: 12/02/1993 Expiry Date: - Issue No: 101 Version Start Date: 10/10/2000 Version End Date:
Not shown	1776	E	385360 412230	Status: Historical Licence No: 2569002255 Details: General use relating to Secondary Category (Medium Loss) Direct Source: "Surface, Non-Tidal - North West Region" Point: "NADEN BROOK AT SIMPSON CLOUGH, HEYWOOD $112" Data Type: Point Name: J R CROMPTON LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: - Original Start Date: 12/02/1993 Expiry Date: - Issue No: 101 Version Start Date: 10/10/2000 Version End Date:
Not shown	1776	E	385360 412230	Status: Active Licence No: 2569002255 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Surface, Non-Tidal - North West Region Point: NADEN BROOK AT SIMPSON CLOUGH, HEYWOOD Data Type: Point Name: UNION PAPERTECH LIMITED	Annual Volume (m^3): 2.13662e+006 Max Daily Volume (m^3): 6219 Application No: - Original Start Date: 12/02/1993 Expiry Date: - Issue No: 102 Version Start Date: 13/08/2007 Version End Date:

6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site — Identified

The following Potable Water Abstraction Licences records are represented as points, lines and regions on the SPZ and Potable Water Abstraction Licences Map (6c):

ID	Distance (m)	Direction	NGR	Details	
Not shown	1910	NW	381900 413300	Status: Historical Licence No: 2569001194 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Ground Water - North West Region Point: BOREHOLE ON PREMISES AT BIRTLE, BURY Data Type: Point Name: STONE	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 20/06/1974 Expiry Date: - Issue No: 100 Version Start Date: Version End Date:
Not shown	1910	NW	381900 413300	Status: Historical Licence No: 2569001194 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household" Direct Source: Ground Water - North West Region Point: "BOREHOLE ON PREMISES AT BIRTLE, BURY" Data Type: Point Name: STONE	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 20/06/1974 Expiry Date: - Issue No: 100 Version Start Date: Version End Date:

6.6 Source Protection Zones

Source Protection Zones within 500m of the study site — None identified

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Source Protection Zones within the Confined Aquifer within 500m of the study site — None identified

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site Identified

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Minor Aquifer/High Leaching Potential	H3	Coarse textured or moderately shallow soils which readily transmit non-adsorbed pollutants and liquid discharges but have some ability to attenuate adsorbed pollutants because of their clay or organic matter content.
0	On Site	Minor Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.
379	E	Minor Aquifer/High Leaching Potential	H2	Deep, permeable, coarse textured soils which readily transmit a wide range of pollutants because of their rapid drainage and low attenuation potential.
447	N	Minor Aquifer/Low Leaching Potential	L	Soils in which pollutants are unlikely to penetrate the soil layer because either water movement is largely horizontal, or they have the ability to attenuate diffuse pollutants.

6.9 River Quality

Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site Identified

6.9.1 Biological Quality:

Biological Quality data describes water quality in terms of 83 groups of macroinvertebrates, some of which are pollution sensitive. The results are graded from A ('Very Good') to F ('Bad').

The following Biological Quality records are shown on the Hydrology Map (6e):

ID	Distance (m)	Direction	NGR	River Quality Grade	Biological Quality Grade				
					2005	2006	2007	2008	2009
Not shown	1490	E	385050 411900	River Name: Naden Bk Reach: Cheesden Bk. To Roch End/Start of Stretch: End of Stretch NGR	B	B	B	B	B

6.9.2 Chemical Quality:

Chemical quality data is based on the General Quality Assessment Headline Indicators scheme (GQAHI). In England, each chemical sample is measured for ammonia and dissolved oxygen. In Wales, the samples are measured for biological oxygen demand (BOD), ammonia and dissolved oxygen. The results are graded from A ('Very Good') to F ('Bad').

The following Chemical Quality records are shown on the Hydrology Map (6e):

					Chemical Quality Grade				
ID	Distance (m)	Direction	NGR	River Quality Grade	2005	2006	2007	2008	2009
Not shown	1490	E	385050 411900	River Name: Naden Bk. Reach: Cheesden Bk. To Roch End/Start of Stretch: End of Stretch NGR	A	A	A	A	A

6.10 Ordnance Survey MasterMap Water Network

Ordnance Survey MasterMap Water Network entries within 500m of the study site

This watercourse information is provided by Ordnance Survey MasterMap Water Network. The data provides a detailed centre line following the curve of the waterway precisely, so all distances provided in the report should be understood as measurements to the centreline rather than a measurement to the nearest point of the watercourse. Underground watercourses are inferred from entry and exit points so caution is advised in using these to indicate precise locations of underground watercourses when planning site investigation and development.

The following Ordnance Survey MasterMap Water Network records are represented on the Hydrology Map (6e):

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
1	51 N	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
24	51 N	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
2	63 N	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
25	63 N	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
3	65 NW	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
4	65 NW	Not Specified	Manmade watercourse for water transfer.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse may not contain water year round. Average Width in Watercourse Section (m): 2.3
26	65 NW	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
27	65 NW	Not Specified	Manmade watercourse for water transfer.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse may not contain water year round. Average Width in Watercourse Section (m): 2.3
5	70 N	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
28	70 N	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
6	77 NE	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
29	77 NE	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
7	79 NW	Not Specified	Reservoir. An area of non-tidal water used for storing water.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 61.6
30	79 NW	Not Specified	Reservoir. An area of non-tidal water used for storing water.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 61.6
8	94 E	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.1
31	94 E	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.1
9	111 E	Tack Lee Brook	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
32	111	Tack Lee Brook	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	E			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
10	182 W	Not Specified	Reservoir. An area of non-tidal water used for storing water.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
33	182 W	Not Specified	Reservoir. An area of non-tidal water used for storing water.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
11	211 W	Not Specified	Reservoir. An area of non-tidal water used for storing water.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.9
34	211 W	Not Specified	Reservoir. An area of non-tidal water used for storing water.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.9
12	222 N	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
35	222 N	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
13	239 W	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
36	239 W	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
14	268 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
37	268 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
15	278 SW	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
38	278 SW	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
16	294 SE	Tack Lee Brook	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
17	294 N	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.6
39	294 SE	Tack Lee Brook	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	294 N	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.6
18	319 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	319 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
19	332 NW	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
42	332 NW	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
20	358 NW	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	358 NW	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
21	401 NW	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
44	401 NW	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
22	410 NW	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
45	410 NW	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
23	460 SE	Tack Lee Brook	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.8
Not shown	460 SE	Tack Lee Brook	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.8
24	500 SE	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	500 SE	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

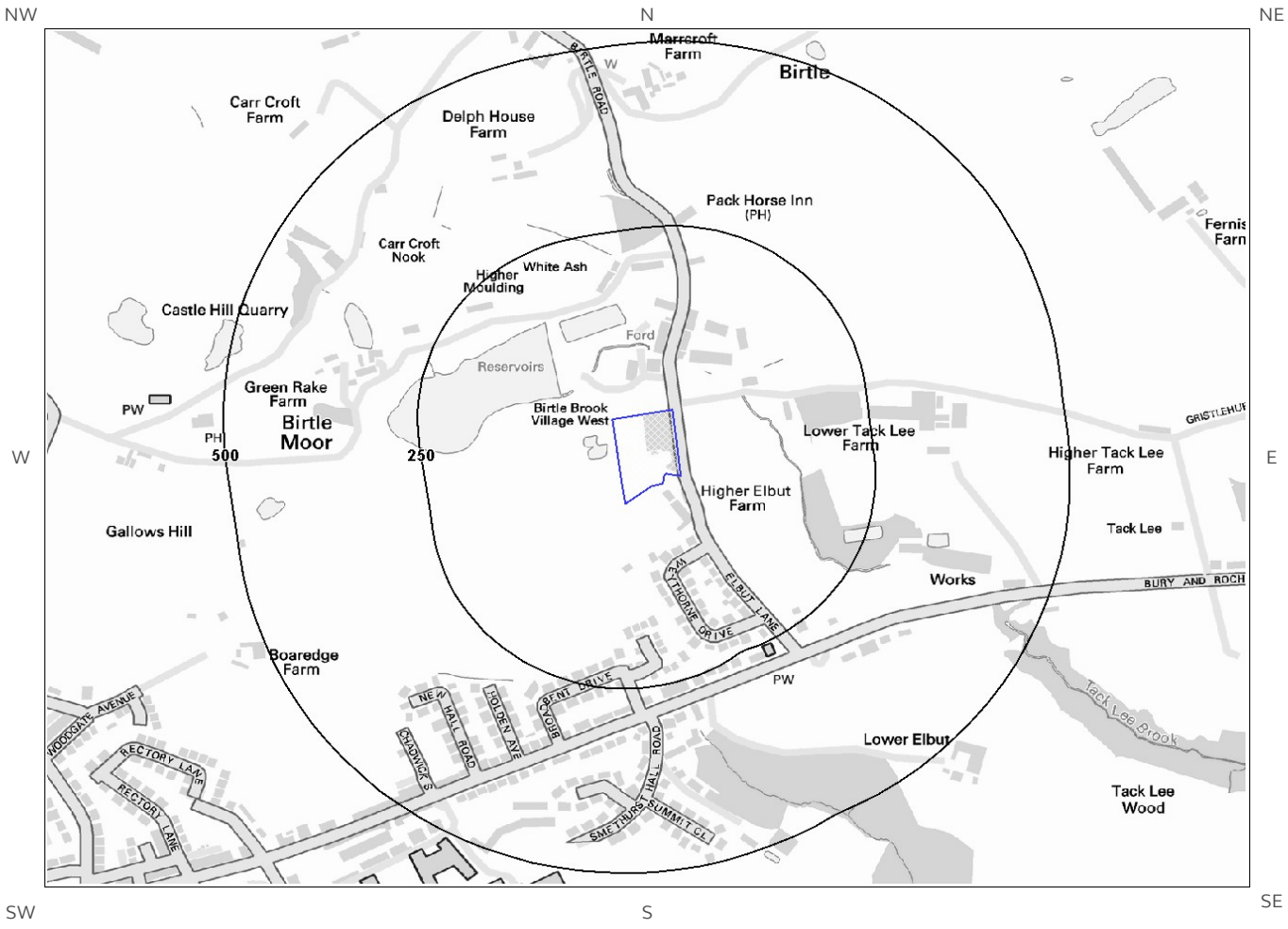
6.11 Surface Water Features

Surface water features within 250m of the study site Identified

The following surface water records are not represented on mapping:

Distance (m)	Direction
64	NW
69	N
93	E
118	N
132	NE
221	E
222	N
239	W

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



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Site Outline

100
250
Search Buffers (m)

Zone 2 Floodplain

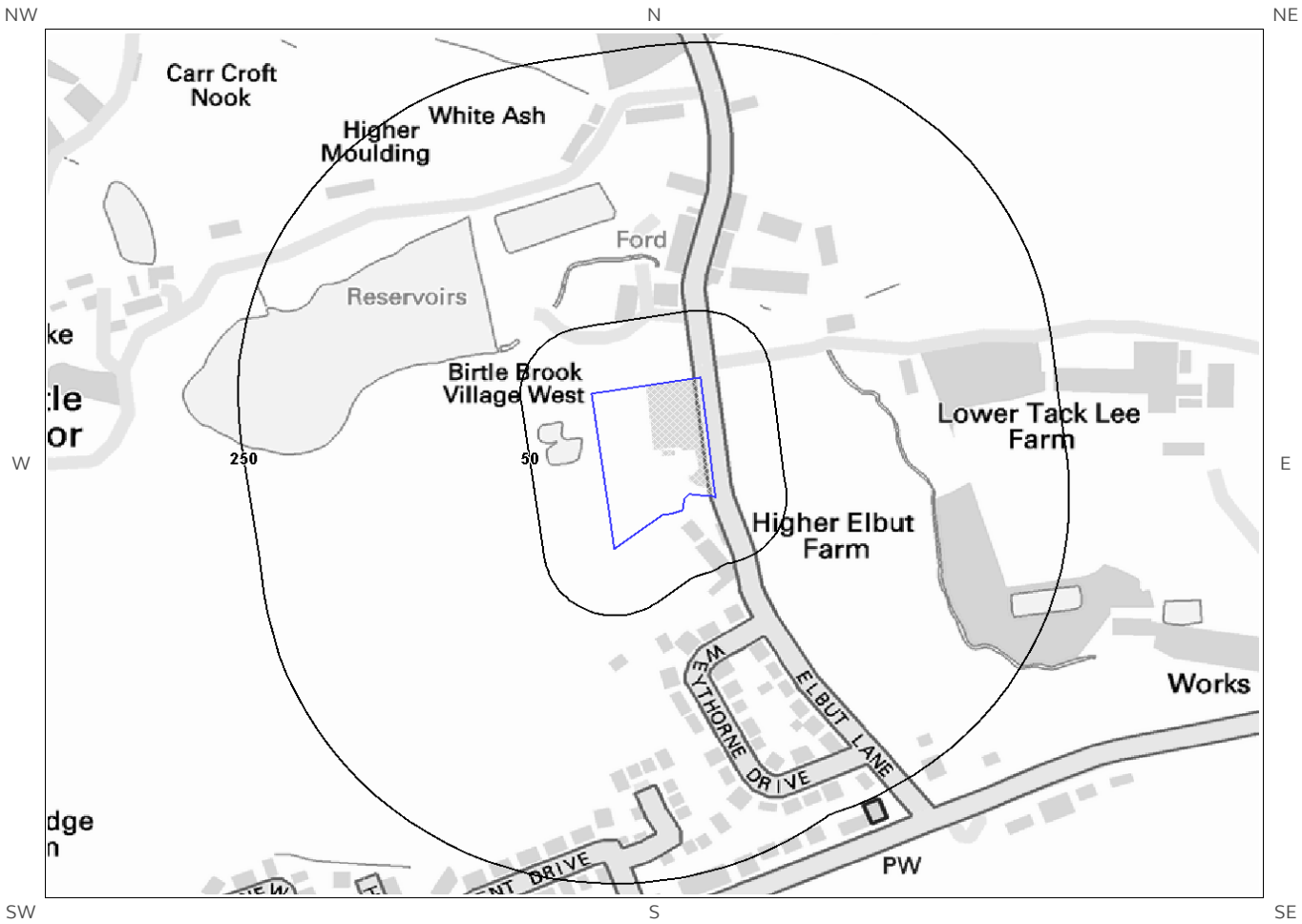
Zone 3 Floodplain

Flood Defences

Area used for Flood Storage

Area Benefiting from Flood Defences

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



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Site Outline

100
250
Search Buffers (m)

RoFRaS Rating

- Very Low
- Low
- Medium
- High

7 Flooding

7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m — None identified

Environment Agency/Natural Resources Wales Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

Database searched and no data found.

7.2 River and Coastal Zone 3 Flooding

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m — None identified

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

Database searched and no data found.

7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

Highest risk of flooding onsite — Very Low

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Very Low (less than 1 in 1000) chance of flooding in any given year.

7.4 Flood Defences

Flood Defences within 250m of the study site — None identified

Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site — None identified

7.6 Areas benefiting from Flood Storage

Areas used for Flood Storage within 250m of the study site	None identified

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site: Identified

Clearwater Flooding or Superficial Deposits Flooding	Superficial Deposits Flooding

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

7.7.2 Highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions

Potential at Surface

Where potential for groundwater flooding to occur at surface is indicated, this means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions. It is recommended that other relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information be investigated in order to establish relative, but not absolute, risk of groundwater flooding.

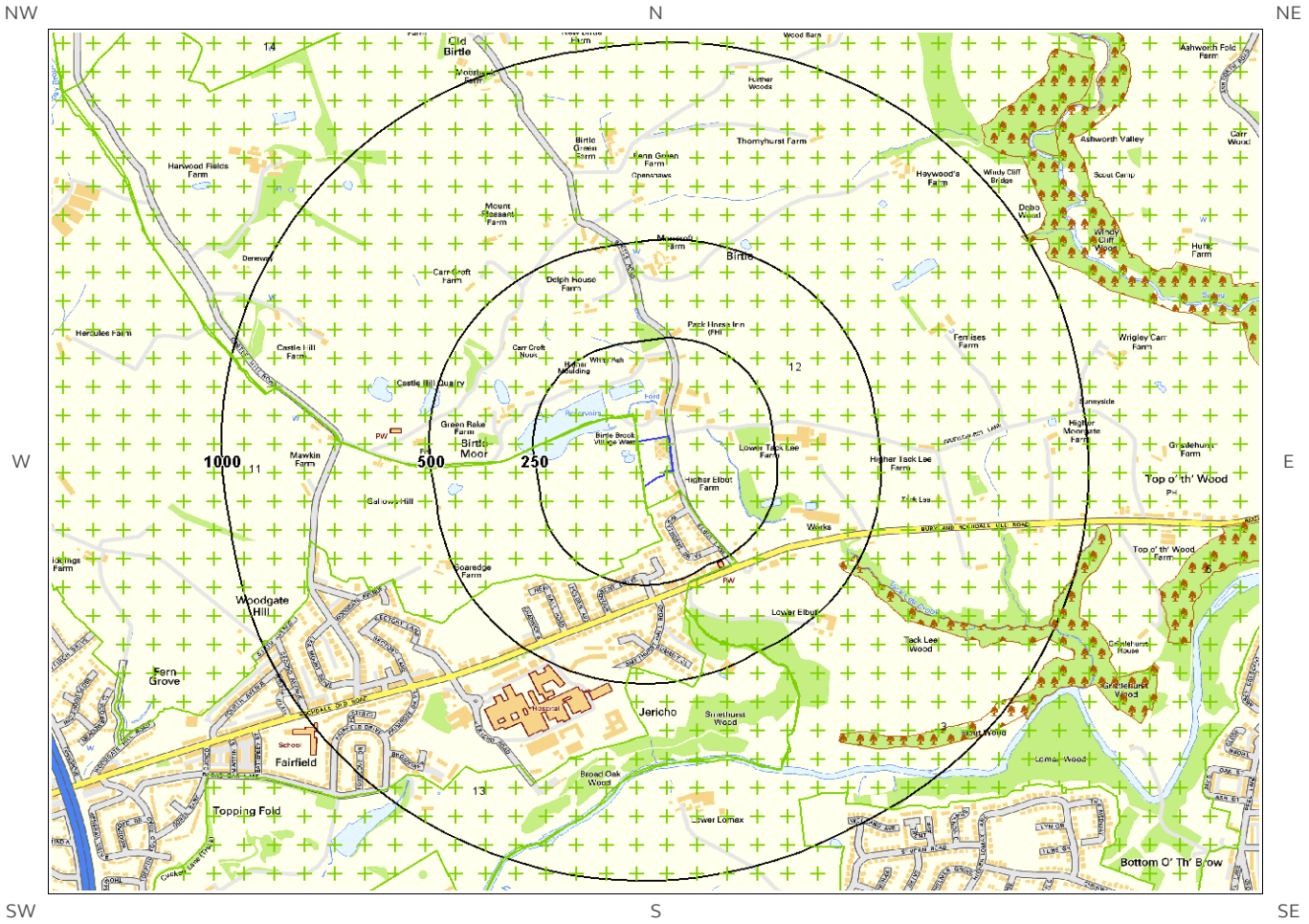
7.8 Groundwater Flooding Confidence Areas

British Geological Survey confidence rating in this result	Low

Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

8. Designated Environmentally Sensitive Sites Map



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Site Outline

100 250 Search Buffers (m)

- AONB
- National Park
- SSSI
- Special Protection Areas
- Nitrate Vulnerable Zones
- Green Belt
- Environmentally Sensitive Areas
- Special Areas of Conservation
- World Heritage Sites
- Nitrate Sensitive Areas
- Ancient Woodland
- National Nature Reserve
- Local Nature Reserves
- Ramsar Sites

8. Designated Environmentally Sensitive Sites

Designated Environmentally Sensitive Sites within 2000m of the study site	Identified

8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

0

Database searched and no data found.

8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

0

Database searched and no data found.

8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.

8.5 Records of Ramsar sites within 2000m of the study site:

0

Database searched and no data found.

8.6 Records of Ancient Woodland within 2000m of the study site:

9

The following records of Designated Ancient Woodland provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
2	461	SE	UNKNOWN	Ancient and Semi-Natural Woodland
3	776	SE	UNKNOWN	Ancient and Semi-Natural Woodland
4	989	NE	JOWKIN WOOD	Ancient and Semi-Natural Woodland
Not shown	1142	N	UNKNOWN	Ancient and Semi-Natural Woodland
6	1206	E	SIMPSON CLOUGH WOOD	Ancient and Semi-Natural Woodland
Not shown	1568	E	JOWKIN WOOD	Ancient and Semi-Natural Woodland
Not shown	1595	E	JOWKIN WOOD	Ancient and Semi-Natural Woodland
Not shown	1601	E	JOWKIN WOOD	Ancient and Semi-Natural Woodland
Not shown	1670	E	JOWKIN WOOD	Ancient and Semi-Natural Woodland

8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

1

The following Local Nature Reserve (LNR) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	LNR Name	Data Source
Not shown	1646	W	Chesham Woods	Natural England

8.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

8.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

0

Database searched and no data found.

8.14 Records of Green Belt land within 2000m of the study site:

4

Green Belt data contains Ordnance Survey data © Crown copyright and database right [2015].

ID	Distance	Direction	Green Belt Name	Local Authority Name
11	0	On Site	Liverpool, Manchester and West Yorks Greenbelt	Bury District (B)
12	0	On Site	Liverpool, Manchester and West Yorks Greenbelt	Rochdale
13	326	S	Liverpool, Manchester and West Yorks Greenbelt	Bury District (B)
14	1193	NW	Liverpool, Manchester and West Yorks Greenbelt	Rossendale District (B)

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a Groundsure Geo Insight, available from our website. The following information has been found:

9.1.1 Shrink Swell

Maximum Shrink-Swell* hazard rating identified on the study site — Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

9.1.2 Landslides

Maximum Landslide* hazard rating identified on the study site — Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

9.1.3 Soluble Rocks

Maximum Soluble Rocks* hazard rating identified on the study site — Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

* This indicates an automatically generated 50m buffer and site.

9.1.4 Compressible Ground

Maximum Compressible Ground* hazard rating identified on the study site — Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

9.1.5 Collapsible Rocks

Maximum Collapsible Rocks* hazard rating identified on the study site — Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

9.1.6 Running Sand

Maximum Running Sand** hazard rating identified on the study site — Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

* This indicates an automatically generated 50m buffer and site.

9.2 Radon

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

9.2.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing
ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

10. Mining

10.1 Coal Mining

Coal mining areas within 75m of the study site — Identified

The following coal mining information provided by the Coal Authority is not represented on Mapping:

Distance (m)	Direction	Details
0	On Site	The study site is located within the specified search distance of an identified mining area. Further details concerning this can be obtained from the Coal Authority Helpline on 0845 762 6848.

10.2 Non-Coal Mining

Non-Coal Mining areas within 50m of the study site boundary — None identified

Database searched and no data found.

10.3 Brine Affected Areas

Brine affected areas within 75m of the study site — None identified
Guidance: No Guidance Required.

Contact Details

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British Geological Survey Enquiries
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Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:
Web:**www.bgs.ac.uk**
BGS Geological Hazards Reports and general geological enquiries:
enquiries@bgs.ac.uk

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Tel: 03708 506 506
Web: **www.environment-agency.gov.uk**
Email: enquiries@environment-agency.gov.uk

Public Health England
Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
www.gov.uk/phe
Email:**enquiries@phe.gov.uk**
Main switchboard**: 020 7654 8000**

The Coal Authority
200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Ordnance Survey
Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505

Local Authority
Authority: Rochdale Metropolitan Borough Council
Phone: 01706 647 474
Web: http://www.rochdale.gov.uk/
Address: Number One Riverside, Smith Street, Rochdale, Lancashire,

Gemapping PLC
Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444

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CENTREMAPS

Open Space, Upper Interfields,
Worcester, WR14 1UT

Report Reference: CMAPS-CM-768008-23462-040119GEO

Your Reference: 23462

Report Date 4 Jan 2019

Report Delivery Method: Email - pdf

Geo Insight

Address: Birtle RC

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Geo Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 01886 832972 quoting the above CENTREMAPS reference number.

Yours faithfully,

CENTREMAPS

Enc.
Groundsure Geo Insight

Geo Insight

Address:	**Birtle RC**
Date:	**4 Jan 2019**
Reference:	**CMAPS-CM-768008-23462-040119GEO**
Client:	**CENTREMAPS**

NW N NE



W E

SW S SE

Aerial Photograph Capture date:	26-Mar-2012
Grid Reference:	383541,412202
Site Size:	0.76ha

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Overview of Findings

The Groundsure Geo Insight provides high quality geo-environmental information that allows geo-environmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 and 1:10,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Non-coal mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and Groundsure's unique database including historical surface ground and underground workings.

For further details on each dataset, please refer to each individual section in the report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Geology 1:10,000 Scale		
1.1 Artificial Ground	1.1 Is there any Artificial Ground/ Made Ground present beneath the study site at 1:10,000 scale?	No
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*	Yes
	1.2.2 Are there any records of landslip within 500m of the study site boundary at 1:10,000 scale?	No
1.3 Bedrock, Solid Geology and linear features	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale?	Yes

Section 2: Geology 1:50,000 Scale		
2.1 Artificial Ground	2.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	No
	2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?	No
2.2 Superficial Geology and Landslips	2.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	Yes
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	Yes
	2.2.3 Are there any records of landslip within 500m of the study site boundary?	No
	2.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and linear features	2.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	2.3.2 Are there any records relating to permeability of bedrock ground within the study site boundary?	Yes
	2.3.3 Are there any records of linear features within 500m of the study site boundary?	Yes

Section 3: Radon

3. Radon	3.1Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
	3.2Radon Protection	No radon protective measures are necessary.

Section 4: Ground Workings	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	0	14	36	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	14
4.3 Current Ground Workings	0	0	0	4	29

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.1 Historical Mining	0	0	0	0	14
5.2 Coal Mining	1	0	0	0	0
5.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
5.4 Non-Coal Mining*	0	0	1	0	0
5.5 Non–Coal Mining Cavities	0	0	0	0	0
5.5 Natural Cavities	0	0	0	0	0

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Tin Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0

Section 6: Natural Ground Subsidence	On-site
6.1 Shrink-Swell Clay	Very Low
6.2 Landslides	Very Low
6.3 Ground Dissolution of Soluble Rocks	Negligible
6.4 Compressible Deposits	Negligible
6.5 Collapsible Deposits	Very Low
6.5 Running Sand	Very Low

Section 7: Borehole Records	On-site	0-50m	51-250
7 BGS Recorded Boreholes	0	0	1

Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250
8 Records of Background Soil Chemistry	2	0	0

Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500
9.1 Tunnels	0	0	0	Not Searched
9.2 Historical Railway and Tunnel Features	0	0	0	Not Searched
9.3 Historical Railways	0	0	0	Not Searched
9.4 Active Railways	0	0	0	Not Searched
9.5 Railway Projects	0	0	0	0

1:10,000 Scale Availability

NW N NE



W E

SW S SE

1_10,000 Availability Legend

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Site Outline

Full Coverage

Partial Coverage

No Coverage

50
250
Search Buffers (m)

Availability of 1:10,000 Scale Geology Mapping

The following information represents the availability of the key components of the 1:10,000 scale geological data.

ID	Distance	Artificial Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	Some deposits are mapped	Full	Full	Some deposits are mapped
N2	1415.0	Some deposits are mapped	Full	Full	Some deposits are mapped

Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not all themes are mapped or available on every map sheet. Therefore a coverage layer showing the availability of the four themes is presented above.

The definitions of coverage are as follows:

Geology	Full Coverage	Partial Coverage	No Coverage
Bedrock	The whole tile has been mapped	Some but not all the tile has been mapped	No coverage
Superficial	The whole tile has been mapped	Some but not all of the tile has been mapped	No coverage
Artificial	Some deposits are mapped on this tile	-	No deposits are mapped
Mass Movement	Some deposits are mapped on this tile	-	No coverage

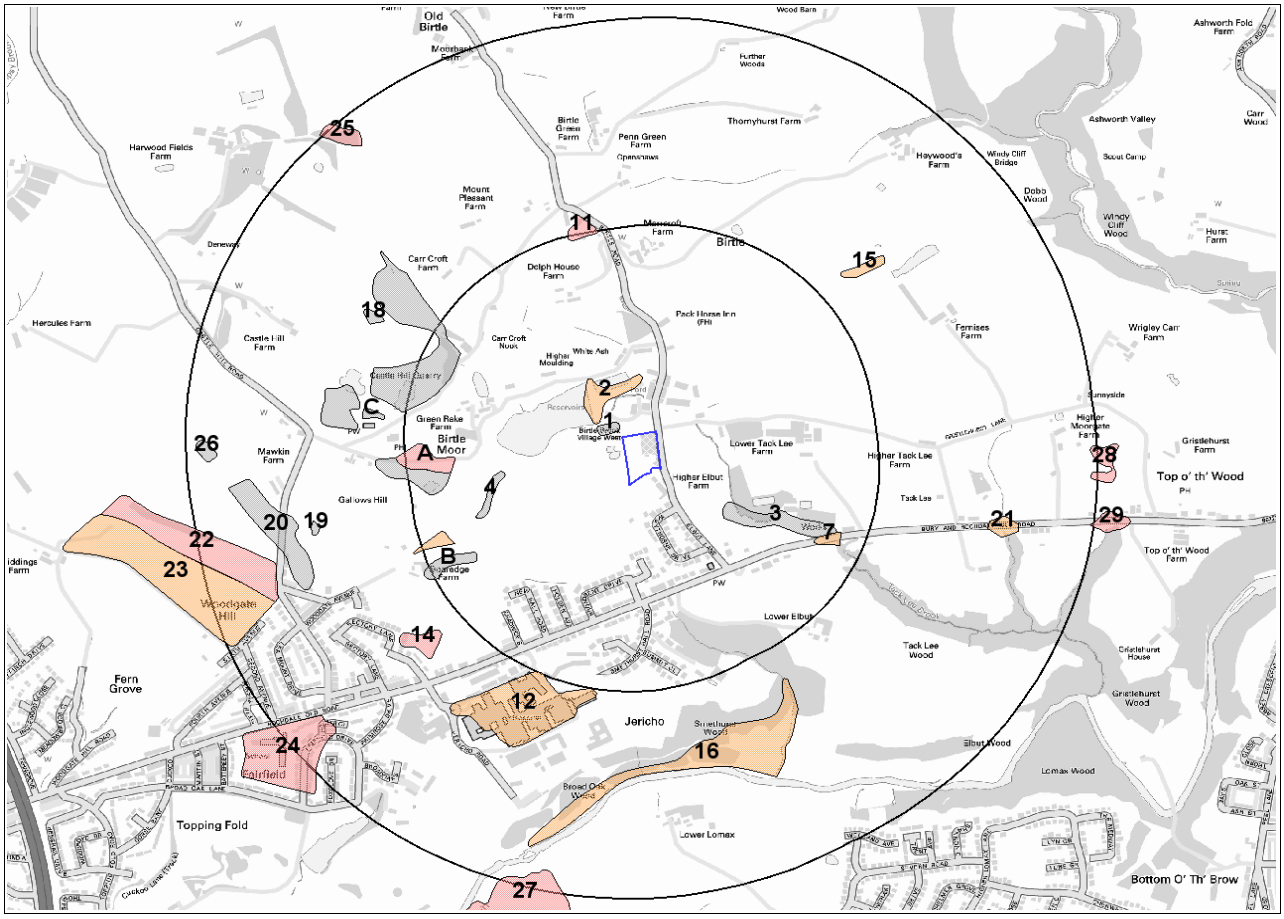
1 Geology (1:10,000 scale).

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

NW N NE

W E

SW S SE



Artificial Ground Legend

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Site Outline

500
1000
Search Buffers (m)

Made Ground (undivided)

Disturbed Ground (undivided)

Worked Ground (undivided)

Landscaped Ground (undivided)

Infilled Ground

Reclaimed Ground

1. Geology 1:10,000 scale

1.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

Are there any records of Artificial/ Made Ground within 500m of the study site boundary at 1:10,000 scale? Yes

ID	Distance	Direction	LEX Code	Description	Rock Description
1	18.0	NW	WGR-VOID	Worked Ground (Undivided)	Void
2	65.0	NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
3	170.0	SE	WGR-VOID	Worked Ground (Undivided)	Void
4	279.0	W	WGR-VOID	Worked Ground (Undivided)	Void
5A	387.0	W	WMGR-ARTDP	Infilled Ground	Artificial Deposit
6B	389.0	SW	WGR-VOID	Worked Ground (Undivided)	Void
7	390.0	SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
8A	400.0	W	WGR-VOID	Worked Ground (Undivided)	Void
9	418.0	W	WGR-VOID	Worked Ground (Undivided)	Void
10B	426.0	W	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
11	487.0	N	WMGR-ARTDP	Infilled Ground	Artificial Deposit
12	496.0	SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

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

NW N NE

W E

SW S SE



Artificial Ground Legend

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Site Outline

500
1000
Search Buffers (m)

1.2 Superficial Deposits and Landslips

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping

1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary at 1:10,000 scale? Yes

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel
2	18.0	NW	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
3	127.0	SE	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel
4	170.0	S	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel
5	194.0	SW	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel
6	206.0	N	HEAD-XCZSV	Head - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
7	216.0	NE	HEAD-XCZSV	Head - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
8	298.0	SE	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel
9	328.0	SW	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel
10	381.0	S	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel
11	382.0	SE	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel
12	486.0	E	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel

1.2.2 Landslip

Are there any records of Landslip within 500m of the study site boundary at 1:10,000 scale?

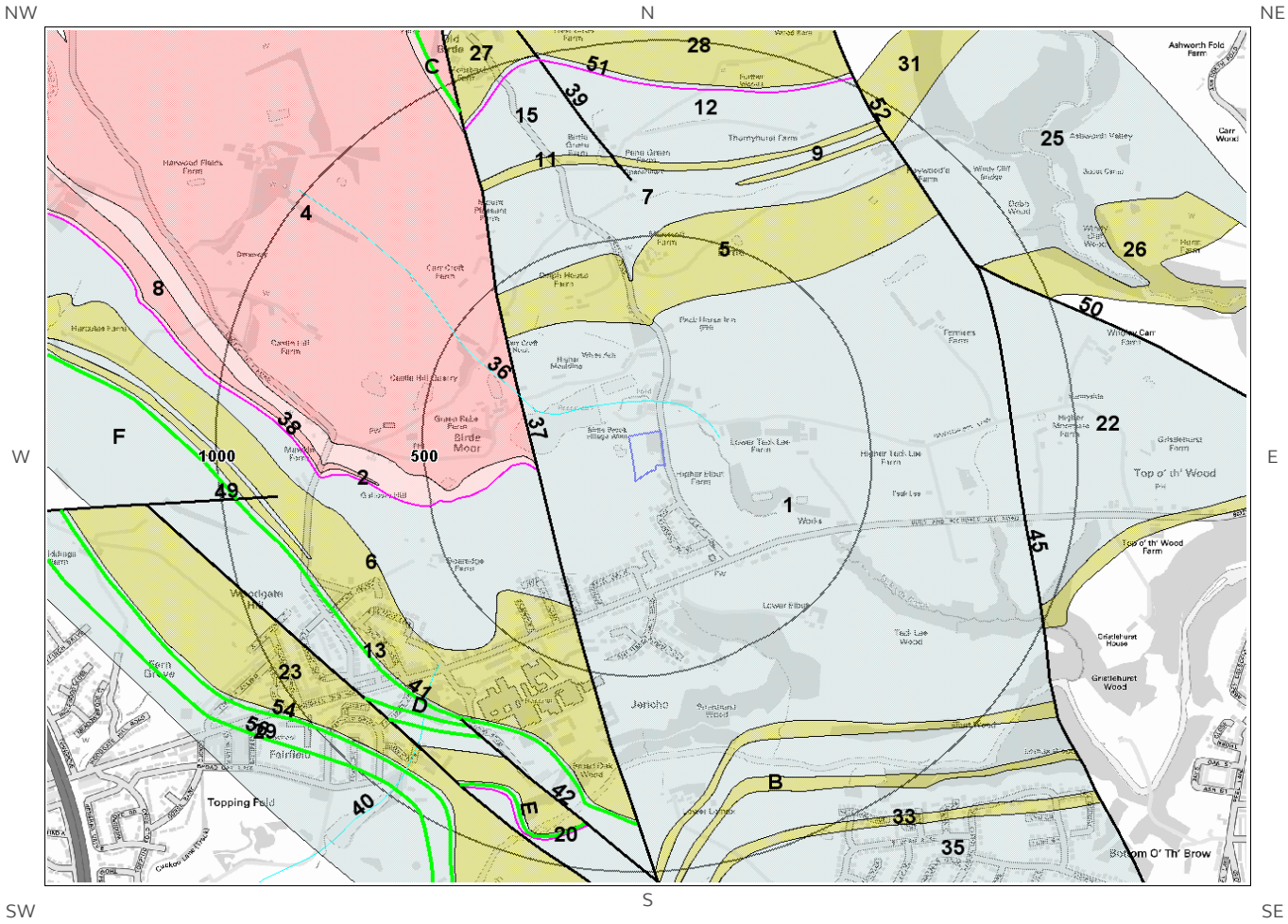
No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:10,000 scale

This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

1.3 Bedrock and linear features map (1:10,000 scale)



Bedrock and linear features Legend

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Site Outline

500
1000
Search Buffers (m)

1.3 Bedrock and linear features

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

1.3.1 Bedrock/ Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary at 1:10,000 scale.

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
1	0.0	On Site	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
2	224.0	W	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
3	230.0	W	ROSSE-MDSI	Rossendale Formation - Mudstone And Siltstone	Yeadonian Sub-age
4	231.0	W	RR-SDST	Rough Rock - Sandstone	Yeadonian Sub-age
5	273.0	N	MLRS-SDST	Milnrow Sandstone - Sandstone	Langsettian Sub-age
6	357.0	SW	WH-SDST	Woodhead Hill Rock - Sandstone	Langsettian Sub-age
7	391.0	N	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age

1.3.2 Linear features

Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale? Yes

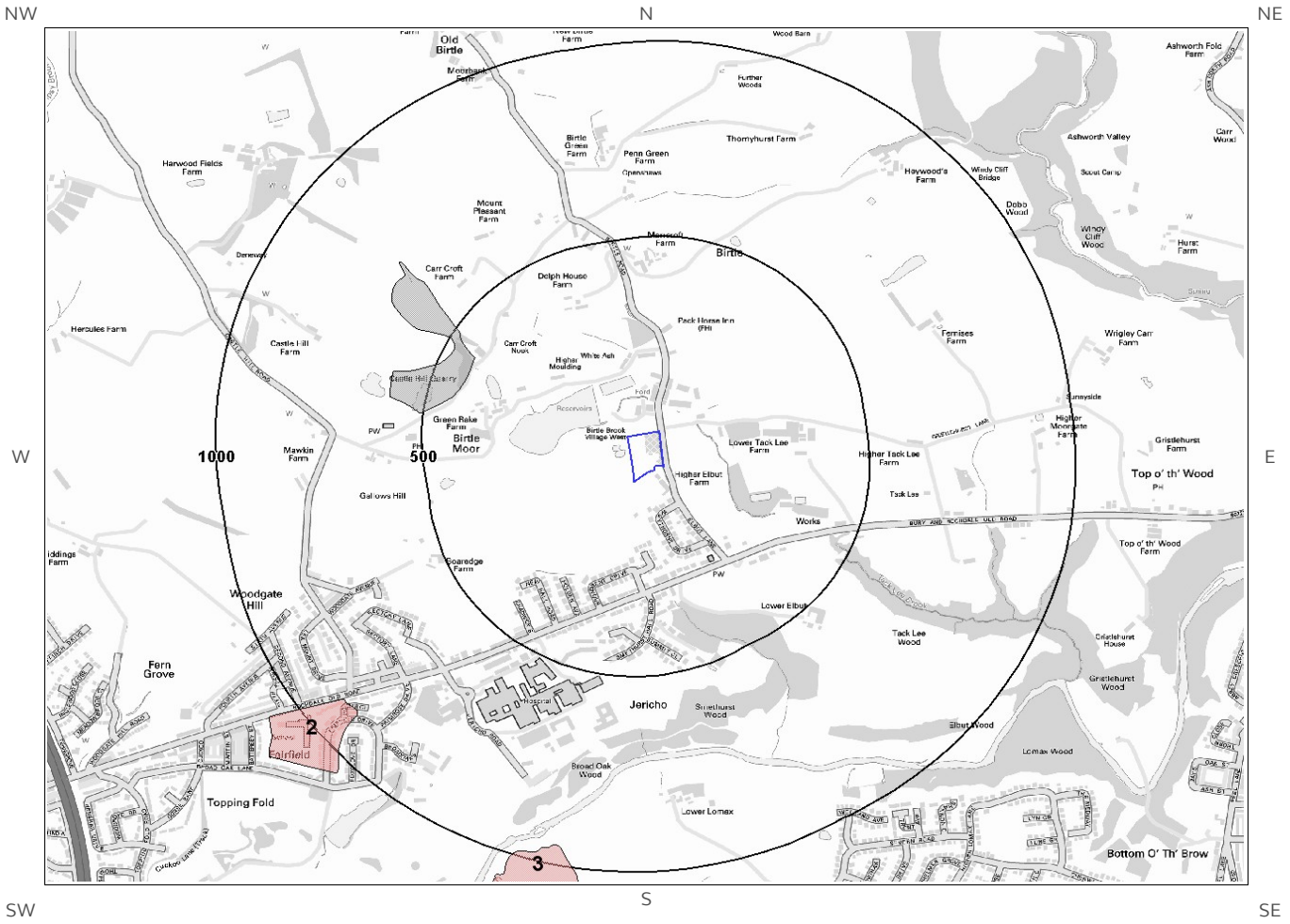
ID	Distance (m)	Direction	Category Description	Feature Description
36	75.0	N	LANDFORM	Glacial meltwater channel, undifferentiated, centre line
37	224.0	W	FAULT	Normal fault, inferred; crossmarks on downthrow side
38	230.0	W	FOSSIL_HORIZON	Fossil horizon, marine band coincident with bedrock geology boundary

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of great Britain at 1:10,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2 Geology 1:50,000 Scale

2.1 Artificial Ground map



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2. Geology 1:50,000 scale

2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 085

2.1.1 Artificial/ Made Ground

Are there any records of Artificial/ Made Ground within 500m of the study site boundary? Yes

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	417.0	W	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID

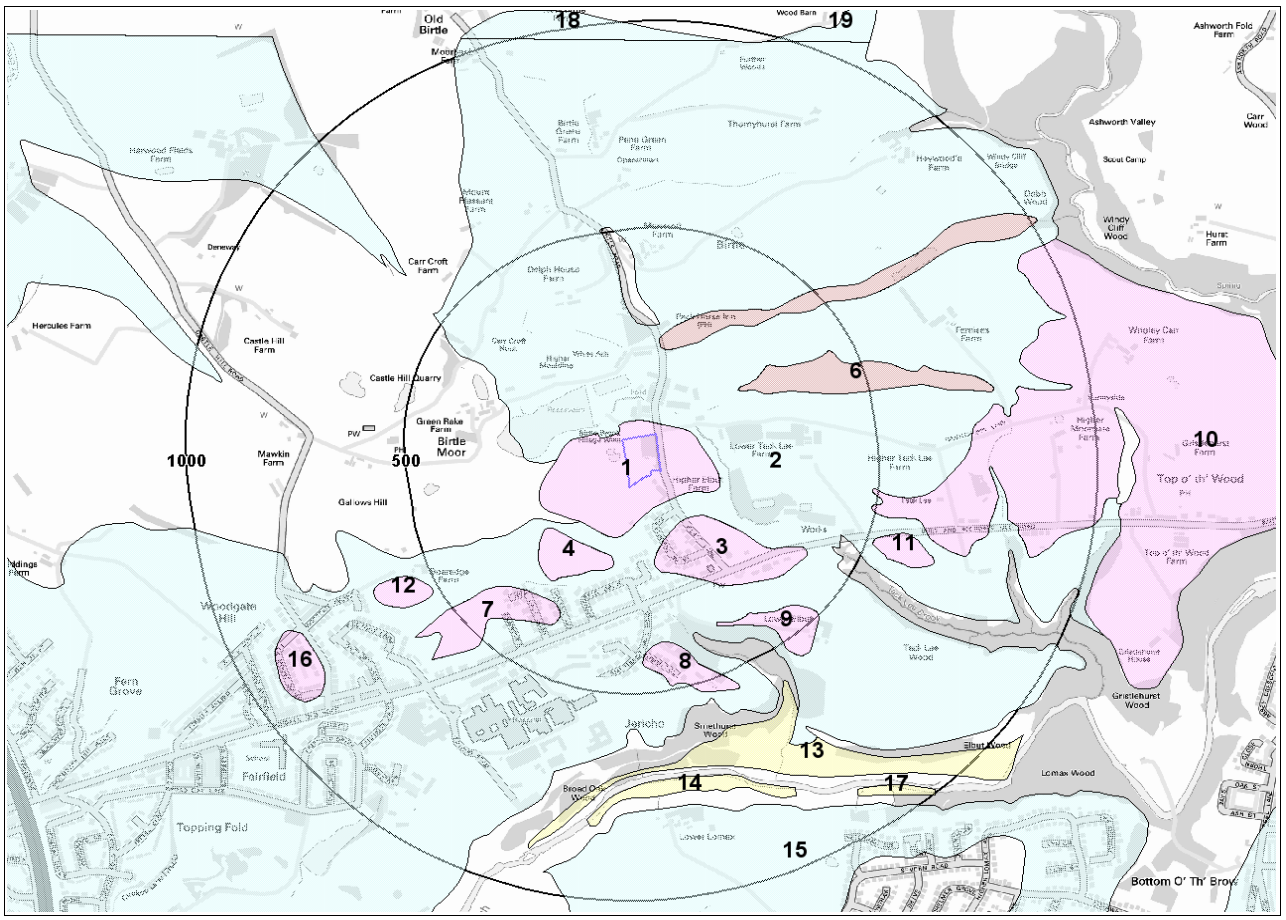
2.1.2 Permeability of Artificial Ground

Are there any records relating to permeability of artificial ground within the study site boundary? No

Database searched and no data found.

2.2 Superficial Deposits and Landslips map (1:50,000 scale)

NW N NE



W E

SW S SE

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Site Outline

500
1000
Search Buffers (m)

2.2 Superficial Deposits and Landslips

2.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary? Yes

ID	Distance	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
2	18.0	NW	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
3	127.0	SE	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
4	169.0	S	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
5	206.0	N	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL
6	216.0	NE	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL
7	328.0	SW	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
8	381.0	S	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
9	382.0	SE	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
10	486.0	E	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL

2.2.2 Permeability of Superficial Ground

Are there any records relating to permeability of superficial ground within the study site boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Intergranular	Very High	High
18.0	NW	Mixed	High	Low

2.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

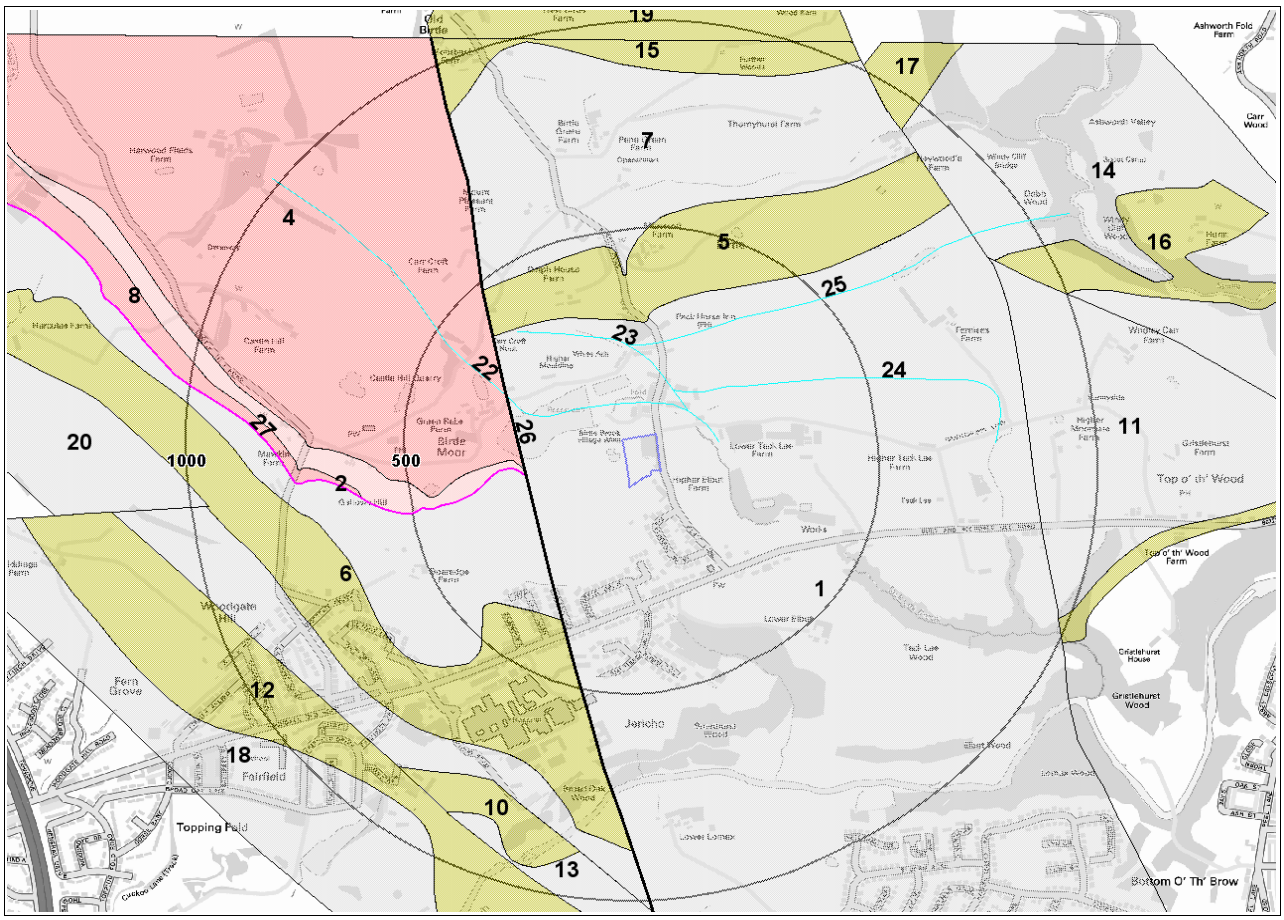
2.2.4 Landslip Permeability

Are there any records relating to permeability of landslips within the study site boundary? No

Database searched and no data found.

2.3 Bedrock and linear features map (1:50,000 scale)

NW N NE



W E

SW S SE

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Site Outline

500
1000
Search Buffers (m)

2.3 Bedrock, Solid Geology & linear features

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 085

2.3.1 Bedrock/Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary:

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
2	225.0	W	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
3	231.0	W	ROSSE-MDSI	ROSSENDALE FORMATION - MUDSTONE AND SILTSTONE	NAMURIAN
4	232.0	W	RR-SDST	ROUGH ROCK - SANDSTONE	NAMURIAN
5	273.0	N	MLRS-SDST	MILNROW SANDSTONE - SANDSTONE	WESTPHALIAN
6	357.0	SW	WH-SDST	WOODHEAD HILL ROCK - SANDSTONE	WESTPHALIAN
7	391.0	N	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

2.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site boundary? Yes

Distance	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Fracture	High	Low

2.3.3 Linear features

Are there any records of linear features within 500m of the study site boundary? Yes

ID	Distance	Direction	Category Description	Feature Description
22	76.0	N	LANDFORM	Glacial meltwater channel centre line, undifferentiated
23	92.0	NE	LANDFORM	Glacial meltwater channel centre line (tail)
24	115.0	N	LANDFORM	Glacial meltwater channel centre line (head)
25	218.0	N	LANDFORM	Glacial meltwater channel centre line (head)
26	225.0	W	FAULT	Fault, inferred

ID	Distance	Direction	Category Description	Feature Description
27	231.0	W	FOSSIL_HORIZON	Marine band

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nation wide coverage.

3 Radon Data

3.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

3.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

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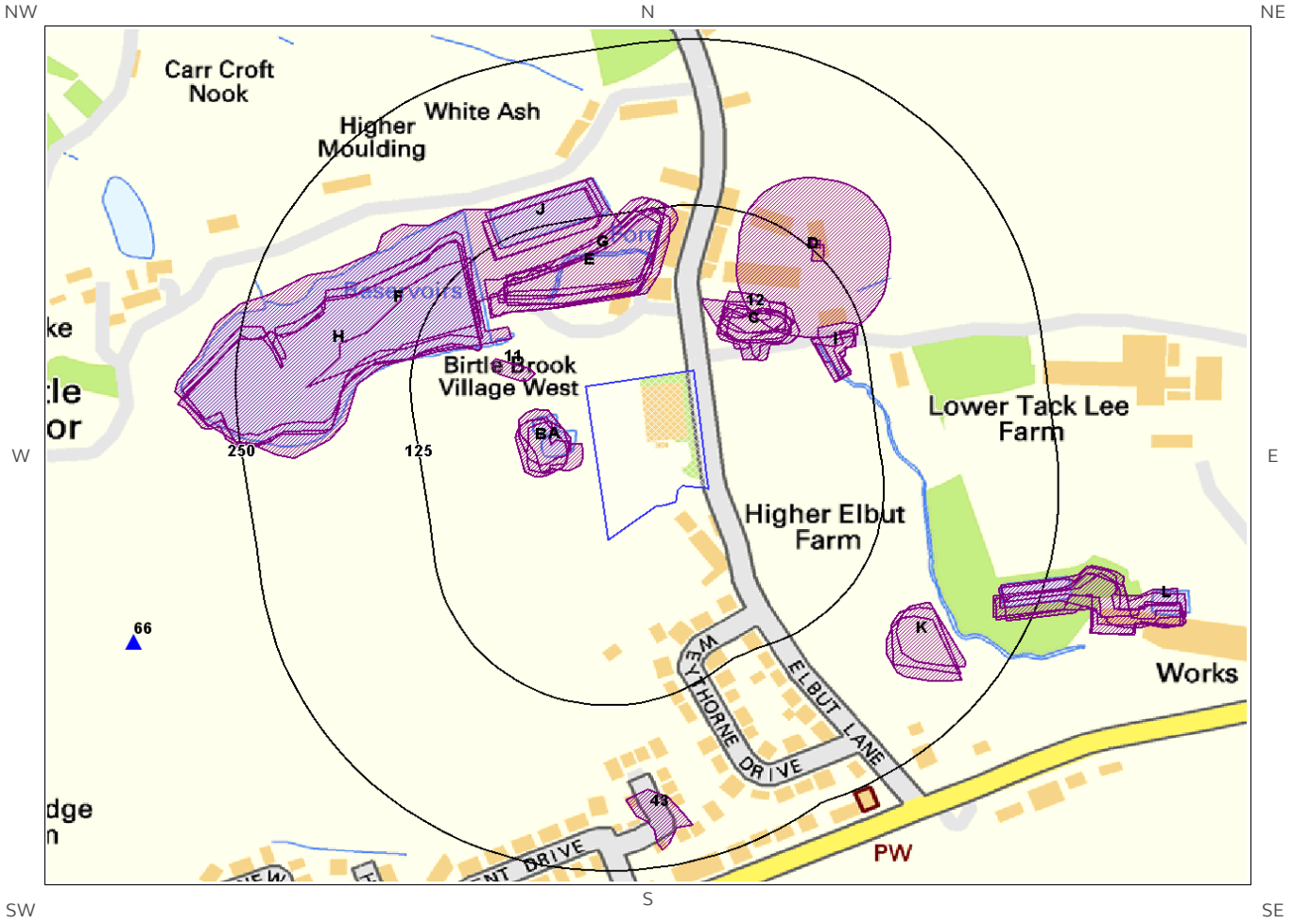
4 Ground Workings map



Ground Workings Legend

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Site Outline

125
250
Search Buffers (m)

Historic Surface Ground Workings

Historic Underground Workings

Current Ground Workings

4 Ground Workings

4.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on Groundsure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Use	Date
1A	9.0	W	383476 412208	Ponds	1891
2A	16.0	W	383468 412215	Ponds	1956
3A	18.0	W	383468 412209	Ponds	1938
4B	20.0	W	383465 412207	Ponds	1928
5B	20.0	W	383465 412207	Ponds	1908
6C	31.0	NE	383617 412291	Reservoir	1908
7C	34.0	NE	383618 412302	Reservoirs	1928
8C	34.0	NE	383611 412301	Pond	1851
9C	34.0	NE	383619 412298	Reservoirs	1938
10C	36.0	NE	383624 412293	Reservoirs	1891
11	37.0	W	383446 412266	Unspecified Ground Workings	1983
12	41.0	NE	383620 412309	Reservoirs	1956
13C	45.0	NE	383606 412305	Pond	1967
14C	45.0	NE	383606 412305	Pond	1983
15D	61.0	NE	383660 412351	Reservoir	1928
16D	61.0	NE	383660 412351	Reservoir	1908
17E	62.0	N	383491 412345	Reservoir	1891
18E	63.0	N	383490 412347	Reservoir	1908
19E	64.0	N	383496 412351	Reservoir	1938
20F	64.0	NW	383377 412305	Ponds	1967
21F	64.0	NW	383377 412305	Ponds	1983

ID	Distance (m)	Direction	NGR	Use	Date
22E	64.0	N	383490 412347	Reservoir	1928
23G	70.0	N	383498 412357	Pond	1851
24G	70.0	N	383497 412358	Reservoir	1956
25H	80.0	W	383316 412287	Reservoir	1938
26H	81.0	W	383314 412285	Reservoir	1928
27H	81.0	W	383314 412285	Reservoir	1908
28H	82.0	NW	383316 412293	Reservoir	1956
29I	88.0	E	383674 412276	Filter Beds	1938
30F	89.0	NW	383360 412302	Reservoir	1891
31I	90.0	E	383675 412277	Filter Beds	1928
32I	93.0	E	383672 412281	Filter Beds	1956
33J	111.0	N	383465 412376	Reservoir	1908
34J	111.0	N	383465 412376	Reservoir	1928
35J	111.0	N	383466 412376	Reservoir	1938
36J	118.0	N	383468 412383	Reservoir	1956
37D	118.0	NE	383663 412354	Reservoir	1956
38D	126.0	NE	383662 412361	Reservoir	1938
39K	165.0	SE	383740 412062	Unspecified Pit	1956
40K	167.0	SE	383739 412056	Unspecified Pit	1928
41K	168.0	SE	383744 412066	Unspecified Pit	1967
42K	168.0	SE	383744 412066	Unspecified Pit	1983
43	191.0	S	383550 411926	Pond	1983
44L	219.0	E	383815 412090	Reservoirs	1908
45L	219.0	E	383815 412090	Reservoirs	1928
46L	221.0	E	383844 412096	Ponds	1956
47L	221.0	E	383857 412089	Reservoirs	1938
48L	221.0	E	383857 412099	Ponds	1983
49L	221.0	E	383857 412099	Ponds	1967
50L	227.0	E	383861 412092	Reservoirs	1891

4.2 Historical Underground Working Features derived from Historical Mapping

This data is derived from the Groundsure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary? Yes

The following Historical Underground Working Features are provided by Groundsure:

ID	Distance (m)	Direction	NGR	Use	Date
Not shown	537.0	N	383485 412799	Old Coal Shaft	1908
Not shown	537.0	N	383485 412799	Unspecified Old Shaft	1928
Not shown	538.0	N	383487 412800	Unspecified Old Shaft	1938
Not shown	545.0	N	383487 412807	Unspecified Old Shaft	1949
Not shown	549.0	N	383492 412814	Unspecified Disused Shaft	1983
Not shown	549.0	N	383492 412814	Unspecified Disused Shaft	1967
Not shown	642.0	NE	384062 412689	Unspecified Old Shaft	1928
Not shown	646.0	NE	384063 412693	Unspecified Old Shaft	1949
Not shown	650.0	NE	384072 412687	Unspecified Shaft	1891
Not shown	655.0	NE	384071 412699	Unspecified Disused Shaft	1983
Not shown	655.0	NE	384071 412699	Unspecified Disused Shaft	1967
Not shown	720.0	N	383449 412979	Unspecified Old Shaft	1908
Not shown	776.0	NE	384221 412701	Ventilating Shaft	1908
Not shown	780.0	NE	384225 412700	Unspecified Shaft	1891

4.3 Current Ground Workings

This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

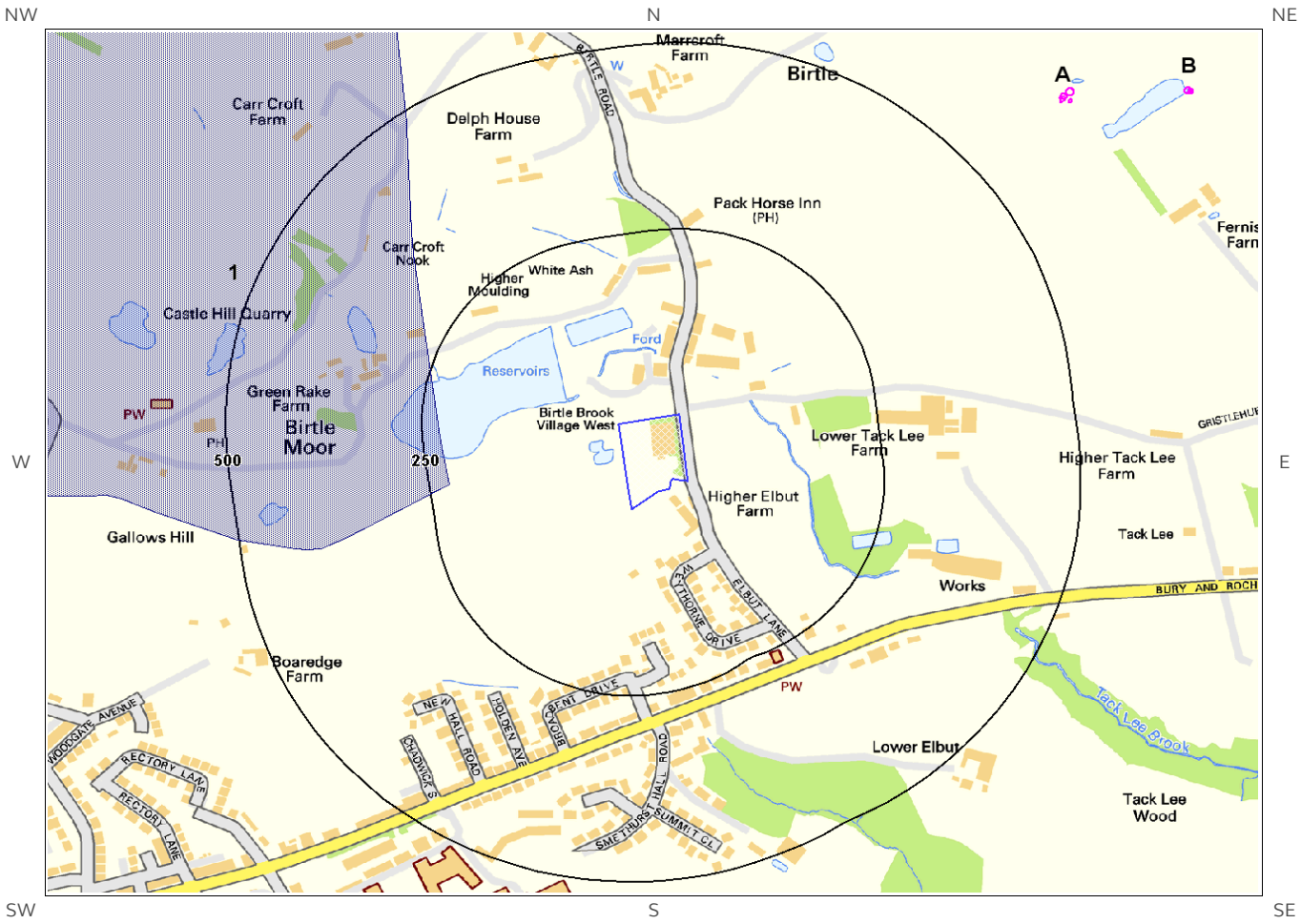
The following Current Ground Workings information is provided by British Geological Survey:

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	290.0	N	383560 412555	Sandstone	Carr	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
66	348.0	W	383174 412060	Clay & Shale	Boaredge Pottery	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	476.0	W	383040 412385	Sandstone	Castle Hill	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	481.0	W	383025 412160	Sandstone	Gallow's Hill Quarries	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	508.0	W	382990 412230	Sandstone	Malkin	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	511.0	SW	383130 411800	Clay & Shale	Smethurst Hall Brickworks	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	530.0	S	383658 411628	Sandstone	Smethurst Wood	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	536.0	W	382968 412164	Sandstone	Gallows HIll	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	552.0	N	383494 412812	Coal, Deep	Openshaws Pit	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	579.0	W	382920 412300	Sandstone	Church	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	633.0	W	382879 412392	Sandstone	Castle Hill	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	641.0	NW	382929 412550	Sandstone	Castle Hill	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	642.0	W	382862 412345	Sandstone	Church	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	668.0	W	382830 412285	Silica Sand	Church Quarry	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	668.0	W	382830 412285	Sand & Gravel	Church Quarry	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	668.0	W	382830 412285	Sandstone	Church Quarry	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	668.0	W	382830 412285	Sand	Church Quarry	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	671.0	NE	384084 412702	Coal, Deep	Birtle Coal Pit	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	721.0	S	383343 411437	Sandstone	Broad Oak Wood	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	727.0	N	383457 412983	Coal, Deep	Pen Green Colliery	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	751.0	NE	383909 412938	Coal, Deep	Thorny Hurst Coal Pits	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	781.0	W	382770 411900	Sandstone	Woodgate Hill	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	790.0	NE	384225 412713	Coal, Deep	Birtle Coal Pit	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	802.0	W	382728 411976	Sandstone	Rough Stones	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	805.0	W	382715 412035	Sandstone	Rough Stones	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	834.0	W	382678 412091	Sandstone	Rough Stones	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	870.0	W	382639 412107	Sandstone	Rough Stones	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	895.0	N	383861 413113	Coal, Deep	Old Birtle Colliery	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	944.0	W	382554 412208	Sandstone	Woodgate Hill	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	947.0	N	383899 413155	Coal, Deep	Old Birtle Colliery	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	957.0	NE	384145 413033	Coal, Deep	Thorny Hurst Coal Pits	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	959.0	S	383150 411250	Sandstone	Broad Oak	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	965.0	NE	384050 413105	Sandstone	Thorny Hurst	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

5 Mining, Extraction & Natural Cavities map



Mining, Extraction and Natural Cavities Legend

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Site Outline

Search Buffers (m) — 250 — 500

Historical Mining

Non-Coal Mining Cavities

Natural Cavities (point data)

Natural Cavities (polygon data)

Non-Coal Mining

- Highly likely
- Likely
- Unlikely
- Highly unlikely
- Rare

5 Mining, Extraction & Natural Cavities

5.1 Historical Mining

This dataset is derived from Groundsure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary? Yes

The following Historical Mining information is provided by Groundsure:

ID	Distance (m)	Direction	NGR	Details	Date
Not shown	537.0	N	383485 412799	Old Coal Shaft	1908
Not shown	537.0	N	383485 412799	Unspecified Old Shaft	1928
Not shown	538.0	N	383487 412800	Unspecified Old Shaft	1938
Not shown	545.0	N	383487 412807	Unspecified Old Shaft	1949
Not shown	549.0	N	383492 412814	Unspecified Disused Shaft	1983
Not shown	549.0	N	383492 412814	Unspecified Disused Shaft	1967
8A	642.0	NE	384062 412689	Unspecified Old Shaft	1928
9A	646.0	NE	384063 412693	Unspecified Old Shaft	1949
10A	650.0	NE	384072 412687	Unspecified Shaft	1891
11A	655.0	NE	384071 412699	Unspecified Disused Shaft	1983
12A	655.0	NE	384071 412699	Unspecified Disused Shaft	1967
Not shown	720.0	N	383449 412979	Unspecified Old Shaft	1908
14B	776.0	NE	384221 412701	Ventilating Shaft	1908
15B	780.0	NE	384225 412700	Unspecified Shaft	1891

5.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary? Yes

The following Coal Mining information provided by the Coal Authority is not represented on Mapping:

Distance (m)	Direction	Details
0.0	On Site	The study site is located within the specified search distance of an identified mining area. Further details concerning this can be obtained from the Coal Authority Helpline on 0845 762 6848.

5.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary? No

The following information provided by JPB is not represented on mapping: Database searched and no data found.

5.4 Non-Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary? Yes

The following non-coal mining information is provided by the BGS:

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
1	225.0	W	Not available	Vein Mineral	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered

5.5 Non-Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled “Review of mining instability in Great Britain, 1990” PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.6 Natural Cavities

This dataset provides information based on the Peter Brett Associates natural cavities database. The dataset is made up of points and polygons. Where polygons are used these represent an area in which it is expected the cavities could be found. It does not indicate that cavities are present everywhere within the polygon, and caution should be used in the interpretation of this data.

Are there any Natural Cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.7 Brine Extraction

This data provides information from the Cheshire Brine Subsidence Compensation Board.

Are there any Brine Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.9 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level..

Are there any Tin Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.10 Clay Mining

This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

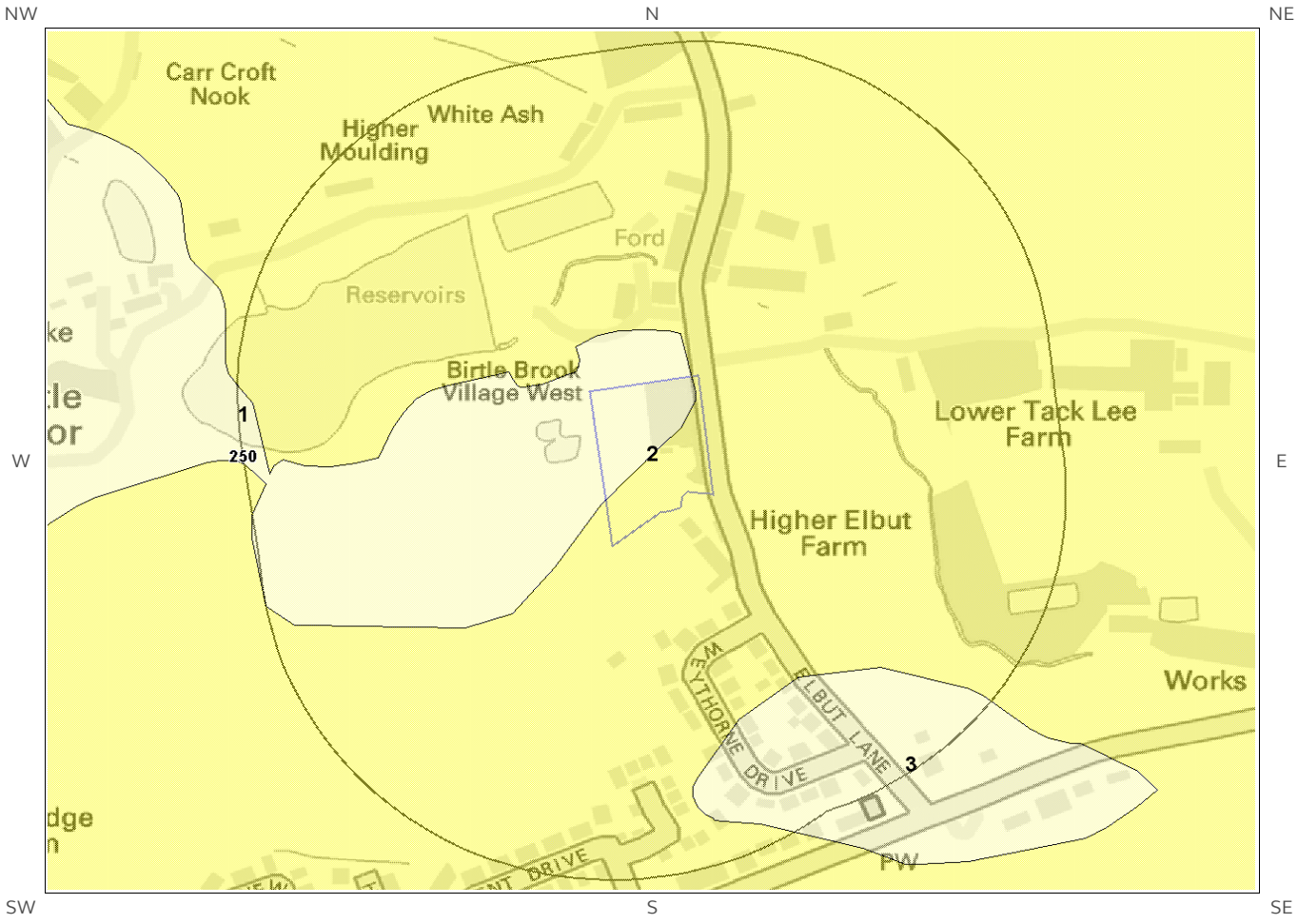
Are there any Clay Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

---

6 Natural Ground Subsidence

6.1 Shrink-Swell Clay map



Shrink Swell Clay Legend

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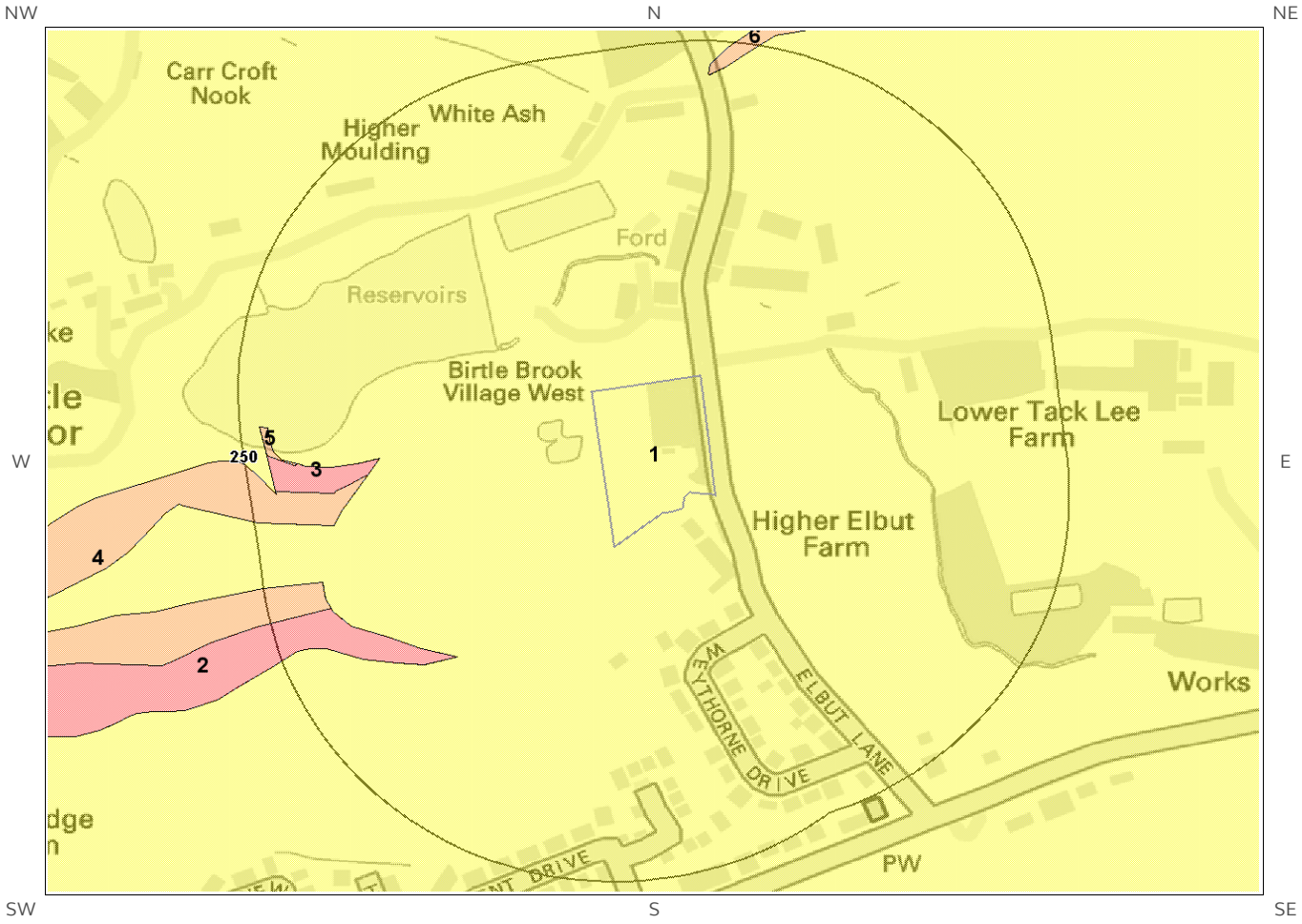
6.2 Landslides map



Landslides Legend

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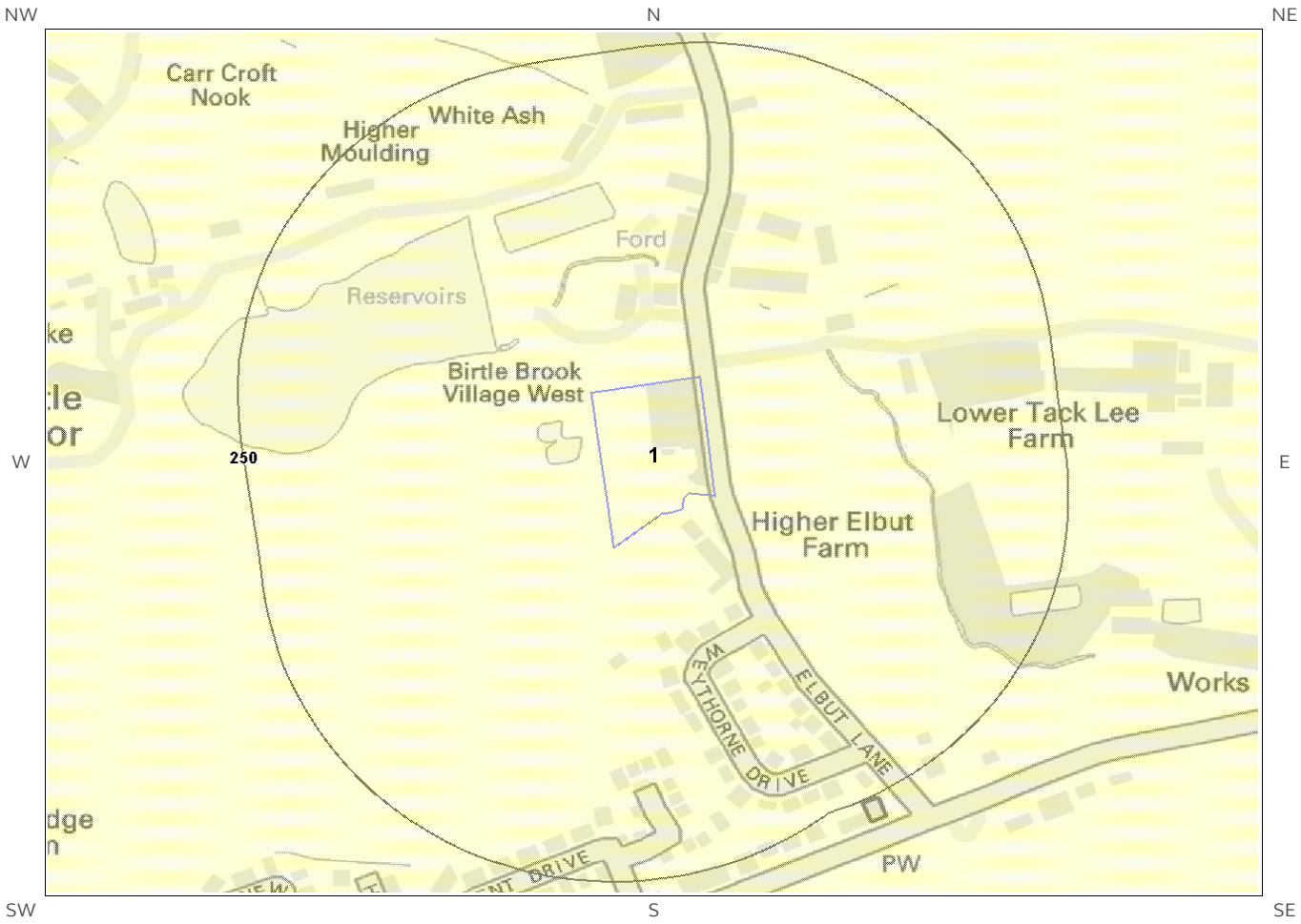
6.3 Ground Dissolution of Soluble Rocks map



Ground Dissolution Soluble Rocks Legend

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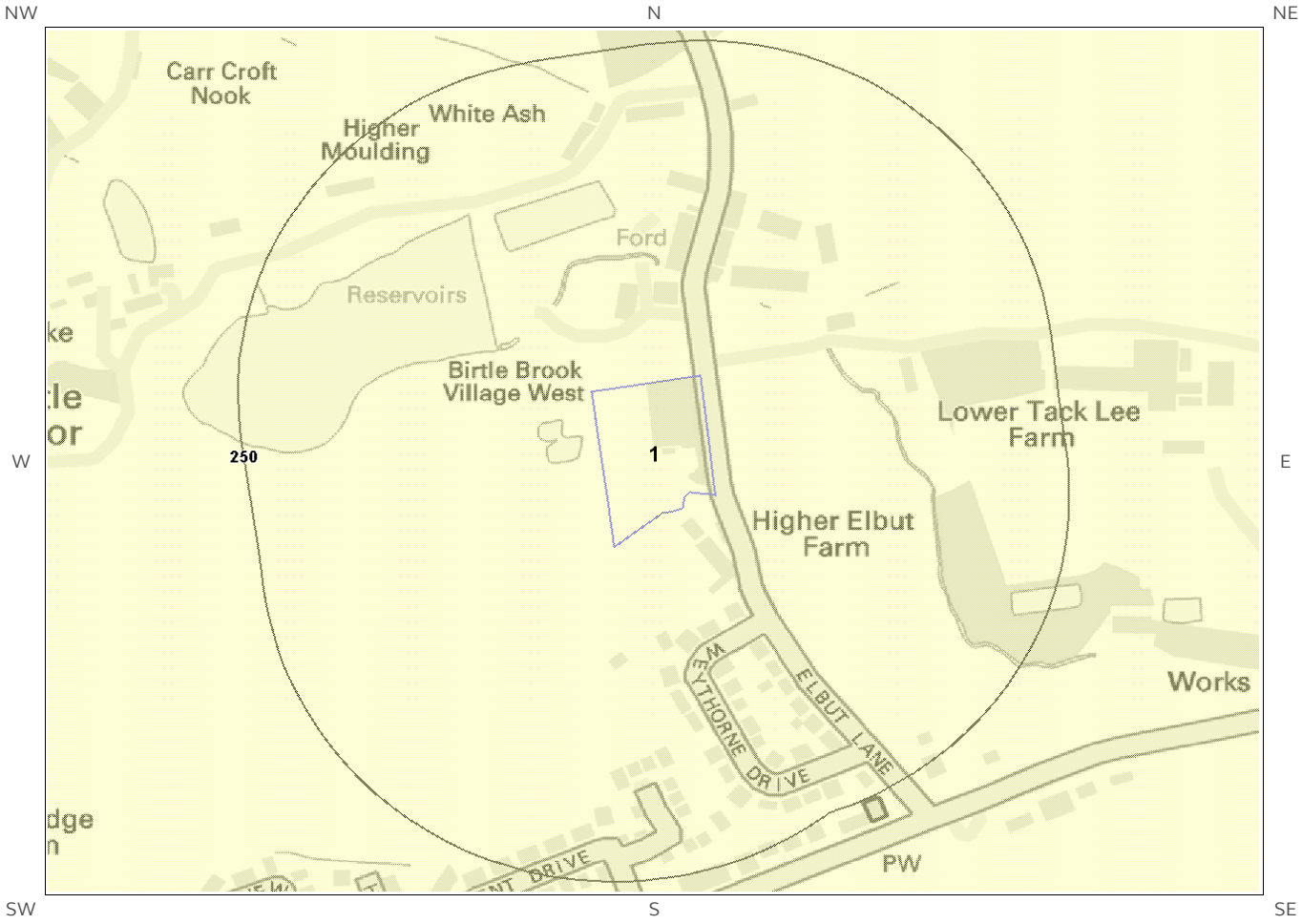
6.4 Compressible Deposits map



Compressible Deposits Legend

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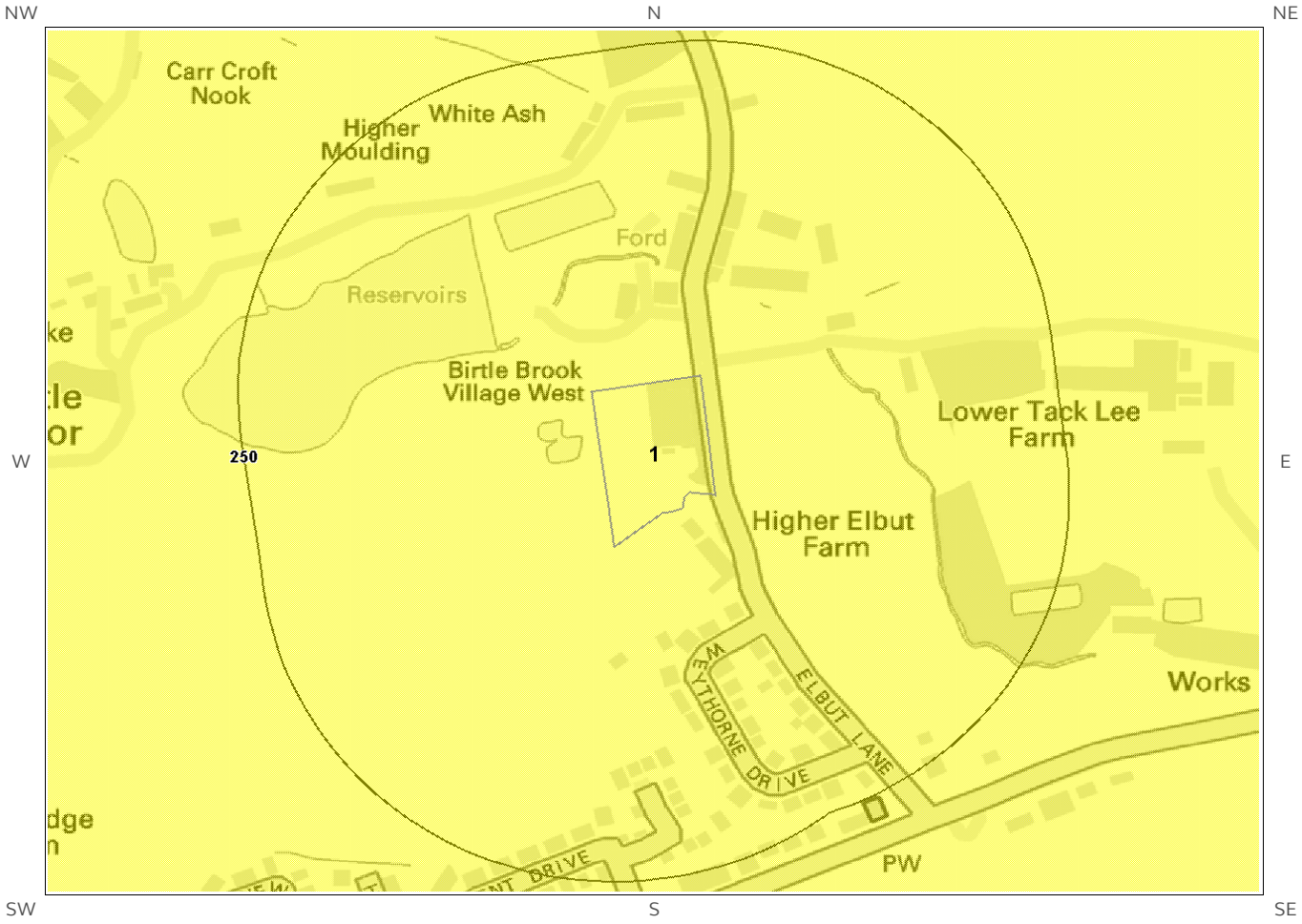
6.5 Collapsible Deposits map



Collapsible Deposits Legend

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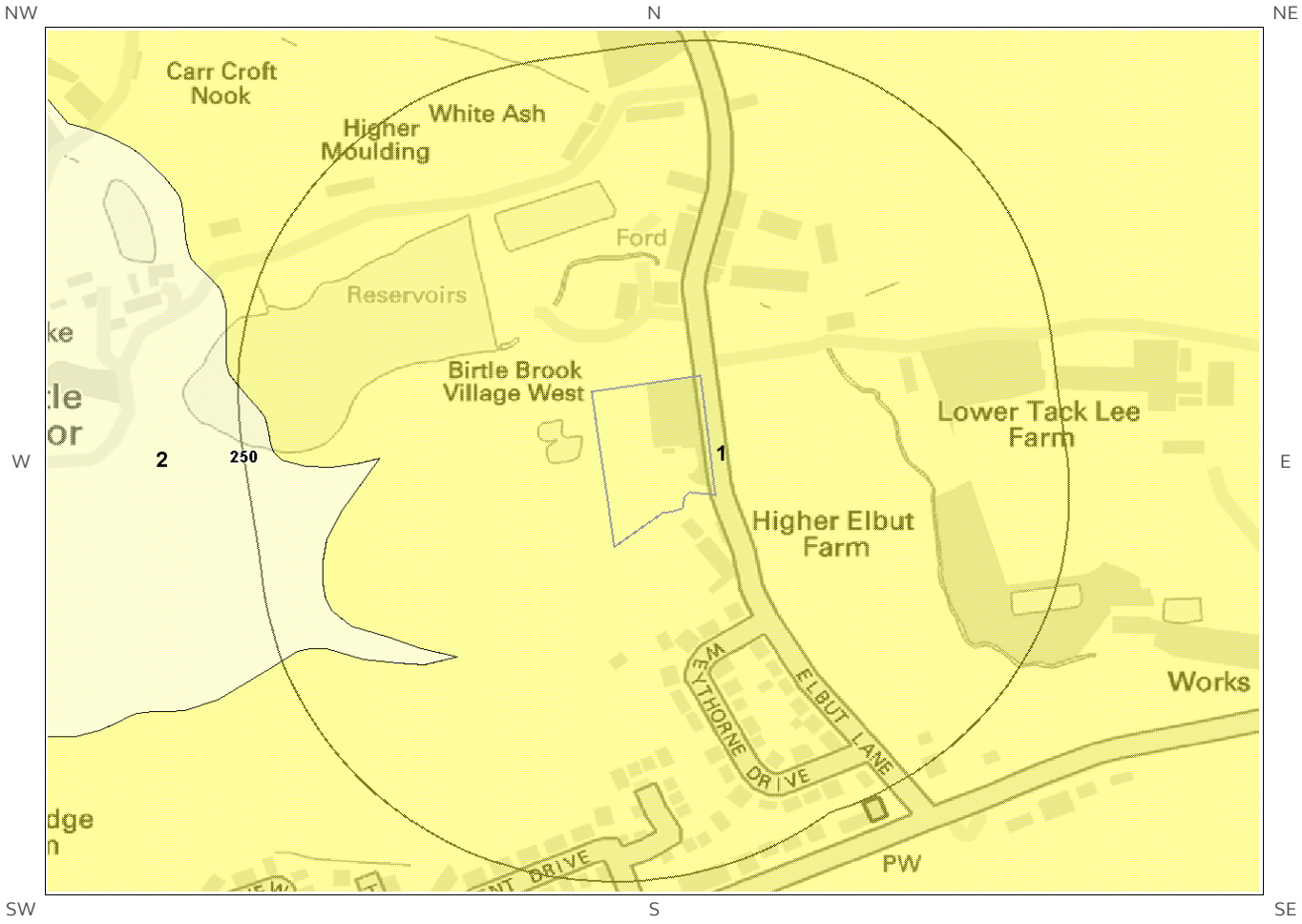
6.6 Running Sand map



Running Sand Legend

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6 Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

What is the maximum hazard rating of natural subsidence within the study site*[*] boundary? Very Low

6.1 Shrink-Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
2	0.0	On Site	Very Low	Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

* This includes an automatically generated 50m buffer zone around the site

6.3 Ground Dissolution of Soluble Rocks

The following Ground Dissolution information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

6.4 Compressible Deposits

The following Compressible Deposits information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

6.5 Collapsible Deposits

The following Collapsible Rocks information provided by the British Geological Survey:

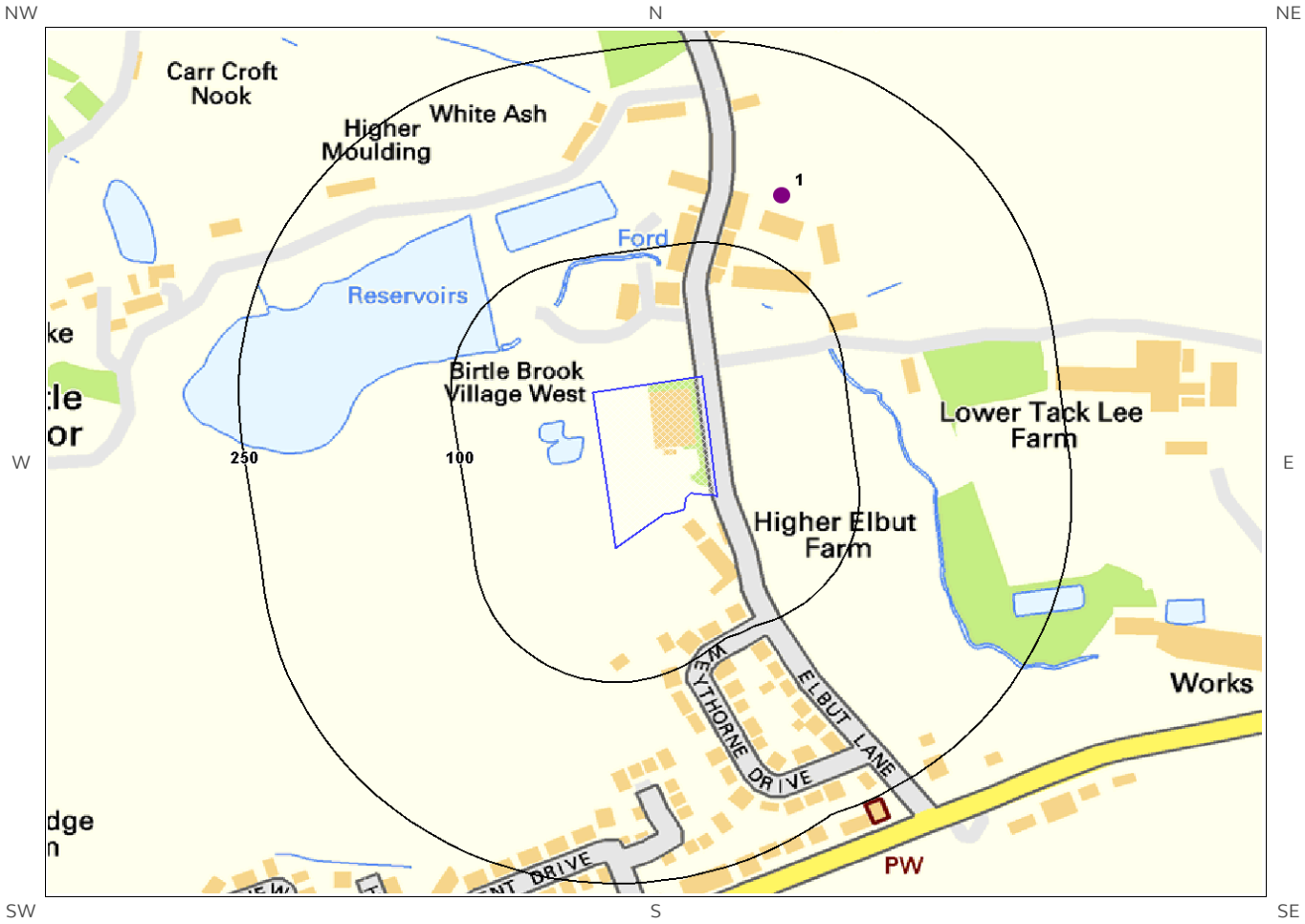
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

6.6 Running Sands

The following Running Sands information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

7 Borehole Records map



Borehole Records Legend

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Site Outline

Borehole Locations

125
250
Search Buffers (m)

7 Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary: 1

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	146.0	NE	383630 412400	SD81SW2	59.13	BIRTLE MILLS

The borehole records are available using the hyperlinks below: Please note that if the donor of the borehole record has requested the information be held as commercial-in-confidence, the additional data will be held separately by the BGS and a formal request must be made for its release.

#1: scans.bgs.ac.uk/sobi_scans/boreholes/30320

8 Estimated Background Soil Chemistry

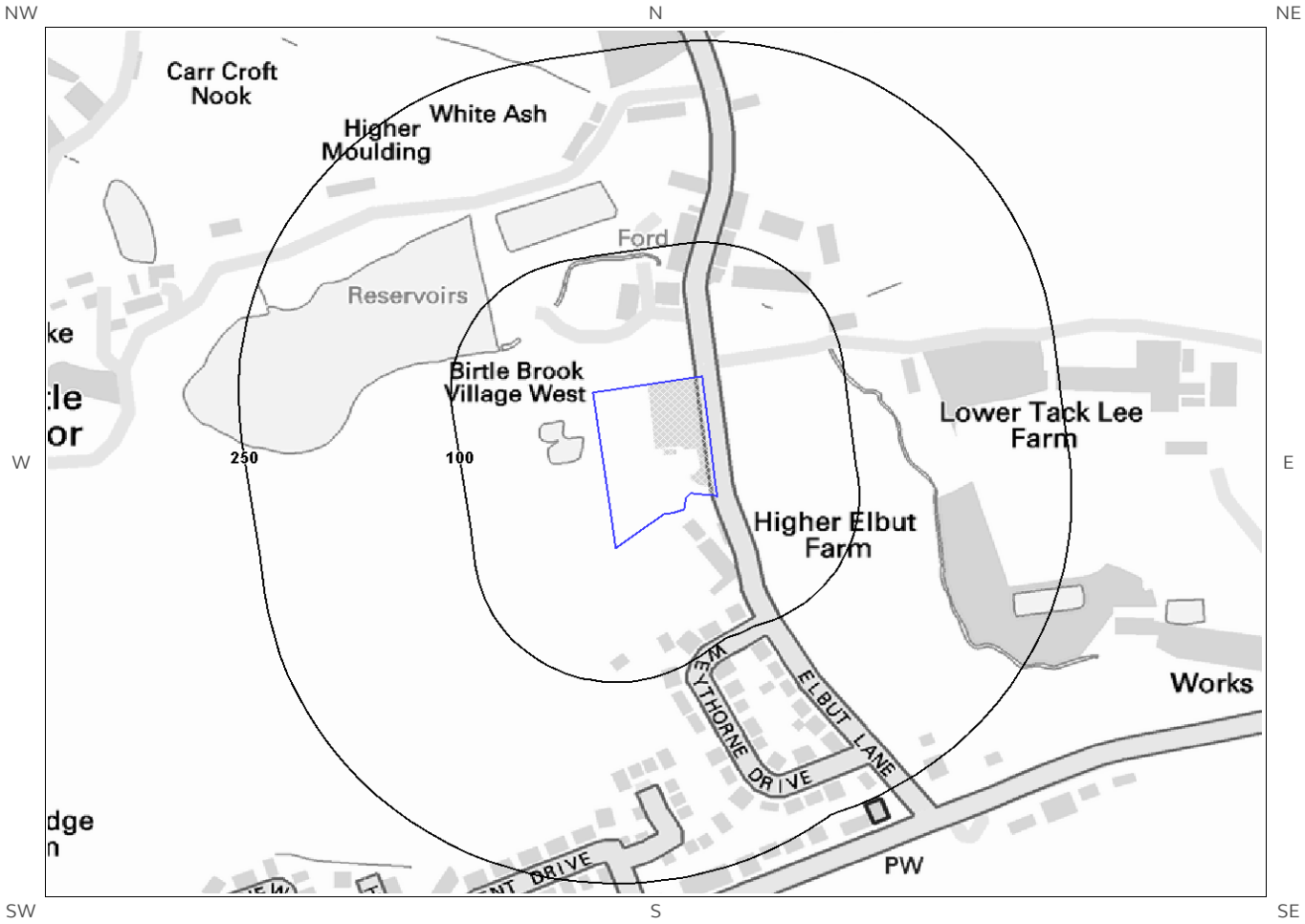
Records of background estimated soil chemistry within 250m of the study site boundary: 2

For further information on how this data is calculated and limitations upon its use, please see the Groundsure Geo Insight User Guide, available on request.

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg

*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

9 Railways and Tunnels map



Railways and Tunnels Legend

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- Site Outline
- 250 / 500 Search Buffers (m)
- Underground or Partially Underground Railway / Subway System
- Railway Tunnel (OS Mapping)
- Abandoned or Dismantled Railway (OpenStreetMap)
- Railway Track (OS Mapping)
- Railway Track (OpenStreetMap)
- High Speed 2
- High Speed 2 Revised Proposed Route
- Crossrail 1
- Railway and/or Tunnel Feature from Historical Mapping

9 Railways and Tunnels

9.1 Tunnels

This data is derived from OpenStreetMap and provides information on the possible locations of underground railway systems in the UK - the London Underground, the Tyne & Wear Metro and the Glasgow Subway.

Have any underground railway lines been identified within the study site boundary?	No
Have any underground railway lines been identified within 250m of the study site boundary?	No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

This data is derived from Ordnance Survey mapping and provides information on the possible locations of railway tunnels forming part of the UK overground railway network.

Have any other railway tunnels been identified within the site boundary?	No
Have any other railway tunnels been identified within 250m of the site boundary?	No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

9.2 Historical Railway and Tunnel Features

This data is derived from Groundsure's unique Historical Land-use Database and contains features relating to tunnels, railway tracks or associated works that have been identified from historical Ordnance Survey mapping.

Have any historical railway or tunnel features been identified within the study site boundary?	No
Have any historical railway or tunnel features been identified within 250m of the study site boundary?	No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

9.3 Historical Railways

This data is derived from OpenStreetMap and provides information on the possible alignments of abandoned or dismantled railway lines in proximity to the study site.

Have any historical railway lines been identified within the study site boundary?	No
Have any historical railway lines been identified within 250m of the study site boundary?	No

Database searched and no data found.

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.4 Active Railways

These datasets are derived from Ordnance Survey mapping and OpenStreetMap and provide information on the possible locations of active railway lines in proximity to the study site.

Have any active railway lines been identified within the study site boundary?	No
Have any active railway lines been identified within 250m of the study site boundary?	No

Database searched and no data found.

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.5 Railway Projects

These datasets provide information on the location of large scale railway projects High Speed 2 and Crossrail 1 .

Is the study site within 5km of the route of the High Speed 2 rail project?	No
Is the study site within 500m of the route of the Crossrail 1 rail project?	No

Further information on proximity to these routes, the project construction status and associated works can be obtained through the purchase of a Groundsure HS2 and Crossrail 1 Report.

The route data has been digitised from publicly available maps by Groundsure. The route as provided relates to the Crossrail 1 project only, and does not include any details of the Crossrail 2 project, as final details of the route for Crossrail 2 are still under consultation.

Please note that this assessment takes account of both the original Phase 2b proposed route and the amended route proposed in 2016. As the Phase 2b route is still under consultation, Groundsure are providing information on both options until the final route is formally confirmed. Practitioners should take account of this uncertainty when advising clients.

Contact Details

CENTREMAPS

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Open Space, Upper Interfields, Malvern, Worcester, WR14 1UT

British Geological Survey Enquiries

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Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:**enquiries@bgs.ac.uk**
Web:**www.bgs.ac.uk**
BGS Geological Hazards Reports and general geological enquiries

British Gypsum

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The Coal Authority

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Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Public Health England

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133-155 Waterloo Road, London, SE1 8UG
https://www.gov.uk/government/organisations/public-health-england
Email: **enquiries@phe.gov.uk**
Main switchboard: 020 7654 8000

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Standard Terms and Conditions

Groundsure's Terms and Conditions can be viewed online at this link:
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Appendix C – Coal Report

David Bellis Consulting Surveyors Ltd
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searchcode

COAL SEARCH PLUS +
Protecting your investment
By
David Bellis
CONSULTING SURVEYORS

Regulated Coal Mining Search Report

Incorporating Cheshire Brine Screening

The Property Ombudsman
Consumer Redress

COPSO
ASSOCIATE MEMBER

Coal Mining Search Report

Incorporating Cheshire Brine Screening

Serial Number 403255

Client detail :

Centremaps
Open Space
Upper Interfields
Leigh Sinton Road
Malvern
Worcestershire WR14 1UT

CoalSearchPlus+ by David Bellis Consulting Surveyors Ltd
8 Mornington Terrace
Harrogate
North Yorkshire
HG1 5DH
(DX 720352 Harrogate)

Tel 01423 529911
Fax 01423 529922

Search produced by M J Peace

Property details:

Birtle RC
Elbut Lane
Heywood
Bury
BL9 7TU

Your ref : 00768007
Purchaser :
Vendor :

In accordance with your instructions received 07 Jan 2019 we have inspected plans and records of coal mine workings and have made enquiries with respect to Cheshire brine extraction in relation to the above property and can report as follows :

1. **SEAM DETAILS FOR PAST UNDERGROUND COAL MINING :** In relation to the property the undermentioned seam(s) have been worked within the likely zone of physical influence on the surface.

Seam	Depth (m)	Sect (cm)	Date	Remarks
See Remarks				No previous recorded coal workings.

2. **SEAM DETAILS FOR CURRENT AND FUTURE UNDERGROUND COAL MINING :** The undermentioned seam(s) are currently being worked, or licenses to work are being determined, or have been granted to work, within the likely zone of physical influence on the surface in relation to the property.

Seam	Depth (m)	Sect (cm)	Date	Remarks
				Coal in reserve - no workings currently planned.

3. **UNDERLYING GEOLOGY :**

The property is situated in an area of Lower Coal Measures, shales and mudstones.

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4. OPENCAST COAL MINING :

Past Opencast Workings : The property is not situated within the boundary of a former opencast coal mining site.

Present Opencast Workings : The property is not situated within 200m of the boundary of a currently operating opencast coal mining site.

Future Opencast Workings : The property is not situated within 800m of the boundary of an opencast site for which a license to extract coal by opencast methods has been granted or a license to do so is currently being determined.

5. MINE ENTRIES, MINE GAS, SURFACE HAZARDS AND ADDITIONAL INFORMATION :

The Coal Authority licensed Mine Entry dataset shows no evidence of any shafts or adits within 20 metres of the property or the boundary of the property.

There are no tips or lagoons in the vicinity of the Property.

The Coal Authority licensed Mine Gas dataset shows no record of mine gas emissions within the property or the property boundary requiring action.

The Coal Authority licensed Coal Mining Related Hazards dataset shows that the property has not been subject to remedial works by the Coal Authority, or its representatives, under the Coal Authority Emergency Surface Hazard Call Out Procedures.

6. NOTICES IN RELATION TO FUTURE COAL MINING ACTIVITY :

We have no knowledge of any intention to work coal by underground methods within influencing distance on the surface in the vicinity of the property for which section 46 notices have been issued under the Coal Mining Subsidence Act 1991.

7. PAST COAL MINING RELATED SUBSIDENCE :

A review of the records held by the Coal Authority has shown no evidence of coal mining related subsidence claims in relation to the subject property since 31st October 1994. This is the period for which records are held by the Coal Authority.

8. CONCLUSION (COAL MINING) : In the light of the above facts we conclude that in relation to coal mining :

In our opinion it is unlikely that coal will be worked in the forseeable future.

COAL MINING RISK LEVEL : We recommend that the transaction is treated as :

Normal coal mining risk however where this report is to be used for development purposes particular attention is drawn to the paragraphs below concerning the ownership of in situ coal, coal workings and the risks from mine gases.

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Please note that the overall coal mining risk level above is based upon an assessment of the detailed information contained in the body of the report. The risk assessment must be used in conjunction with the detailed report.

If development of the property is being considered then all necessary enquiries and investigations should be completed prior to the commencement of works to ensure that proposals follow good engineering practice for development in mining areas. The Coal Authority has ownership of in situ coal, coal mines (both current and disused) and coal mine shafts and adits. Activities that intersect, enter or disturb any of the Coal Authority's interests require the written permission of the Authority.

Any development proposals should consider risks to the development, or adjacent property, of generating or displacing underground gases where coal seams or former mining works are disturbed. The need for effective measures to prevent gasses entering public properties should be assessed and properly addressed. These actions are necessary due to the public safety implications of development in these circumstances.

CHESHIRE BRINE EXTRACTION INFORMATION :

The property lies outside the Cheshire Brine Compensation District as prescribed by the Cheshire Brine Pumping (Compensation for Subsidence) Act 1952.

With respect to coal mining there is nothing to prevent a claim being made under the provisions of the Coal Mining Subsidence Act 1991 and subsequent legislation, but it must not be inferred that the Coal Authority or their licensees will necessarily accept that any damage has been caused as a result of mining subsidence.

If you require any further information please contact CoalSearchPlus+ on 01423 529911 or via our website www.coalsearch.plus.com.

This report is prepared in accordance with the CoalSearchPlus+ terms and conditions as published on the CoalSearchPlus+ website (www.coalsearch.plus.com) on the date of issue of this report.

This is a Coal Mining Search Report and is not to be interpreted as being part of an Environmental Assessment of the property.

We cannot be held responsible for the accuracy of the information provided to us by third party organisations.

The information and/or material supplied is composed from data based in many cases on measurements and records of various standards of reliability and age. We cannot be held responsible for the accuracy of such information.

This search report is based upon the privately owned CoalSearchPlus+ mining record database, data supplied to CoalSearchPlus+ under license from the Coal Authority, and plans and records held by the Coal Authority and made publicly available at the time of inspection which may include British Geological Survey and Ordnance Survey data. Organisations reserve the right to vary their proposals and intentions as to their future mining operations without prior notice save as provided in the Coal Mining (Subsidence) Act 1991 and the Coal Industry Act 1994.

This report contains Data provided by the Coal Authority. Any and all analysis and interpretation of the Coal Authority Data in this report is made by David Bellis Consulting Surveyors Ltd trading as CoalSearchPlus+, and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be copyright of the Coal Authority and permission should be sought from David Bellis Consulting Surveyors Ltd prior to any re-use.

Coal Authority Address : The Coal Authority, 200 Lichfield Lane, Berry Hill, Mansfield, Nottinghamshire, HG18 4RG
British Geological Survey Address : British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham NG12 5GG

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The information contained in this report relates to the property address given by the individual or organisation ordering the report. Where a plan indicating the property location and boundary is supplied with the instruction the report is based on that information. Where no plan is supplied the report is based on the property location as defined in publicly available mapping data. At all times it remains the responsibility of the instructing organisation or individual to define the boundary of the property.

Additional notes applicable to Residential Coal Mining Reports only:

David Bellis Consulting Surveyors Ltd is not aware of any personal or business relationship between the person conducting or preparing the search and any person involved in the sale of the property.

This report is a desk study of existing published geological and coal mining records, the CoalSearchPlus+ coal mining data base and data supplied under license by the Coal Authority. In order to compile this report enquiries have been made in relation to the following:

Past Coal Mining – the existence of any previously worked seams of coal within influencing distance on the surface in relation to the property including an indication of the depth and age of the workings,
A statement of shallow depth generally indicates records show that coal has been mined within 30m of the surface. In some circumstances coal classified as shallow may extend up to a depth of 50m.
A statement of moderate depth indicates records show that coal has been mined at between 30m and 500m depth.
A statement of 'at depth' indicates records show that coal has been mined at depths of over 500m.

Present Coal Mining - the existence of any currently worked seams of coal within influencing distance on the surface in relation to the property including an indication of the depth and age of the workings. The existence of coal that could be worked at some time in the future will be enquired into and detail of any relevant licenses disclosed where available.

Underlying Geology - the underlying geology of the property will be reviewed and briefly described in relation to coal mining.

Opencast Coal Mining - the existence of past present and future opencast coal mining, specifically :

- if the property is situated within the boundary of a former opencast site. In the case of old opencast workings it must be understood that the records are often unclear regarding the site boundary and or worked areas. Published records and data supplied under license by the Coal Authority will be reviewed to give our opinion of the existence of relevant former opencast coal workings.
- if the property is situated within 200m of the boundary of a currently operating opencast site.
- if the property is situated within 800m of the boundary of an opencast for which either a license to extract coal by opencast methods has been granted or a license to do so is currently being determined.

Mine Entries, Mine Gas, Surface Hazards and Additional Information – the existence of any mine entries within 20m of the property or the boundary of the property and its associated land and buildings (the definition of the boundary of the property is the responsibility of the individual or organisation ordering this report). Where a mine entry is found to exist the approximate location of the mine entry will be indicated on a plan. The existence of unworked coal will be enquired into and our opinion regarding the likelihood of it being worked at some time in the past will be given where relevant.
It will be reported if mine gas emissions relating to the property are recorded by The Coal Authority.
It will be reported if The Coal Authority has carried out work in relation to the property after a report of an alleged coal mining related hazard under the Coal Authority's Emergency Hazard Call Out procedures.
Any other relevant coal mining related features discovered will be noted.

Notices in relation to future coal mining activity – the existence of notices indicating an intention to work coal by underground methods in the future.

Past coal mining related subsidence – report if The Coal Authority licensed Claim Dataset shows record of a coal mining subsidence claim having been reported on the subject property or any other property within 50m of the boundary of the subject property since 31st October 1994. Where available claim detail information will be given for claims on the subject property only.

Coal Mining Risk Level – the opinion of David Bellis Consulting Surveyors Ltd of the risk posed to the property from coal mining given all the information contained in the report. The risk to the property is given in relation to the majority of the housing stock in the immediate area.

Cheshire Brine – the location of the property in relation to the Cheshire Brine Compensation District.

Additional information, including answers to many frequently asked questions, can be found on the CoalSearchPlus+ website, www.coalsearch.plus.com

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If you want to make a complaint, we will:

- Acknowledge it within 5 working days of receipt.
- Normally deal with it fully and provide a final response, in writing, within 20 working days of receipt.
- Keep you informed by letter, telephone or e-mail, as you prefer, if we need more time.
- Provide a final response, in writing, at the latest within 40 working days of receipt.
- Liaise, at your request, with anyone acting formally on your behalf.

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If you are not satisfied with our final response, or if we exceed the response timescales, you may refer the complaint to The Property Ombudsman scheme (TPOs):
Tel: 01722 333306, Website: www.tpos.co.uk, E-mail: admin@tpos.co.uk

We will co-operate fully with the Ombudsman during an investigation and comply with his final decision.

Complaints should be sent to:

Mr M. Peace, Director, David Bellis Consulting Surveyors Ltd, 8 Mornington Terrace, Harrogate, North Yorkshire, HG1 5DH
Tel : 01423 529911 Fax : 01423 529922 Email : contact@coalsearch.plus.com

Date : 09 Jan 2019 Signed : 

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- promotes the best practice and quality standards within the industry for the benefit of consumers and property professionals
- enables consumers and property professionals to have confidence in firms which subscribe to the code, their products and services.

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TPOs Contact Details:

The Property Ombudsman scheme
Milford House
43-55 Milford Street
Salisbury
Wiltshire SP1 2BP
Tel: 01722 333306
Fax: 01722 332296
Website: www.tpos.co.uk
Email: admin@tpos.co.uk

You can get more information about the PCCB from www.propertycodes.org.uk.

PLEASE ASK YOUR SEARCH PROVIDER IF YOU WOULD LIKE A COPY OF THE SEARCH CODE

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   c) The Third Party Provider is any Organisation from which the Service Provider obtains data and/or information on behalf of the Applicant in the normal course of fulfilling the Applicants Request.
   d) The request is a formal Request by the Applicant with CoalSearchPlus+ to retrieve specific data and/or information.
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33. Where possible the Applicant will receive Advance Notice of the cost of the Request, including all Fees, Taxes and Disbursements, prior to receipt of the invoice. This advance notice will take the form of the price for the service requested as published on the CoalSearchPlus+ website, or the price as individually agreed between CoalSearchPlus+ and the Applicant.
34. Additional Fees, Taxes and Disbursements may arise during the course of data and/or information retrieval, over and above Advance Notice costs as in clause 33. The Applicant is liable for any such additional costs. Where possible, the Applicant is notified of additional costs prior to fulfilment of the Request.
35. If the Applicant shall pay in advance of receipt of the invoice, then the Applicant remains liable for any underpayment.
36. Any overpayment on the part of the Applicant will be refunded. Arrangements for refunds are agreed on a case-by-case basis, through discussion between CoalSearchPlus+ and the Applicant.
37. The Applicant may cancel the Request in whole or in part at any time prior to Clause 27.
38. If the Applicant cancels the Request in whole or in part prior to Clause 27, the Applicant remains liable for all Fees, Taxes and Disbursements already accrued prior to the Cancellation.
39. CoalSearchPlus+ accept no liability for any loss incurred by the Applicant or the Applicants client where the Applicant is acting as an agent for a client, due to late fulfilment and delivery of the Request.
40. CoalSearchPlus+ accept no liability for any loss to the Applicant, or the Applicant's client where the Applicant is acting as an agent for a client, due to any negative outcome of a report provided in the process of the correct and accurate fulfilment of the Request.
41. Any disputes relating to the provision of coal mining search reports should be addressed to the Practice Principal, CoalSearchPlus+ in the first instance. Disputes will be settled according to the CoalSearchPlus+ complaints procedure detailed in each report.
42. Independent Dispute Resolution - If you make a complaint and we are unable to resolve it to your satisfaction you may refer the complaint to The Property Ombudsman scheme (website: www.tpos.co.uk email:admin@tpos.co.uk Tel: 01722 333306). We will cooperate fully with the Ombudsman during an investigation and comply with his final decision.
43. Third Party and subcontractor Terms and Conditions shall apply in addition to these clauses. Should any conflict arise between CoalSearchPlus+ Terms and Conditions and Third Party or Subcontractor Terms and Conditions, then CoalSearchPlus+ Terms and Conditions prevail unless and until CoalSearchPlus+ expressly states otherwise in writing and/or courts of England and Wales establish otherwise.
44. No variation to these Terms and Conditions is effective unless and until CoalSearchPlus+ expressly agrees in writing.
45. CoalsearchPlus+ reserves the right to alter these terms and conditions as appropriate, without notice, at any time. Such amended Terms and Conditions will become effective upon publication on the CoalSearchPlus+ website.
46. These Terms and conditions are subject to English Law and the exclusive jurisdiction of the courts of England and Wales.