



GEO
Environmental Engineering



PHASE 1: DESK TOP STUDY REPORT

(PRELIMINARY ENVIRONMENTAL RISK ASSESSMENT)

PROPOSED COMMERCIAL USE OF LAND AT:

CLEATOR MILLS, CLEATOR, CUMBRIA

FOR

GENR8 NORTH LTD

GEO Environmental Engineering

DOCUMENT CONTROL SHEET

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1.0 Introduction

1.1 Instruction

Geo Environmental Engineering Ltd (GEO) have been commissioned by the Client, GenR8 North Ltd to undertake a Phase 1: Desk Top Study Report (Preliminary Environmental Risk Assessment) for land at Cleator Mills in Cleator Cumbria to determine any potential geohazards that may affect future commercial use of the site.

It is understood that the Client plans to lease the site for commercial use (plant depot). Further details relating to the scope of development are included in Section 2.1.

This Phase 1: Desk Top Study Report is suitable for submission to the Local Authority as part of a planning application.

1.2 Objectives

The main objective of this Phase 1: Desk Top Study (DTS) Report is to assess the geological and environmental sensitivity of the development area and the surrounding environs to determine any potential geohazards that may impact the proposed development. Particular attention is made to any potentially contaminative industries or processes that may have taken place on site or immediately adjacent which may be considered as potentially posing a risk of ground/groundwater contamination and ground gas that could negatively affect the proposed end users, adjacent sites and controlled waters. This Phase 1: Desk Top Study Report has been completed in accordance with the following documents:

- Land Contamination Risk Management Stages 1 to 4 (LCRM – www.gov.uk) – April 2021.
- CLR11: Model Procedures for the Management of Land Contamination. DEFRA/EA, 2004.
- BS10175: 2017: Code of Practice for the Investigation of Potentially Contaminated Sites.
- BS5930: 2020: Code of Practice for Site Investigations.
- UK Specification for Ground Investigation, 2nd Edition. Site Investigation Steering Group, 2011.
- Effective Site Investigation. Site Investigation Steering Group, 2013.

1.3 Third Party Data Sources

During the completion of this DTS, information has been obtained and reviewed from the following sources:

- British Geological Survey (BGS) Geological Mapping Data.
- Environment Agency (EA).
- Enviro+Geo Insight Ground Sure Report – (GSR – Appendix II).
- Ordnance Survey Historical Maps (Appendix III).
- The Coal Authority Online Database.

A site walkover was completed in May 2023. A summary of the site walkover is included in Section 2.0 and photographs of the site are presented in Appendix I.

1.4 Limitations of Use

The information, assessments, conclusions and recommendations presented within this Phase 1: Desk Top Study (DTS) Report are solely based on, and are limited to, the boundaries of the site, the immediate area and the historical use(s) as described.

This DTS has been completed using information relating to the physical and environmental setting of the development area, highlighting, where possible, any potential geohazards that might be encountered with respect to the proposed Commercial end use (i.e. "Best Fit" CLEA classification of *Commercial*).

Therefore, if a change in the proposed end use is envisaged, then a reassessment of the development area should be carried out.

Consequently, any comments, opinions, diagrams, cross sections and/or sketches contained within the DTS, and/or any configuration of the findings is purely conjectural and given for guidance only as no intrusive investigation works have been completed by Geo Environmental Engineering Ltd and it is recommended that confirmation of the anticipated ground conditions should be considered before development proceeds.

The conclusions and recommendations presented within this report are considered reasonable based on the available information. However, these cannot be guaranteed to gain regulatory approval. Therefore, the report should be passed to the appropriate regulatory authorities and/ or other key stakeholders, including warranty providers in order to seek their approval of the findings prior to undertaking any works on site and prior to development.

Reliance on the report is for the named Client only. Agreement for the use or copying of this report by any Third Party must be obtained in writing from Geo Environmental Engineering Ltd. Reliance on the report is strictly in accordance with the Geo Environmental Engineering Ltd Standard Terms and Conditions, copies of which are available on request.

2.0 Site Location and Development Proposals

2.1 Development Proposal

It is understood that the Client will lease the land to a plant and equipment rental company and that the existing concrete hardstand will be retained.

This report and subsequent intrusive investigations will form a base line survey prior to the lease.

Further details relating to the proposed site use should be obtained from the Consultant.

2.2 Site Location

The site, occupying an area of c.0.5ha is located at the former Kangol factory in Cleator Mills, c.300m south of Cleator Moor as indicated on the site location plan included in Appendix I. Access to the site is via an access road from Trumpet Terrace.

- National Grid Reference: 301966, 513702
- Post Code: CA23 3FA (approximate only)

2.3 Site Description and Levels

A site walkover was completed in May 2023 and a selection of photographs of the site are included in Appendix I.

The majority of the site is covered by a large concrete slab (former factory floor) which was noted to be in a good condition. Discussions with the current land owner indicate that the mill was redeveloped as a factory and the current floor slab constructed during the 1960s/70s.

The land around the edge of the concrete, comprises granular hardstand and soft landscaping (grass). The concrete slab was being used to store mounds of concrete and brick rubble, soil and stone corning from nearby buildings.

No visual or olfactory evidence of any contamination sources (bulk fuel/oil or chemical storage) was noted on the site during the walkover.

The site is generally flat and level. Topographical survey has not been provided, however, Ordnance Survey data suggests that the site is at an elevation of c.60m OD.

2.4 Surrounding Land Uses

A derelict industrial building is present to the east and agricultural fields are present to the north and west. Housing is c.90m south west. The River Ehen is c.45m south and 60m south east of the site boundary.

2.5 Existing Infrastructure and Utilities

A detailed review of statutory utility supplier records lies outside the scope of this report. However, records indicate buried electricity, gas, water, drainage and telecommunications on or near the site.

It is recommended that all utility plans are reviewed prior to commencing any development works.

3.0 Previous Reports

3.1 Report Details

The below listed reports relate to the site and in some instances the larger surrounding area:

- Preliminary Environmental Risk Assessment by Elliott Environmental Surveyors Ltd, ref: EES13-061, dated: 18th June 2013.
- Site Investigation And Updated Environmental Risk Assessment by Elliott Environment Surveyors Ltd, ref: EES13-061, dated: 17th September 2013.
- Environmental Risk Management Strategy by Elliott Environment Surveyors Ltd, ref: EES15-018, dated 15th June 2015.

3.2 Report Summaries

A summary of the previous reports is included below; however, it is recommended that all reports are read in conjunction with this Desk Top Study.

3.2.1 Preliminary Environmental Risk Assessment (June 2013)

The report was completed for the larger Cleator Mills site prior to the demolition of the former Kangol Factory building. At this time, the site was to be developed for residential end use.

The report indicates that the buildings were built between the early 19th Century and the 1960s, the original building having been a linen mill with an associated mill race which ran through the site from the river Ehen in the north northeast, re-joining it in the southwest.

During the site inspection, it was noted that asbestos containing materials were used widely within the building which are a potential risk to human health during construction and the future development. The report also noted the presence of Japanese Knotweed at one location (location not indicated).

The report concluded that contamination may be present on site associated with over 200 years of industrial development. Potential contaminants include hydrocarbon residues (fuels and oils), dyes, metals, solvents, soaps and detergents associated with the former factory. The report also identified a former gasometer to the north east of the former factory and indicated a potential for cyanides, sulphur compounds, phenols, heavy metals and spent oxides. It should be noted however, that the former gasometer was not located within the current site boundary.

The River Ehen was identified as the most sensitive receptor, noting the SAC status due to the high-water quality and the presence of both Freshwater Pearl Mussels and Atlantic Salmon. Human health on adjoining land was not considered to be at risk.

3.2.2 Site Investigation and Updated Environmental Risk Assessment (September 2013)

The report was completed for proposed mixed commercial and residential end use.

The ground investigation comprised 9 No. boreholes to a maximum depth of c.2.40m bgl. The boreholes were predominantly located externally within areas of soft landscaping or asphalt hardstanding surrounding the former Kangol Factory buildings. This area was considered the greatest concern outside the buildings.

Made ground comprised topsoil (with occasional coal and asphalt fragments), stone and mortar with occasional clinker, sandstone, slate and stone, and black clinker with occasional sandstone and brick (with a slight creosote odour) to a maximum depth of c.1.20m bgl.

The underlying drift comprised sands and gravels with some silts which generally becoming coarser and denser with depth. Groundwater was only encountered at one location (in the south western area) within the natural drift deposits at 1.80m bgl. No groundwater was encountered during the monitoring.

Chemical screening identified that the clinker-rich material had elevated concentrations of petroleum hydrocarbons and arsenic with regards to residential development. However, the levels were not deemed of concern with regards to commercial end use. Contaminants were not found at levels of concern in the underlying sands and gravels and the levels and types of chemicals remaining in the soils is such that most accessible contaminants are likely to have been leached or migrated away over the years. Asbestos (amosite fibre) was detected in three of the ten samples screened.

The report indicated that residual risks to the construction workers, end user and the environment remain medium to high due to uncertainties surrounding possible unidentified relic structures which may contain contaminants. The report indicates that while environmental risks are indicated to be lower than previously anticipated, the situation may change if the ground or structures are disturbed during development.

The gas monitoring did not identify any gases or vapours of concern.

3.2.3 Environmental Risk Management Strategy (June 2015)

The Risk Management Strategy was completed for proposed commercial end use. It includes a review of various documents that were completed for the site including an ecology assessment, contamination risk assessments, drainage statement, flood risk assessment and design and access statement. Natural England consultation responses were also reviewed. This information was collated to determine methods to manage the outstanding environmental risks during development and the future use of the site and the surrounding area.

The report includes options and methods to manage the outstanding environmental risks during future development, with particular regard to the adjoining river. These include protected species, residual contamination as well as the flood defences of the site and surrounds, and the possible asbestos residues within the former buildings.

The ecology survey indicated that the site is in a highly sensitive environmental setting due to the presence of fresh water pearl mussel and Atlantic salmon in the adjoining River Ehen, which is classified as an SAC and SSSI.

The Environmental Risk Assessment indicated a fairly low environmental risk in most locations with no specific hazards identified during the soil screening. However, the report indicated that residual risks remain due to the uncertainties associated with any unidentified relic sub-surface structures.

The flood risk assessment concluded that the site is not at flood risk from sea or watercourse flooding, and risk of surface water flooding can be adequately managed and flood routes maintained. Some minor works were recommended with regards to Condition 7 of the planning conditions. The report indicates that Flood Defence Consent is required from the Environment Agency for any works within 8m of the River.

The report includes a 'Construction And Demolition Environmental Management Plan' which outlines methodologies for development to minimise the impact on the surrounding environment.

4.0 Geo-Environmental Setting

This section is based principally upon a search of information available on public registers and obtained through the Ground Sure Report (GSR) to determine any environmental or geological constraints to the proposed end use.

- Sections 3.1 to 3.4 refer to the Enviro+Geo Insight Ground Sure Report contained in Appendix II.
- Section 3.5 refers to the Historical Map Extracts contained in Appendix III.

4.1 Development Area Geology

A geological review of the site has been undertaken using information provided on published geological maps (BGS Sheet 28 Whitehaven, Solid and Drift Edition, 1:50,000 scale) and the Ground Sure Report (GSR) contained in Appendix II.

An extract of the geological map from the GSR is included below as Figure 1.

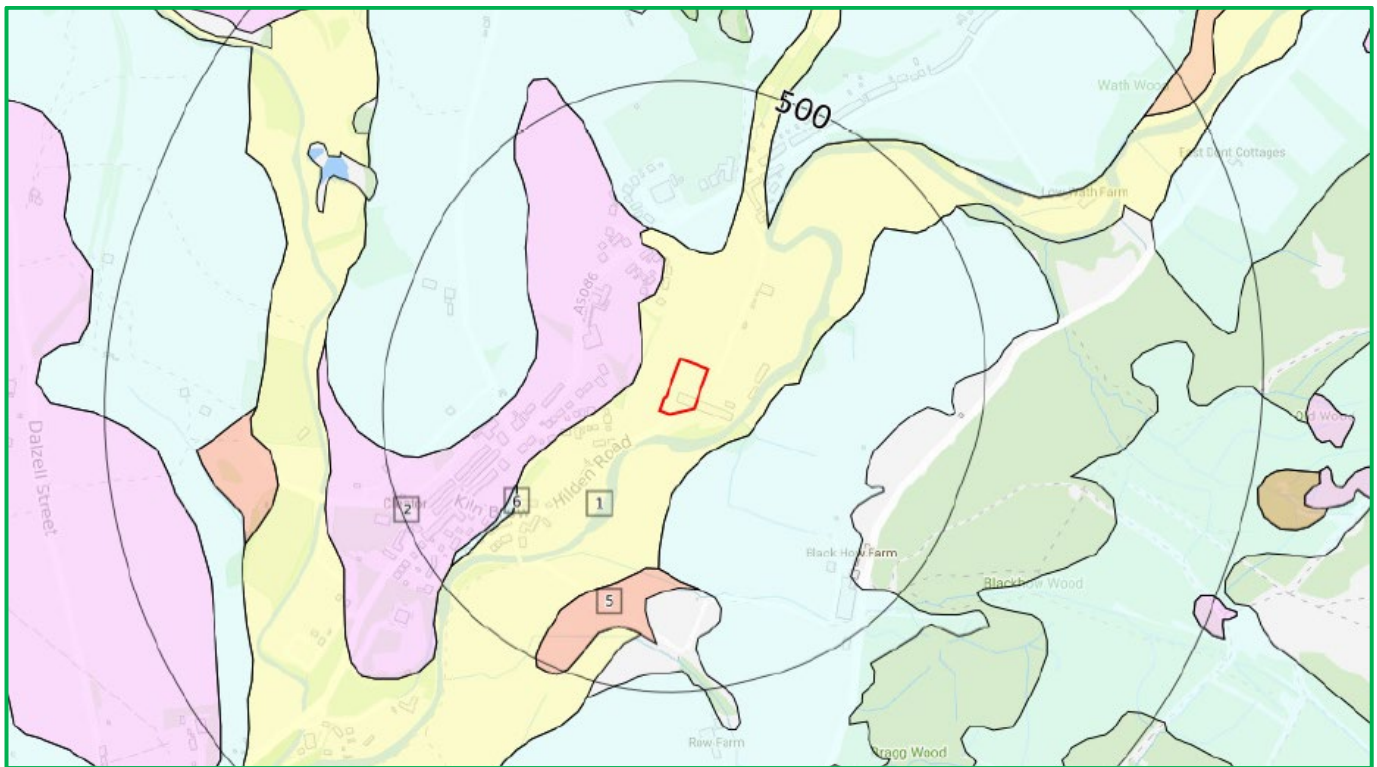


Figure 1. Geological Map Extract

4.1.1 Made Ground

A review of the published geological map and the GSR does not indicate any made ground on the site, however, based on the site history and the existing concrete slab, some made ground is anticipated. The made ground is likely to be less than 1.5m overall, however, some deeper made ground could be present associated with buried utilities, structures and foundations.

There is a potential for some contamination associated with the made ground, however, the risks to the end user based on a commercial end use are considered generally very low.

No significant made ground is recorded within c.250m of the site boundary.

4.1.2 Drift Geological Deposits

A review of the published geological map and the GSR indicates that the site is underlain by alluvial deposits (clay, silt, sand and gravel). The previous ground investigation which was completed immediately east of this area encountered silty sandy gravels which became coarse and denser with depth.

The GSR indicates the following geohazards and associated preliminary level of risk:

■ Shrink-swell clays	very low risk.
■ Landslides	very low risk.
■ Compressible deposits	moderate risk.
■ Collapsible deposits	negligible risk.
■ Running sands	low risk.

The drift deposits are classified as a Secondary 'A' Aquifer.

At this stage it is understood that the existing concrete slab will be used for storing plant and equipment, therefore the geotechnical risk is considered negligible at this stage. However, if structures and/or future development is planned, Phase 2: Ground Investigation works would be prudent to aid the design of foundations, should they be requested by the Design Team.

4.1.3 Bedrock Deposits

Reference to the published geological map and the GSR indicates the site is underlain by the Buttermere Formation which typically comprises mudstone and sandstone and is devoid of coal seams.

The Pennine Lower Coal Measures is classified as a Secondary 'B' Aquifer.

The GSR indicates a negligible risk associated with the dissolution of soluble rocks.

4.1.4 Historical Investigation Records

Historical boreholes have been completed on land immediately east of the site. See section 3.2.2 for further details.

4.1.5 Geological Features

An inspection of the geological map indicates that there are no geological faults on or immediately adjacent to the site.

4.1.6 Coal Mining Assessment

Reference to the published geological map and the GSR indicates the site is underlain by the Buttermere Formation (mudstone and sandstone) which is devoid of coal seams.

The site is recorded as being within a coal mining reporting area by the Coal Authority due to the presence of coal bearing strata to the west of the site which have been worked previously. However, there are no coal seams recorded within 1km as potentially sub-cropping beneath the site.

Based on the information presented above, the risk to the site and the proposed development from shallow unrecorded coal mine workings is negligible.

4.1.7 Non-Coal Mining and Quarrying Assessment

The GSR indicates that the site is located in an area where mineral veins (haematite) may have been mined. The report includes the following comment with regards to mineral vein mining:

“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.”

In view of the information above, the risk to the proposed development from mineral vein mining is very low and further assessment is not considered necessary at this stage.

Information presented within the GSR suggests that there is no risk to the development from brine extraction, tin mining, clay mining and gypsum extraction. The GSR also notes that the site is not at risk of natural cavities.

4.1.8 Radon Gas Assessment

The GSR indicates that the development site is not located within a Radon Affected Area as defined by the British Geological Survey and UK Health Security Agency, as less than 1% of properties are above the action level. Consequently, in accordance with the British Geological Survey and UK Health Security Agency, radon protection measures are not necessary.

4.2 Development Area Hydrogeology (Groundwater)

4.2.1 Made Ground/Soils

Any made ground/topsoil materials on site are likely to be classified as high permeability (i.e. worst-case scenario assumed until proven otherwise).

4.2.2 Drift Geology

The drift deposits beneath the site are 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.

4.2.3 Solid Geology

The underlying bedrock (Lower Coal Measures) is designated a Secondary ‘B’ Aquifer status. These are predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering.

4.3 Development Area Hydrology

4.3.1 Groundwater

Given the topography and anticipated ground conditions, groundwater should be anticipated at a similar level at the Riven Ehen and there will likely be hydraulic continuity.

A review of the hydrology information in the GSR indicates the following:

- No active surface water or groundwater abstractions recorded within c.1km of the site.
- No potable water abstraction licences are held within c.2km of the site.
- The site is not recorded as being within or within c.500m of a Source Protection Zone.

4.3.2 Surface Water Features

The River Ehen is recorded c.44m south of the site. This is classified as an area of Special Scientific Interest (SSSI) and a Special Areas of Conservation (SAC).

4.3.3 Current Surface Water Run-off

Given the anticipated ground conditions, it is likely that any surface water will run-off the site (concrete slab) into the surrounding ground or pool on site to evaporate.

4.4 Development Area Environmental Sensitivity

4.4.1 Site Ecology

The River Ehen (c.44m south) is classified as an area of Special Scientific Interest (SSSI) and a Special Areas of Conservation (SAC).

There are no Environmental Designations within 250m of the site. For further details, please refer to Section 10 of the GSR in Appendix II.

4.4.2 Authorisations, Incidents and Registers

There are no current discharge licenses within 250m. The nearest historical discharge was recorded c.35m south for sewage discharge to the River Ehen, however, this was revoked in 1993.

There are no other Industrial Authorisations, Incidents or Registers (Pollution Incidents, etc...) within 250m of the site.

For further details, please refer to Section 4 of the GSR in Appendix II.

4.4.3 Determination of Contaminated Land (Part IIA)

A review of the GSR indicates that the site is not currently recorded as being considered as Contaminated Land under Part IIA EPA 1990. In addition, no sites are determined as Contaminated Land under Part IIA EPA 1990 within c.500m of the proposed development area.

4.4.4 Historical Industrial Land Uses

A review of Section 1.0 in the GSR indicates the following historical land uses:

- Potentially Contaminative Uses (PCU) – The site was a former textile mill (Flax Mill) which was later a Kangol hat manufacturing facility in the 1960s/70s. Within the surrounding area, the GSR indicates unspecified tanks (39m E), and unspecified pits (220 NW).
- Historical Tanks – None recorded on site. Historical tanks were recorded between 42m and 86m east of the site.
- Potentially Infilled Land – No significant infilling is recorded within 250m.
- Historical Energy Features – A gasometer was recorded c.44m east of the site during the late 1800s.
- Historical Petrol and Fuel Site Database – None noted within c.250m.
- Historical Garage and Motor Vehicle Repair Database – None noted within c.250m.

4.4.5 Current Industrial Land Uses

The GSR does not indicate any current industrial land uses of concern within 250m of the site. The surrounding land is a mixture of commercial, agricultural and residential. None of the uses are considered to pose a significant risk to the proposed on site commercial use.

4.4.6 Fuel Station Entries

No fuel filling stations are currently active within c.500m of the site.

4.4.7 Landfill and Waste Regulation/Management – Landfill Sites

There are no active or historical landfill sites on or within 250m of the site.

Further details are provided in Section 3.0 of the GSR in Appendix II.

4.5 Development Area Historical Plan Appraisal

This section is based on historical Ordnance Survey map data and provides a summary of the site history, highlighting any industries, processes or activities that may be considered as Geohazards. Copies of historical maps which date back to 1863 are provided in Appendix III and a summary of the site history is included below.

4.5.1 On-Site

The first historical map extract dated 1863 indicates that the central and northern parts of the site were developed with a large Flax Mill (Cleator Mill - textiles). Several ancillary buildings appear to be located in the south eastern part and a school was located in the south western part.

From the 1960s, the former mill building appears to be split in two and was recorded as a 'Factory'.

By the 1970s, a single large factory building was present, and the school is no longer recorded. The layout of the factory is similar to the concrete slab currently present on site and has not changed since.

It is understood that the former factory on the site was demolished around 2015.

4.5.2 Off-Site

The first historical map extract dated 1863 shows industrial buildings to the east of the site which were probably associated with the Cleator Mill. A mill race passed beneath these buildings from the north and exited further south, back into the River Ehen. The Mill Race does not appear to pass beneath the proposed development area. Houses were present to the south and fields were present to the north.

During the late 1890s a gasometer was present c.44m east within a complex of ancillary mill buildings. This is no longer recorded after 1899.

By the 1960s, the surrounding buildings are recorded as factories and a large factory had been constructed c.70m north east.

By the 1990s, much of the ancillary buildings to the east of the site had been demolished, leaving only the large factory buildings. These were partially demolished around 2015 although some of the buildings still remain intact but derelict.

5.0 Conceptual Site Model

A Conceptual Site Model (CSM) has been designed using the information presented within this DTS to provide a model of the anticipated ground, groundwater and ground gas conditions below the development area (Existing Site CSM).

The CSM utilises the established *Source – Pathway – Receptor* pollutant linkage model and is designed to provide an improved understanding of the site characteristics. This ensures adequate and appropriate Phase 2: Ground Investigation (P2 GI) Works are designed and undertaken for wide spread and targeted investigations, should they be deemed necessary.

Depending on the results of the ground investigation, the CSM can be refined based upon the outcomes of the intrusive works to ensure that appropriate remediation (if required) is completed to ensure the development area is “fit for purpose” in relation to the proposed commercial end use. The preliminary CSM is presented in the matrix on the following page and considers the anticipated *Source – Pathway – Receptor* pollutant linkage model derived for this site.

<u>SOURCE-PATHWAY-RECEPTOR POLLUTANT LINKAGE MODEL</u>
Sources:
S1 = Possible Made Ground – No specific sources identified. Based on historical map data and previous ground investigations, there is a potential for some made ground on site but this is likely to be predominantly shallow (<1.50m thick). This will probably include reworked silty gravelly deposits with some anthropogenic materials including ash, clinker, brick, concrete, asphalt, etc... There is a potential for some asbestos fibres within the shallow granular deposits and areas that were exposed during demolition. Intrusive ground investigations are recommended to determine if potential sources of contamination are present and to provide a base line prior to leasing the site.
S2 = Unidentified Contamination Given the long period of industrial land use, there is a potential for contaminants on site associated with the former mill and factory. The contaminants could include petroleum hydrocarbons, poly aromatic hydrocarbons, heavy metals, solvents and dyes. Much of these contaminants will have been leached or dispersed by now, However, there is a potential that some contaminants may be ‘confined’ within the existing structures. These are unlikely to pose a significant risk unless disturbed during future development (watching brief required).
S3 = Ground Gas - Potential Sources Identified. No significant ground gas sources have been identified on site or within c.250m.
Pathways:
P1 = Inhalation of air (wind-blown particles, vapours, gasses)
P2 = Dermal/direct contact (Unlikely based on the proposed end use – storage of plant and machinery)
P3 = Ingestion (no risk – there are no plans to grow plants on the site)
P4 = Migration through services (potable water supply)
P5 = Direct contact with building materials (aggressive ground conditions for buried concrete)
P6 = Surface Run-off and Leaching from Soils (to River Ehen and underlying Secondary Aquifers)
Receptors:
R1 = Human Health (End users and Construction Workforce)
R2 = Controlled Waters (River Ehen and Secondary Aquifer)
R3 = Building Materials and Buried Utilities

6.0 Preliminary Qualitative Risk Assessment

The following Contamination Risk Meter determines the potential level of risk associated with the development with respect to ground contamination, groundwater contamination and ground gas. The risk meter takes into account the anticipated *Sources – Pathways – Receptors* within the pollutant linkage model and CSM.

Ground Contamination:						
						
RISK =	NEGLIGIBLE	VERY LOW	LOW	MODERATE	HIGH	VERY HIGH
Groundwater Contamination:						
						
RISK =	NEGLIGIBLE	VERY LOW	LOW	MODERATE	HIGH	VERY HIGH
Ground Gas: (Carbon Dioxide and Methane)						
						
RISK =	NEGLIGIBLE	VERY LOW	LOW	MODERATE	HIGH	VERY HIGH
Radon Gas:						
						
	<1%	1%-3%	3%-5%	5%-10%	10%-30%	>30%*
	Estimated Percentage of Dwellings Exceeding the Radon Action Level					

Ground Contamination: A risk level of VERY LOW to LOW is currently determined appropriate for this development with respect to ground contamination. In summary, the site was used as a textile mill and later factory prior to the 1860s. There is a potential for contamination within the made ground and natural drift deposits associated with the former land use.

Made ground is anticipated on the site following the site walkover which encountered a concrete slab and areas of granular hardstand. Based on previous ground investigations, the made ground is likely to be shallow (<1.50m thick) and will probably comprise reworked silty gravelly deposits with some anthropogenic materials including ash, clinker, brick, concrete, asphalt, etc... There is a potential for some asbestos fibres within the shallow granular deposits and areas that were exposed during demolition.

There is also a potential for contamination associated with the former mill/factory that could include petroleum hydrocarbons, poly aromatic hydrocarbons, heavy metals, solvents and dyes, etc... These contaminants could be present within the made ground or the natural drift deposits, although most contaminants will have been leached or dispersed by now. However, there is a potential that some contaminants may be 'confined' within the existing structures. These are unlikely to pose a risk unless disturbed during future development.

Based on the proposed end use (leasing the concrete slab for storage of plant and machinery), the risk to the end user is typically very low to low as the contaminant pathways are very limited. However, given the potential for some asbestos fibres to be present within the shallow soils, some basic remediation may be necessary to mitigate the risks if present.

It would be prudent to undertake a ground investigation around the perimeter of the concrete slab to determine the shallow ground conditions and allow samples to be recovered for chemical screening. This will also form a base line survey prior to the land being leased.

A watching brief should be implemented during any excavations to ensure that if visual/olfactory evidence of potential contamination (i.e. fuel/oil) is identified then works should be stopped and advice should be sought from an appropriately qualified and experienced Geo-Environmental Engineer.

Groundwater Contamination: As indicated above, there is a potential for made ground and contaminants associated with the former land use. Previous investigations in the vicinity of the site have indicated that the made ground materials were inert and of low leaching potential and no significant risks were identified with regards to the River Ehen. Whilst no specific hazards were identified, the report suggested that there may be unidentified relic structures which may contain contaminants. These are unlikely to pose an ongoing risk to the surrounding Environment, unless disturbed during development.

As the current plans are to re-use the existing concrete slab for storing plant and machinery, the risks are not considered significant. However, if the Client plans to significantly redevelop the site and construct new buildings, care should be taken to ensure any potential contaminants do not pose an elevated risk to Environmental receptors including the River Ehen.

It would be prudent to undertake a ground investigation to around the perimeter of the concrete slab to determine the shallow ground conditions and allow samples to be recovered for leachate screening to determine the potential mobility of contaminants. This will also form a base line survey prior to the land being leased.

Ground Gas: A risk level of NEGLIGIBLE is currently considered appropriate for the site with respect to potential harmful ground gas as no significant sources have been identified and the proposed end use is of very low sensitivity, as it is understood that the land will be leased for storing plant and equipment.

Radon Gas: The site is not located within a Radon Affected Area as defined by the British Geological Survey and UK Health Security Agency, as less than 1% of properties are above the action level. Consequently, radon protection measures are not necessary in new buildings.

7.0 Conclusions

When considering the results of this DTS report, the following can be seen:

- The site is currently considered to pose a very low to low risk to the proposed end users from ground contamination.
- The site is currently considered to pose a very low to low risk to adjacent sites (the surrounding environment) and controlled waters with respect to potential ground/groundwater contamination.
- The site is currently considered to pose a negligible risk to the proposed end users from ground gas (Carbon Dioxide and Methane).
- Radon Protection Measures are not necessary.

It would be prudent to complete a programme of Ground Investigation works to characterise the ground/groundwater conditions below the site.

In summary, the site works should include, but not limited to:

- Mini percussion boreholes and/or trial pits to determine the nature of the underlying ground conditions.
 - As the Client plans to re-use the existing concrete slab, it would be prudent to locate the exploratory holes around the perimeter of the site.
- Soil logging by a suitably qualified and experienced Geo-Environmental Engineer.
- Laboratory screening of soil samples.
 - Samples of made ground and natural soils should be screened for a range of potential contaminants.
 - Leachate screening should be completed to determine the potential mobility of any contaminants present within the made ground.

The results of the intrusive ground investigation should be compiled in an interpretive Ground Investigation Report (GIR) and include recommendations for remediation or any further works that are deemed necessary.

GEO recommends that a “watching brief” and “observational technique” be applied to this site to ensure that if ground conditions appear to vary from those inferred within this investigation report then advice should be sought from a suitably qualified and experienced Geo-Environmental Engineer. In the event that made ground is identified during works on site then sampling of those materials should be completed by an appropriate Geo-Environmental Engineer to facilitate contamination screening and a Human Health Risk Assessment.

GEO is not responsible for the accuracy and completeness of third-party information and cannot be held responsible for any errors or omissions that may occur. The contents of this report have been specifically requested by the client and therefore any items not specifically mentioned cannot be assumed to be covered.

The conclusions and recommendations presented within this report are considered reasonable based on the available information. However, these cannot be guaranteed to gain regulatory approval. Therefore, the report should be passed to the appropriate Regulatory Authorities and/ or other key stakeholders including warranty providers in order to seek their approval of the findings prior to finalising any land values as part of a site acquisition or prior to undertaking any construction or redevelopment works on site.

End of Report

Appendix I

- Site Location
- Aerial Photograph
- Site Walkover Photographs (May 2023)

GEO2023-5775: Land at Cleator Mills – Aerial Photograph



GEO2023-5775: Land at Cleator Mills – Site Photographs



Appendix II

- Enviro+Geo Insight Ground Sure Report (GSR)

unspecified

Order Details

Date: 22/05/2023
Your ref: EMS_868033_1073740
Our Ref: EMS-868033_1111696

Site Details

Location: 301966 513702
Area: 0.5 ha
Authority: [Cumberland Council](#) ↗



Summary of findings

[p. 2 >](#) **Aerial image**

[p. 8 >](#)

OS MasterMap site plan

[p.12 >](#) groundsure.com/insightuserguide ↗

Contact us with any questions at:

info@groundsure.com ↗

01273 257 755

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
13 >	1.1 >	Historical industrial land uses >	5	1	1	20	-
15 >	1.2 >	Historical tanks >	0	2	5	2	-
15 >	1.3 >	Historical energy features >	0	1	0	0	-
16 >	1.4 >	Historical petrol stations >	0	0	0	0	-
16 >	1.5 >	Historical garages >	0	0	0	0	-
16 >	1.6 >	Historical military land >	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
17 >	2.1 >	Historical industrial land uses >	5	1	1	23	-
19 >	2.2 >	Historical tanks >	0	2	5	2	-
19 >	2.3 >	Historical energy features >	0	1	0	0	-
20 >	2.4 >	Historical petrol stations >	0	0	0	0	-
20 >	2.5 >	Historical garages >	0	0	0	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
21 >	3.1 >	Active or recent landfill >	0	0	0	1	-
22 >	3.2 >	Historical landfill (BGS records) >	0	0	0	1	-
22 >	3.3 >	Historical landfill (LA/mapping records) >	0	0	0	1	-
22 >	3.4 >	Historical landfill (EA/NRW records) >	0	0	0	0	-
23 >	3.5 >	Historical waste sites >	0	0	0	0	-
23 >	3.6 >	Licensed waste sites >	0	0	0	2	-
24 >	3.7 >	Waste exemptions >	0	0	2	1	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
25 >	4.1 >	Recent industrial land uses >	1	0	2	-	-
26 >	4.2 >	Current or recent petrol stations >	0	0	0	0	-
26 >	4.3 >	Electricity cables >	0	0	0	0	-
26 >	4.4 >	Gas pipelines >	0	0	0	0	-
26 >	4.5 >	Sites determined as Contaminated Land >	0	0	0	0	-



26 >	4.6 >	Control of Major Accident Hazards (COMAH) >	0	0	0	0	-
27 >	4.7 >	Regulated explosive sites >	0	0	0	0	-
27 >	4.8 >	Hazardous substance storage/usage >	0	0	0	0	-
27 >	4.9 >	Historical licensed industrial activities (IPC) >	0	0	0	0	-
27 >	4.10 >	Licensed industrial activities (Part A(1)) >	0	0	0	0	-
27 >	4.11 >	Licensed pollutant release (Part A(2)/B) >	0	0	0	0	-
28 >	4.12 >	Radioactive Substance Authorisations >	0	0	0	0	-
28 >	4.13 >	Licensed Discharges to controlled waters >	0	1	6	10	-
30 >	4.14 >	Pollutant release to surface waters (Red List) >	0	0	0	0	-
31 >	4.15 >	Pollutant release to public sewer >	0	0	0	0	-
31 >	4.16 >	List 1 Dangerous Substances >	0	0	0	0	-
31 >	4.17 >	List 2 Dangerous Substances >	0	0	0	0	-
31 >	4.18 >	Pollution Incidents (EA/NRW) >	0	0	0	1	-
32 >	4.19 >	Pollution inventory substances >	0	0	0	0	-
32 >	4.20 >	Pollution inventory waste transfers >	0	0	0	0	-
32 >	4.21 >	Pollution inventory radioactive waste >	0	0	0	0	-
Page	Section	Hydrogeology >	On site	0-50m	50-250m	250-500m	500-2000m
33 >	5.1 >	Superficial aquifer >	Identified (within 500m)				
35 >	5.2 >	Bedrock aquifer >	Identified (within 500m)				
37 >	5.3 >	Groundwater vulnerability >	Identified (within 50m)				
38 >	5.4 >	Groundwater vulnerability- soluble rock risk >	Identified (within 0m)				
38 >	5.5 >	Groundwater vulnerability- local information >	None (within 0m)				
39 >	5.6 >	Groundwater abstractions >	0	0	0	0	0
40 >	5.7 >	Surface water abstractions >	0	0	0	0	1
40 >	5.8 >	Potable abstractions >	0	0	0	0	0
40 >	5.9 >	Source Protection Zones >	0	0	0	0	-
40 >	5.10 >	Source Protection Zones (confined aquifer) >	0	0	0	0	-
Page	Section	Hydrology >	On site	0-50m	50-250m	250-500m	500-2000m
42 >	6.1 >	Water Network (OS MasterMap) >	0	3	13	-	-



44 >	6.2 >	Surface water features >	0	1	6	-	-
44 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
45 >	6.4 >	WFD Surface water bodies >	0	0	1	-	-
45 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding >	On site	0-50m	50-250m	250-500m	500-2000m
46 >	7.1 >	Risk of flooding from rivers and the sea >	High (within 50m)				
47 >	7.2 >	Historical Flood Events >	0	2	0	-	-
47 >	7.3 >	Flood Defences >	0	0	2	-	-
48 >	7.4 >	Areas Benefiting from Flood Defences >	1	0	0	-	-
48 >	7.5 >	Flood Storage Areas >	0	0	0	-	-
49 >	7.6 >	Flood Zone 2 >	Identified (within 50m)				
50 >	7.7 >	Flood Zone 3 >	Identified (within 50m)				
Page	Section	Surface water flooding >					
51 >	8.1 >	Surface water flooding >	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding >					
53 >	9.1 >	Groundwater flooding >	Low (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
54 >	10.1 >	Sites of Special Scientific Interest (SSSI) >	0	1	0	0	1
55 >	10.2 >	Conserved wetland sites (Ramsar sites) >	0	0	0	0	0
55 >	10.3 >	Special Areas of Conservation (SAC) >	0	1	0	0	0
55 >	10.4 >	Special Protection Areas (SPA) >	0	0	0	0	0
56 >	10.5 >	National Nature Reserves (NNR) >	0	0	0	0	0
56 >	10.6 >	Local Nature Reserves (LNR) >	0	0	0	0	0
56 >	10.7 >	Designated Ancient Woodland >	0	0	0	1	2
56 >	10.8 >	Biosphere Reserves >	0	0	0	0	0
57 >	10.9 >	Forest Parks >	0	0	0	0	0
57 >	10.10 >	Marine Conservation Zones >	0	0	0	0	0
57 >	10.11 >	Green Belt >	0	0	0	0	0
57 >	10.12 >	Proposed Ramsar sites >	0	0	0	0	0



57 >	10.13 >	Possible Special Areas of Conservation (pSAC) >	0	0	0	0	0
58 >	10.14 >	Potential Special Protection Areas (pSPA) >	0	0	0	0	0
58 >	10.15 >	Nitrate Sensitive Areas >	0	0	0	0	0
58 >	10.16 >	Nitrate Vulnerable Zones >	0	0	0	0	0
59 >	10.17 >	SSSI Impact Risk Zones >	2	-	-	-	-
60 >	10.18 >	SSSI Units >	0	1	0	0	2
Page	Section	Visual and cultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
62 >	11.1 >	World Heritage Sites >	0	0	0	-	-
63 >	11.2 >	Area of Outstanding Natural Beauty >	0	0	0	-	-
63 >	11.3 >	National Parks >	0	0	0	-	-
63 >	11.4 >	Listed Buildings >	0	0	1	-	-
64 >	11.5 >	Conservation Areas >	0	0	0	-	-
64 >	11.6 >	Scheduled Ancient Monuments >	0	0	0	-	-
64 >	11.7 >	Registered Parks and Gardens >	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
65 >	12.1 >	Agricultural Land Classification >	Grade 3 (within 250m)				
66 >	12.2 >	Open Access Land >	0	0	0	-	-
66 >	12.3 >	Tree Felling Licences >	0	0	1	-	-
66 >	12.4 >	Environmental Stewardship Schemes >	0	0	0	-	-
66 >	12.5 >	Countryside Stewardship Schemes >	0	0	0	-	-
Page	Section	Habitat designations >	On site	0-50m	50-250m	250-500m	500-2000m
67 >	13.1 >	Priority Habitat Inventory >	0	1	5	-	-
68 >	13.2 >	Habitat Networks >	0	0	0	-	-
68 >	13.3 >	Open Mosaic Habitat >	0	0	0	-	-
68 >	13.4 >	Limestone Pavement Orders >	0	0	0	-	-
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
69 >	14.1 >	10k Availability >	Identified (within 500m)				
70 >	14.2 >	Artificial and made ground (10k) >	0	0	0	0	-
71 >	14.3 >	Superficial geology (10k) >	0	0	0	0	-

71 >	14.4 >	Landslip (10k) >	0	0	0	0	-
72 >	14.5 >	Bedrock geology (10k) >	0	0	0	0	-
72 >	14.6 >	Bedrock faults and other linear features (10k) >	0	0	0	0	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
73 >	15.1 >	50k Availability >	Identified (within 500m)				
74 >	15.2 >	Artificial and made ground (50k) >	0	0	0	1	-
75 >	15.3 >	Artificial ground permeability (50k) >	0	0	-	-	-
76 >	15.4 >	Superficial geology (50k) >	1	0	3	2	-
77 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
77 >	15.6 >	Landslip (50k) >	0	0	0	0	-
77 >	15.7 >	Landslip permeability (50k) >	None (within 50m)				
78 >	15.8 >	Bedrock geology (50k) >	1	0	4	2	-
79 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
79 >	15.10 >	Bedrock faults and other linear features (50k) >	0	0	2	1	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
80 >	16.1 >	BGS Boreholes >	0	0	0	-	-
Page	Section	Natural ground subsidence >					
81 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
82 >	17.2 >	Running sands >	Low (within 50m)				
83 >	17.3 >	Compressible deposits >	Moderate (within 50m)				
84 >	17.4 >	Collapsible deposits >	Negligible (within 50m)				
85 >	17.5 >	Landslides >	Very low (within 50m)				
86 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities >	On site	0-50m	50-250m	250-500m	500-2000m
88 >	18.1 >	Natural cavities >	0	0	0	0	-
89 >	18.2 >	BritPits >	0	0	0	2	-
89 >	18.3 >	Surface ground workings >	0	0	1	-	-
90 >	18.4 >	Underground workings >	0	0	0	2	30
91 >	18.5 >	Historical Mineral Planning Areas >	0	0	0	0	-



91 >	18.6 >	Non-coal mining >	1	0	2	0	4
92 >	18.7 >	Mining cavities >	0	0	0	1	4
93 >	18.8 >	JPB mining areas >	None (within 0m)				
93 >	18.9 >	Coal mining >	Identified (within 0m)				
93 >	18.10 >	Brine areas >	None (within 0m)				
94 >	18.11 >	Gypsum areas >	None (within 0m)				
94 >	18.12 >	Tin mining >	None (within 0m)				
94 >	18.13 >	Clay mining >	None (within 0m)				
Page	Section	Radon >					
95 >	19.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
97 >	20.1 >	BGS Estimated Background Soil Chemistry >	2	0	-	-	-
97 >	20.2 >	BGS Estimated Urban Soil Chemistry >	0	0	-	-	-
97 >	20.3 >	BGS Measured Urban Soil Chemistry >	0	0	-	-	-
Page	Section	Railway infrastructure and projects >	On site	0-50m	50-250m	250-500m	500-2000m
98 >	21.1 >	Underground railways (London) >	0	0	0	-	-
98 >	21.2 >	Underground railways (Non-London) >	0	0	0	-	-
98 >	21.3 >	Railway tunnels >	0	0	0	-	-
98 >	21.4 >	Historical railway and tunnel features >	0	0	0	-	-
98 >	21.5 >	Royal Mail tunnels >	0	0	0	-	-
99 >	21.6 >	Historical railways >	0	0	0	-	-
99 >	21.7 >	Railways >	0	0	0	-	-
99 >	21.8 >	Crossrail 1 >	0	0	0	0	-
99 >	21.9 >	Crossrail 2 >	0	0	0	0	-
99 >	21.10 >	HS2 >	0	0	0	0	-

Recent aerial photograph



Capture Date: 10/10/2018

Site Area: 0.5ha



Recent site history - 2008 aerial photograph



Capture Date: 05/10/2008

Site Area: 0.5ha



Recent site history - 2000 aerial photograph



Capture Date: 16/06/2000

Site Area: 0.5ha



Recent site history - 1999 aerial photograph



Capture Date: 26/07/1999

Site Area: 0.5ha



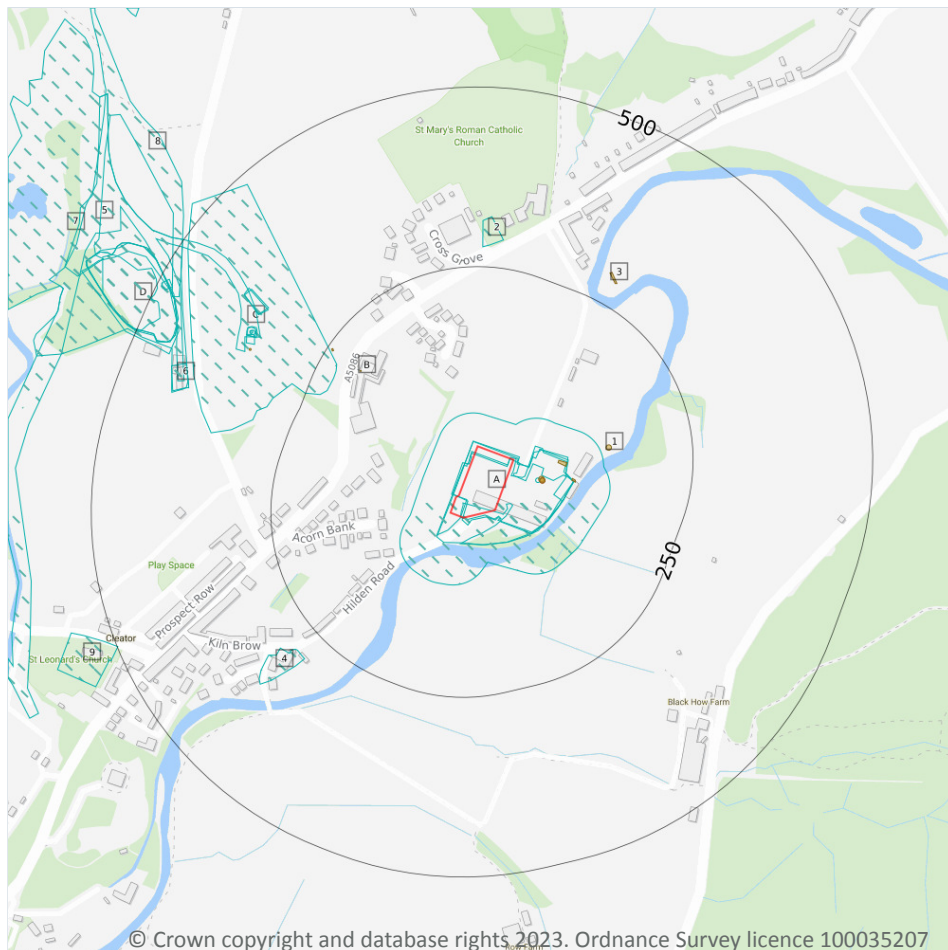
OS MasterMap site plan



Site Area: 0.5ha



1 Past land use



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

1.1 Historical industrial land uses

Records within 500m

27

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 13 >](#)

ID	Location	Land use	Dates present	Group ID
A	On site	Flax Mill	1863	576811



ID	Location	Land use	Dates present	Group ID
A	On site	Unspecified Mills	1926	599144
A	On site	Unspecified Mills	1898	608885
A	On site	Unspecified Mills	1948	629617
A	On site	Unspecified Mills	1938	629929
A	39m E	Unspecified Tank	1863	550974
C	222m NW	Unspecified Pit	1898	619163
2	278m N	Grave Yard	1863	557217
4	286m SW	Corn Mill	1863	553776
5	338m NW	Mineral Railway Sidings	1898	580878
C	341m NW	Unspecified Pit	1948	622063
C	343m NW	Unspecified Pit	1938	597638
C	345m NW	Unspecified Pit	1926	604808
C	348m NW	Unspecified Old Shaft	1938	609701
C	348m NW	Cuttings	1926	584752
C	349m NW	Unspecified Pit	1938	631245
C	351m NW	Unspecified Old Shaft	1926	623823
6	402m W	Smithy	1863	580583
7	405m W	Iron Ore Mine	1898	586361
D	446m NW	Unspecified Pit	1948	596916
D	448m NW	Unspecified Pit	1898	613122
D	448m NW	Unspecified Pit	1938	624711
D	450m NW	Unspecified Pit	1926	622031
8	465m NW	Railway Sidings	1863	614074
D	477m NW	Unspecified Pit	1863	615823
D	479m NW	Engine House	1863	551992
9	499m SW	Grave Yard	1863	557212

This data is sourced from Ordnance Survey / Groundsure.



1.2 Historical tanks

Records within 500m

9

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

Features are displayed on the Past land use map on [page 13 >](#)

ID	Location	Land use	Dates present	Group ID
A	42m E	Unspecified Tank	1863	72905
A	44m E	Gasometer	1899	75426
A	62m E	Unspecified Tank	1925	72904
A	86m E	Unspecified Tank	1925	72901
1	130m E	Unspecified Tank	1991	72903
B	193m NW	Tank or Trough	1863	75511
B	241m NW	Tank or Trough	1863	75510
3	283m NE	Unspecified Tank	1925	72902
C	343m NW	Unspecified Tank	1899	72906

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

1

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

Features are displayed on the Past land use map on [page 13 >](#)

ID	Location	Land use	Dates present	Group ID
A	44m E	Gasometer	1899	42581

This data is sourced from Ordnance Survey / Groundsure.



1.4 Historical petrol stations

Records within 500m**0**

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

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m**0**

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

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

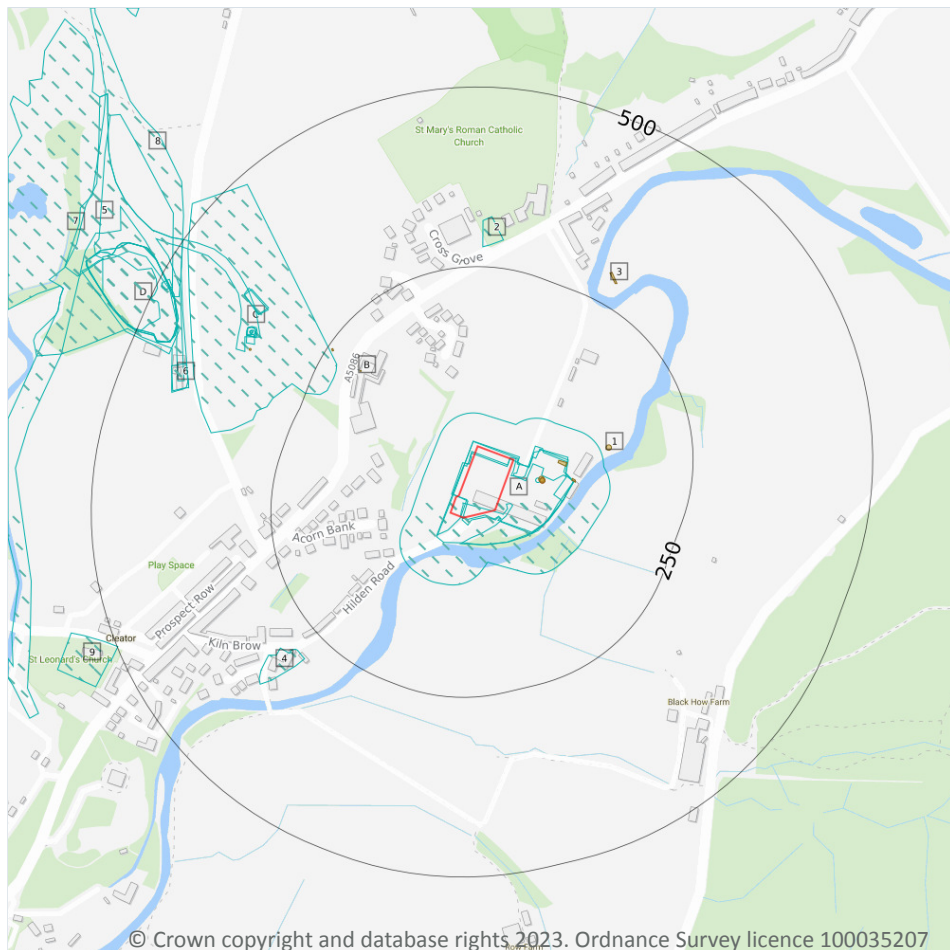
Records within 500m**0**

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

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



2 Past land use - un-grouped



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

2.1 Historical industrial land uses

Records within 500m

30

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 17](#) >

ID	Location	Land Use	Date	Group ID
A	On site	Unspecified Mills	1938	629929
A	On site	Unspecified Mills	1898	608885
A	On site	Flax Mill	1863	576811



ID	Location	Land Use	Date	Group ID
A	On site	Unspecified Mills	1948	629617
A	On site	Unspecified Mills	1926	599144
A	39m E	Unspecified Tank	1863	550974
C	222m NW	Unspecified Pit	1898	619163
2	278m N	Grave Yard	1863	557217
4	286m SW	Corn Mill	1863	553776
5	338m NW	Mineral Railway Sidings	1898	580878
C	341m NW	Unspecified Pit	1948	622063
C	343m NW	Unspecified Pit	1938	597638
C	345m NW	Unspecified Pit	1926	604808
C	345m NW	Unspecified Pit	1926	604808
C	348m NW	Unspecified Old Shaft	1938	609701
C	348m NW	Cuttings	1926	584752
C	349m NW	Unspecified Pit	1938	631245
C	351m NW	Unspecified Old Shaft	1926	623823
C	351m NW	Unspecified Old Shaft	1926	623823
6	402m W	Smithy	1863	580583
7	405m W	Iron Ore Mine	1898	586361
D	446m NW	Unspecified Pit	1948	596916
D	448m NW	Unspecified Pit	1938	624711
D	448m NW	Unspecified Pit	1898	613122
D	450m NW	Unspecified Pit	1926	622031
D	450m NW	Unspecified Pit	1926	622031
8	465m NW	Railway Sidings	1863	614074
D	477m NW	Unspecified Pit	1863	615823
D	479m NW	Engine House	1863	551992
9	499m SW	Grave Yard	1863	557212

This data is sourced from Ordnance Survey / Groundsure.



2.2 Historical tanks

Records within 500m

9

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

Features are displayed on the Past land use - un-grouped map on [page 17 >](#)

ID	Location	Land Use	Date	Group ID
A	42m E	Unspecified Tank	1863	72905
A	44m E	Gasometer	1899	75426
A	62m E	Unspecified Tank	1925	72904
A	86m E	Unspecified Tank	1925	72901
1	130m E	Unspecified Tank	1991	72903
B	193m NW	Tank or Trough	1863	75511
B	241m NW	Tank or Trough	1863	75510
3	283m NE	Unspecified Tank	1925	72902
C	343m NW	Unspecified Tank	1899	72906

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

1

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

Features are displayed on the Past land use - un-grouped map on [page 17 >](#)

ID	Location	Land Use	Date	Group ID
A	44m E	Gasometer	1899	42581

This data is sourced from Ordnance Survey / Groundsure.



2.4 Historical petrol stations

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m

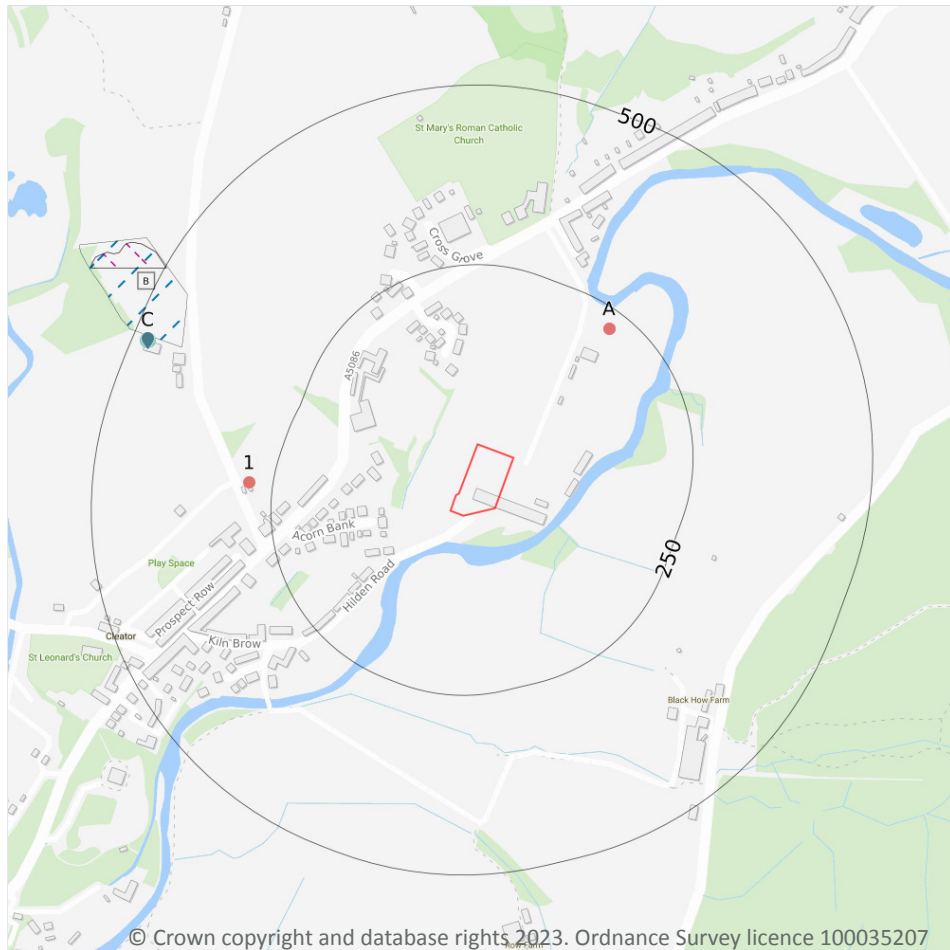
0

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

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Active or recent landfill
- Historical landfill (BGS)
- Historical landfill (LA/OS)
- Licensed waste sites
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

1

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation. Features are displayed on the Waste and landfill map on [page 21](#) >

ID	Location	Details	
B	433m NW	Operator: Cumbria County Council Site Address: Jacktrees Road, Cleator Moor, Cumbria, CA25 5BB	WML Number: 57253 EPR Reference: CUM015 Landfill type: A05: Landfill taking Non-Biodegradable Wastes Status: Closure IPPC Reference: - EPR Number: EA/EPR/ZP3493ZX/V002



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

3.2 Historical landfill (BGS records)

Records within 500m

1

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

Features are displayed on the Waste and landfill map on [page 21 >](#)

ID	Location	Address	BGS Number	Risk	Waste Type
C	480m NW	Jacktrees Rd, Cleator Moor, Cumberland	2481	No risk to aquifer	N/A

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m

1

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

Features are displayed on the Waste and landfill map on [page 21 >](#)

ID	Location	Site address	Source	Data type
B	498m NW	Refuse Tip	1995 mapping	Polygon

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

3.4 Historical landfill (EA/NRW records)

Records within 500m

0

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

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

3.5 Historical waste sites

Records within 500m

0

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

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

3.6 Licensed waste sites

Records within 500m

2

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

Features are displayed on the Waste and landfill map on [page 21 >](#)

ID	Location	Details		
C	480m NW	Site Name: Jacktrees Road Landfill Site Address: Jacktrees Road, Cleator Moor, Cumbria, CA25 5BB Correspondence Address: -	Type of Site: Landfill taking Non-Biodegradable Wastes Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CUM015 EPR reference: EA/EPR/ZP3493ZX/V002 Operator: Cumbria County Council Waste Management licence No: 57253 Annual Tonnage: 500	Issue Date: 28/04/1994 Effective Date: - Modified: 20/06/2017 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Closure
C	480m NW	Site Name: Jacktrees Road Site Address: County Contracting, Jacktrees Road, Cleator Moor, Cumbria, CA25 5BB Correspondence Address: -	Type of Site: Inert LF Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CUM015 EPR reference: EA/EPR/ZP3493ZX/A001 Operator: Cumbria County Council Waste Management licence No: 57253 Annual Tonnage: 500	Issue Date: 28/04/1994 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Closure

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



3.7 Waste exemptions

Records within 500m

3

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

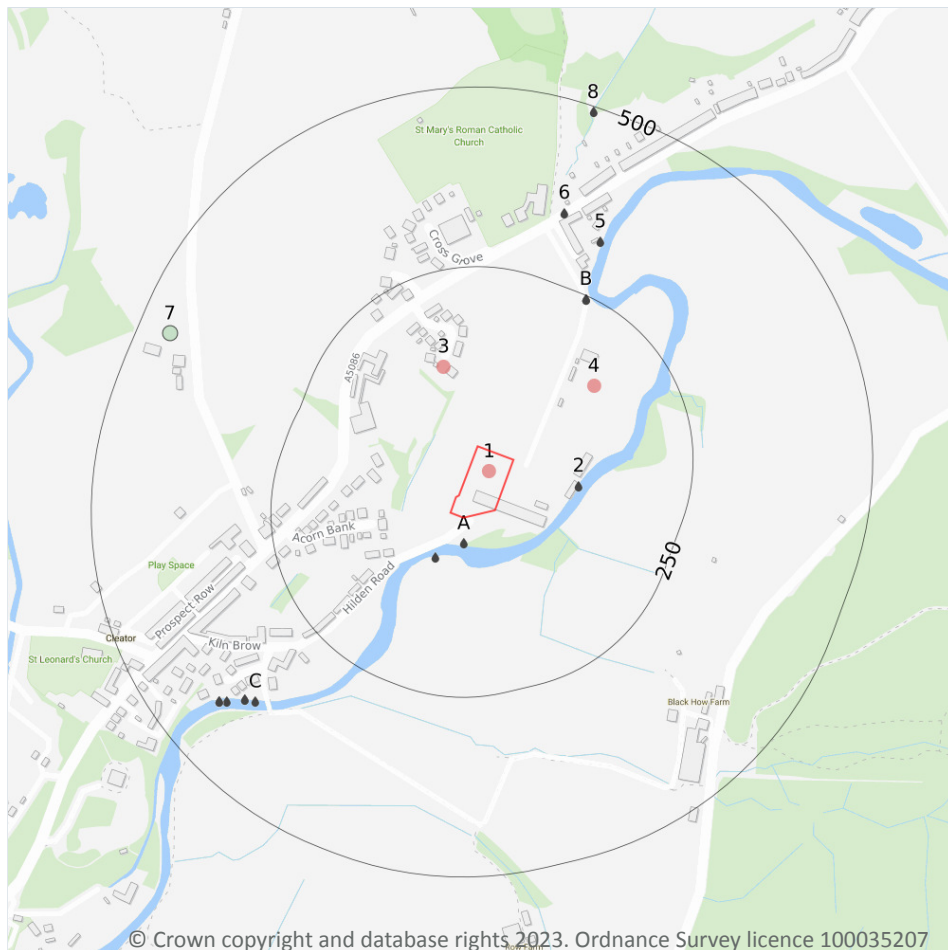
Features are displayed on the Waste and landfill map on [page 21 >](#)

ID	Location	Site	Reference	Category	Sub-Category	Description
A	223m NE	-	WEX245998	Treating waste exemption	Not on a farm	Screening and blending of waste
A	223m NE	-	WEX245998	Using waste exemption	Not on a farm	Use of waste in construction
1	283m W	-	WEX249716	Disposing of waste exemption	Not on a farm	Burning waste in the open

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



4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- Licensed Discharges to controlled waters
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m

3

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 25 >](#)

ID	Location	Company	Address	Activity	Category
1	On site	Factory	Cumbria, CA23	Unspecified Works Or Factories	Industrial Features
3	121m N	Electricity Sub Station	Cumbria, CA23	Electrical Features	Infrastructure and Facilities
4	152m NE	Factory	Cumbria, CA23	Unspecified Works Or Factories	Industrial Features



This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m

0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m

0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m

0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m

0

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m

0

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

This data is sourced from the Health and Safety Executive.



4.7 Regulated explosive sites

Records within 500m

0

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m

0

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m

0

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m

0

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

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

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

Records within 500m

0

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

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m

0

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m

17

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

Features are displayed on the Current industrial land use map on [page 25 >](#)

ID	Location	Address	Details	
A	35m S	THE FLOSH, CLEATOR, CUMBRIA	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 01COP0021 Permit Version: 1 Receiving Water: RIVER EHEN	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 15/09/1993 Revocation Date: 15/09/1993
A	66m SW	KANGOL WEAR LTD, CLEATOR MILLS, CLEATOR MOOR, CUMBRIA	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: 017490073 Permit Version: 1 Receiving Water: R.EHEN	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 22/09/1966 Revocation Date: 04/10/1995
2	97m E	CROSS PAPERWARE LTD, CLEATOR MILL, CLEATOR, CUMBRIA	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: 017490086 Permit Version: 1 Receiving Water: R.EHEN	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 25/10/1978 Revocation Date: 22/03/1991
B	245m NE	BROOKSIDE CSO, CLEATON MOOR, CUMBRIA	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 017580239 Permit Version: 3 Receiving Water: RIVER EHEN	Status: VARIED UNDER EPR 2010 Issue date: 27/07/2021 Effective Date: 27/07/2021 Revocation Date: -
B	245m NE	BROOKSIDE CSO, CLEATON MOOR, CUMBRIA	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 017580239 Permit Version: 1 Receiving Water: RIVER EHEN	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 18/06/1992 Revocation Date: 20/05/2007



ID	Location	Address	Details	
B	245m NE	BROOKSIDE CSO, CLEATON MOOR, CUMBRIA	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 017580239 Permit Version: 2 Receiving Water: RIVER EHEN	Status: VARIED BY APPLICATION - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 21/05/2007 Effective Date: 21/05/2007 Revocation Date: 20/12/2022
B	245m NE	BROOKSIDE CSO, CLEATON MOOR, CUMBRIA	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01COP0091 Permit Version: 1 Receiving Water: RIVER EHEN	Status: CONSENT REVOKED OR REVISED - NEW CONSENT ISSUED (37(1)) Issue date: - Effective Date: 01/01/1995 Revocation Date: 01/01/1995
5	326m NE	BROOKSIDE NO 2, CLEATOR, COPELAND, CUMBRIA	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01COP0020 Permit Version: 1 Receiving Water: RIVER EHEN	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 07/10/1994 Revocation Date: 01/01/1995
6	346m N	BROOKSIDE NO 1, CLEATOR, COPELAND, CUMBRIA	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01COP0082 Permit Version: 1 Receiving Water: SKIRTING BECK	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/01/1995 Revocation Date: -
C	377m SW	KILN BROW COMBINED SEWER OVERFLOW, KILN BROW, CLEATOR, CUMBRIA	Effluent Type: MISCELLANEOUS DISCHARGES - EMERGENCY DISCHARGES Permit Number: 01COP0011 Permit Version: 1 Receiving Water: RIVER EHEN	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/01/1995 Revocation Date: 10/11/2020
C	386m SW	KILN BROW PUMPING STATION, 1 MILLERS WALK, CLEATOR, CLEATOR, CA23 3BP	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01COP0011 Permit Version: 2 Receiving Water: RIVER EHEN	Status: VARIED UNDER EPR 2010 Issue date: 11/11/2020 Effective Date: 11/11/2020 Revocation Date: -
C	386m SW	KILN BROW PUMPING STATION, 1 MILLERS WALK, CLEATOR, CLEATOR, CA23 3BP	Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: 01COP0011 Permit Version: 2 Receiving Water: RIVER EHEN	Status: VARIED UNDER EPR 2010 Issue date: 11/11/2020 Effective Date: 11/11/2020 Revocation Date: -



ID	Location	Address	Details	
C	407m SW	KILN BROW COMBINED SEWER OVERFLOW, KILN BROW, CLEATOR, CUMBRIA	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01COP0019 Permit Version: 1 Receiving Water: RIVER EHEN	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 01/01/1995 Revocation Date: 30/03/2004
C	415m SW	KILN BROW COMBINED SEWER OVERFLOW, KILN BROW, CLEATOR, CUMBRIA	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 017480401 Permit Version: 2 Receiving Water: RIVER EHEN	Status: VARIED UNDER EPR 2010 Issue date: 23/03/2017 Effective Date: 14/03/2017 Revocation Date: -
C	415m SW	KILN BROW COMBINED SEWER OVERFLOW, KILN BROW, CLEATOR, CUMBRIA	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 017480401 Permit Version: 1 Receiving Water: RIVER EHEN	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 04/12/2006 Effective Date: 04/12/2006 Revocation Date: 13/03/2017
C	415m SW	KILN BROW COMBINED SEWER OVERFLOW, KILN BROW, CLEATOR, CUMBRIA	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01COP0019 Permit Version: 2 Receiving Water: RIVER EHEN	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 31/03/2004 Effective Date: 31/03/2004 Revocation Date: 03/12/2006
8	491m N	PRIORY RD, CLEATOR MOOR, CUMBRIA	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 01COP0022 Permit Version: 1 Receiving Water: KIRTING BECK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 15/09/1993 Revocation Date: 15/09/1993

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m

0

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

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



4.15 Pollutant release to public sewer

Records within 500m

0

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m

0

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

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

4.17 List 2 Dangerous Substances

Records within 500m

0

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m

1

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

Features are displayed on the Current industrial land use map on [page 25 >](#)

ID	Location	Details	
7	456m NW	Incident Date: 25/07/2003 Incident Identification: 176742 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)

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

4.19 Pollution inventory substances

Records within 500m**0**

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

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

4.20 Pollution inventory waste transfers

Records within 500m**0**

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

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

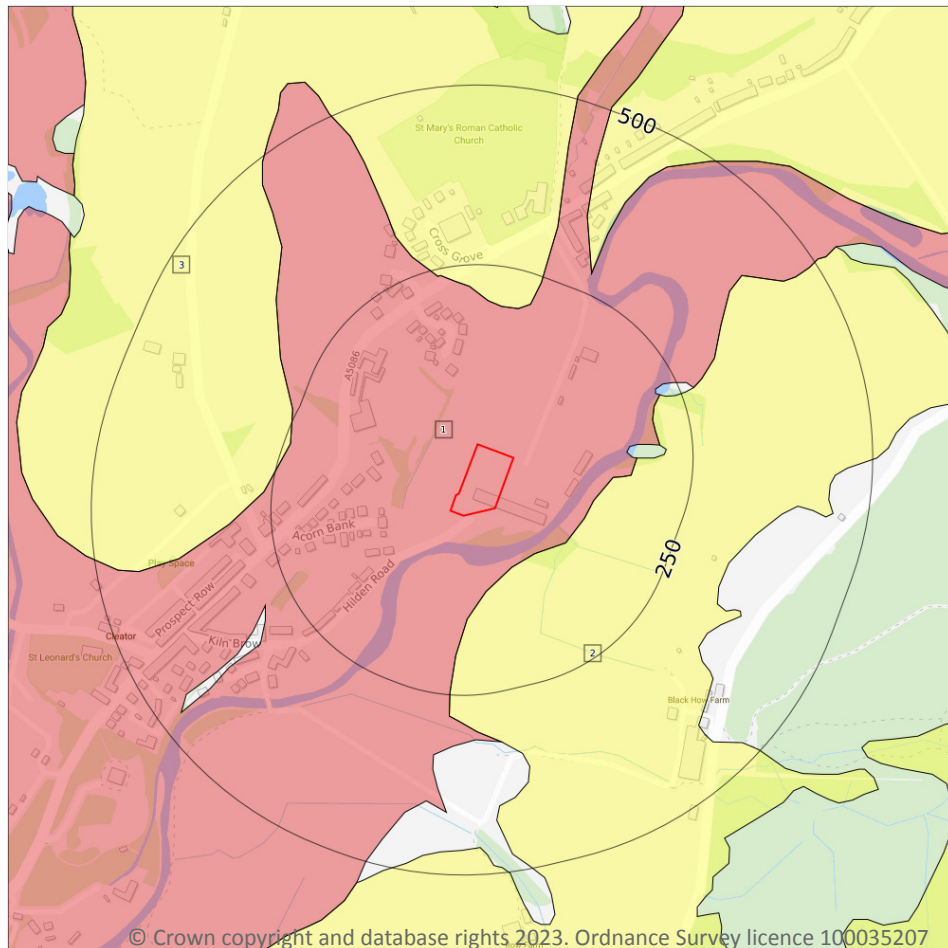
4.21 Pollution inventory radioactive waste

Records within 500m**0**

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

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

5 Hydrogeology - Superficial aquifer



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

5.1 Superficial aquifer

Records within 500m

3

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on [page 33](#) >

ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	83m SE	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

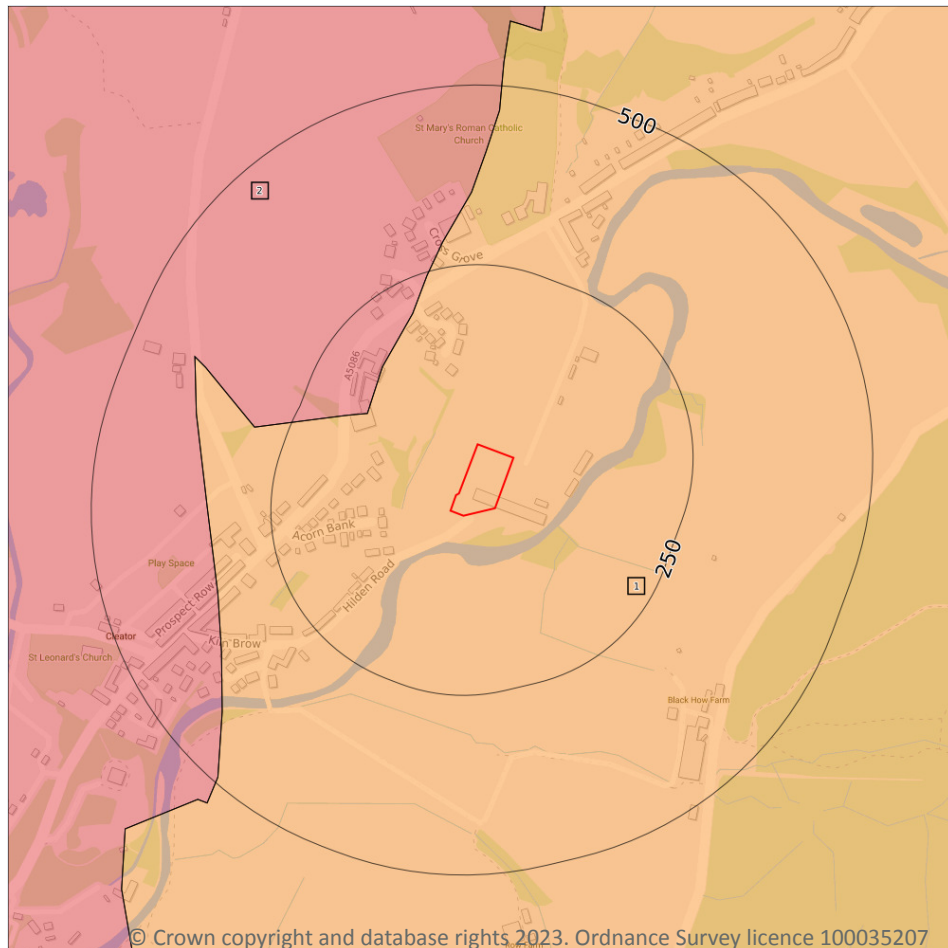


ID	Location	Designation	Description
3	195m N	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

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



Bedrock aquifer



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

5.2 Bedrock aquifer

Records within 500m

2

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on [page 35](#) >

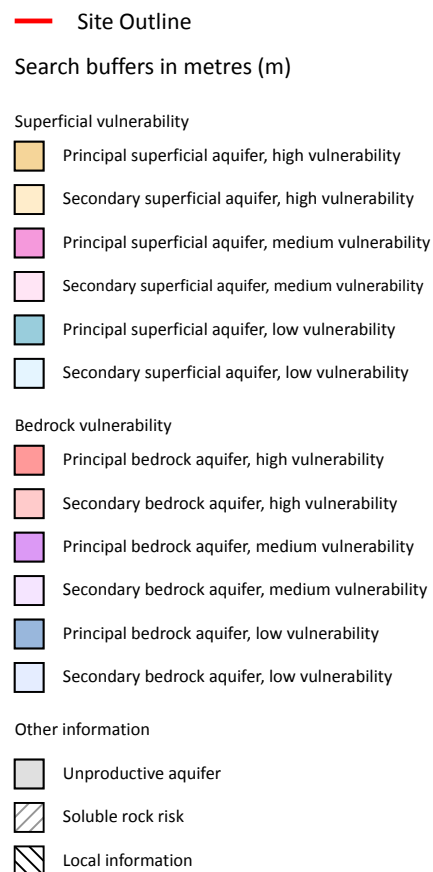
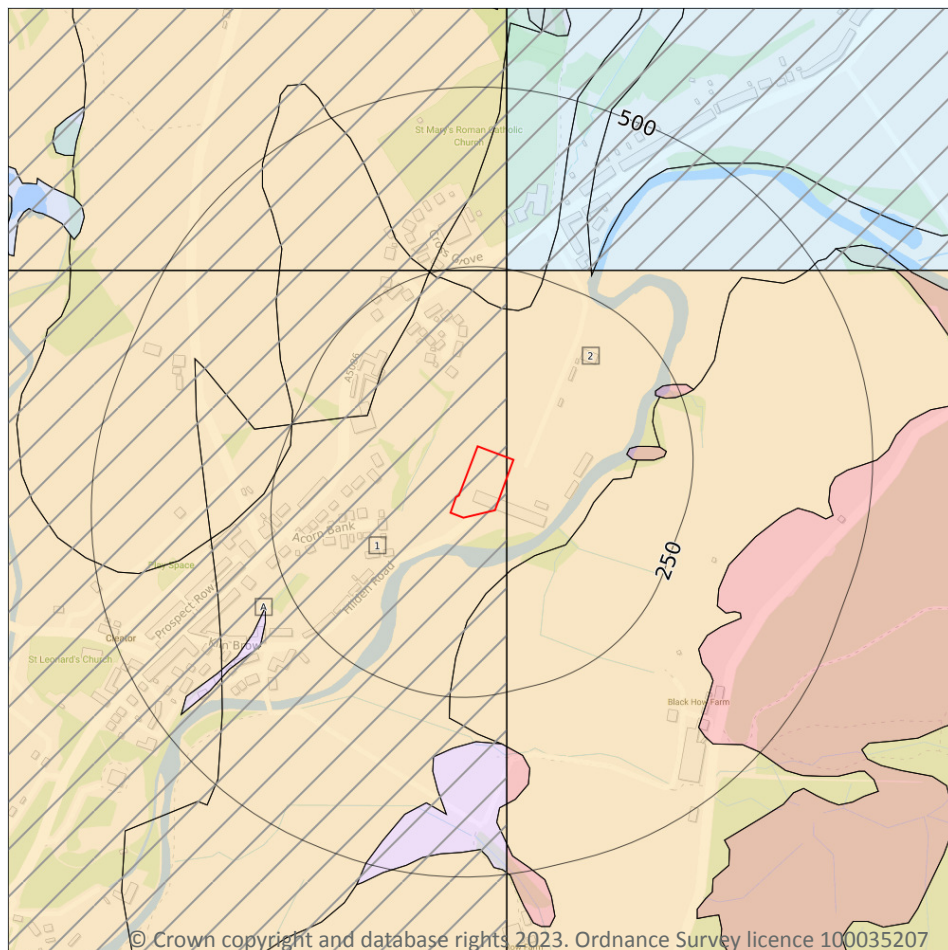
ID	Location	Designation	Description
1	On site	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers
2	159m NW	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



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



Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

2

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

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

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

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: >550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: High	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
2	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: >550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: 3-10m Patchiness value: <90% Recharge potential: High	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	1
------------------------	----------

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

ID	Maximum soluble risk category	Percentage of grid square covered by maximum risk
A	Significant soluble rocks are likely to be present. Low possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow.	21.0%

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

5.5 Groundwater vulnerability- local information

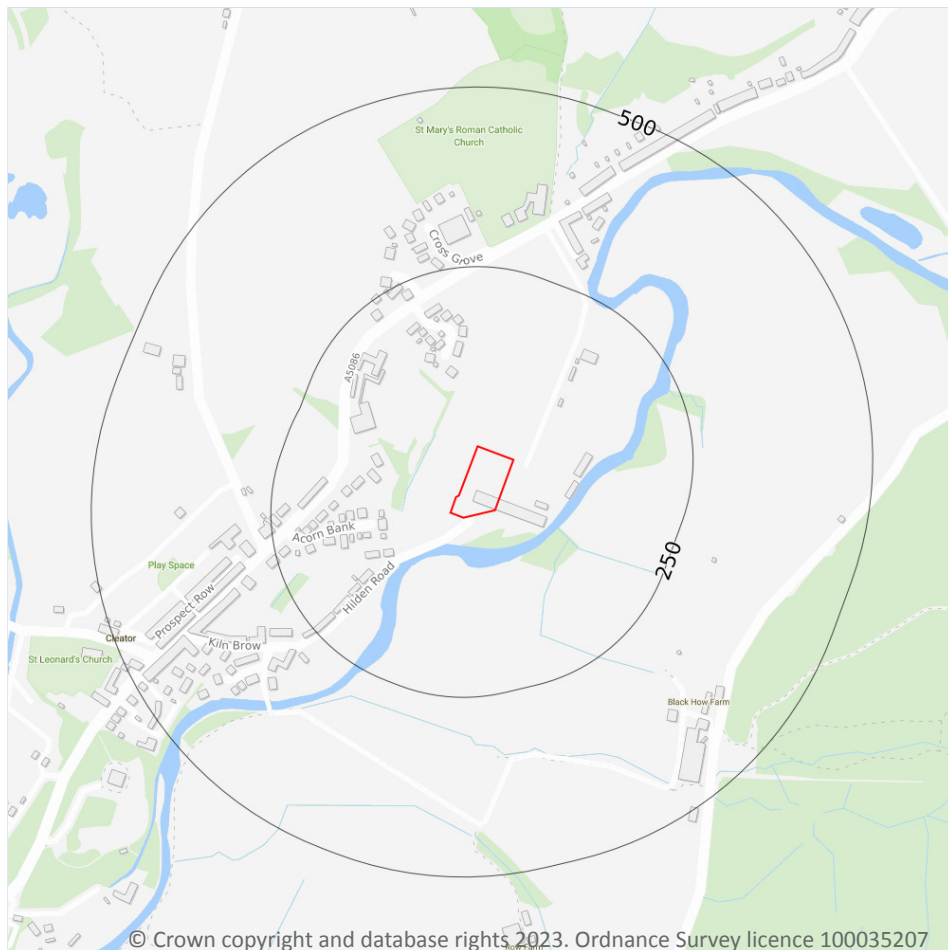
Records on site	0
------------------------	----------

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk ↗.

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



Abstractions and Source Protection Zones



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

5.6 Groundwater abstractions

Records within 2000m

0

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

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

5.7 Surface water abstractions

Records within 2000m

1

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

Features are displayed on the Abstractions and Source Protection Zones map on [page 39](#) >

ID	Location	Details	
-	780m NE	Status: Historical Licence No: 2774003011 Details: Fish Farm/Cress Pond Throughflow Direct Source: Surface, Non-Tidal - North West Region Point: RIVER EHEN AT BECK SIDE Data Type: Point Name: JACQUES Easting: 302700 Northing: 514100	Annual Volume (m ³): 416100 Max Daily Volume (m ³): 1140 Original Application No: - Original Start Date: 14/09/1994 Expiry Date: - Issue No: 100 Version Start Date: 14/09/1994 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m

0

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

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

5.9 Source Protection Zones

Records within 500m

0

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

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

5.10 Source Protection Zones (confined aquifer)

Records within 500m

0

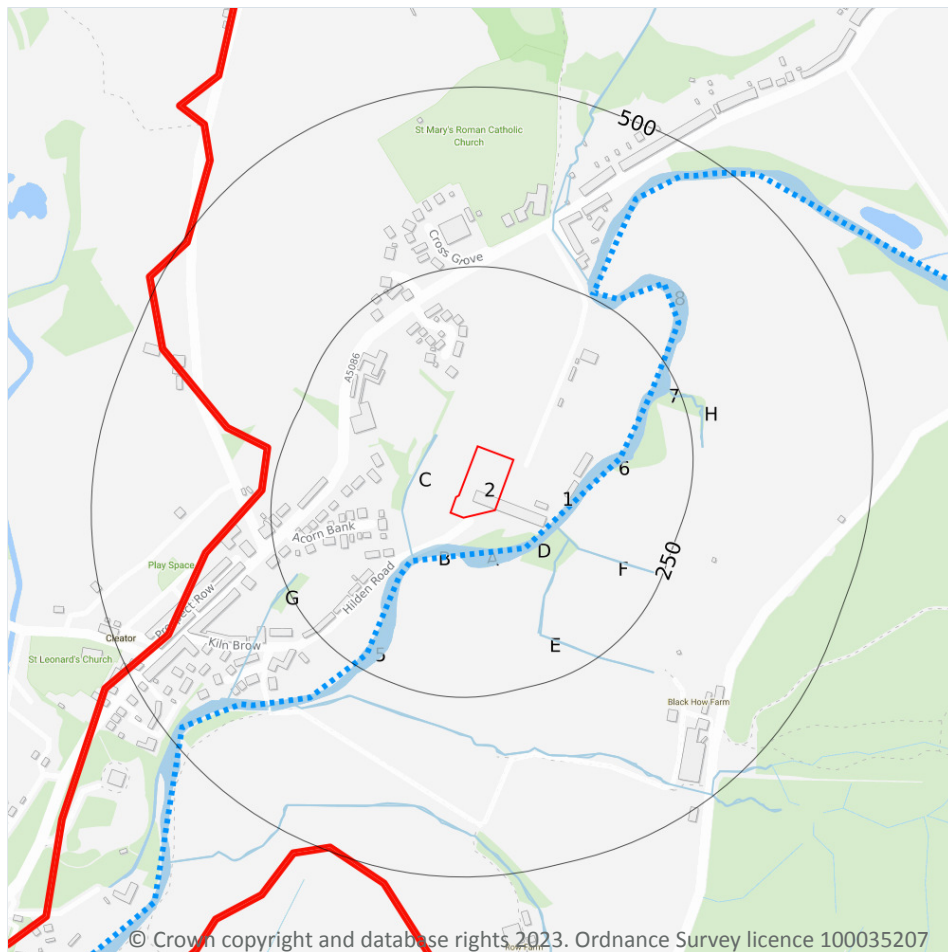
Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.



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



6 Hydrology



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

6.1 Water Network (OS MasterMap)

Records within 250m

16

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

Features are displayed on the Hydrology map on [page 42 >](#)

ID	Location	Type of water feature	Ground level	Permanence	Name
A	44m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Ehen



ID	Location	Type of water feature	Ground level	Permanence	Name
A	46m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Ehen
B	46m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Ehen
C	58m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	60m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Ehen
B	65m SW	Inland river not influenced by normal tidal action.	Not provided	Watercourse contains water year round (in normal circumstances)	-
5	80m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Ehen
6	85m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Ehen
D	85m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	109m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	110m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	127m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
G	229m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
7	230m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-



ID	Location	Type of water feature	Ground level	Permanence	Name
8	230m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Ehen
H	237m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

7

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

Features are displayed on the Hydrology map on [page 42 >](#)

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site

1

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

Features are displayed on the Hydrology map on [page 42 >](#)

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	On site	River	Ehen (upper including Liza)	GB112074070010	Ehen-Calder	South West Lakes

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



6.4 WFD Surface water bodies

Records identified	1
---------------------------	----------

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

Features are displayed on the Hydrology map on [page 42 >](#)

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
4	52m S	River	Ehen (upper including Liza)	GB112074070010 ↗	Moderate	Fail	Good	2019

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

6.5 WFD Groundwater bodies

Records on site	1
------------------------	----------

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

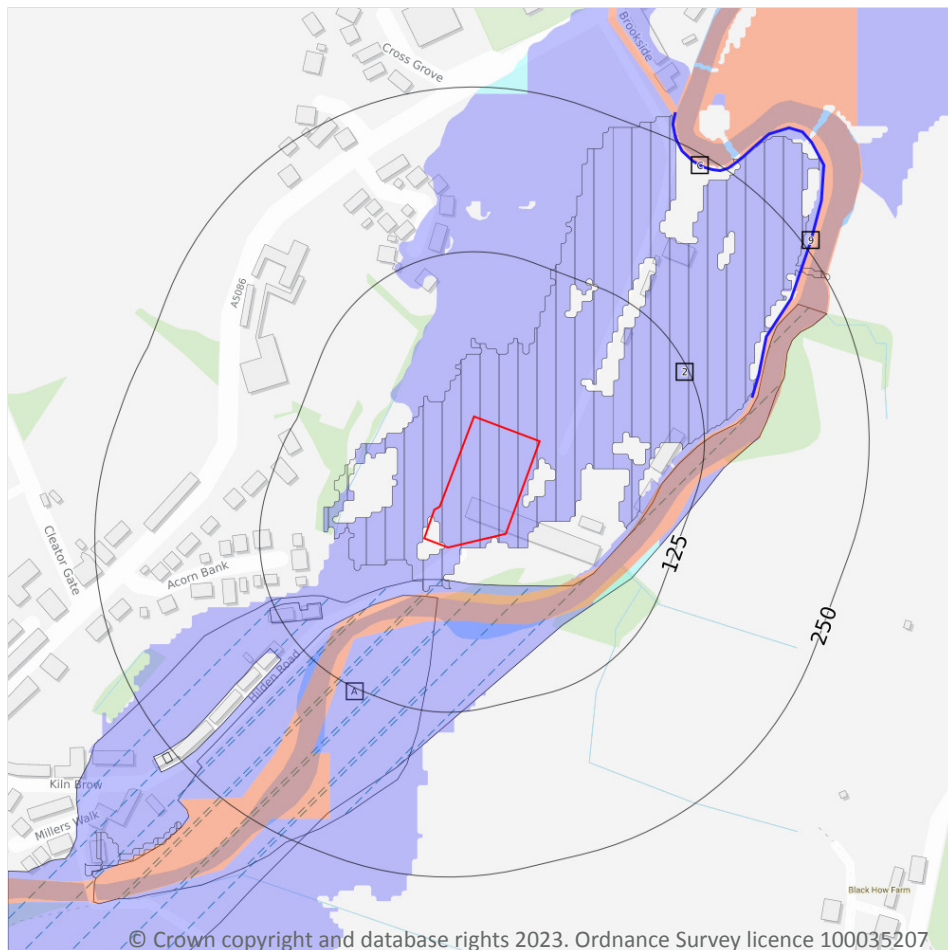
Features are displayed on the Hydrology map on [page 42 >](#)

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
2	On site	Derwent and West Cumbria Lower Palaeozoic and Carboniferous Aquifers	GB41202G103700 ↗	Poor	Poor	Good	2019

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



7 River and coastal flooding



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

7.1 Risk of flooding from rivers and the sea

Records within 50m

2

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

Features are displayed on the River and coastal flooding map on [page 46 >](#)



Distance	Flood risk category
On site	Medium
0 - 50m	High

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

7.2 Historical Flood Events

Records within 250m	2
----------------------------	----------

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

Features are displayed on the River and coastal flooding map on [page 46 >](#)

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
A	25m SW	Cleator November 2009 Flooding	2009-11-19 2009-11-22	Main river	Channel capacity exceeded (no raised defences)	Fluvial
A	39m S	11/10/2017 Fluvial Flood Event - Cleator Moor	2017-10-11 2017-10-12	Main river	Channel capacity exceeded (no raised defences)	Fluvial

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

7.3 Flood Defences

Records within 250m	2
----------------------------	----------

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

Features are displayed on the River and coastal flooding map on [page 46 >](#)

ID	Location	Update
9	164m E	08/11/2022
C	242m NE	08/11/2022

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



7.4 Areas Benefiting from Flood Defences

Records within 250m**1**

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

Features are displayed on the River and coastal flooding map on [page 46](#) >

ID	Location	
2	On site	Area benefiting from flood defences

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

7.5 Flood Storage Areas

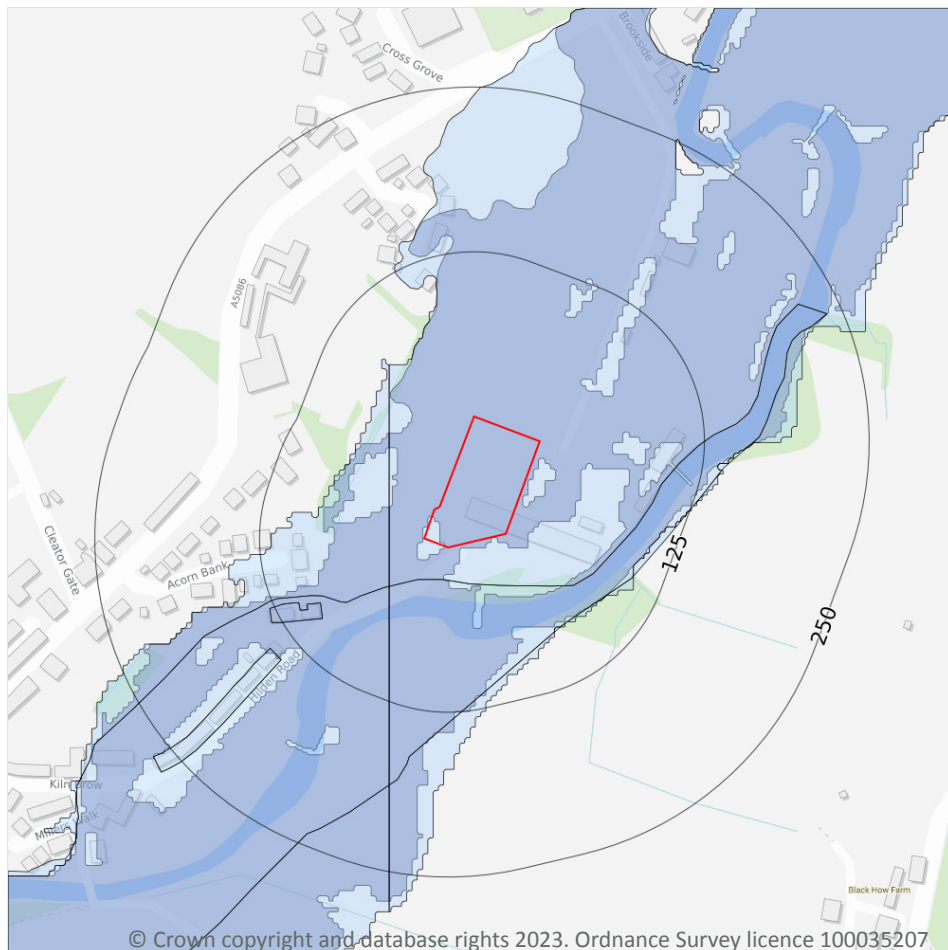
Records within 250m**0**

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

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



River and coastal flooding - Flood Zones



- Site Outline
- Search buffers in metres (m)
- Flood zone 2
- Flood zone 3

7.6 Flood Zone 2

Records within 50m

1

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

Features are displayed on the River and coastal flooding map on [page 46 >](#)

Location	Type
On site	Zone 2 - (Fluvial /Tidal Models)

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

7.7 Flood Zone 3

Records within 50m

1

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

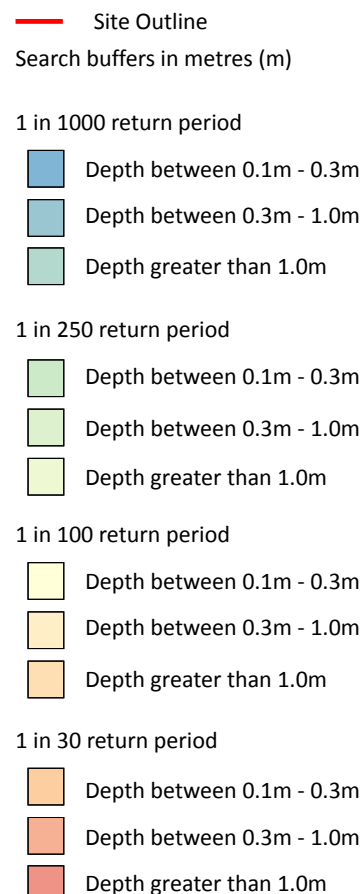
Features are displayed on the River and coastal flooding map on [page 46](#) >

Location	Type
On site	Zone 3 - (Fluvial /Tidal Models)

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



8 Surface water flooding



8.1 Surface water flooding

Highest risk on site

1 in 30 year, 0.1m - 0.3m

Highest risk within 50m

1 in 30 year, 0.3m - 1.0m

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

Features are displayed on the Surface water flooding map on [page 51](#) >

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

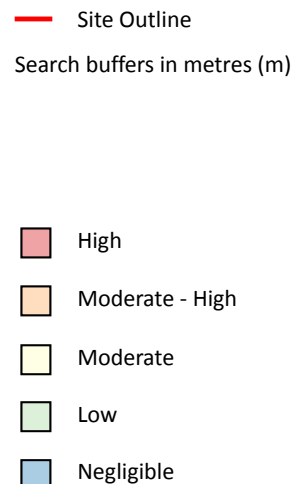
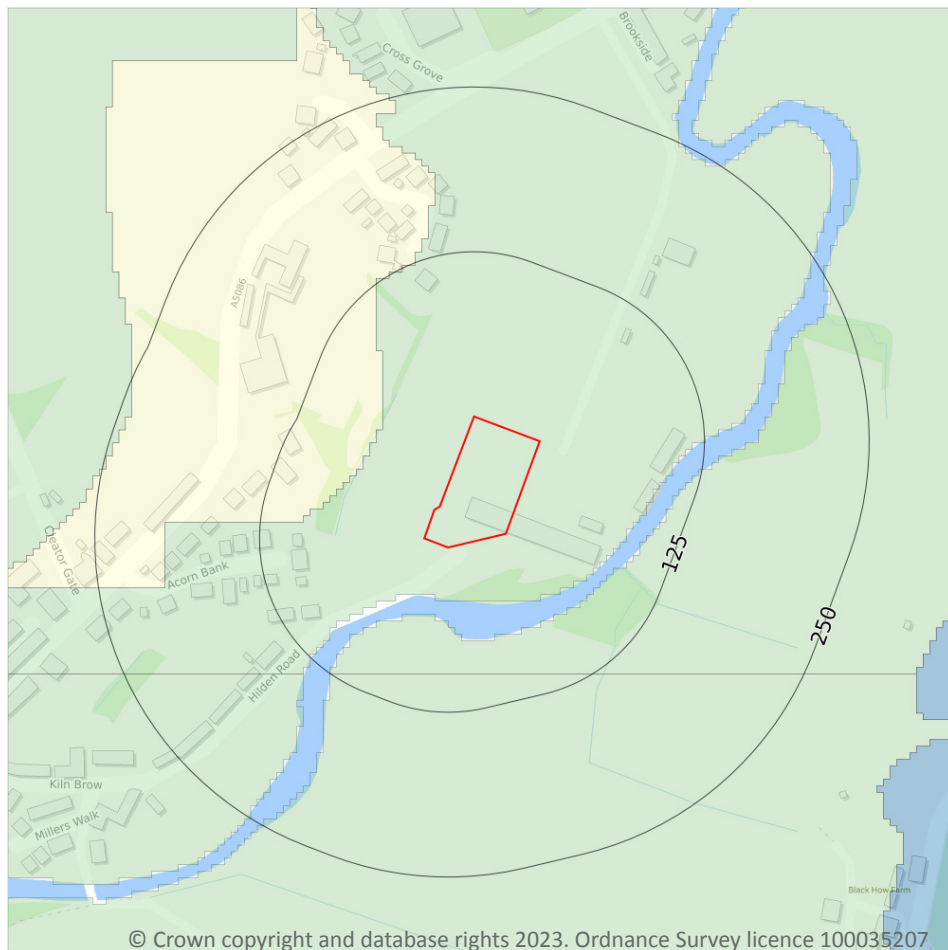
The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Between 0.3m and 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.3m and 1.0m
1 in 30 year	Between 0.1m and 0.3m

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

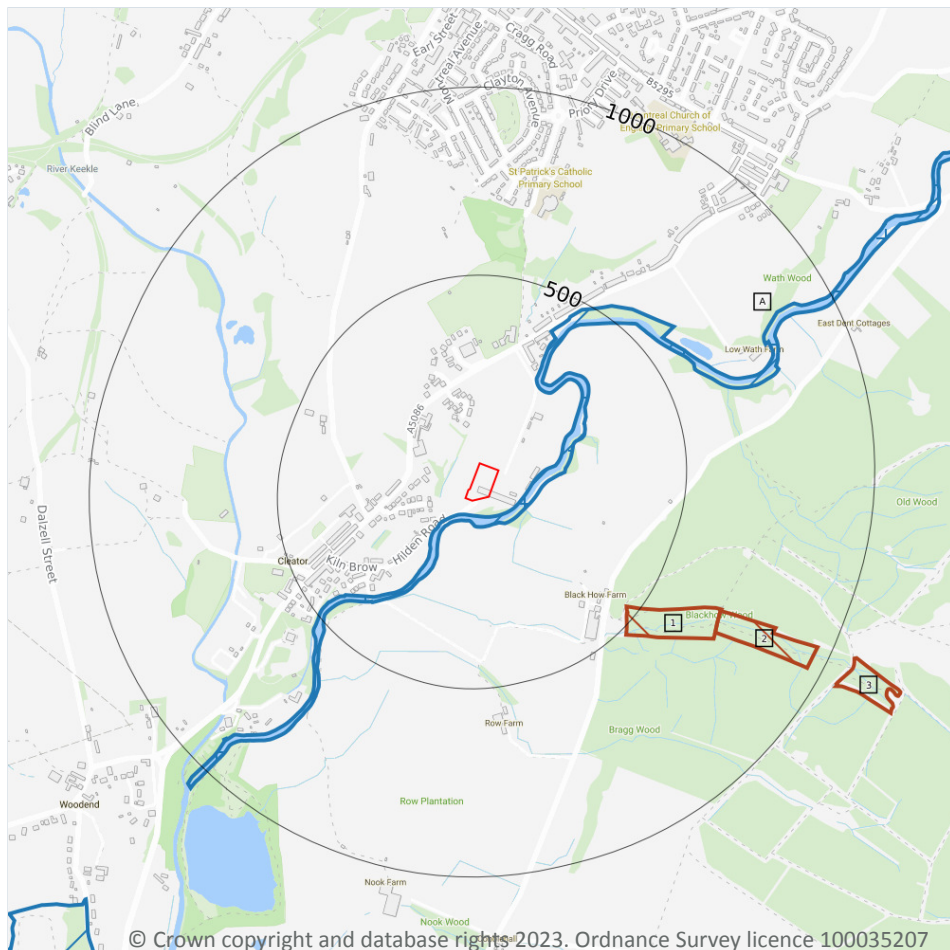
Low

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

Features are displayed on the Groundwater flooding map on [page 53 >](#)

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Sites of Special Scientific Interest (SSSI)
- + Special Areas of Conservation (SAC)
- Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

2

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

Features are displayed on the Environmental designations map on [page 54](#) >

ID	Location	Name	Data source
A	39m S	River Ehen (Ennerdale Water to Keekle Confluence)	Natural England



ID	Location	Name	Data source
4	1468m SW	Clints Quarry	Natural England

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0
-----------------------------	----------

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	1
-----------------------------	----------

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

Features are displayed on the Environmental designations map on [page 54 >](#)

ID	Location	Name	Features of interest	Habitat description	Data source
A	39m S	River Ehen	Brook lamprey; Atlantic salmon; Freshwater pearl mussel.	Inland water bodies (Standing water, Running water); Coniferous woodland; Broad-leaved deciduous woodland	Natural England

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

10.4 Special Protection Areas (SPA)

Records within 2000m	0
-----------------------------	----------

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m**0**

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m**0**

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

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

10.7 Designated Ancient Woodland

Records within 2000m**3**

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

Features are displayed on the Environmental designations map on [page 54 >](#)

ID	Location	Name	Woodland Type
1	468m SE	Unknown	Ancient Replanted Woodland
2	687m SE	Unknown	Ancient Replanted Woodland
3	1049m SE	Unknown	Ancient Replanted Woodland

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

10.8 Biosphere Reserves

Records within 2000m**0**

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



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

10.9 Forest Parks

Records within 2000m

0

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m

0

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

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

10.11 Green Belt

Records within 2000m

0

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

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

10.12 Proposed Ramsar sites

Records within 2000m

0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

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

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



10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m

0

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

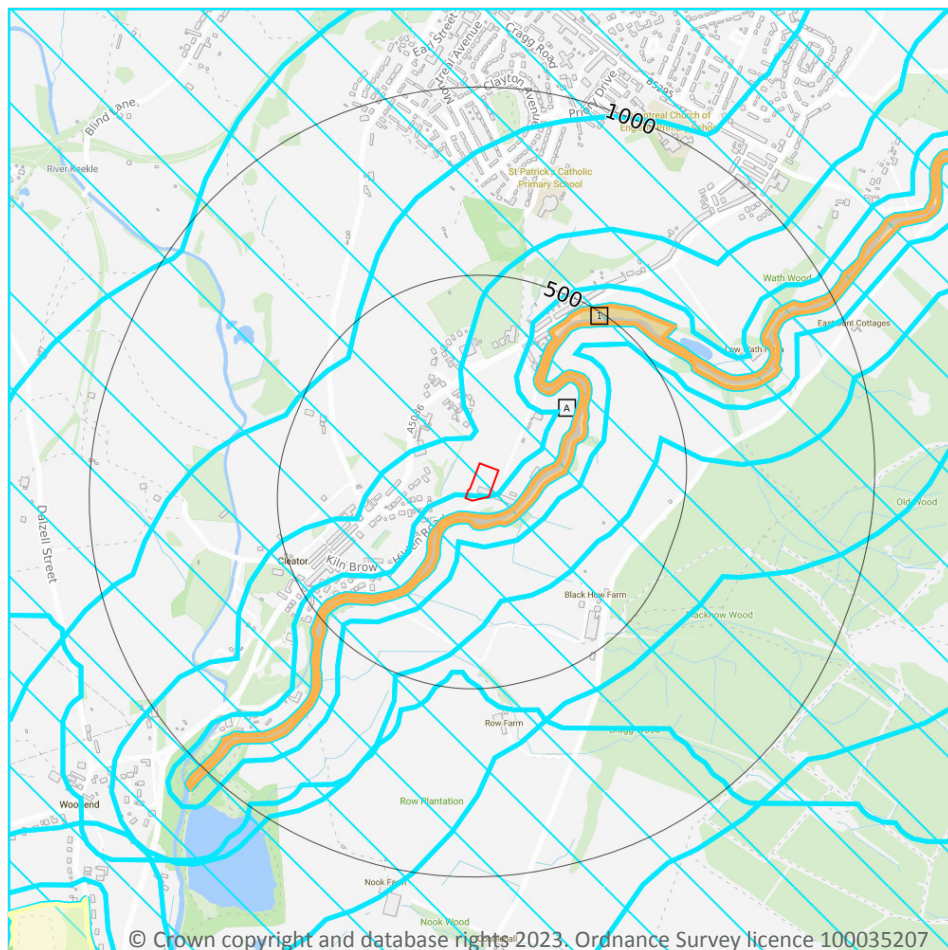
Records within 2000m

0

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

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

SSSI Impact Zones and Units



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

10.17 SSSI Impact Risk Zones

Records on site

2

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

Features are displayed on the SSSI Impact Zones and Units map on [page 59](#) >

ID	Location	Type of developments requiring consultation
A	On site	All applications - All planning applications - except householder applications.



ID	Location	Type of developments requiring consultation
A	On site	Infrastructure - Pipelines, pylons and overhead cables. any transport proposal including road, rail and by water (excluding routine maintenance). airports, helipads and other aviation proposals. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, review of minerals permissions (romp), extensions, variations to conditions etc. oil & gas exploration/extraction. Rural non-residential - Large non residential developments outside existing settlements/urban areas where net additional gross internal floorspace is > 1,000m² or footprint exceeds 0.2ha. Residential - Residential development of 50 units or more. Rural residential - Any residential development of 10 or more houses outside existing settlements/urban areas. Air pollution - Any development that could cause air pollution or dust either in its construction or operation (incl: industrial/commercial processes, livestock & poultry units, slurry lagoons & digestate stores, manure stores). Combustion - All general combustion processes. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Mechanical and biological waste treatment, inert landfill, non-hazardous landfill, hazardous landfill, household civic amenity recycling facilities construction, demolition and excavation waste, other waste management. Composting - Any composting proposal. incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Discharges - Any discharge of water or liquid waste that is discharged to ground (ie to seep away) or to surface water, such as a beck or stream. Water supply - Large infrastructure such as warehousing / industry where net additional gross internal floorspace is > 1,000m² or any development needing its own water supply .

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m

3

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

Features are displayed on the SSSI Impact Zones and Units map on [page 59](#) >

ID:	1
Location:	39m S
SSSI name:	River Ehen (Ennerdale Water to Keekle Confluence)
Unit name:	Old Units 3-6
Broad habitat:	Rivers And Streams
Condition:	Unfavourable - Declining
Reportable features:	



Feature name	Feature condition	Date of assessment
Population of Schedule 5 mollusc - Margaritifera margaritifera, Freshwater Pearl Mussel	Unfavourable - Declining	13/08/2012
Rivers and Streams	Unfavourable - No change	13/08/2012
S1029 Freshwater pearl mussel, Margaritifera margaritifera	Unfavourable - Declining	13/08/2012
S1106 Atlantic salmon, Salmo salar	Unfavourable - No change	13/08/2012

ID: 15
 Location: 1468m SW
 SSSI name: Clints Quarry
 Unit name: 2
 Broad habitat: Earth Heritage
 Condition: Unfavourable - Recovering
 Reportable features:

Feature name	Feature condition	Date of assessment
ED - Dinantian	Unfavourable - Recovering	26/03/2008
Lowland calcareous grassland (CG7)	Not Recorded	01/01/1900
Lowland dry acid grassland (U1b,c,d,f)	Not Recorded	01/01/1900
Upland neutral grassland (MG3)	Not Recorded	01/01/1900

ID: 16
 Location: 1702m SW
 SSSI name: Clints Quarry
 Unit name: 1
 Broad habitat: Earth Heritage
 Condition: Favourable
 Reportable features:

Feature name	Feature condition	Date of assessment
ED - Dinantian	Favourable	12/07/2021
Lowland calcareous grassland (CG2)	Favourable	30/01/2013
Lowland calcareous grassland (CG7)	Not Recorded	01/01/1900

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



11 Visual and cultural designations



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

11.1 World Heritage Sites

Records within 250m

0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m**0**

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

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

11.3 National Parks

Records within 250m**0**

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

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

11.4 Listed Buildings

Records within 250m**1**

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

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

ID	Location	Name	Grade	Reference Number	Listed date
1	160m NW	The Flosh	II	1086723	09/08/1984

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



11.5 Conservation Areas

Records within 250m**0**

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

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

11.6 Scheduled Ancient Monuments

Records within 250m**0**

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

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

11.7 Registered Parks and Gardens

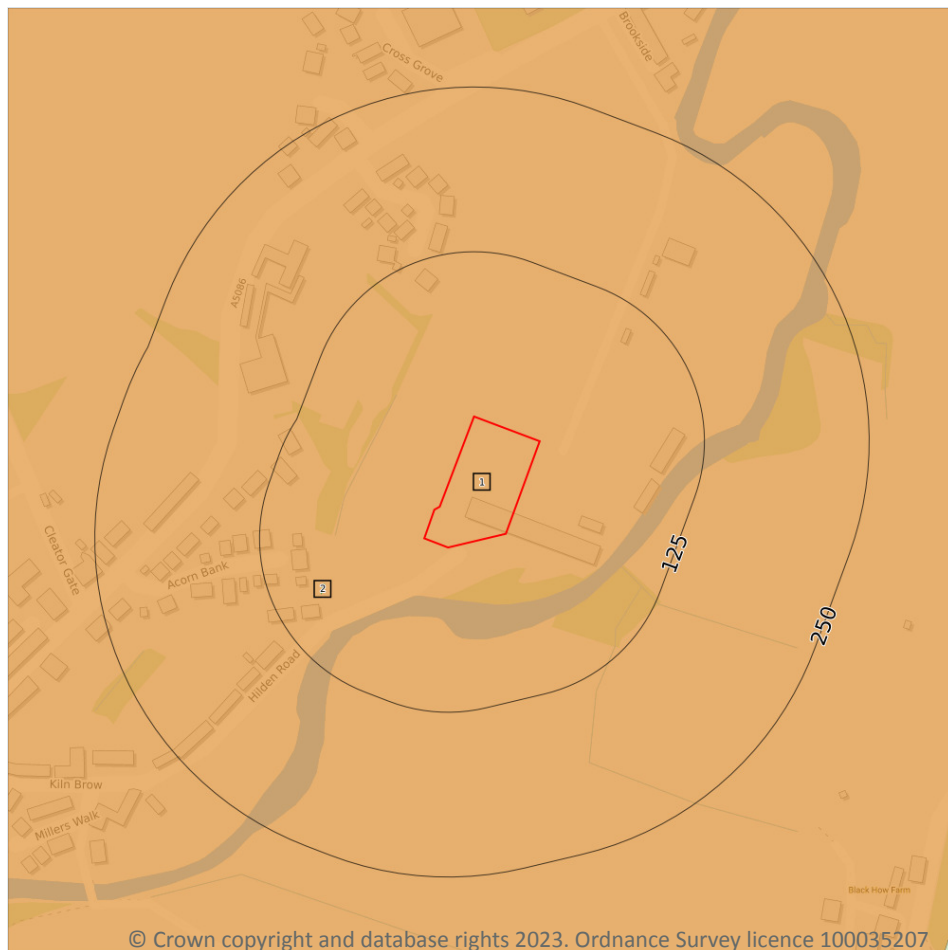
Records within 250m**0**

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

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



12 Agricultural designations



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

12.1 Agricultural Land Classification

Records within 250m

1

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

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

ID	Location	Classification	Description
1	On site	Grade 3	Good to moderate quality agricultural land. Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.

This data is sourced from Natural England.



12.2 Open Access Land

Records within 250m**0**

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

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

12.3 Tree Felling Licences

Records within 250m**1**

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

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

ID	Location	Description	Reference	Application date
2	83m SW	Clear Fell (Conditional)	010/81/08-09	13/10/2008

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m**0**

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m**0**

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

This data is sourced from Natural England.



13 Habitat designations



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

13.1 Priority Habitat Inventory

Records within 250m

6

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

Features are displayed on the Habitat designations map on [page 67 >](#)

ID	Location	Main Habitat	Other habitats
1	27m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	59m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
3	73m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
4	133m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)



ID	Location	Main Habitat	Other habitats
5	140m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
6	214m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0
----------------------------	----------

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0
----------------------------	----------

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

This data is sourced from Natural England.

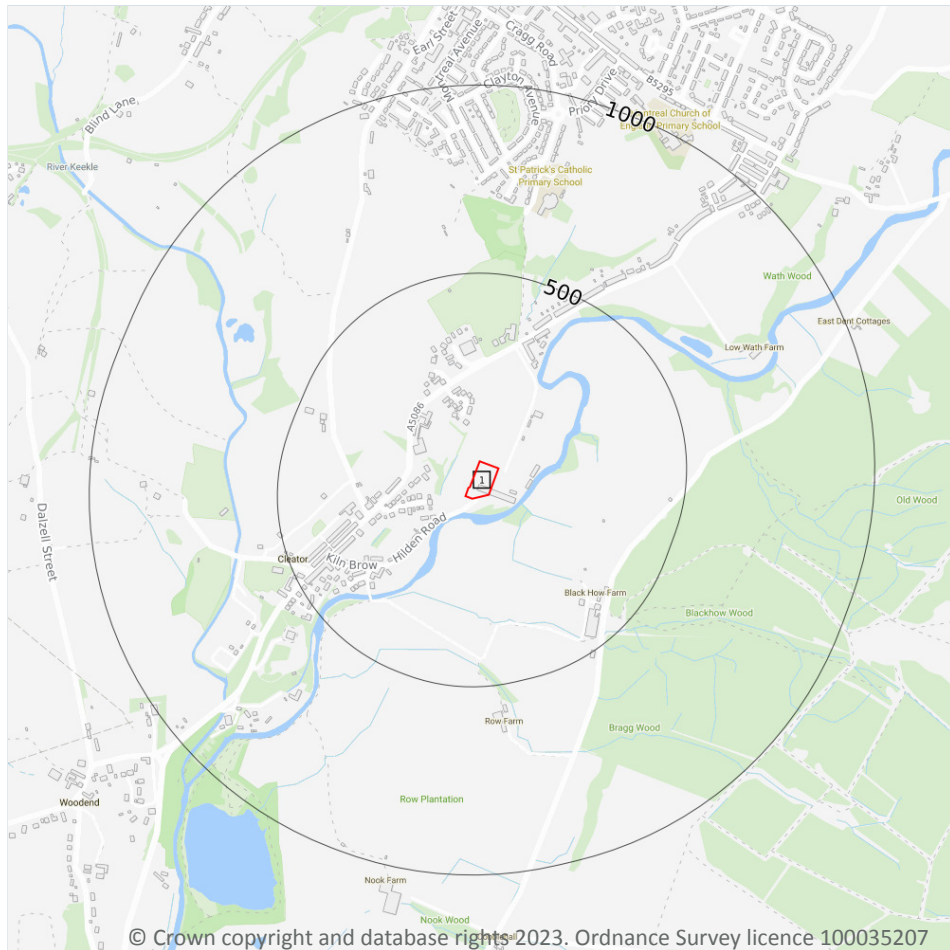
13.4 Limestone Pavement Orders

Records within 250m	0
----------------------------	----------

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



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

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14.1 10k Availability

Records within 500m

1

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

Features are displayed on the Geology 1:10,000 scale - Availability map on [page 69](#) >

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

This data is sourced from the British Geological Survey.



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

14.2 Artificial and made ground (10k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial

14.3 Superficial geology (10k)

Records within 500m

0

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock

14.5 Bedrock geology (10k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline

Search buffers in metres (m)

□ Geological map tile

15.1 50k Availability

Records within 500m

1

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

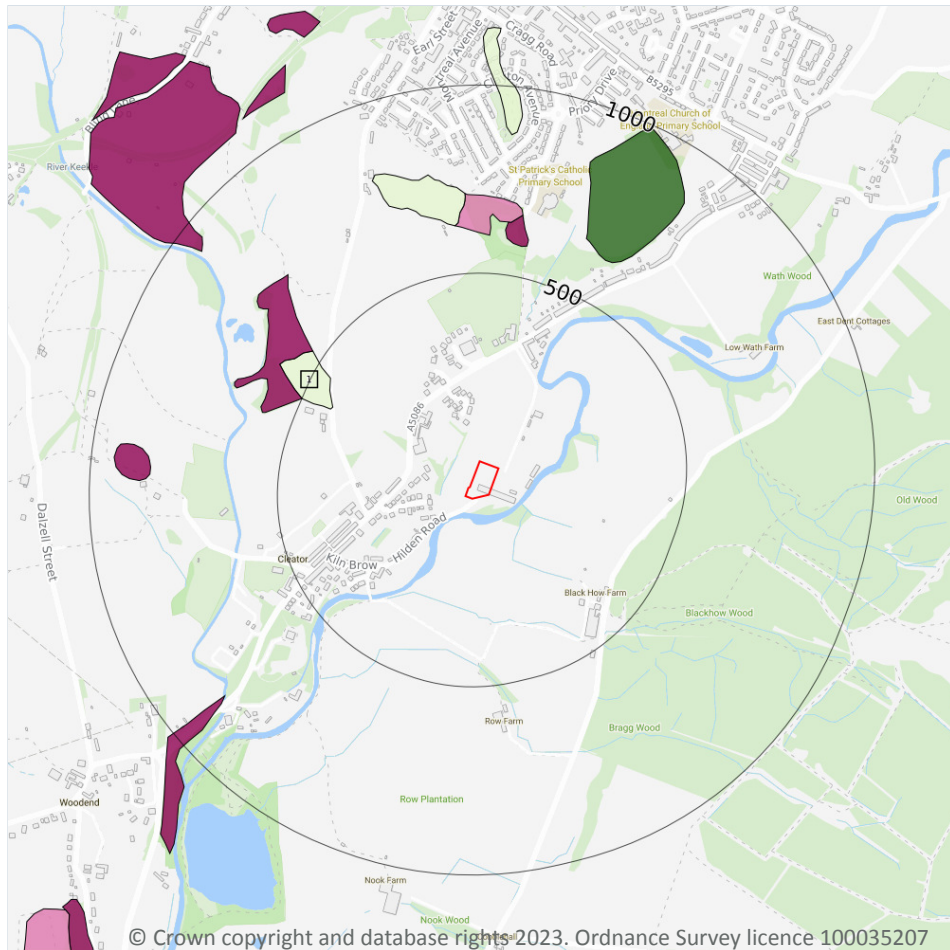
Features are displayed on the Geology 1:50,000 scale - Availability map on [page 73](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	EW028_whitehaven_v4

This data is sourced from the British Geological Survey.



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



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

15.2 Artificial and made ground (50k)

Records within 500m

1

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

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

ID	Location	LEX Code	Description	Rock description
1	416m NW	WMGR-ARTDP	INFILLED GROUND	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.



15.3 Artificial ground permeability (50k)

Records within 50m

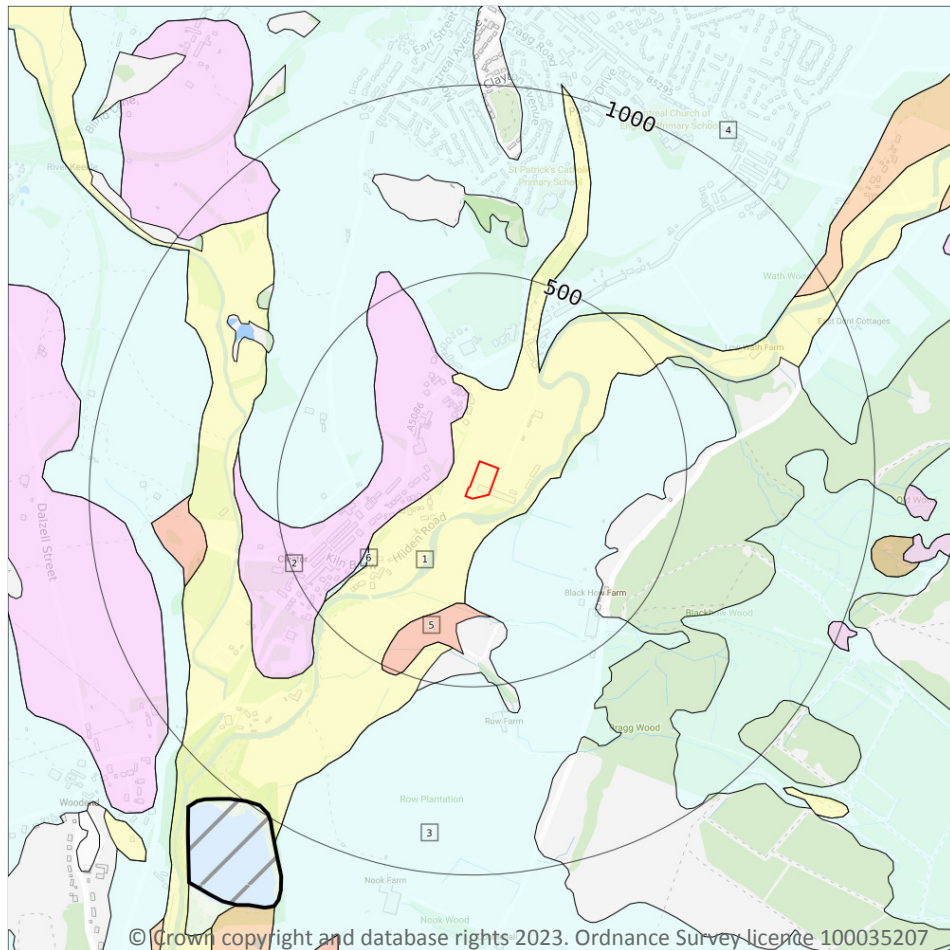
0

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m

6

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

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

ID	Location	LEX Code	Description	Rock description
1	On site	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
2	63m W	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
3	83m SE	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
4	195m N	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON



ID	Location	LEX Code	Description	Rock description
5	280m S	ALF-XSV	ALLUVIAL FAN DEPOSITS	SAND AND GRAVEL
6	289m SW	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m **1**

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	Intergranular	High	Very Low

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m **0**

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

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

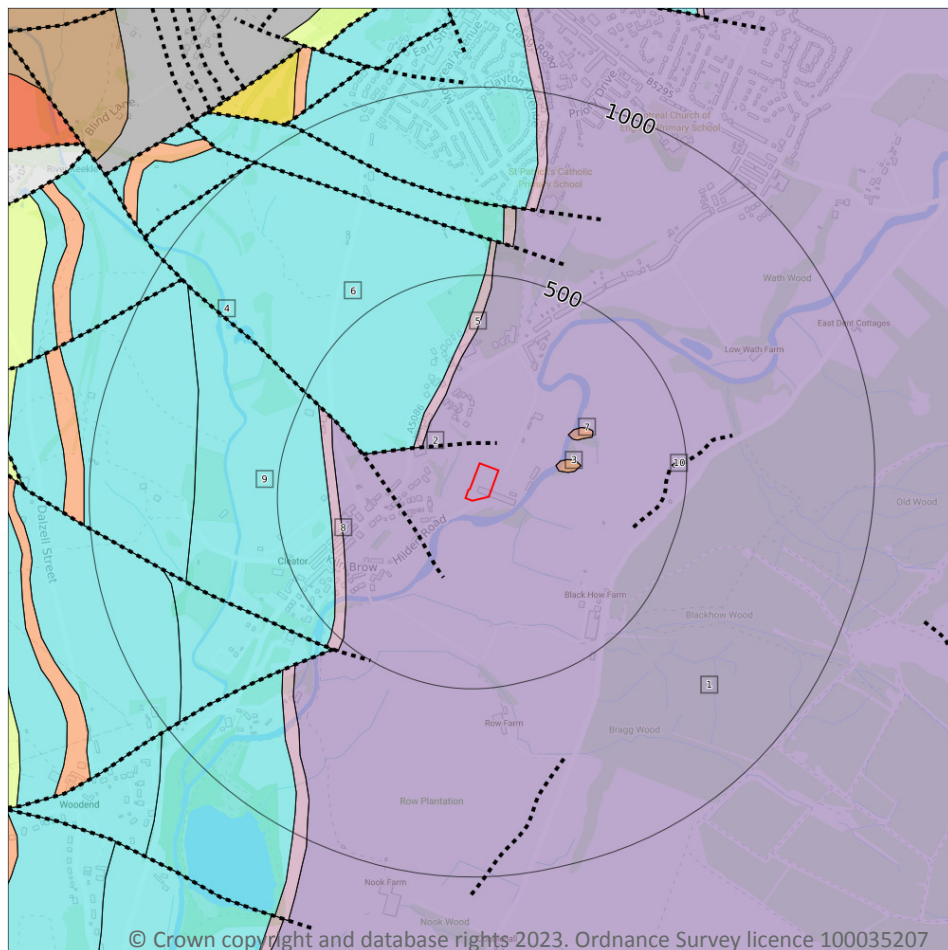
Records within 50m **0**

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

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

Bedrock geology (50k)

Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m

7

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

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

ID	Location	LEX Code	Description	Rock age
1	On site	BUF-MDSD	BUTTERMERE FORMATION - MUDSTONE AND SANDSTONE	-
3	153m E	LDDMI-AND	LAKE DISTRICT DEVONIAN MINOR INTRUSION SUITE - ANDESITE	-

ID	Location	LEX Code	Description	Rock age
5	159m NW	MASA-CONG	MARSETT SANDSTONE FORMATION - CONGLOMERATE	TOURNAISIAN
6	179m NW	FRLI-LMST	FRIZINGTON LIMESTONE FORMATION - LIMESTONE	WISEAN
7	209m NE	LDDMI-AND	LAKE DISTRICT DEVONIAN MINOR INTRUSION SUITE - ANDESITE	-
8	335m W	MASA-CONG	MARSETT SANDSTONE FORMATION - CONGLOMERATE	TOURNAISIAN
9	361m W	FRLI-LMST	FRIZINGTON LIMESTONE FORMATION - LIMESTONE	WISEAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m

1

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	Fracture	Moderate	Low

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m

3

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

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

ID	Location	Category	Description
2	54m N	FAULT	Fault, inferred, displacement unknown
4	158m SW	FAULT	Fault, inferred, displacement unknown
10	389m E	LANDFORM	Glacial meltwater channel centre line, undifferentiated

This data is sourced from the British Geological Survey.



16 Boreholes

16.1 BGS Boreholes

Records within 250m

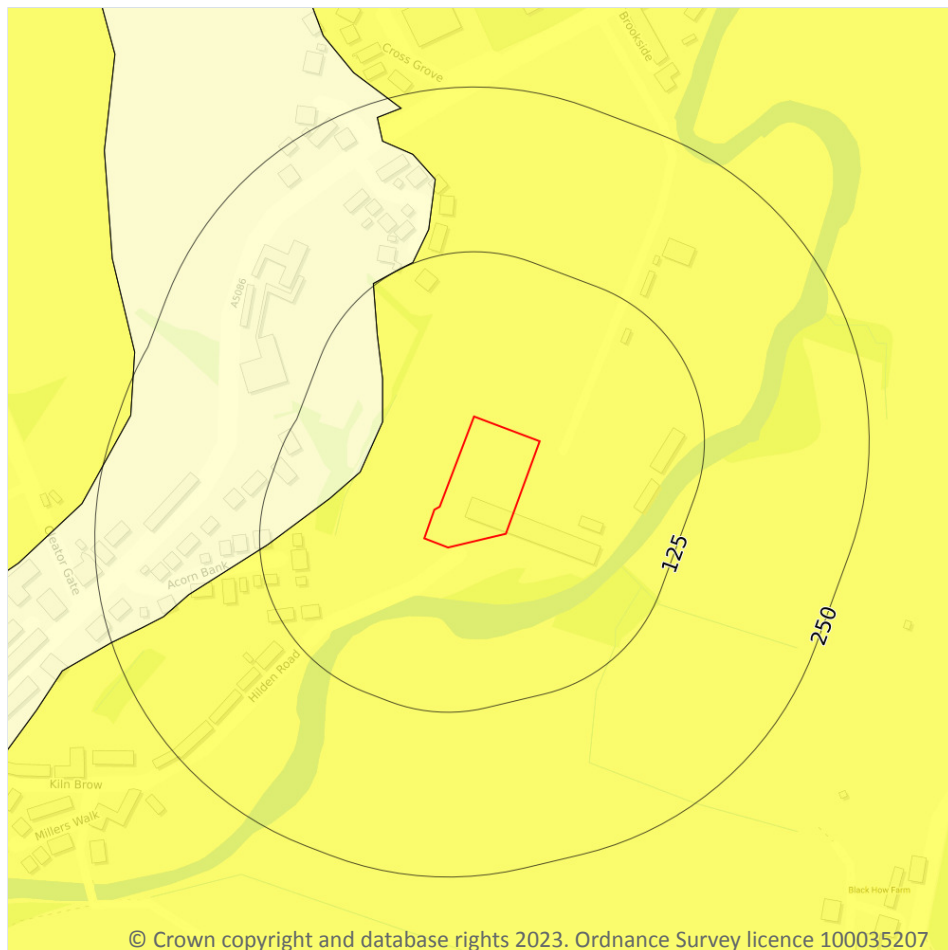
0

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

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



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

17.1 Shrink swell clays

Records within 50m

1

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

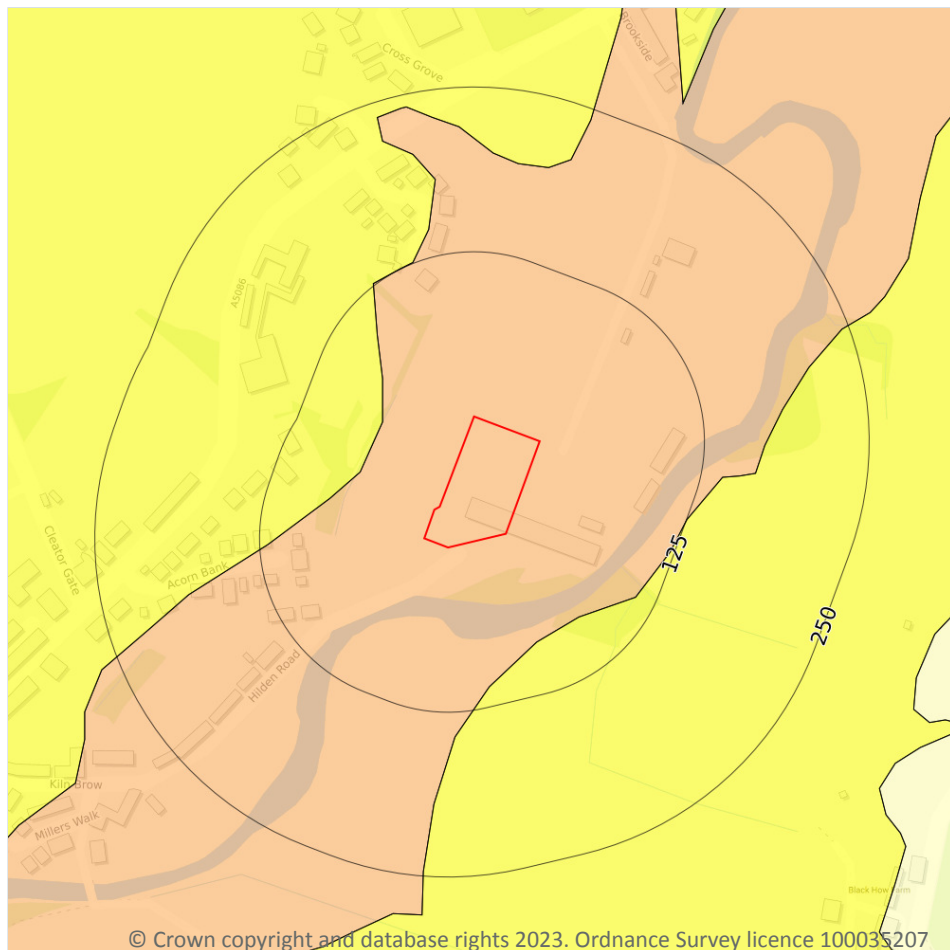
Features are displayed on the Natural ground subsidence - Shrink swell clays map on [page 81 >](#)

Location	Hazard rating	Details
On site	Very low	Ground conditions predominantly low plasticity.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



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

17.2 Running sands

Records within 50m

1

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

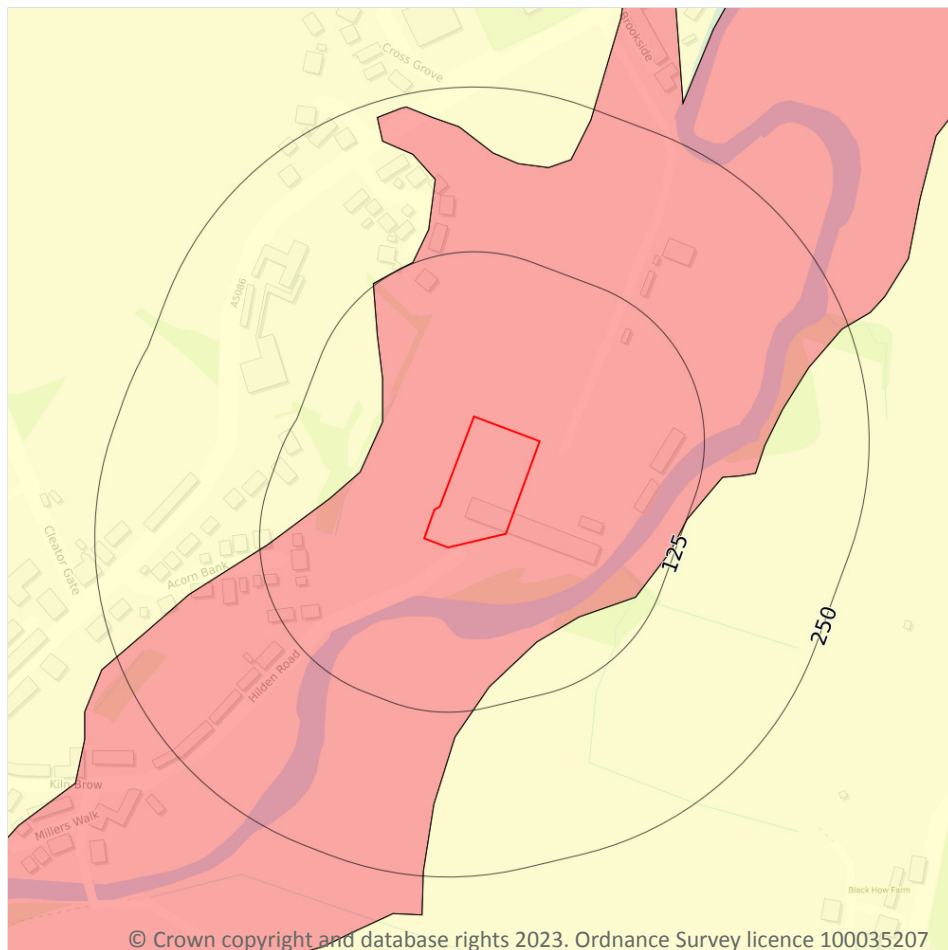
Features are displayed on the Natural ground subsidence - Running sands map on [page 82 >](#)

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



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

17.3 Compressible deposits

Records within 50m

1

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

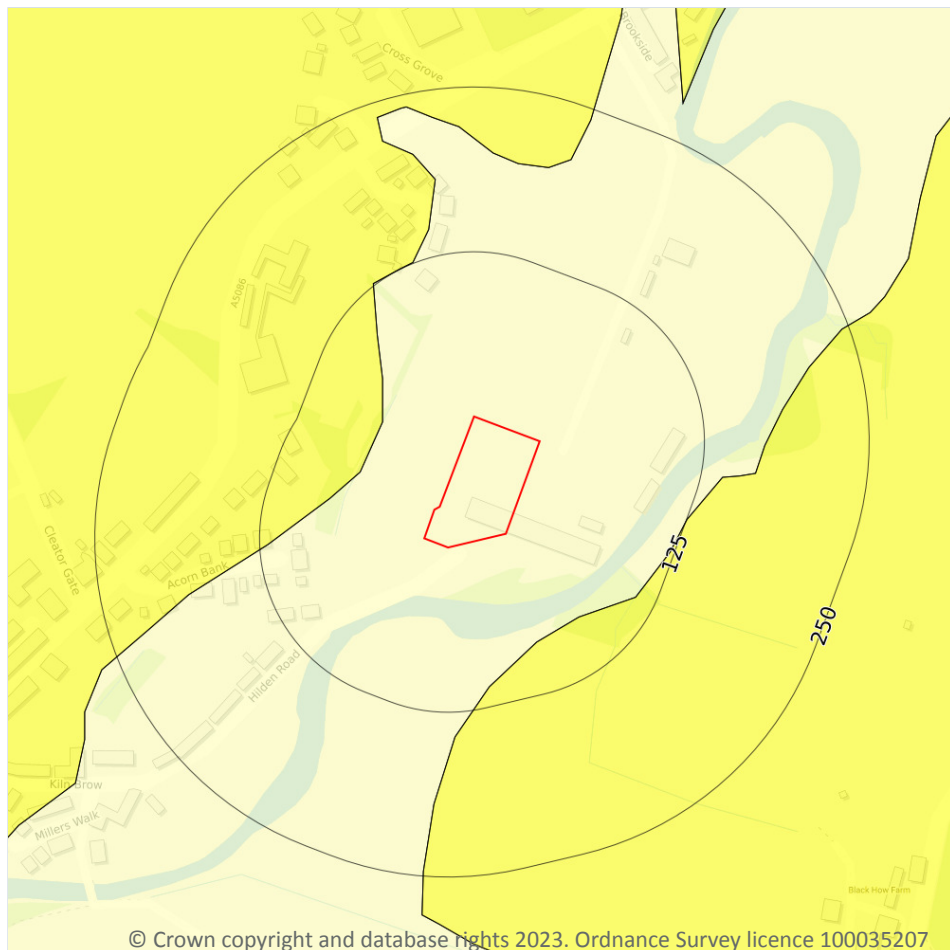
Features are displayed on the Natural ground subsidence - Compressible deposits map on [page 83](#) >

Location	Hazard rating	Details
On site	Moderate	Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the site.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



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

17.4 Collapsible deposits

Records within 50m

1

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

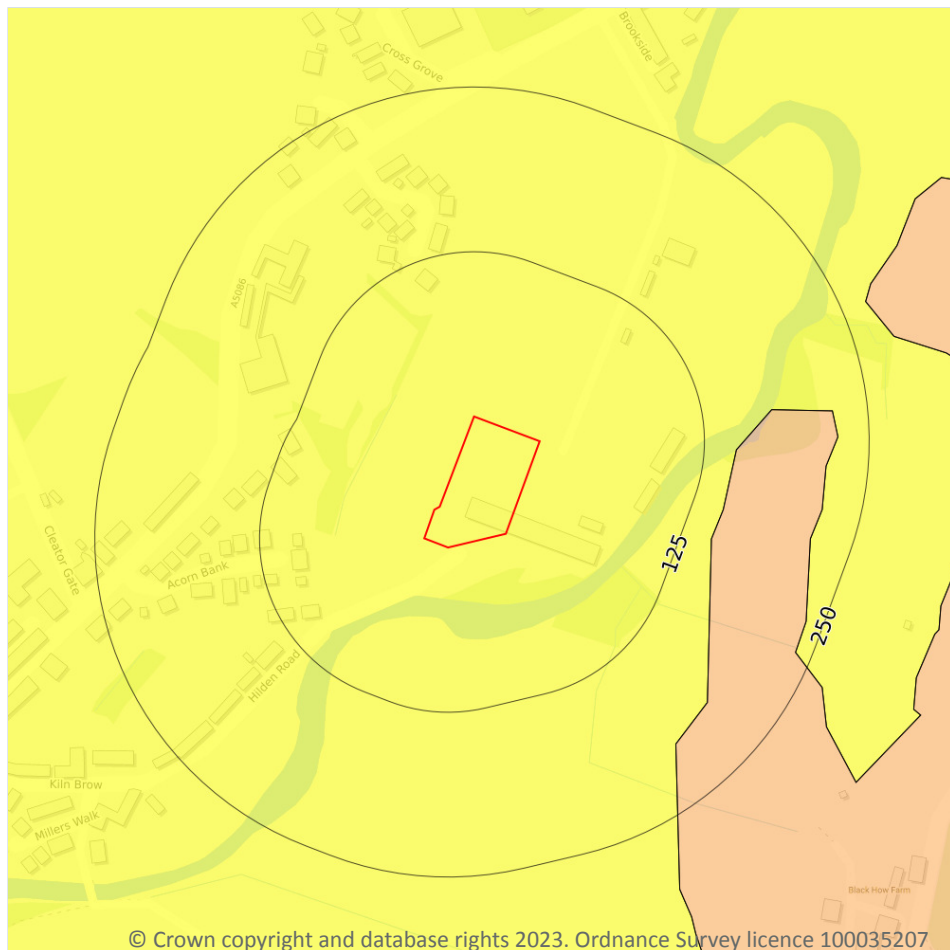
Features are displayed on the Natural ground subsidence - Collapsible deposits map on [page 84 >](#)

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



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

17.5 Landslides

Records within 50m

1

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

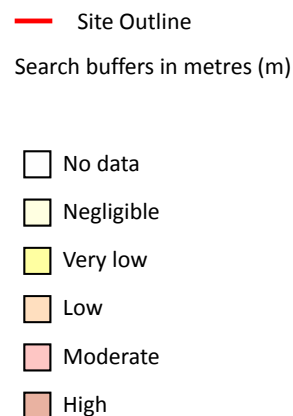
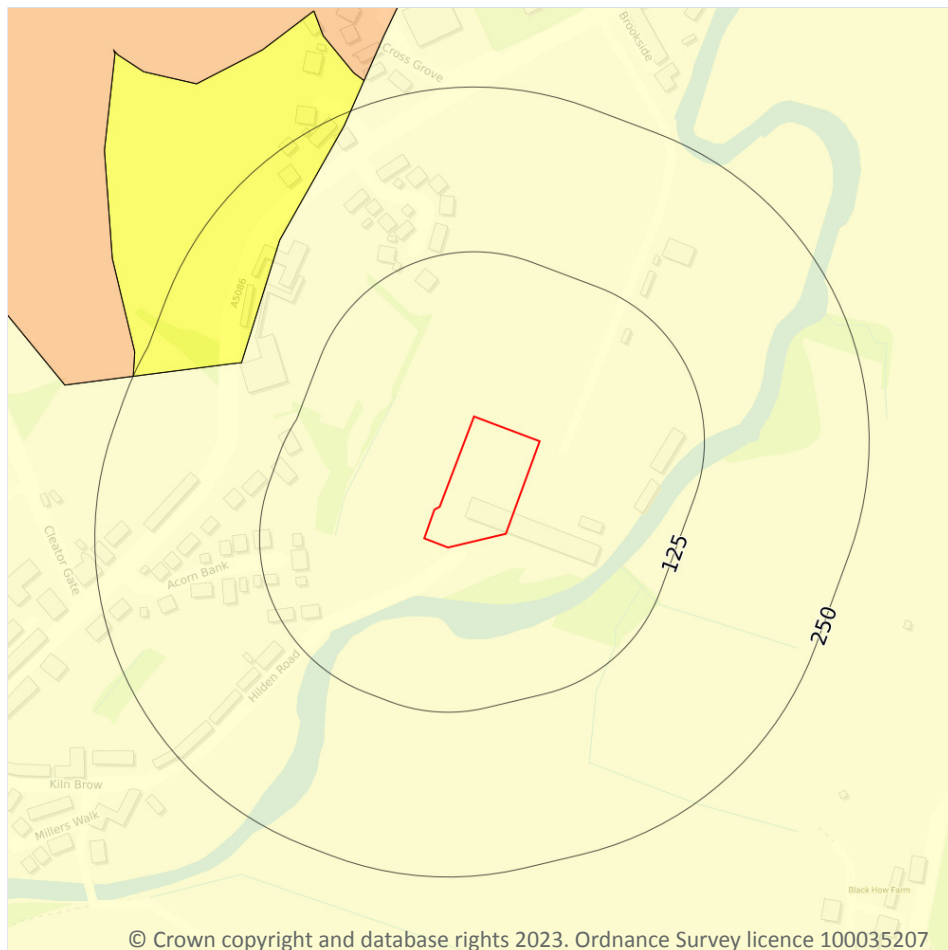
Features are displayed on the Natural ground subsidence - Landslides map on [page 85 >](#)

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



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17.6 Ground dissolution of soluble rocks

Records within 50m

1

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

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

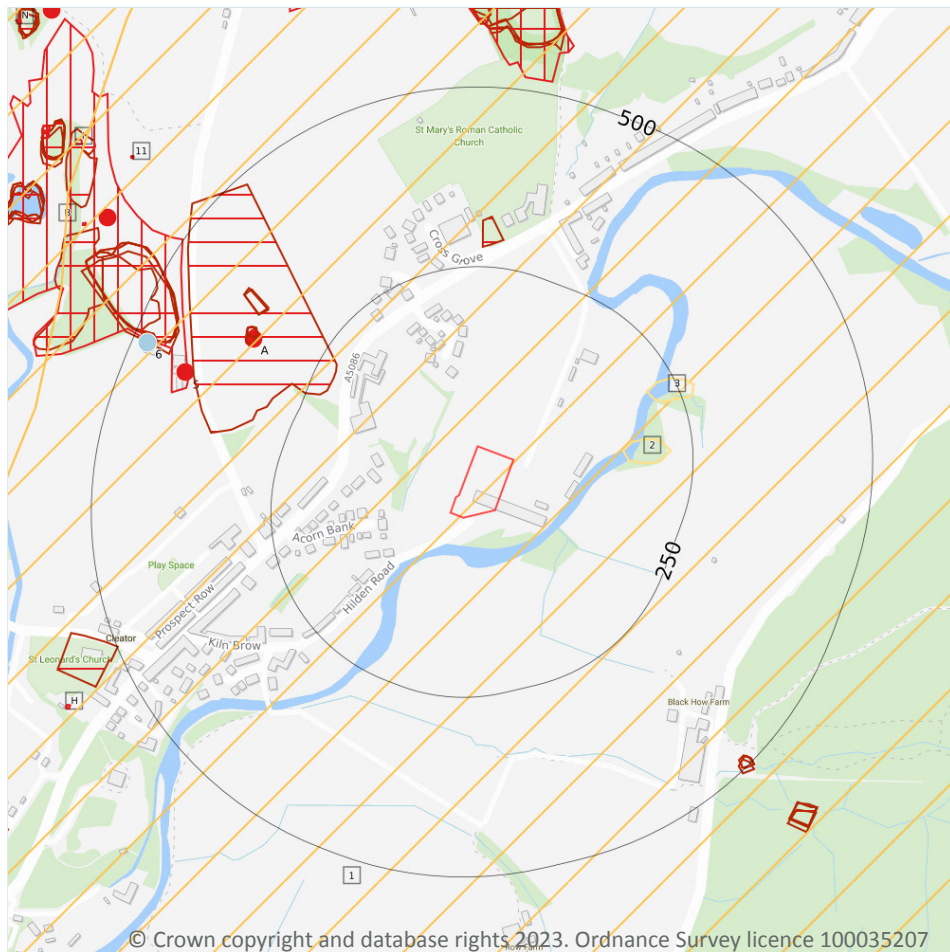
Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.



This data is sourced from the British Geological Survey.



18 Mining, ground workings and natural cavities



- Site Outline
- Search buffers in metres (m)
- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities
- Non Coal Mining
- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m

0

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

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m

2

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

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

ID	Location	Details	Description
A	346m NW	Name: Cleator Iron Ore Mine Address: Cleator, CLEATOR MOOR, Cumbria Commodity: Hematite (Iron Ore) Status: Ceased	Type: 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) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
5	415m W	Name: Cleator Iron Ore Mine Address: Cleator, CLEATOR MOOR, Cumbria Commodity: Hematite (Iron Ore) Status: Ceased	Type: 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) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m

1

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

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

ID	Location	Land Use	Year of mapping	Mapping scale
A	222m NW	Unspecified Pit	1898	1:10560

This data is sourced from Ordnance Survey/Groundsure.



18.4 Underground workings

Records within 1000m

32

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

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

ID	Location	Land Use	Year of mapping	Mapping scale
A	348m NW	Unspecified Old Shaft	1938	1:10560
B	405m W	Iron Ore Mine	1898	1:10560
8	518m N	Old Iron Ore Mine	1898	1:10560
H	594m SW	Unspecified Shaft	1938	1:10560
H	594m SW	Unspecified Shaft	1898	1:10560
11	625m NW	Iron Shaft	1863	1:10560
B	626m NW	Iron Shaft	1863	1:10560
-	650m W	Iron Ore Mine	1898	1:10560
I	693m NW	Unspecified Old Shafts	1898	1:10560
-	702m W	Unspecified Mine	1898	1:10560
-	722m W	Unspecified Old Shaft	1938	1:10560
-	727m W	Unspecified Old Shaft	1948	1:10560
-	733m N	Unspecified Old Shaft	1948	1:10560
I	736m NW	Unspecified Old Shaft	1948	1:10560
-	736m N	Unspecified Old Shaft	1938	1:10560
I	740m NW	Unspecified Old Shaft	1938	1:10560
I	740m NW	Unspecified Old Shafts	1898	1:10560
-	771m NW	Iron Shaft	1863	1:10560
-	825m NW	Unspecified Old Shafts	1898	1:10560
-	839m NW	Air Shaft	1863	1:10560
-	840m NW	Unspecified Old Shaft	1948	1:10560
-	848m NW	Unspecified Old Shaft	1938	1:10560
N	867m NW	Unspecified Old Shaft	1948	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
-	875m N	Unspecified Old Shaft	1948	1:10560
-	879m N	Unspecified Old Shaft	1938	1:10560
-	929m NW	Unspecified Old Shaft	1948	1:10560
-	939m NW	Iron Ore Mine	1898	1:10560
-	941m NW	Unspecified Old Shaft	1948	1:10560
-	943m NW	Unspecified Old Shaft	1938	1:10560
-	958m NW	Unspecified Old Shaft	1898	1:10560
-	986m NW	Unspecified Old Shaft	1938	1:10560
-	986m NW	Unspecified Old Shaft	1898	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m

7

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

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

ID	Location	Name	Commodity	Class	Likelihood
1	On site	Not available	Vein Mineral	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered



ID	Location	Name	Commodity	Class	Likelihood
2	153m E	Not available	Vein Mineral	A	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
3	209m NE	Not available	Vein Mineral	A	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
10	596m W	Not available	Iron Ore (Non Vein)	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
-	909m NW	Not available	Iron Ore (Non Vein)	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
-	931m W	Not available	Iron Ore (Non Vein)	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
-	956m W	Not available	Iron Ore (Non Vein)	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m

5

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

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

ID	Location	Mine Address	Mineral	Data source	Publisher
6	480m NW	Cleator Mine, Cumbria	Hematite	CATALOGUE OF MINING INFORMATION (OTHER THAN COAL, FIRECLAY & SLATE) FOR THE L.D	BGS
-	838m W	Cleator Glebe Mine, Cumbria	Hematite	CATALOGUE OF MINING INFORMATION (OTHER THAN COAL, FIRECLAY & SLATE) FOR THE L.D	BGS



ID	Location	Mine Address	Mineral	Data source	Publisher
-	875m NW	Fawncross, Cumbria	Hematite	MINES OF THE LAKE DISTRICT FELS.	THE DALESMAN PUBLISHING COMPANY
-	884m N	Jacktrees Mine, Cumbria	Hematite	CATALOGUE OF MINING INFORMATION (OTHER THAN COAL, FIRECLAY & SLATE) FOR THE L.D	BGS
-	922m W	Glebe, Cumbria	Hematite	MINES OF THE LAKE DISTRICT FELS.	THE DALESMAN PUBLISHING COMPANY

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site 0

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

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site 1

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

Location	Details
On site	The site is located within a coal mining area as defined by the Coal Authority. A Consultants Coal Mining Report is recommended to further assess coal mining issues at the site. This can be ordered directly through Groundsure or your preferred search provider.

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site 0

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

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



18.11 Gypsum areas

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

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

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

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

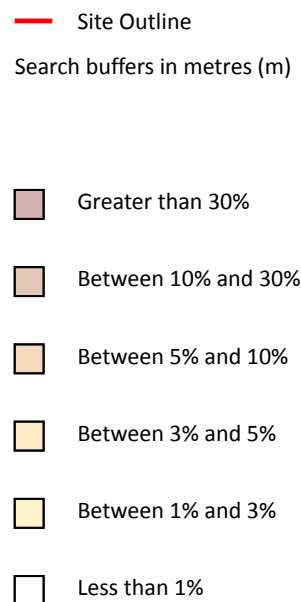
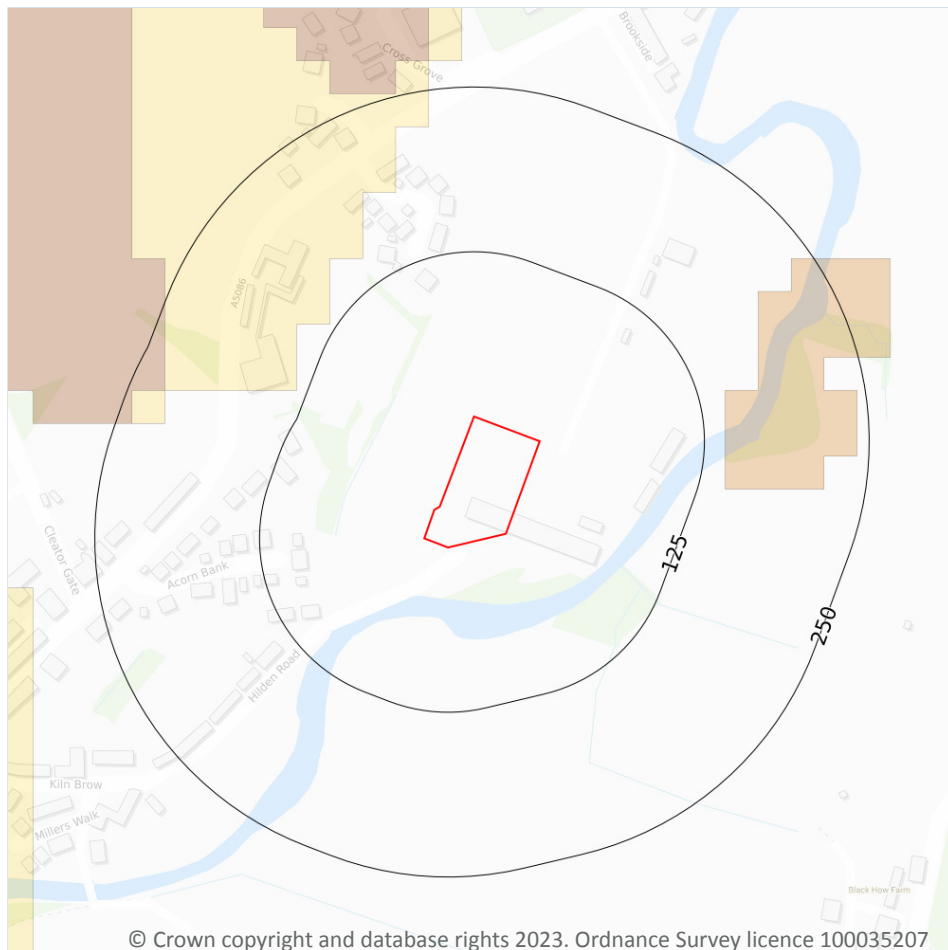
18.13 Clay mining

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

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

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

19 Radon



19.1 Radon

Records on site

1

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

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

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



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



20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m

2

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km². In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².

This data is sourced from the British Geological Survey.



21 Railway infrastructure and projects

21.1 Underground railways (London)

Records within 250m**0**

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m**0**

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

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m**0**

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m**0**

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

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m**0**

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



This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m

0

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

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m

0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m

0

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

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m

0

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m

0

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

This data is sourced from HS2 Ltd.



Data providers

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

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Appendix III

- Historical Map Extracts



EMAPSITE™

Site Details:

unspecified

Client Ref: EMS_868033_1073740
Report Ref: EMS-868033_1111695
Grid Ref: 301965, 513705

Map Name: County Series

Map date: 1863

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1863
Revised 1863
Edition N/A
Copyright N/A
Levelled N/A



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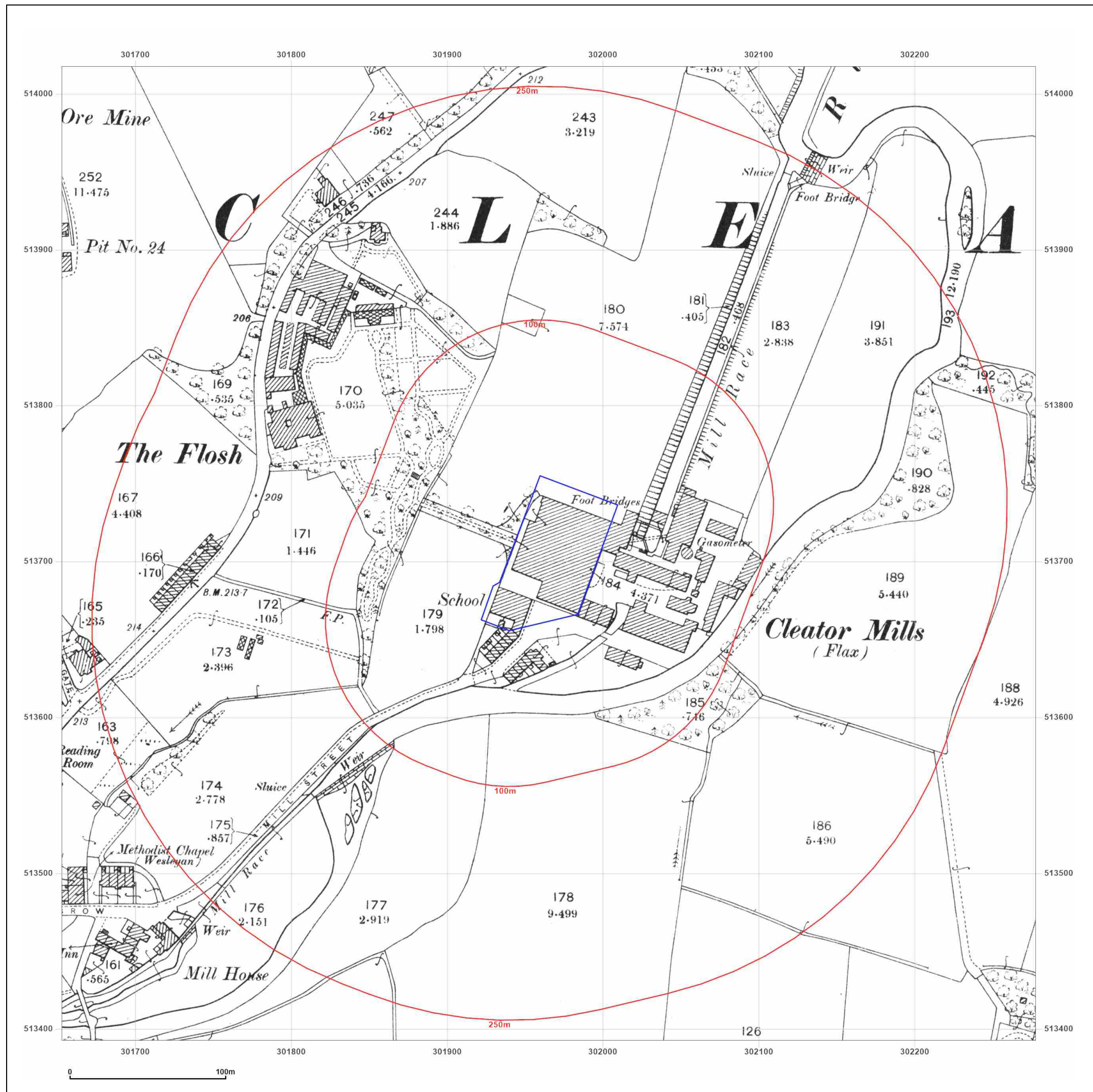


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Site Details:

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Client Ref: EMS_868033_1073740
Report Ref: EMS-868033_1111695
Grid Ref: 301965, 513705

Map Name: County Series

Map date: 1899

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1899
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Site Details:

unspecified

Client Ref: EMS_868033_1073740
Report Ref: EMS-868033_1111695
Grid Ref: 301965, 513705

Map Name: County Series

Map date: 1925

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1925
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Edition N/A
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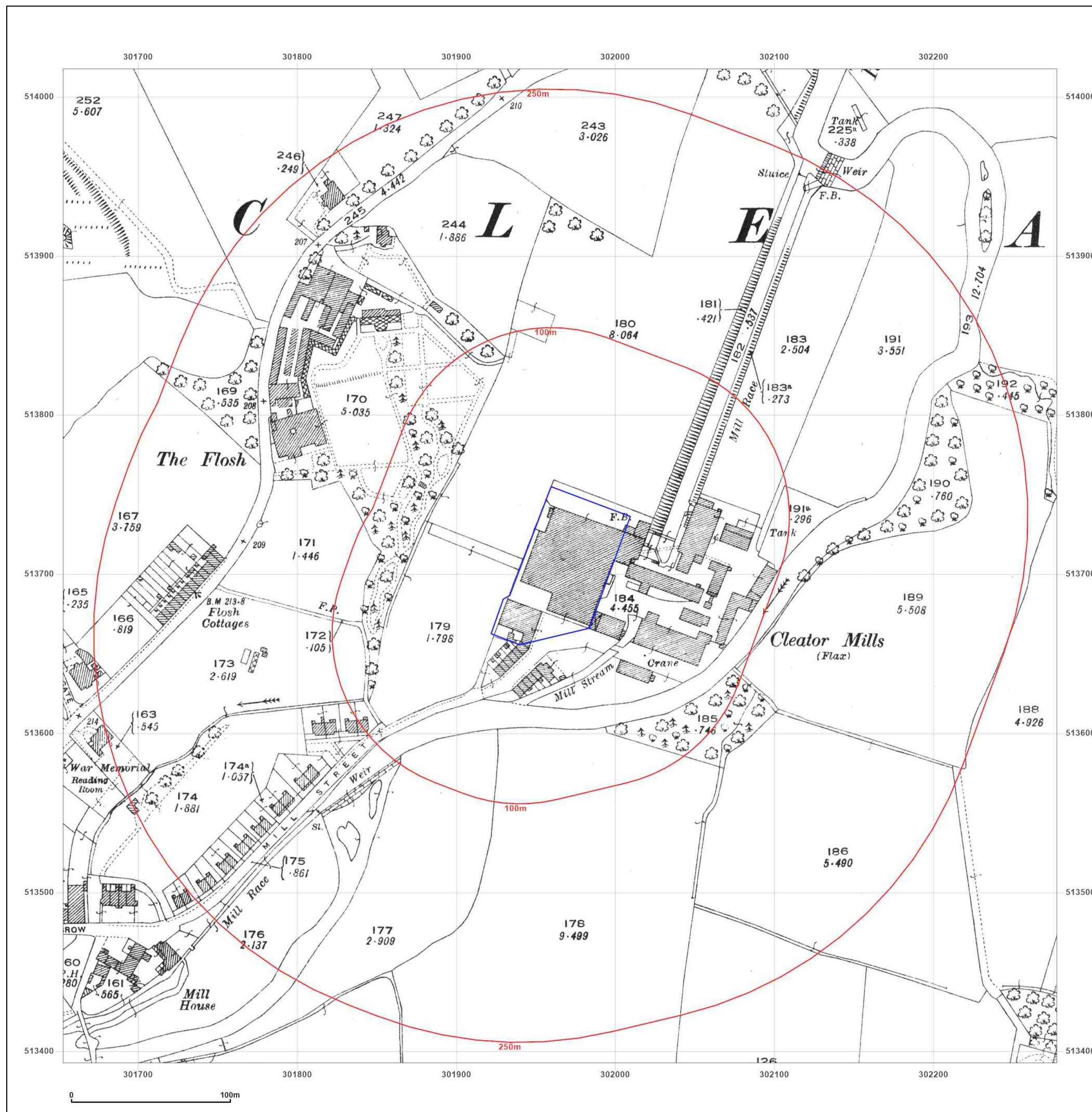


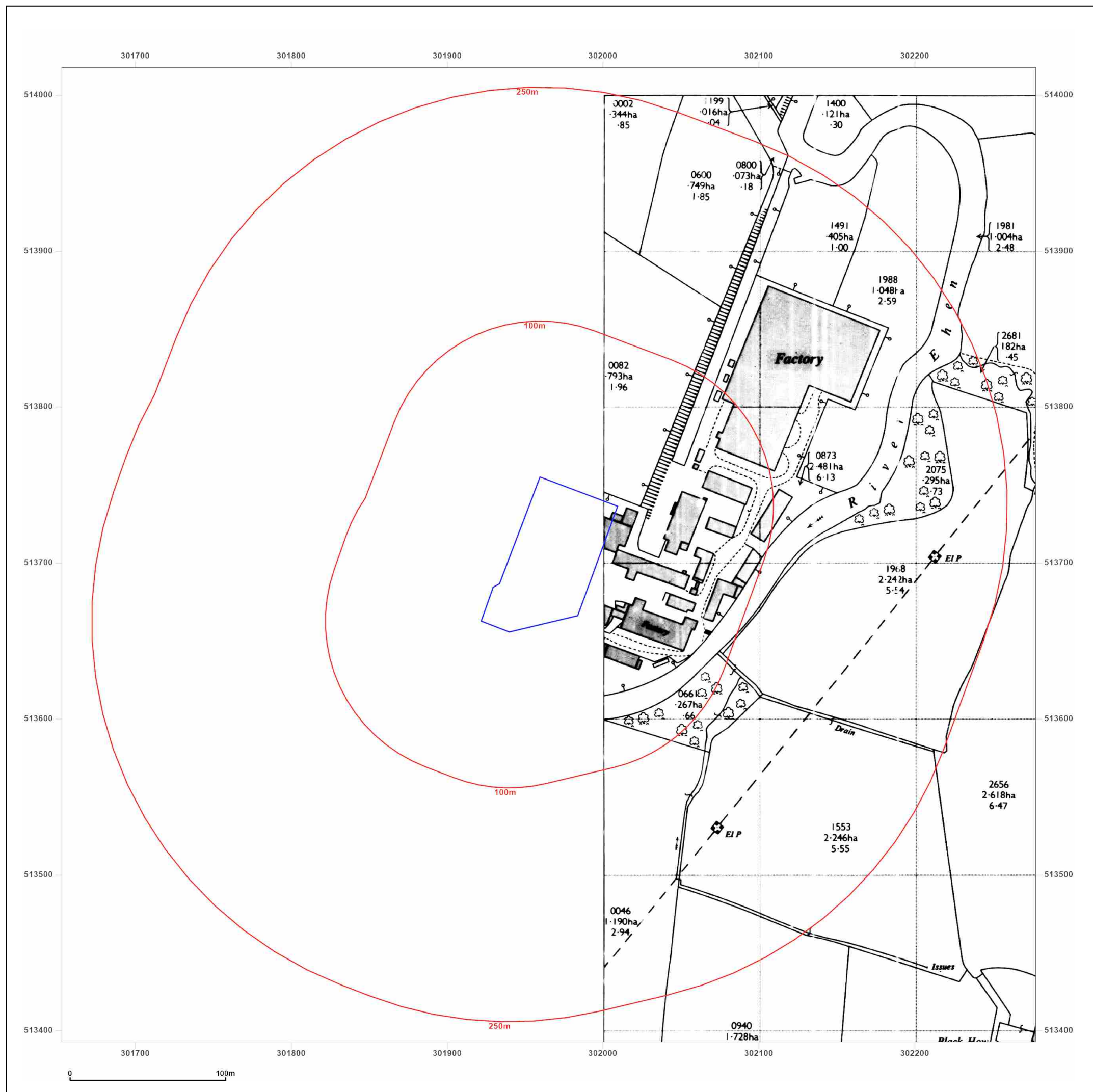
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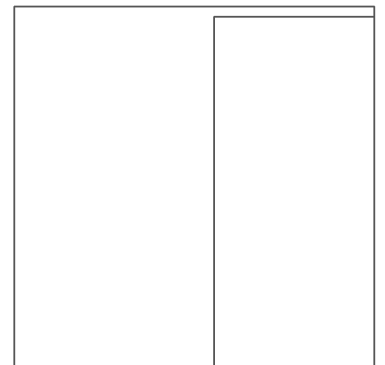
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Report Ref: EMS-868033_1111695
Grid Ref: 301965, 513705

Map Name: National Grid

Map date: 1963

Scale: 1:2,500

Printed at: 1:2,500



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Edition N/A
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Report Ref: EMS-868033_1111695
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Map Name: National Grid

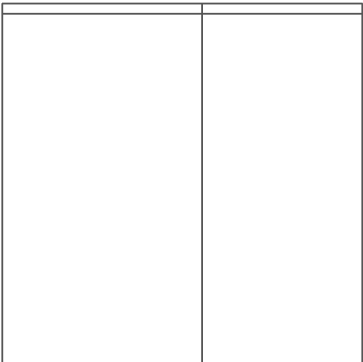
Map date: 1962-1967

Scale: 1:2,500

Printed at: 1:2,500



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Report Ref: EMS-868033_1111695
Grid Ref: 301965, 513705

Map Name: National Grid

Map date: 1962-1967

Scale: 1:2,500

Printed at: 1:2,500



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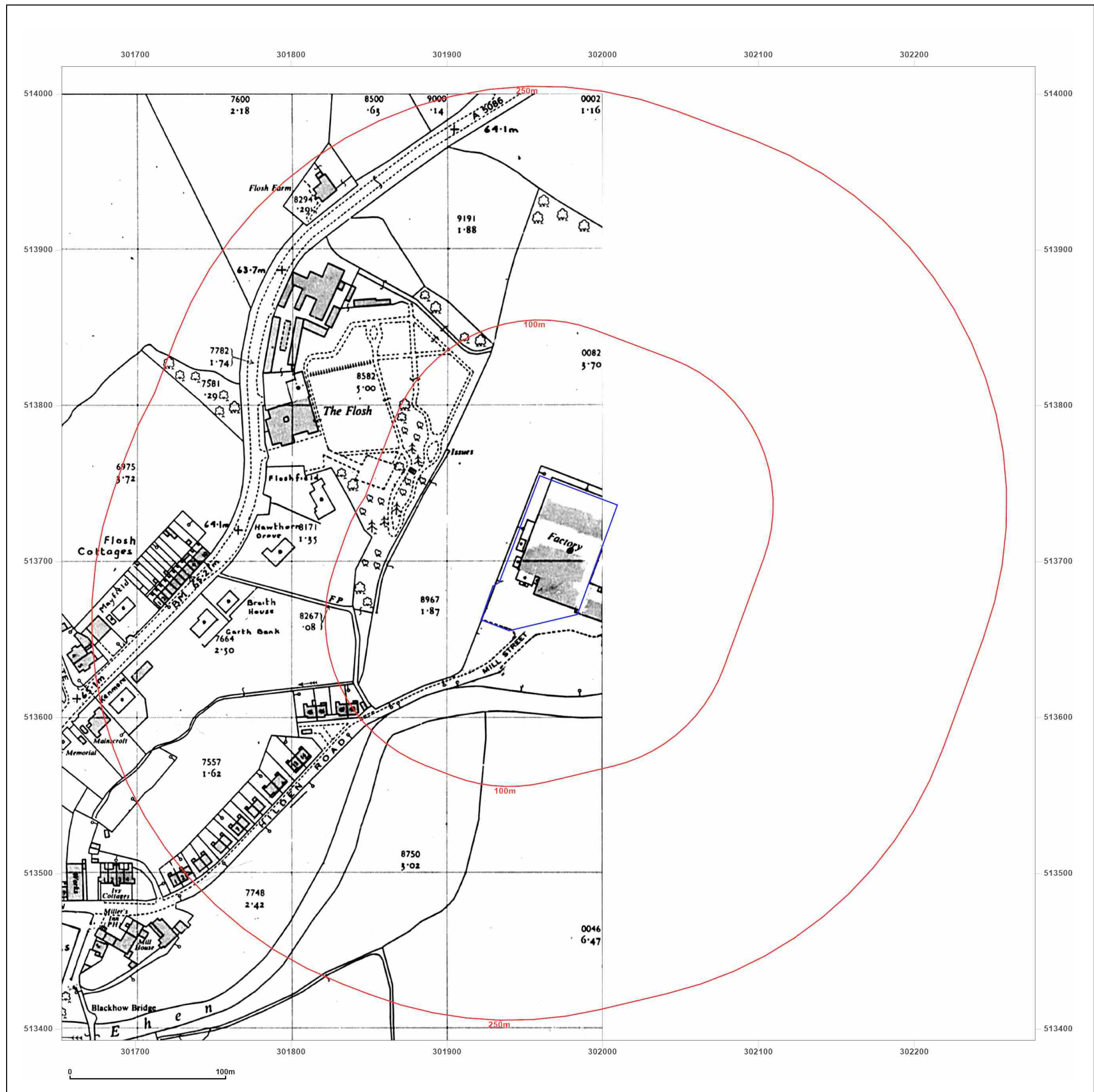
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Client Ref: EMS_868033_1073740
Report Ref: EMS-868033_1111695
Grid Ref: 301965, 513705

Map Name: National Grid

Map date: 1979

Scale: 1:2,500

Printed at: 1:2,500



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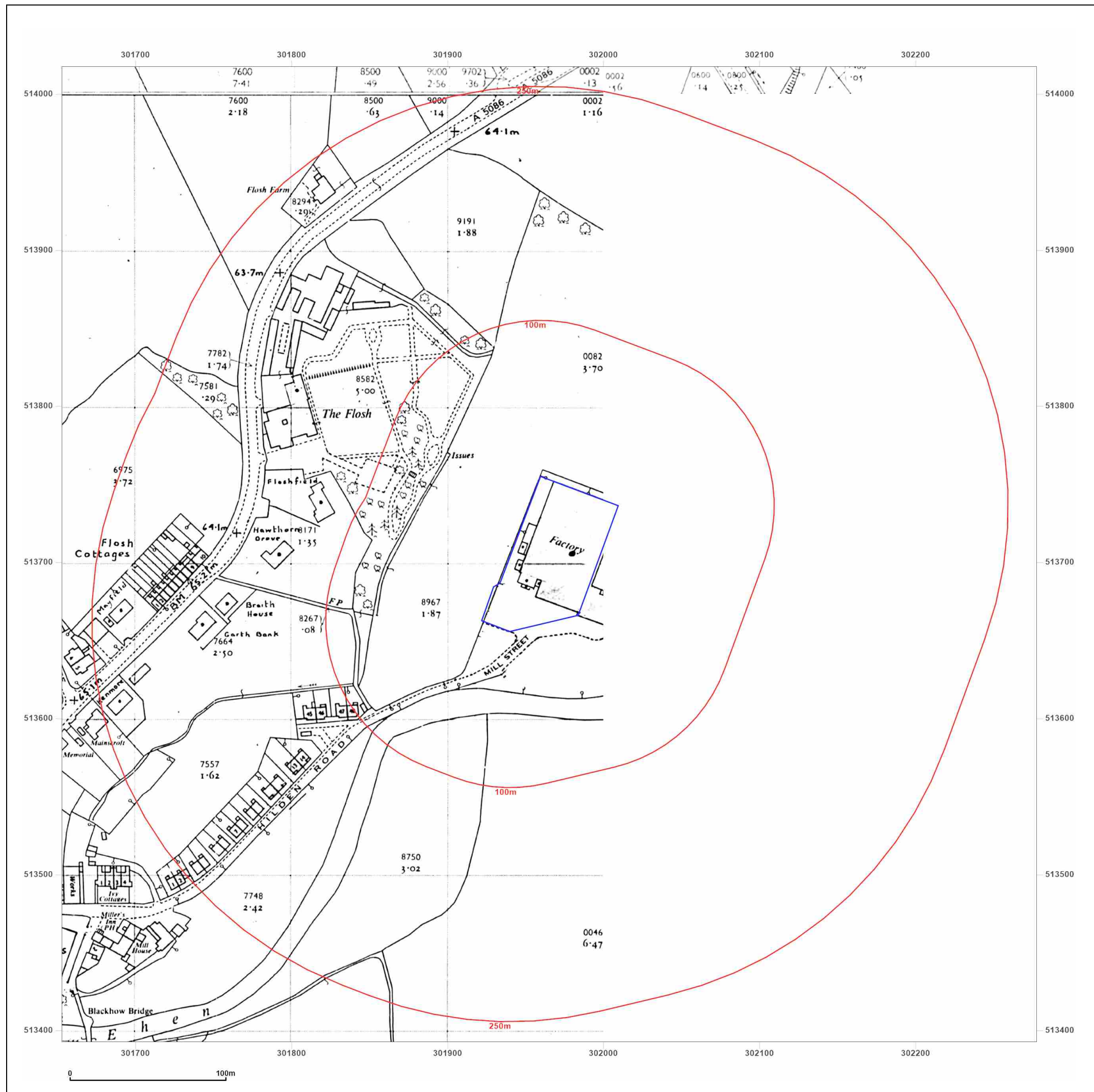


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Report Ref: EMS-868033_1111695
Grid Ref: 301965, 513705

Map Name: National Grid

Map date: 1979-1981

Scale: 1:2,500

Printed at: 1:2,500



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Client Ref: EMS_868033_1073740
Report Ref: EMS-868033_1111695
Grid Ref: 301965, 513705

Map Name: National Grid

Map date: 1991

Scale: 1:2,500

Printed at: 1:2,500



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Revised 1991
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Client Ref: EMS_868033_1073740
Report Ref: EMS-868033_1111695
Grid Ref: 301965, 513705

Map Name: National Grid

Map date: 1994

Scale: 1:2,500

Printed at: 1:2,500



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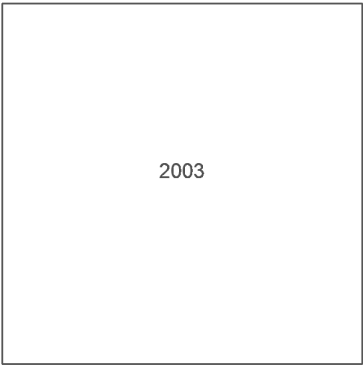
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Report Ref: EMS-868033_1111695
Grid Ref: 301965, 513705

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



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