GEO Environmental Engineering



PHASE 1: DESK TOP STUDY REPORT

(PRELIMINARY ENVIRONMENTAL RISK ASSESSMENT)

PROPOSED COMMERCIAL REDEVELOPMENT OF LAND AT:

HENSINGHAM ARLFC, CLEATOR MOOR ROAD

WHITEHAVEN, CUMBRIA

FOR

HENSINGHAM A.R.L.F.C.

GEO Environmental Engineering

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Consultant	Day Cummins Limited

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1.0 Introduction

1.1 Instruction

Geo Environmental Engineering Ltd (GEO) have been commissioned by the Consultant, Day Cummins Limited on behalf of the Client, Hensingham A.R.L.F.C to undertake a Phase 1: Desk Top Study Report (Preliminary Environmental Risk Assessment) for land at the existing Rugby Club to determine any potential geohazards that may affect the development of the site.

It is understood that the Client plans to develop a small section of the existing Rugby Club for use as changing rooms. 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.
- BR211: 2023 Radon, Guidance on protective measures for new buildings.
- 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 Mining Remediation Authority (formerly The Coal Authority) Online Database.

A site walkover was completed in September 2026. 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.

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 Site Location

The red line boundary indicated on the proposed site layout plan occupies and area of 0.32ha. The site is located in the north eastern part of Hensingham, c.2km south east of Whitehaven town centre as indicated on the site location plan included in Appendix I. Access to the site is via a one-way road which also provides access to The Whitehaven Academy.

- National Grid Reference: 299314, 517268
- Post Code: CA28 8TX (approximate only)

2.2 Development Proposal

It is understood that the Client plans to build a new changing room within the existing Rugby Club. This will comprise a single storey building close to the northern boundary.

The client has provided a red line boundary which includes the proposed building and additional land along the northern and eastern boundaries. Following discussions with the Consultant, it is understood that a footpath may be constructed, joining the proposed development to the existing buildings, however, the rest of the land within the red line boundary will remain unaltered.

A proposed site layout plan has been provided, and a copy is included in Appendix I.

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

2.3 Site Description and Levels

A site walkover was completed in September 2026 and a selection of photographs of the site are included in Appendix I.

The site is part of the existing Rugby club and comprises a strip of ground to the north west of the rugby pitch. The ground is covered with long unkempt grass and scrub vegetation. The area is raised approximately 1m above the rugby pitch and is separate by a steep bank and an asphalt footpath.

The red line boundary also includes a section of land to the north of the rugby pitch, however, it is understood that this will remain unaltered. This area also comprises long unkempt grass and scrub vegetation.

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

The Rugby Club is generally level and appears to have been levelled, possibly by a process of cut and fill. The area within the red line boundary is c.1m higher than the rugby pitch which may indicate some made ground.

A topographical survey has not been provided, however, Ordnance Survey data suggests that the site is at an elevation of between 120m and 130m OD. It would be prudent to acquire a topographical survey of the site prior to development.

2.4 Surrounding Land Uses

The rugby pitch is present to the south of the proposed development. Smurfit Westrock Composites, a paper based packaging manufacturer is present to the north west and a auto repair and tyre centre are present to the north east. Residential properties and the Rugby Club buildings are present to the south west.

The composite factory and auto repair centre are possible sources of contamination that could impact the proposed development through possible contamination migration, both historically and ongoing.

2.5 Existing Infrastructure and Utilities

A review of statutory utility supplier records lies outside the scope of this report. It is recommended that all utility plans are reviewed prior to commencing any development works.

3.0 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 development.

- 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.

3.1 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 1:50,000 scale geological map is included below as Figure 1.

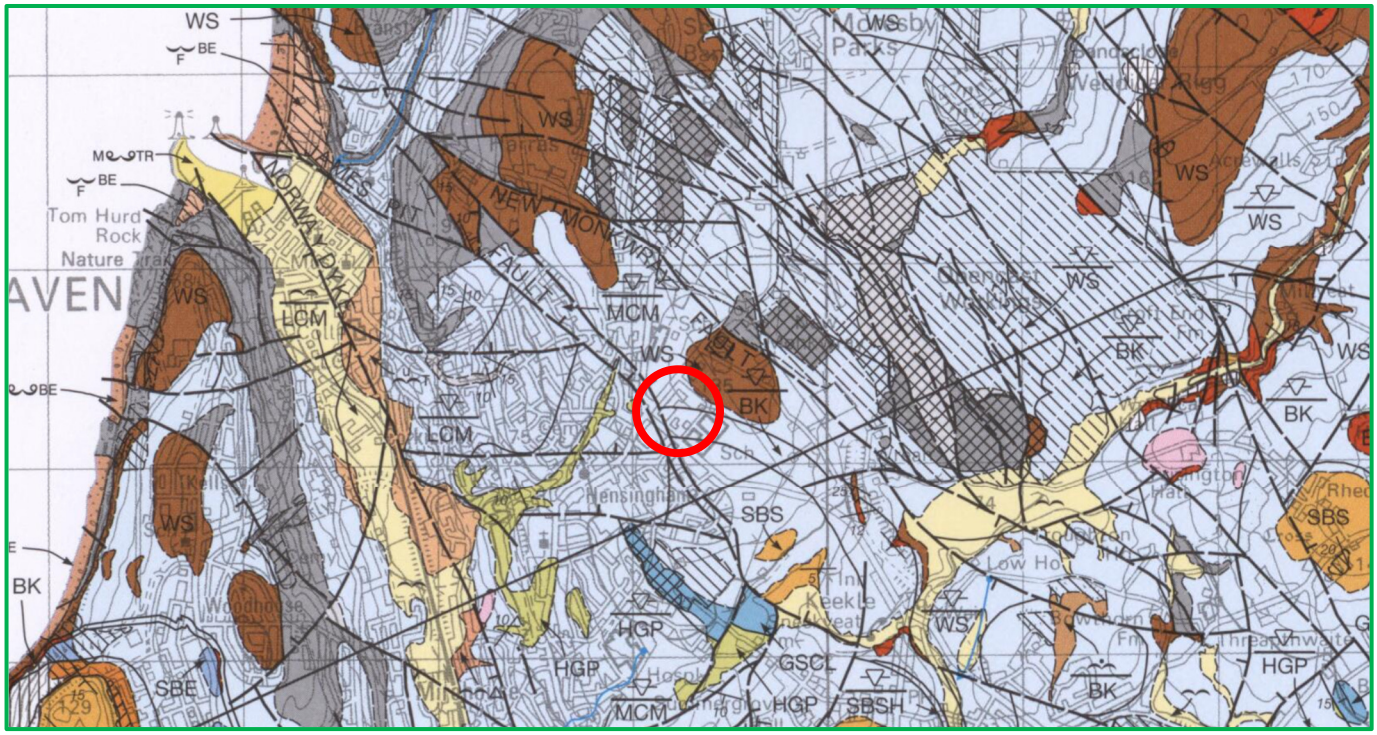


Figure 1. 1:50,000 Geological Map Extract (red circle denotes approximate site location)

3.1.1 Made Ground

A review of the published geological map and the GSR does not indicate any made ground on the site. However, given the profile of the surrounding land, some shallow made ground may be encountered associated with possible cut and fill which is likely to have occurred during levelling of the rugby pitch.

A review of the historical map extracts suggests that the land has remained mostly undeveloped with no evidence to suggest significant made ground may be present.

Prior to development of the Rugby Club in the 1970s, the land appears to have been agricultural. Agricultural land can be disturbed/re-worked during agricultural processes (i.e. ploughing) and some undulations may have been infilled. Topsoil materials on agricultural land can frequently include coarse granular anthropogenic debris (i.e. fragments of ash, clinker, brick, etc.) that may have been added to

aid drainage. Therefore, some made ground may be encountered on site associated with previous farming activities (drainage/levelling, etc…).

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

3.1.2 Drift Geological Deposits

A review of the published geological map and the GSR indicates that the site is underlain by glacial till deposits. These deposits typically comprise firm and stiff gravelly clays with bands of sand and gravel. Boulders may also be encountered.

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

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

The drift deposits are classified as a Secondary Undifferentiated Aquifer.

Phase 2: Ground Investigation works would be prudent to aid the design of foundations and any retaining structures. Any such investigations would be at the discretion of the Client and/or Design Team.

3.1.3 Bedrock Deposits

Reference to the published geological map and the GSR indicates the site is underlain by variable solid geology. The proposed development (changing rooms) is underlain by Brockram-Breccia which typically comprises cemented limestone and sandstone fragments. The northern part of the site comprises Whitehaven Sandstone Formation (Sandstone). Neither formation are indicated to include any coal bearing stratum.

The Brockram-Breccia is classified as a Principal Aquifer. The Whitehaven Sandstone Formation is classified as a Secondary ‘A’ Aquifer.

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

An extract of the 1:50,000 scale geological map is included below as Figure 2.



Figure 2. 1:10,000 Geological Map Extract (red circle denotes approximate site location)

3.1.4 Historical Investigation Records

No suitable historical borehole records are indicated within a suitable distance of the site (i.e. within c.100m).

3.1.5 Geological Features

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

3.1.6 Coal Mining Assessment

Reference to the published geological maps and the GSR indicate that the site is underlain by solid strata of the Brockram-Breccia and Whitehaven Sandstone Formations, neither of which include any coal bearing strata. Furthermore, an inspection of the Mining Remediation Authority online database does not indicate any significant mining related hazards within influencing distance of the site (e.g., no nearby outcropping coal seams, shallow mining, mine entrances, etc…). Former coal mining is not recorded beneath the site or the proposed location of the changing rooms.

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

3.1.7 Non-Coal Mining and Quarrying Assessment

The GSR indicates that the site is not located in an area where non-coal mining has occurred. The GSR indicates and area of iron ore mining c.63m west, however, the report includes the following comment with regards to this mining:

> *"Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered."*

In view of the information presented 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.

3.1.8 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.

Radon risks are re-assessed periodically by the British Geological Survey and UK Health Security Agency, therefore, a re-assessment is recommended if the development does not commence within 12 months of issue of this report.

3.2 Development Area Hydrogeology (Groundwater)

3.2.1 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).

3.2.2 Drift Geology

The drift deposits beneath the site are classified as a Secondary Undifferentiated Aquifer. This is assigned where it is not possible to attribute either category A or B.

3.2.3 Solid Geology

The bedrock underlying the proposed changing rooms (Brockram-Breccia) is designated a Principal Aquifer status. This includes geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers.

Bedrock underlying the northern part of the site and surrounding area is classified as a Secondary Aquifer. This includes permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.

3.3 Development Area Hydrology

3.3.1 Groundwater

Given the topography and anticipated ground conditions, shallow groundwater is not anticipated.

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

- No groundwater abstractions are recorded within c.1km of the site.
- No surface water abstractions are 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.

3.3.2 Surface Water Features

There are no surface water features recorded within 250m of the site boundary.

3.3.3 Current Surface Water Run-off

Given the anticipated ground conditions, it is likely that any surface water will infiltrate directly into the ground with some overland flow likely during heavy rainfall events.

3.4 Development Area Environmental Sensitivity

3.4.1 Site Ecology

There are no Environmental Designations (Sites of Special Scientific Interest, Special Area of Conservation, etc…) within 250m of the site.

For further details, please refer to Section 10 of the GSR in Appendix II.

3.4.2 Authorisations, Incidents and Registers

There are no Industrial Authorisation or Registers (Pollution Incidents, Discharge consents, etc…) within 250m of the site.

The nearest pollution incident was recorded c.60m north west in 2002 relating to a chemical spillage and was classified as having a minor impact on water.

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

3.4.3 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.

3.4.4 Historical Industrial Land Uses

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

- Potentially Contaminative Uses (PCU):

  A factory has been recorded to the west of the site since the 1960s and an unspecified 'tank', possibly for storing fuels or oils has been present immediately west of the site since the 1970s.

  An auto repair and tyre centre is present to the north east of the proposed development. This was recorded as a builder's yard since the 1970s.

- Historical Tanks – A tank has been recorded immediately west of the site boundary since the 1970s. It is unclear what this has been used to store, however, it could include fuels or oils. This is a potential source of contamination on the site.

- Potentially Infilled Land – An Unspecified Old Quarry is recorded c.214m west of the site. However, this was a small feature and was redeveloped with housing during the 1970s.

- Historical Energy Features – None of concern noted within c.250m.
- Historical Petrol and Fuel Site Database – None noted within c.250m.
- Historical Garage and Motor Vehicle Repair Database – None noted within c.250m.

3.4.5 Current Industrial Land Uses

Smurfit Westrock Composites, a paper-based packaging manufacturer is present to the west of the site. Historical maps indicate that the factory was constructed during the 1970s and was recorded as an Unspecified Factory. A 'tank' is also recorded to the west of the west of the site and appears to be associated with the factory.

An Auto repair and Tyre centre business are present to the north east of the site.

Both of these land uses are potential sources of contamination. Potential contaminants include oils, fuels and associated chemicals.

3.4.6 Fuel Station Entries

The nearest petrol station within c.500m of the site is a Shell garage located c.354m south west.

3.4.7 Landfill and Waste Regulation/Management – Landfill Sites

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

There is a waste exemption license located c.7m north of the site boundary which is associated with storing waste within a secure place (not on a farm). This is likely to be associated with the auto repair premises.

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

3.5 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.

3.5.1 On-Site

The first historical map extract dated 1863 indicates that the site was part of an agricultural field. The land remained undeveloped agricultural land until it was incorporated within the boundary of the Rugby Club during the 1970s. A small building was constructed in the west part of the site, however, this is no longer present. With the exception of this small building in the western part, the land has remained undeveloped.

3.5.2 Off-Site

The first historical map extract dated 1863 shows the site within a large agricultural field with Richmond Hill (large house) to the south west. The site was primarily surrounded by fields with a small quarry recorded c.214m west. Hensingham Reservoir was constructed c.100m west during the 1940s.

By the 1950s, Eugene House had been constructed on land immediately north of the site and the reservoir to the west had been replaced by West Cumberland Silk Mills.

Significant development occurred within the surrounding area during the 1970s. This included Whitehaven Grammar and Overend Schools to the south east, large textile factories and housing to the south west and west. The small quarry to the west was redeveloped with housing during this period.

A large unspecified factory was constructed to the north west. This factory is now used by Smurfit Westrock Composites (paper-based packaging manufacture). The factory included an unspecified 'tank' which was located close to the site boundary. The contents of the tank are unknown but could include oils or fuels.

A builder's yard was constructed to the north of the site during the 1970s. This has now changed to a auto repair and tyre centre.

The historical maps indicate several industrial land uses within close proximity of the site. These industrial land uses are potential contamination sources which could have impacted the ground beneath the site/proposed development.

4.0 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 as **Figure 3** and considers the anticipated *Source – Pathway – Receptor* pollutant linkage model derived for this site.

SOURCE-PATHWAY-RECEPTOR POLLUTANT LINKAGE MODEL
Sources:
S1 = Possible Made Ground – Some Shallow Made Ground Possible. Historical information suggests that the site has remained mostly undeveloped. However, the topography of the site suggests that some minor cut and fill may have occurred during levelling of the rugby pitch. As such, some shallow made ground may be present. The content of any made ground in unknown, however, as it is likely to comprise reworked natural deposit, significant contamination is not anticipated.
S2 – Contamination from Nearby Industry – Potential sources identified Several historical and current industrial land uses have been identified within close proximity to the site. of most concern is the factory to the north west which includes an unspecified 'tank' close to the site boundary and the auto repair and tyre centre to the north east. It would be prudent to carry out some intrusive works to confirm the shallow ground conditions and to screen shallow soil samples to determine the suitability of the ground for use in a commercial context. If significant made ground or potential sources of contamination are encountered, the scope of chemical laboratory screening should be increased appropriately.
S3 = Ground Gas – No Potential Sources Identified. No potential significant sources of ground gas have been identified within 250m of the site. As such, the risk to the proposed end user (persons using the changing rooms) is considered negligible and gas protection measures are not considered necessary at this stage. This should be reviewed as part of the intrusive ground investigation.
Pathways:
P1 = Inhalation of air (wind-blown particles, vapours, gasses)
P2 = Dermal/direct contact (limited risk through areas of soft landscaping)
P3 = Ingestion (very little to no risk of soil ingestion)
P4 = Migration through services (potable water supply)
P5 = Direct contact with building materials (aggressive ground conditions for buried concrete)
P6 = Surface Run-off
P7 = Leaching from Soils (to underlying Principal Aquifer)
Receptors:
R1 = Human Health (End users and Construction Workforce)
R2 = Controlled Waters (Principal Aquifer)
R3 = Building Materials and Buried Utilities
R4 = Flora and Fauna (soft landscaping)

Figure 3. *Source – Pathway – Receptor* pollutant linkage model

5.0 Preliminary Qualitative Risk Assessment

5.1 Qualitative Geotechnical Risk Assessment – Risk Meter

The preliminary Geotechnical Risk Meter below indicates the potential level of geotechnical risk associated with the proposed development. The risk meter takes into account past development, geology, mining and other geotechnical factors which have been discussed earlier in the report.

Geotechnical:						
RISK =	NEGLIGIBLE	VERY LOW	LOW	MODERATE	HIGH	VERY HIGH

A risk level of VERY LOW is determined appropriate for this development area for the following reasons:

- Historical records indicate that the site has not been previously developed.
- Some shallow made ground should be anticipated, associated with possible cut and fill during levelling of the rugby pitch.
- Geological records indicate that the site is underlain by glacial till deposits which typically comprise firm and stiff clays with bands of sand and gravel. As such, there is a potential for some variable ground conditions.
- Information suggests that the site is not at risk of coal mining related geohazards.
- Shallow groundwater is not anticipated although some trapped “perched” water may be present within any drift deposits.
- Where clay soils are present, their soil shrinkability could be affected by mature vegetation such as trees.

Consequently, it would be prudent to consider a geotechnical Phase 2: Ground Investigation to confirm the underlying ground conditions (i.e. the presence of any made ground and the drift deposits) and to allow samples to be recovered for geotechnical laboratory analysis to aid the design of foundations and drainage.

5.2 Qualitative Contamination Risk Assessment – Risk Meter

The following 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 is currently determined appropriate for this development with respect to ground contamination. The site has remained largely undeveloped. However, several industrial land uses including factories, unspecified tanks and auto repair / tyre centres are located within close proximity.

These are considered potential sources of contamination that could impact the ground beneath the site through migration. As such, there is a potential risk to the end user (any persons using the changing rooms). However, as any exposure is likely to be minor and transient, the risk is not considered significant. Therefore, as the proposed development relates to a single above ground structure (changing room), there is no current requirement for targeted intrusive investigation and contamination assessment.

However, a watching brief should be implemented during the development works to ensure that if areas of significant or deep made ground including anthropogenic material such as ash, clinker, slag, etc… or visual/olfactory evidence of potential contamination (i.e. fuel/oil) are identified then works should be stopped and advice should be sought from an appropriately qualified and experienced Geo-Environmental Engineer.

At this stage, based on the available information there is no evidence to suggest a significant or unacceptable risk of PFAS requiring targeted investigation.

Groundwater Contamination: A risk level of VERY LOW is currently considered appropriate for the site with respect to potential risks to controlled waters (groundwater, nearby surface water features) and adjacent sites.

As the site has remained mainly undeveloped, the risk of significant contamination sources on site is very low. However, there is a potential for mobile contaminants from nearby industrial land uses that could pose a risk to the underlying Principal Aquifer. The presence of clays beneath the site would largely

mitigate the risks, however, care would need to be taken to prevent preferential pathways being formed during construction if contaminants are found to be present.

Ground Gas: A risk level of NEGLIGIBLE is currently considered appropriate for the site with respect to potential harmful ground gas. No potential significant sources of ground gas have been identified within 250m of the site. As such, the risk to the proposed end user (persons using the changing rooms) is considered negligible and gas protection measures are not considered necessary at this stage.

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.

Radon risks are re-assessed periodically by the British Geological Survey and UK Health Security Agency, therefore, a re-assessment is recommended if the development does not commence within 12 months of issue of this report.

6.0 Conclusions

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

- The development site is currently considered to represent a very low geotechnical risk.
- The site is currently considered to pose a very low risk to the proposed end users from ground contamination.
- The site is currently considered to pose a negligible to very low risk to 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.
- Radon Protection Measures are not necessary at this time.

Consequently, no significant or potentially unacceptable risks have been identified that trigger the need for targeted intrusive investigation (e.g., human health ground contamination risk assessment) at the location of the proposed changing room.

However, 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 (e.g., if variable made ground or visual/olfactory evidence of contamination is encountered during construction) 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.

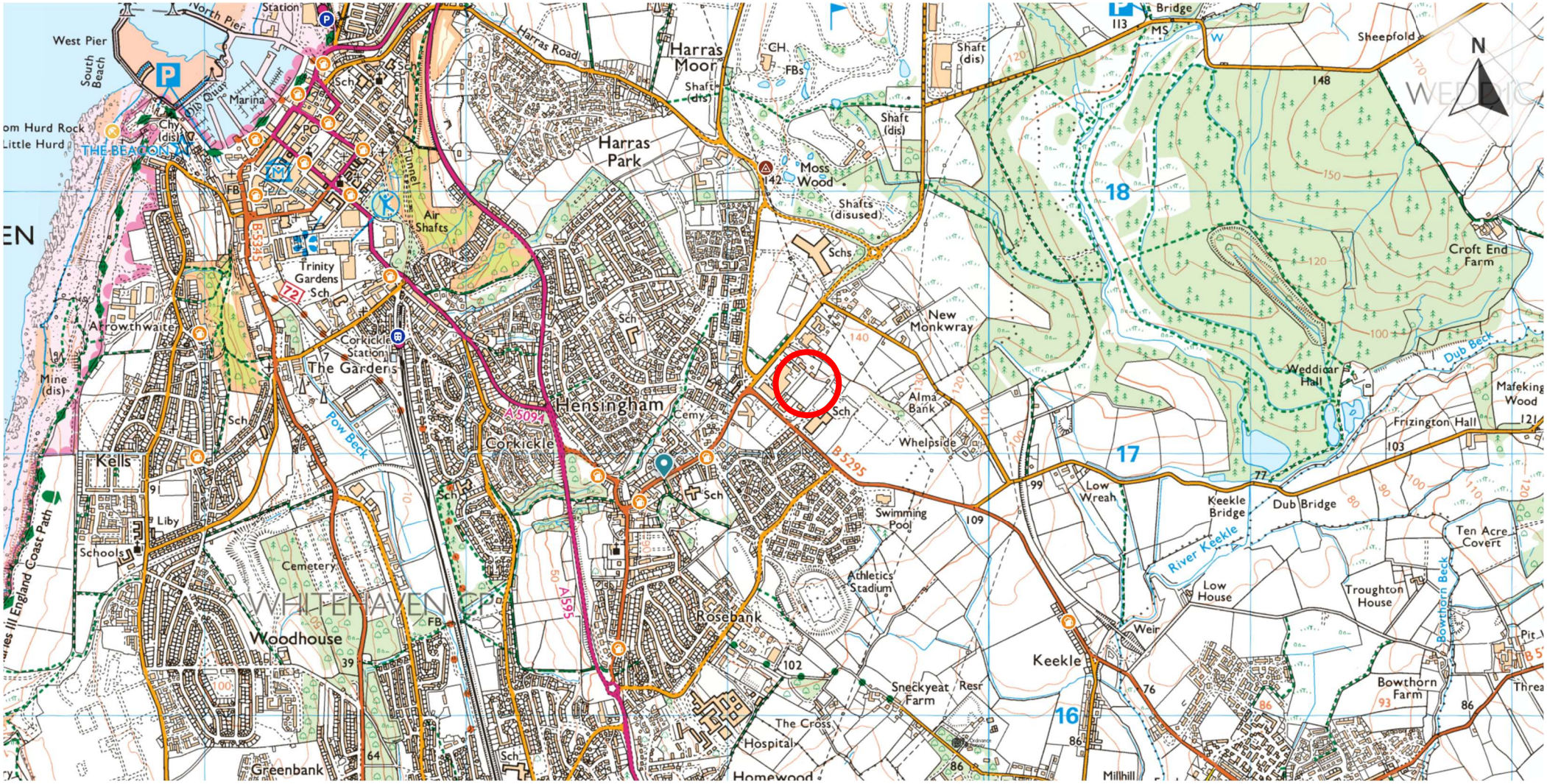
End of Report

Appendix I

- Site Location Plan
- Aerial Photograph Extract
- Site Walkover Photographs (September 2026)
- Proposed Development Plan

GEO Environmental Engineering

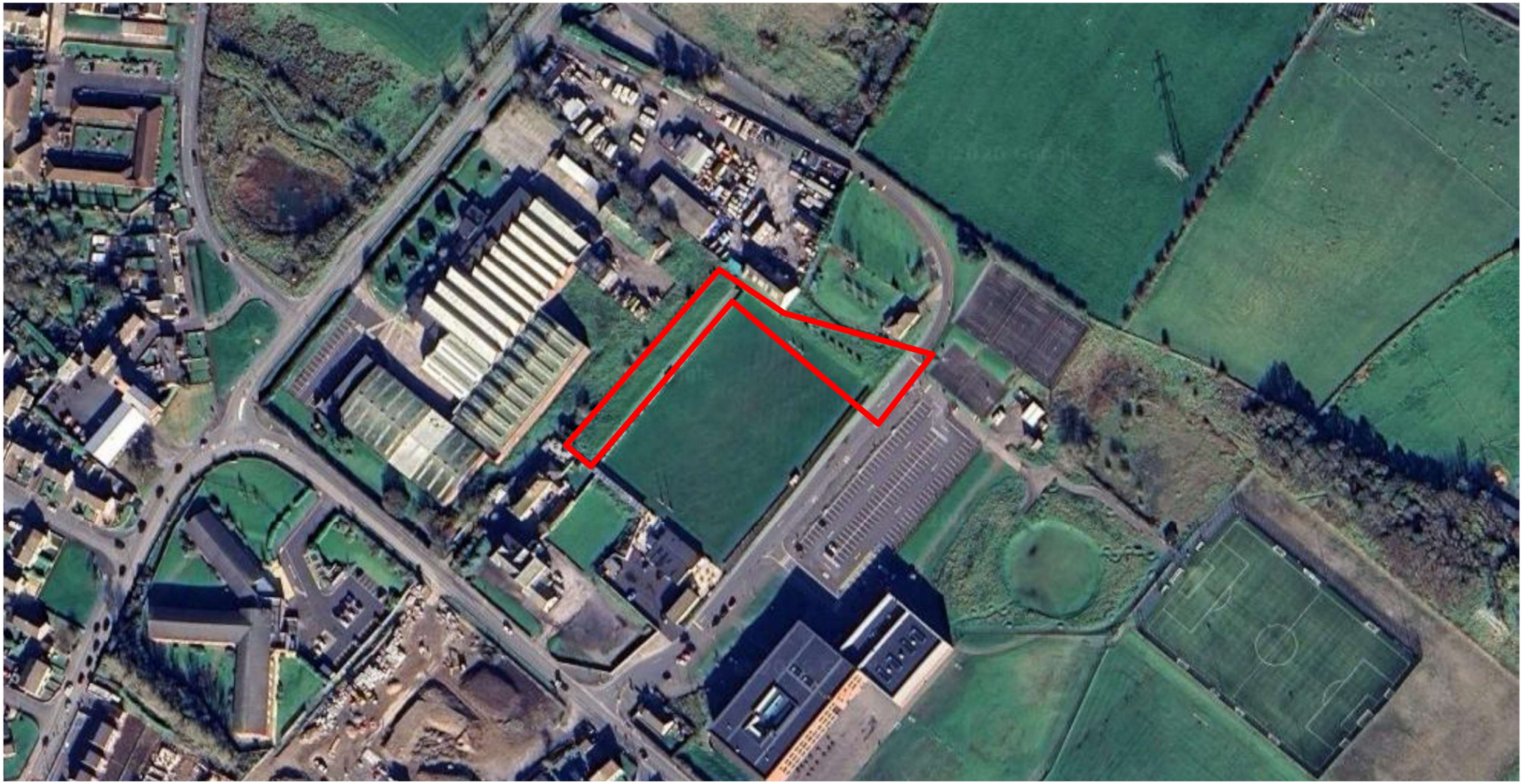
GEO2026-7367: Hensingham A.R.L.F.C. – Site Location



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GEO Environmental Engineering

GEO2026-7367: Hensingham A.R.L.F.C. – Aerial Photograph Extract

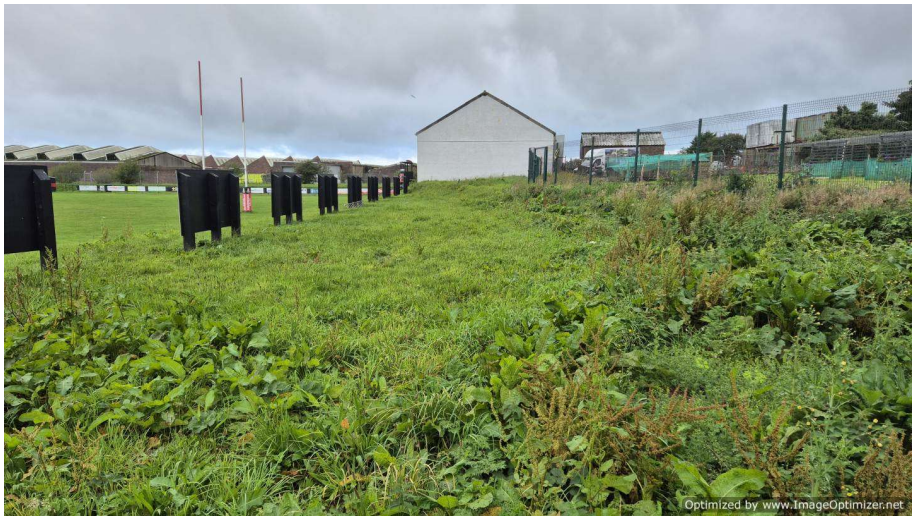


Website: www.geoenvironmentalengineering.com
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Telephone: 07883 440 186

GEO Environmental Engineering

GEO2026-7367: Hensingham A.R.L.F.C. – Site Photographs (September 2026)









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Email: info@geoenvironmentalengineering.com
Telephone: 07883 440 186

Tank
Tank
Factory
Hensingham
ARLFC
Tank
El Sub Sta
Coach House
Cottages
2
1
Posts
The Haven
(Club)
Clubhouse
Factory
Richmond Hill
128.0m
CLEATOR MOOR ROAD
Whitehaven School
Shelter
Tanks
BM
128.45m
129.2m

SCALE BAR 1:500

10m 0 10m 20m 30m 40m 50m

NOTE:
All dimensions to be checked on site.
All dimensions in millimetres unless stated otherwise.

Rev:	Date:	Comments:	By:
A	30.07.26	Amended planning issue	TH

Client:

HENSINGHAM ARLFC
C/O
STOBBARTS LTD.

DAY CUMMINS LIMITED

Architects & Surveyors
Lakeland Business Park
Cockermouth Cumbria CA13 0QT
Tel: 01900 820700
Fax: 01900 820701
email: dc@day-cummins.co.uk
www.day-cummins.co.uk

Project:
NEW CHANGING ROOMS, HENSINGHAM ARLFC, CLEATOR MOOR ROAD, WHITEHAVEN

Drawing Title:
AS PROPOSED LOCATION PLAN

Drawn:	Checked:	Signed:
TH	AW	
Scale:	**Date:**	**Paper Size:**
1:500	11.03.26	A1

ALL DIMENSIONS TO BE CHECKED ON SITE.
FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS
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Project No:	Drawing No:	Rev:
6210	03	**A**

Appendix II

- Enviro+Geo Insight Ground Sure Report (GSR)

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo Insight

unspecified

Order Details

Date: 03/09/2026

Your ref: EMS_1126378_1419837

Our Ref: EMS-1126378_1410821

Site Details

Location: 299314 517268

Area: 0.32 ha

Authority: Cumberland Council ↗

Site plan



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Quick Links

Summary of findings p. 2 >

OS MasterMap site plan p.14 >

Aerial image p. 9 >

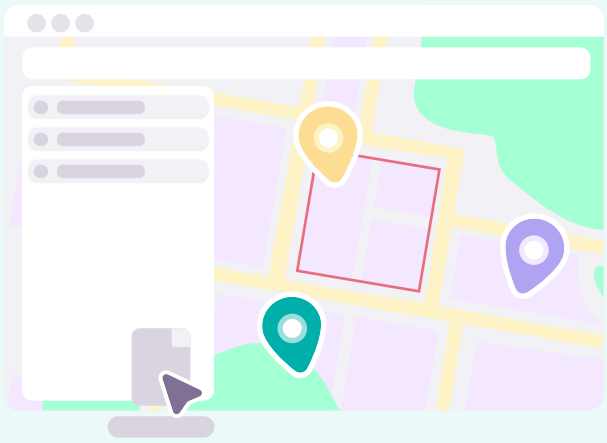
Insight User Guide ↗

Interrogate this site with GIS data!

Insight data can also be purchased in GIS format to visualise and analyse the data

- Map and interpret 130+ datasets across 170 years
- Generate insights and visuals quickly
- Geopackage format allows easy load into several GIS applications

Access to Groundsure Insight GIS data is purchased on a 12 month licence.



Contact us with any questions at:
info@groundsure.com ↗
01273 257 755

Certified B Corporation

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	1	0	9	16	-
17 >	1.2 >	Historical tanks >	0	1	4	2	-
17 >	1.3 >	Historical energy features >	0	0	3	4	-
18	1.4	Historical petrol stations	0	0	0	0	-
18 >	1.5 >	Historical garages >	0	0	0	1	-
18	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
19 >	2.1 >	Historical industrial land uses >	1	0	11	18	-
21 >	2.2 >	Historical tanks >	0	1	4	3	-
21 >	2.3 >	Historical energy features >	0	0	3	7	-
22	2.4	Historical petrol stations	0	0	0	0	-
22 >	2.5 >	Historical garages >	0	0	0	1	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
23	3.1	Active or recent landfill	0	0	0	0	-
23	3.2	Historical landfill (BGS records)	0	0	0	0	-
24	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
24	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
24	3.5	Historical waste sites	0	0	0	0	-
24	3.6	Licensed waste sites	0	0	0	0	-
24 >	3.7 >	Waste exemptions >	0	3	1	4	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
26 >	4.1 >	Recent industrial land uses >	0	2	8	-	-
27 >	4.2 >	National Geographic Database (NGD) - Current or recent tanks >	0	0	1	-	-
27 >	4.3 >	Current or recent petrol stations >	0	0	0	1	-
28	4.4	Sites determined as Contaminated Land	0	0	0	0	-
28	4.5	Control of Major Accident Hazards (COMAH)	0	0	0	0	-

28	4.6	Regulated explosive sites	0	0	0	0	-
28	4.7	Hazardous substance storage/usage	0	0	0	0	-
29	4.8	Historical licensed industrial activities (IPC)	0	0	0	0	-
29	4.9	Licensed industrial activities (Part A(1))	0	0	0	0	-
29 >	4.10 >	Licensed pollutant release (Part A(2)/B) >	0	0	0	1	-
29	4.11	Radioactive Substance Authorisations	0	0	0	0	-
30	4.12	Licensed Discharges to controlled waters	0	0	0	0	-
30	4.13	Pollutant release to surface waters (Red List)	0	0	0	0	-
30	4.14	Pollutant release to public sewer	0	0	0	0	-
30	4.15	List 1 Dangerous Substances	0	0	0	0	-
30	4.16	List 2 Dangerous Substances	0	0	0	0	-
31 >	4.17 >	Pollution Incidents (EA/NRW) >	0	0	2	1	-
31	4.18	Pollution inventory substances	0	0	0	0	-
31	4.19	Pollution inventory waste transfers	0	0	0	0	-
32	4.20	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)				
34 >	5.2 >	Bedrock aquifer >	Identified (within 500m)				
36 >	5.3 >	Groundwater vulnerability >	Identified (within 50m)				
37	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
37	5.5	Groundwater vulnerability- local information	None (within 0m)				
38	5.6	Groundwater abstractions	0	0	0	0	0
38	5.7	Surface water abstractions	0	0	0	0	0
38	5.8	Potable abstractions	0	0	0	0	0
38	5.9	Source Protection Zones	0	0	0	0	-
39	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology >	On site	0-50m	50-250m	250-500m	500-2000m
40	6.1	Water Network (OS NGD)	0	0	0	-	-
40	6.2	Surface water features	0	0	0	-	-

41 >	6.3 >	WFD Surface water body catchments >	2	-	-	-	-
41 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
42 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding >	On site	0-50m	50-250m	250-500m	500-2000m
43	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
44 >	7.2 >	Historical Flood Events >	0	0	1	-	-
44	7.3	Flood Defences	0	0	0	-	-
44	7.4	Flood Storage Areas	0	0	0	-	-
45	7.5	Flood Zone 2	None (within 50m)				
45	7.6	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
46	8.1	Surface water flooding	Negligible (within 50m)				
Page	Section	Groundwater flooding >					
47 >	9.1 >	Groundwater flooding >	Low (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
48	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
49	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
49	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
49	10.4	Special Protection Areas (SPA)	0	0	0	0	0
49	10.5	National Nature Reserves (NNR)	0	0	0	0	0
50	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
50 >	10.7 >	Designated Ancient Woodland >	0	0	0	0	4
50	10.8	Biosphere Reserves	0	0	0	0	0
51	10.9	Forest Parks	0	0	0	0	0
51	10.10	Marine Conservation Zones	0	0	0	0	0
51	10.11	Green Belt	0	0	0	0	0
51	10.12	Proposed Ramsar sites	0	0	0	0	0
51	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
52	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0

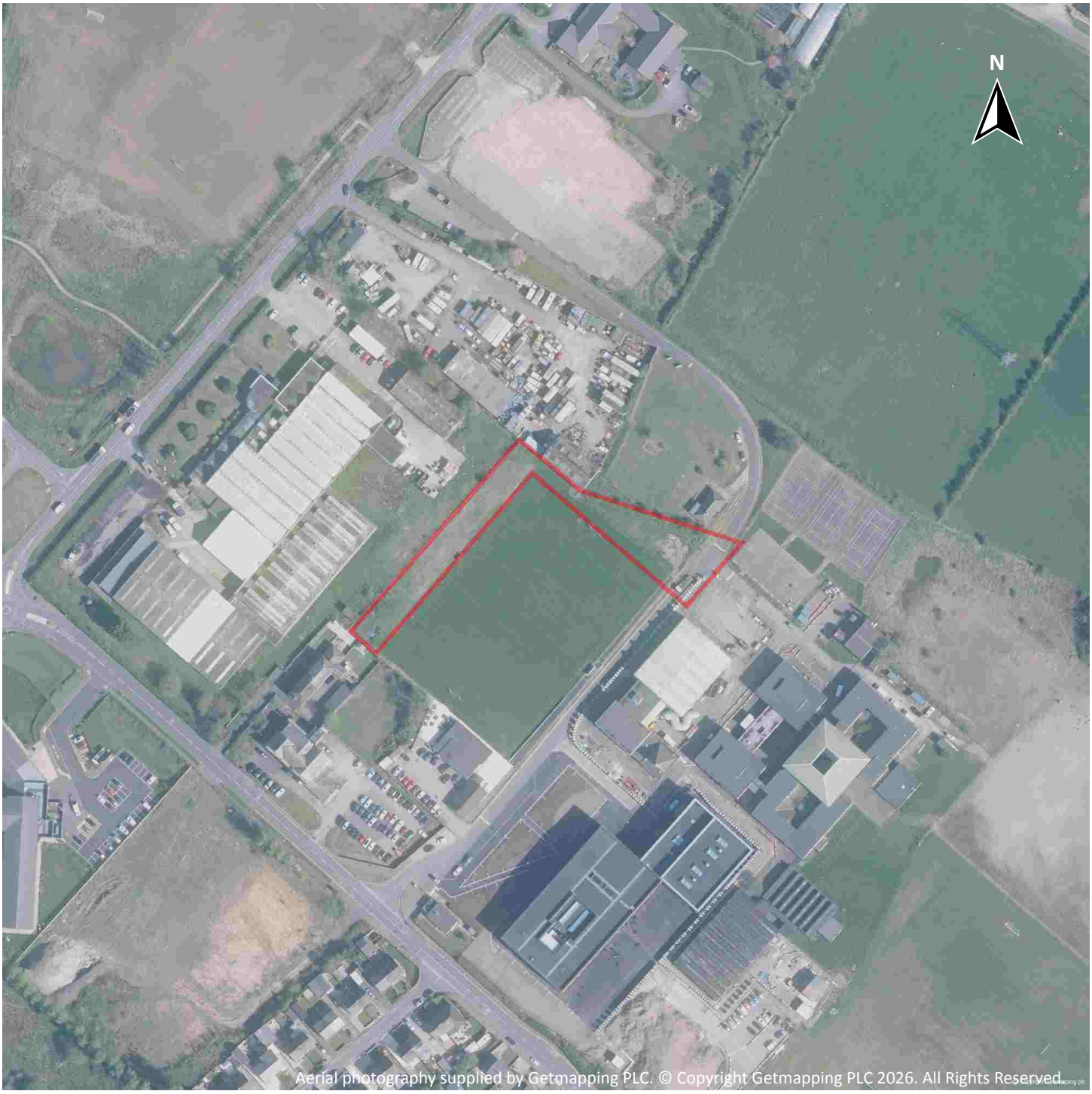
52	10.15	Nitrate Sensitive Areas	0	0	0	0	0
52	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
53 >	**10.17 >**	**SSSI Impact Risk Zones >**	1	-	-	-	-
54	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
55	11.1	World Heritage Sites	0	0	0	-	-
55	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
55	11.3	National Parks	0	0	0	-	-
55	11.4	Listed Buildings	0	0	0	-	-
56	11.5	Conservation Areas	0	0	0	-	-
56	11.6	Scheduled Ancient Monuments	0	0	0	-	-
56	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	**Agricultural designations >**	On site	0-50m	50-250m	250-500m	500-2000m
57 >	**12.1 >**	**Agricultural Land Classification >**	Grade 3 (within 250m)				
58	12.2	Open Access Land	0	0	0	-	-
58	12.3	Tree Felling Licences	0	0	0	-	-
58	12.4	Environmental Stewardship Schemes	0	0	0	-	-
58 >	**12.5 >**	**Countryside Stewardship Schemes >**	0	0	1	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
59	13.1	Priority Habitat Inventory	0	0	0	-	-
59	13.2	Habitat Networks	0	0	0	-	-
59	13.3	Open Mosaic Habitat	0	0	0	-	-
59	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
60 >	**14.1 >**	**10k Availability >**	Identified (within 500m)				
61	14.2	Artificial and made ground (10k)	0	0	0	0	-
62	14.3	Superficial geology (10k)	0	0	0	0	-
62	14.4	Landslip (10k)	0	0	0	0	-
63	14.5	Bedrock geology (10k)	0	0	0	0	-

63	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
64 >	15.1 >	50k Availability >	Identified (within 500m)				
65 >	15.2 >	Artificial and made ground (50k) >	0	0	0	3	-
66	15.3	Artificial ground permeability (50k)	0	0	-	-	-
67 >	15.4 >	Superficial geology (50k) >	1	0	0	0	-
68 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
68	15.6	Landslip (50k)	0	0	0	0	-
68	15.7	Landslip permeability (50k)	None (within 50m)				
69 >	15.8 >	Bedrock geology (50k) >	2	0	7	6	-
70 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
71 >	15.10 >	Bedrock faults and other linear features (50k) >	0	0	4	5	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
72	16.1	BGS Boreholes	0	0	0	-	-
Page	Section	**Natural ground subsidence >**					
73 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
74 >	17.2 >	Running sands >	Very low (within 50m)				
76 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
77 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
78 >	17.5 >	Landslides >	Very low (within 50m)				
79 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	**Mining and ground workings >**	On site	0-50m	50-250m	250-500m	500-2000m
81 >	18.1 >	BritPits >	0	0	1	2	-
82 >	18.2 >	Surface ground workings >	0	0	9	-	-
83 >	18.3 >	Underground workings >	0	0	0	0	23
84	18.4	Underground mining extents	0	0	0	0	-
84 >	18.5 >	Historical Mineral Planning Areas >	0	0	0	1	-
85 >	18.6 >	Non-coal mining >	0	0	2	2	9
86	18.7	JPB mining areas	None (within 0m)				

87	18.8	The Coal Authority non-coal mining	0	0	0	0	-
87 >	18.9 >	Researched mining >	0	0	0	1	-
87	18.10	Mining record office plans	0	0	0	0	-
87	18.11	BGS mine plans	0	0	0	0	-
88 >	18.12 >	Coal mining >	Identified (within 0m)				
88	18.13	Brine areas	None (within 0m)				
88	18.14	Gypsum areas	None (within 0m)				
88	18.15	Tin mining	None (within 0m)				
88	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
89	19.1	Natural cavities	0	0	0	0	-
89	19.2	Mining cavities	0	0	0	0	0
89	19.3	Reported recent incidents	0	0	0	0	-
89	19.4	Historical incidents	0	0	0	0	-
Page	Section	Radon >					
91 >	20.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
93 >	21.1 >	BGS Estimated Background Soil Chemistry >	2	1	-	-	-
93	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
93	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
94	22.1	Underground railways (London)	0	0	0	-	-
94	22.2	Underground railways (Non-London)	0	0	0	-	-
94	22.3	Railway tunnels	0	0	0	-	-
94	22.4	Historical railway and tunnel features	0	0	0	-	-
94	22.5	Royal Mail tunnels	0	0	0	-	-
95	22.6	Historical railways	0	0	0	-	-
95	22.7	Railways	0	0	0	-	-
95	22.8	Crossrail 2	0	0	0	0	-

95	22.9	HS2		0	0	0	0	-

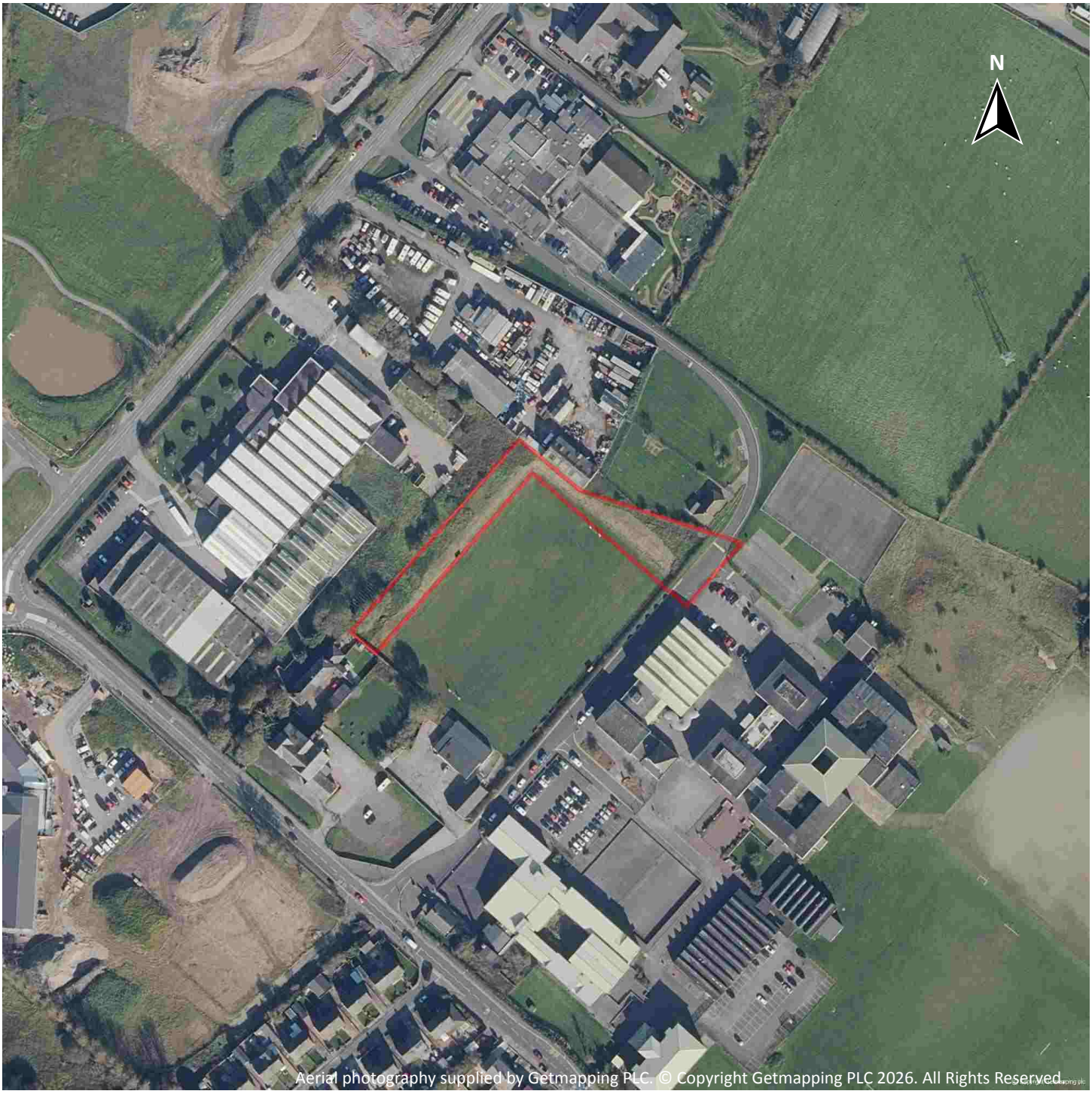
Recent aerial photograph



Capture Date: 20/04/2022

Site Area: 0.32ha

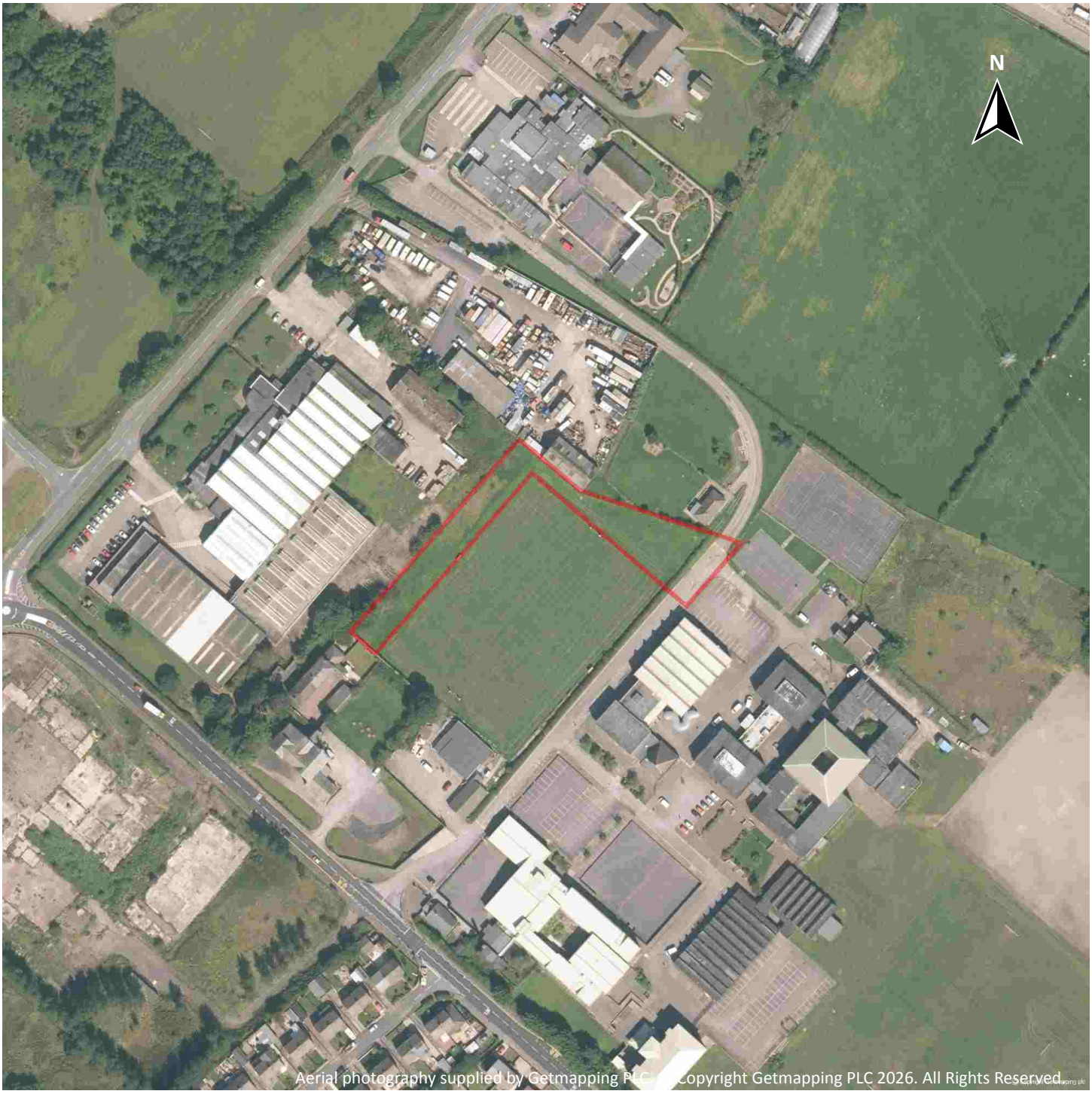
Recent site history - 2018 aerial photograph



Capture Date: 10/10/2018

Site Area: 0.32ha

Recent site history - 2016 aerial photograph



Capture Date: 16/08/2016

Site Area: 0.32ha

Recent site history - 2008 aerial photograph



Capture Date: 05/10/2008

Site Area: 0.32ha

Recent site history - 1999 aerial photograph



Capture Date: 26/07/1999

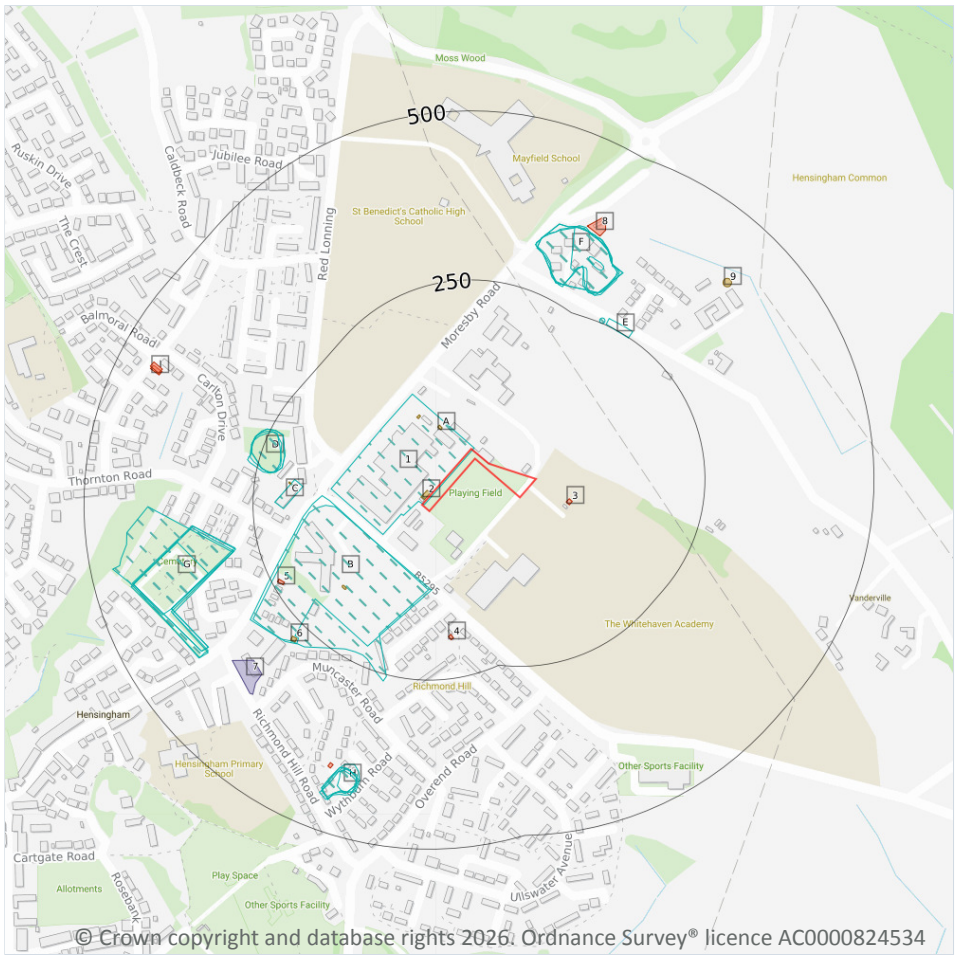
Site Area: 0.32ha

OS MasterMap site plan



Site Area: 0.32ha

1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

Historical garages

1.1 Historical industrial land uses

Records within 500m	26

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 15 >**

ID	Location	Land use	Dates present	Group ID
1	**On site**	**Unspecified Factory**	**1977**	**206220**

ID	Location	Land use	Dates present	Group ID
B	87m SW	Unspecified Factories	1977	199993
B	87m SW	Silk Mills	1957	203767
C	178m W	Fire Station	1977	203947
D	214m W	Unspecified Old Quarry	1898	207153
D	214m W	Unspecified Pit	1926	209010
D	217m W	Unspecified Pit	1863	211698
D	219m W	Unspecified Pit	1938 - 1957	210916
E	249m NE	Windmill	1863	201362
E	250m NE	Old Windmill	1863	206352
F	275m NE	Unspecified Ground Workings	1957	210885
F	276m NE	Unspecified Old Quarry	1898	207152
F	276m NE	Unspecified Pit	1926	211840
F	278m NE	Unspecified Ground Workings	1938	213525
G	283m W	Cemetery	1926	211977
G	284m W	Cemetery	1938	211506
F	286m N	Unspecified Pit	1977	211092
G	286m W	Cemetery	1957	215236
G	289m W	Cemetery	1977	216913
F	323m N	Unspecified Pit	1863	217327
G	332m W	Cemetery	1898	213732
H	391m S	Unspecified Old Quarry	1898	207133
H	399m S	Unspecified Pit	1926	213289
H	400m S	Unspecified Pit	1938	208971
H	401m S	Unspecified Quarry	1863	203263
H	404m S	Unspecified Pit	1957	219098

This data is sourced from Ordnance Survey® / Groundsure.

1.2 Historical tanks

Records within 500m	7

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

Features are displayed on the Past land use map on **page 15 >**

ID	Location	Land use	Dates present	Group ID
2	2m NW	Unspecified Tank	1973	29343
A	53m NW	Unspecified Tank	1973	29342
A	88m NW	Unspecified Tank	1973	29341
B	166m SW	Tanks	1973	29672
C	196m W	Unspecified Tank	1973	29344
6	271m SW	Unspecified Tank	1973	29345
9	399m NE	Unspecified Tank	1993 - 1994	30308

This data is sourced from Ordnance Survey® / Groundsure.

1.3 Historical energy features

Records within 500m	7

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

Features are displayed on the Past land use map on **page 15 >**

ID	Location	Land use	Dates present	Group ID
3	56m SE	Electricity Substation	1973	16129
4	185m S	Electricity Substation	1973	16211
5	234m SW	Electricity Substation	1973	16130
8	368m NE	Gas Governor	1983 - 1990	16758

ID	Location	Land use	Dates present	Group ID
H	400m S	Electricity Substation	1994	16215
I	432m NW	Electricity Substation	1973 - 1983	16483
I	433m NW	Electricity Substation	1969	16460

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 un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey® / Groundsure.

1.5 Historical garages

Records within 500m	1

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

Features are displayed on the Past land use map on **page 15 >**

ID	Location	Land use	Dates present	Group ID
7	339m SW	Garage	1973	5323

This data is sourced from Ordnance Survey® / Groundsure.

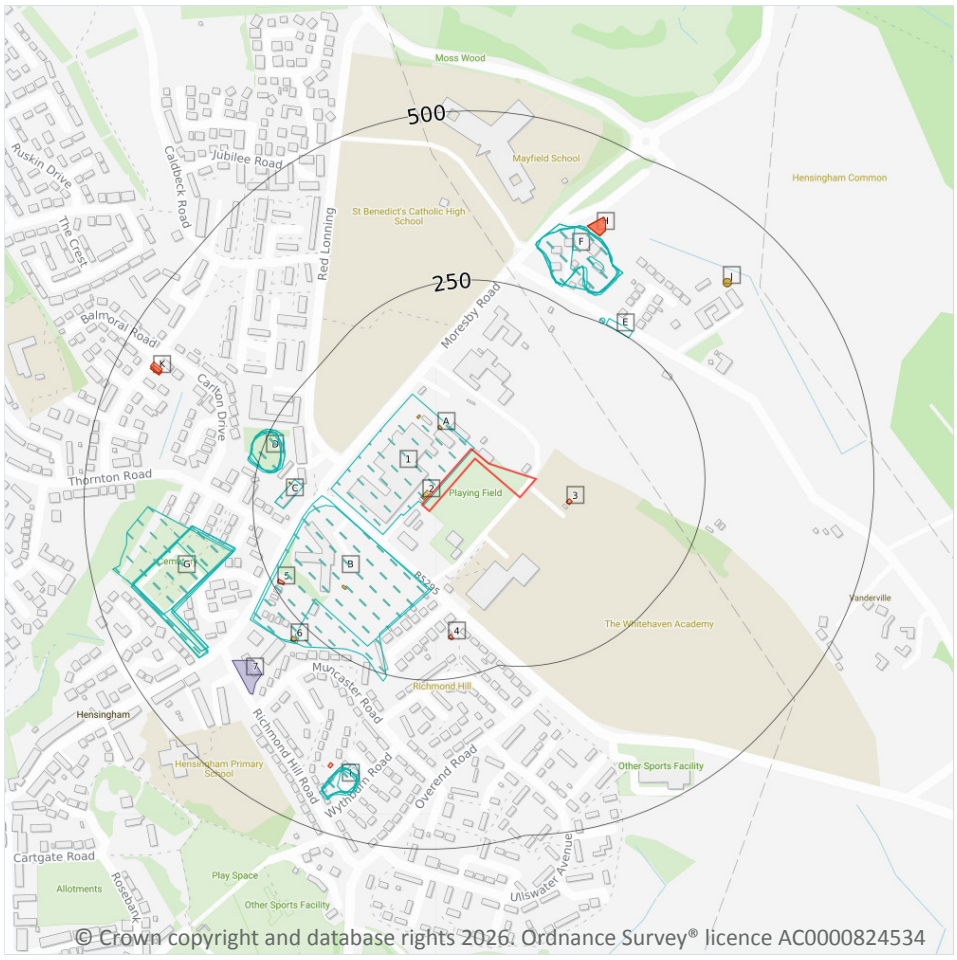
1.6 Historical military land

Records within 500m	0

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

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

2 Past land use - un-grouped



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

Historical garages

2.1 Historical industrial land uses

Records within 500m	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 19 >**

ID	Location	Land Use	Date	Group ID
1	**On site**	**Unspecified Factory**	**1977**	**206220**
B	87m SW	Unspecified Factories	1977	199993
B	87m SW	Silk Mills	1957	203767

ID	Location	Land Use	Date	Group ID
C	178m W	Fire Station	1977	203947
D	214m W	Unspecified Pit	1926	209010
D	214m W	Unspecified Old Quarry	1898	207153
D	217m W	Unspecified Pit	1863	211698
D	219m W	Unspecified Pit	1938	210916
D	219m W	Unspecified Pit	1938	210916
D	220m W	Unspecified Pit	1957	210916
E	249m NE	Windmill	1863	201362
E	250m NE	Old Windmill	1863	206352
F	275m NE	Unspecified Ground Workings	1957	210885
F	276m NE	Unspecified Pit	1926	211840
F	276m NE	Unspecified Old Quarry	1898	207152
F	278m NE	Unspecified Ground Workings	1938	213525
F	278m NE	Unspecified Ground Workings	1938	213525
G	283m W	Cemetery	1926	211977
G	284m W	Cemetery	1938	211506
F	286m N	Unspecified Pit	1977	211092
G	286m W	Cemetery	1957	215236
G	289m W	Cemetery	1977	216913
F	323m N	Unspecified Pit	1863	217327
G	332m W	Cemetery	1898	213732
I	391m S	Unspecified Old Quarry	1898	207133
I	399m S	Unspecified Pit	1926	213289
I	400m S	Unspecified Pit	1938	208971
I	400m S	Unspecified Pit	1938	208971
I	401m S	Unspecified Quarry	1863	203263
I	404m S	Unspecified Pit	1957	219098

This data is sourced from Ordnance Survey® / Groundsure.

2.2 Historical tanks

Records within 500m	8

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

Features are displayed on the Past land use - un-grouped map on **page 19 >**

ID	Location	Land Use	Date	Group ID
2	2m NW	Unspecified Tank	1973	29343
A	53m NW	Unspecified Tank	1973	29342
A	88m NW	Unspecified Tank	1973	29341
B	166m SW	Tanks	1973	29672
C	196m W	Unspecified Tank	1973	29344
6	271m SW	Unspecified Tank	1973	29345
J	399m NE	Unspecified Tank	1994	30308
J	400m NE	Unspecified Tank	1993	30308

This data is sourced from Ordnance Survey® / Groundsure.

2.3 Historical energy features

Records within 500m	10

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

Features are displayed on the Past land use - un-grouped map on **page 19 >**

ID	Location	Land Use	Date	Group ID
3	56m SE	Electricity Substation	1973	16129
4	185m S	Electricity Substation	1973	16211
5	234m SW	Electricity Substation	1973	16130
H	368m NE	Gas Governor	1988	16758
H	368m NE	Gas Governor	1990	16758
H	368m NE	Gas Governor	1983	16758

ID	Location	Land Use	Date	Group ID
I	400m S	Electricity Substation	1994	16215
K	432m NW	Electricity Substation	1973	16483
K	432m NW	Electricity Substation	1983	16483
K	433m NW	Electricity Substation	1969	16460

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	1

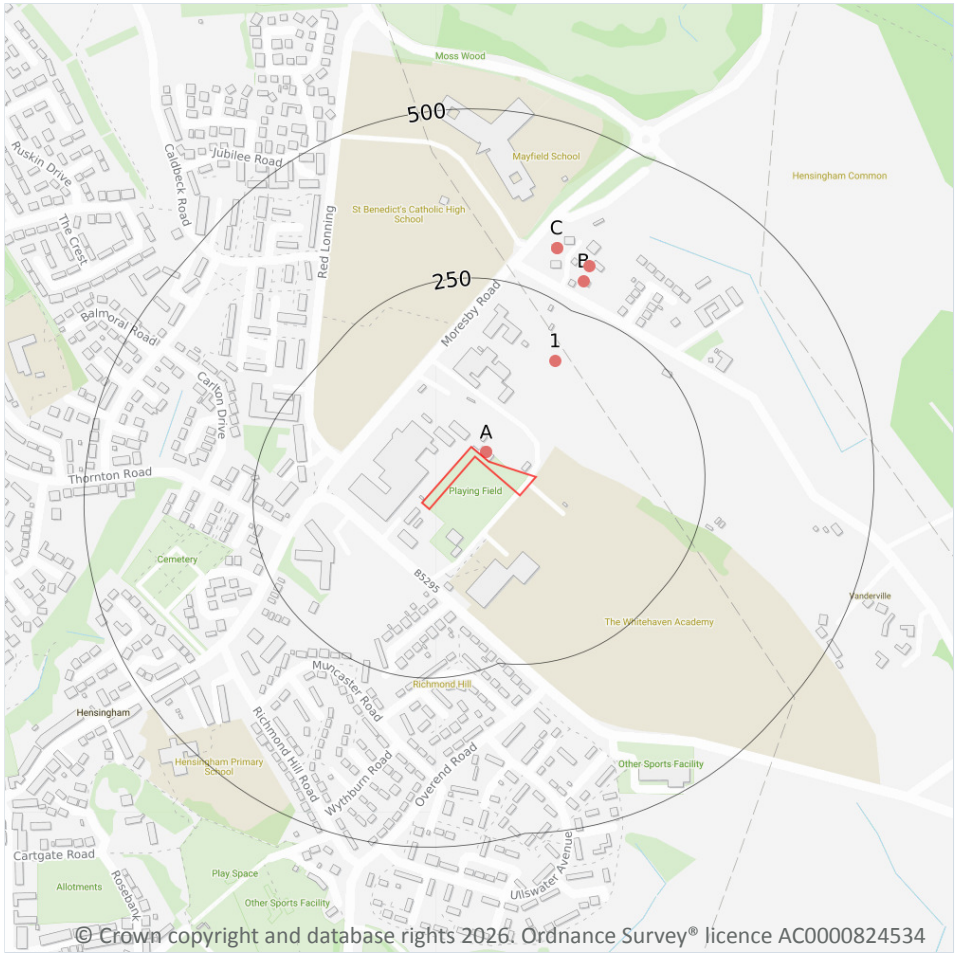
Garages digitised from historical Ordnance Survey® mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 19 >**

ID	Location	Land Use	Date	Group ID
7	339m SW	Garage	1973	5323

This data is sourced from Ordnance Survey® / Groundsure.

3 Waste and landfill



Site Outline

Search buffers in metres (m)

Waste exemptions

3.1 Active or recent landfill

Records within 500m	0

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

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

3.2 Historical landfill (BGS records)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

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

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

3.5 Historical waste sites

Records within 500m	0

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

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

3.6 Licensed waste sites

Records within 500m	0

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

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

3.7 Waste exemptions

Records within 500m	8

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

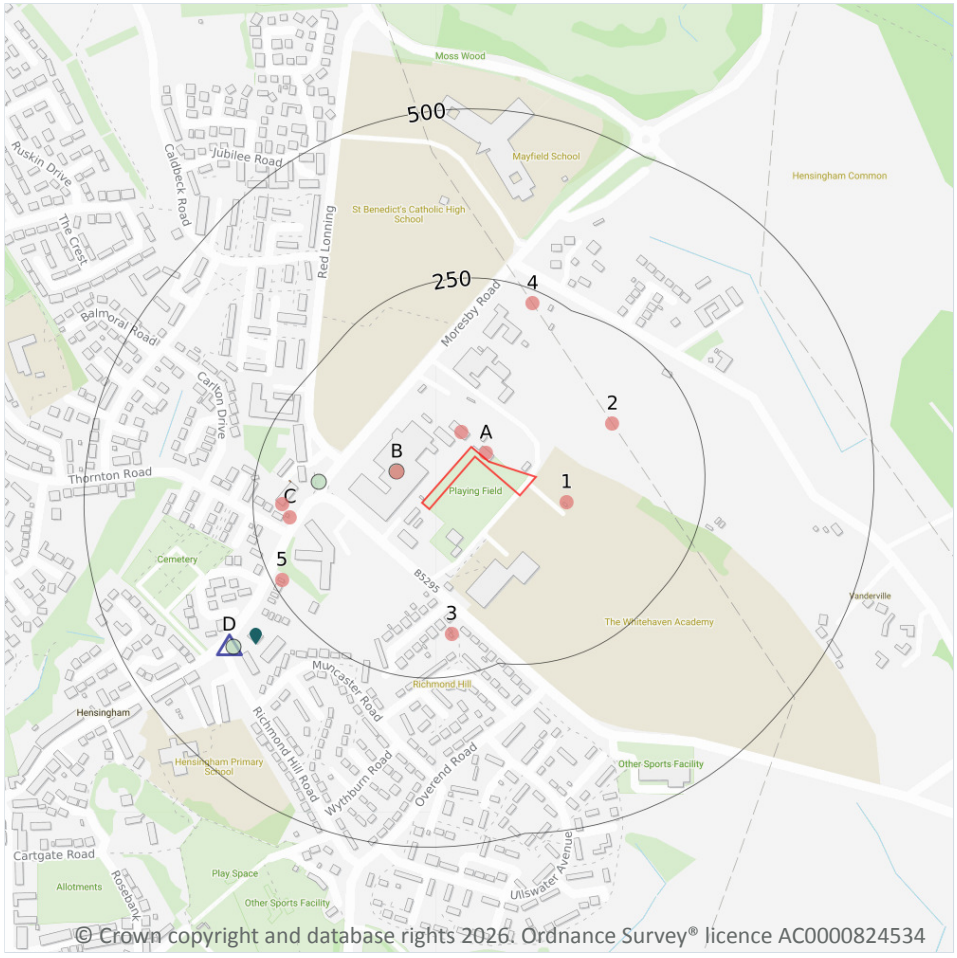
Features are displayed on the Waste and landfill map on **page 23 >**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	7m NE	Moresby Road, Hensingham, Whitehaven, Ca28 8tu	WEX244838	Storing waste exemption	Not on a farm	Storage of waste in a secure place

ID	Location	Site	Reference	Category	Sub-Category	Description
A	7m NE	Moresby Road, Hensingham, Whitehaven, Ca28 8tu	WEX102717	Storing waste exemption	Not on a farm	Storage of waste in a secure place
A	7m NE	Moresby Road, Hensingham, Whitehaven, Ca28 8tu	WEX371974	Storing waste exemption	Not on a farm	Storage of waste in a secure place
1	171m N	Jacksons Marine C/o 1 Masons Yard Hensingham Ca28 8tu	EPR/ZE5082ZQ /A001	Storing waste exemption	Non-agricultural waste only	Storage of waste in a secure place
B	295m NE	Hensingham Business Park, Hensingham, Whitehaven, Ca28 8yu	WEX443220	Disposing of waste exemption	Not on a farm	Burning waste in the open
B	318m NE	Hensingham Business Park, Hensingham, Whitehaven, Ca28 8yu	WEX310961	Disposing of waste exemption	Not on a farm	Burning waste in the open
C	319m NE	Iron Mountain, Units 4, 5 & 7, Hensingham Business Park, Linden Row, Whitehaven, Ca28 8yu	WEX281855	Storing waste exemption	Not on a farm	Storage of waste in a secure place
C	319m NE	Iron Mountain, Units 4, 5 & 7, Hensingham Business Park, Linden Row, Whitehaven, Ca28 8yu	WEX411673	Storing waste exemption	Not on a farm	Storage of waste in a secure place

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

NGD current or recent tanks

Current or recent petrol stations

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

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	10

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 26 >**

ID	Location	Company	Address	Activity	Category
A	7m NE	Mason's Auto Repairs	Mason Auto Repairs, Moresby Road, Whitehaven, Cumbria, CA28 8TU	Vehicle Repair, Testing and Servicing	Repair and Servicing
A	26m NW	Haven Tyre Centre	Moresby Road, Whitehaven, Cumbria, CA28 8TU	Vehicle Parts and Accessories	Motoring

ID	Location	Company	Address	Activity	Category
B	58m NW	Smurfit Westrock Composites	Richmond Works, Moresby Road, Whitehaven, Cumbria, CA28 8TS	Packaging	Industrial Products
1	59m SE	Electricity Sub Station	Cumbria, CA28	Electrical Features	Infrastructure and Facilities
2	138m NE	Pylon	Cumbria, CA28	Electrical Features	Infrastructure and Facilities
3	188m S	Electricity Sub Station	Cumbria, CA28	Electrical Features	Infrastructure and Facilities
C	196m W	Gas Governor Station	Cumbria, CA28	Gas Features	Infrastructure and Facilities
C	206m W	Whitehaven Fire Station	Whitehaven Fire Station, Main Street, Hensingham, Cumbria, CA28 6XD	Fire Brigade Stations	Central and Local Government
4	231m NE	Pylon	Cumbria, CA28	Electrical Features	Infrastructure and Facilities
5	237m SW	Electricity Sub Station	Cumbria, CA28	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey®.

4.2 National Geographic Database (NGD) - Current or recent tanks

Records within 250m	**1**

Current or recent tanks identified from the Ordnance Survey® NGD.

Features are displayed on the Current industrial land use map on **page 26 >**

ID	Location	Tank description	Activity	Date first identified
C	196m W	Roofed Storage Tank	Commercial Activity: Distribution Or Storage	18/07/1990

This data is sourced from Ordnance Survey®.

4.3 Current or recent petrol stations

Records within 500m	**1**

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on **page 26 >**

ID	Location	Company	Address	LPG	Status
D	354m SW	SHELL	Main Street, Hensingham, Whitehaven, Cumbria, CA28 8TP	No	Open

This data is sourced from Experian.

4.4 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.

4.5 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.

4.6 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.

4.7 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.

4.8 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.

4.9 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.

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

Records within 500m	1

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

Features are displayed on the Current industrial land use map on **page 26 >**

ID	Location	Address	Details	
D	316m SW	James Hall & Co Ltd, GEM Whitehaven, Spar Store, Hensingham, Whtiehaven, Cumbria, CA28 8TP	Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified

This data is sourced from Local Authority records.

4.11 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.

4.12 Licensed Discharges to controlled waters

Records within 500m	0

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

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

4.13 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.

4.14 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.

4.15 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.

4.16 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.

4.17 Pollution Incidents (EA/NRW)

Records within 500m	3

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 26 >**

ID	Location	Details	
B	60m NW	Incident Date: 07/10/2002 Incident Identification: 113181 Pollutant: Inorganic Chemicals/Products Pollutant Description: Other Inorganic Chemical or Product	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
C	156m W	Incident Date: 30/07/2001 Incident Identification: 20393 Pollutant: Sewage Materials Pollutant Description: Other Sewage Material	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
D	351m SW	Incident Date: 15/01/2002 Incident Identification: 52587 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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

4.18 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.

4.19 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.

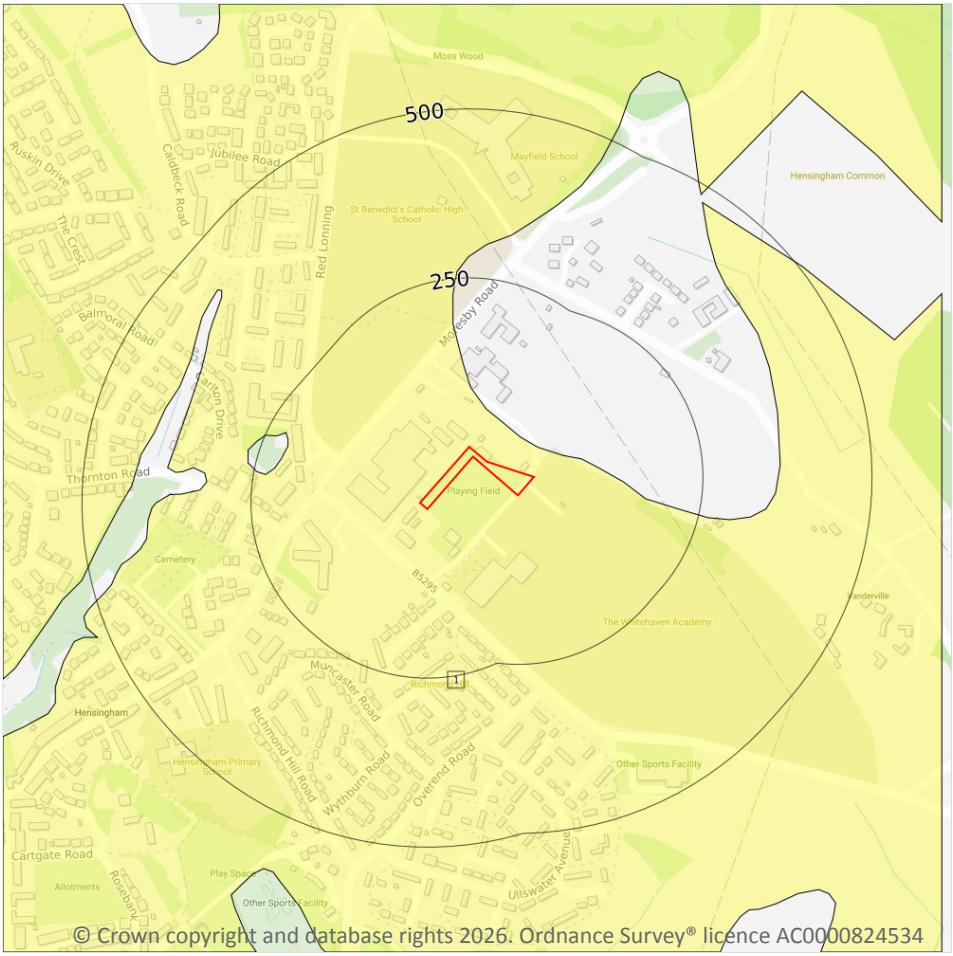
4.20 Pollution inventory radioactive waste

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	1

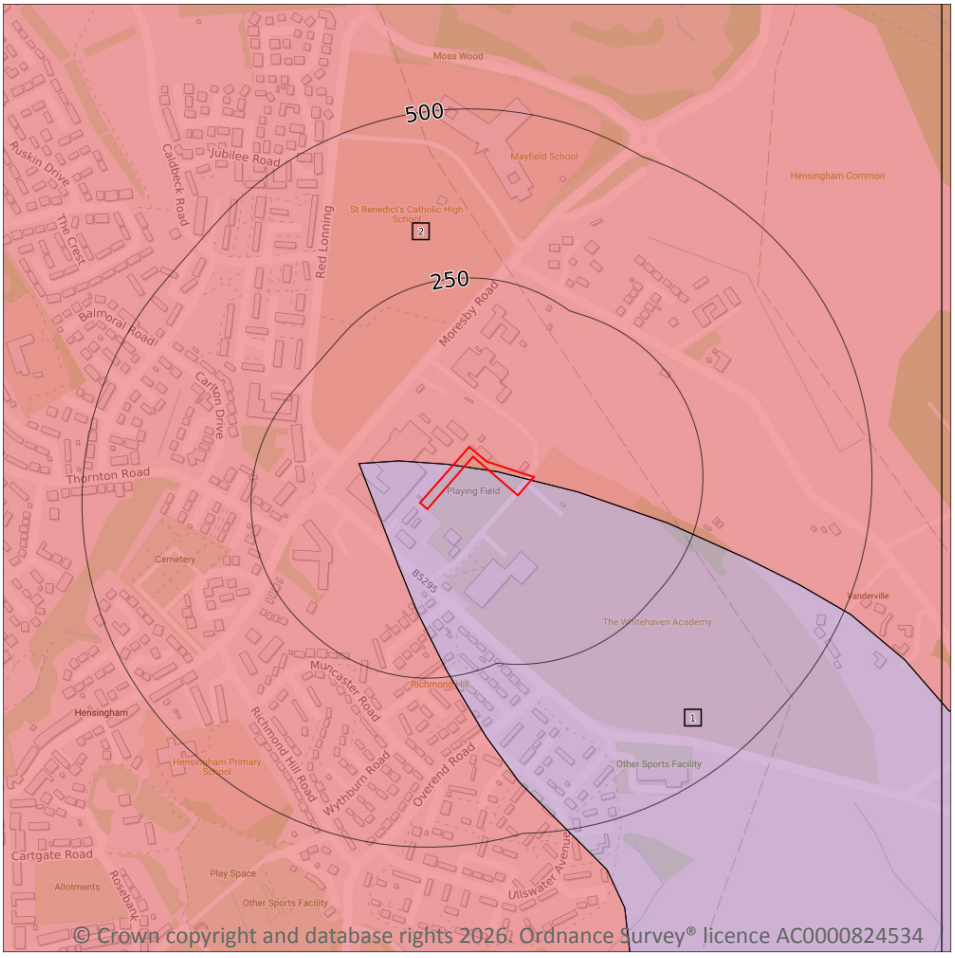
Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 33 >**

ID	Location	Designation	Description
1	On site	Secondary 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

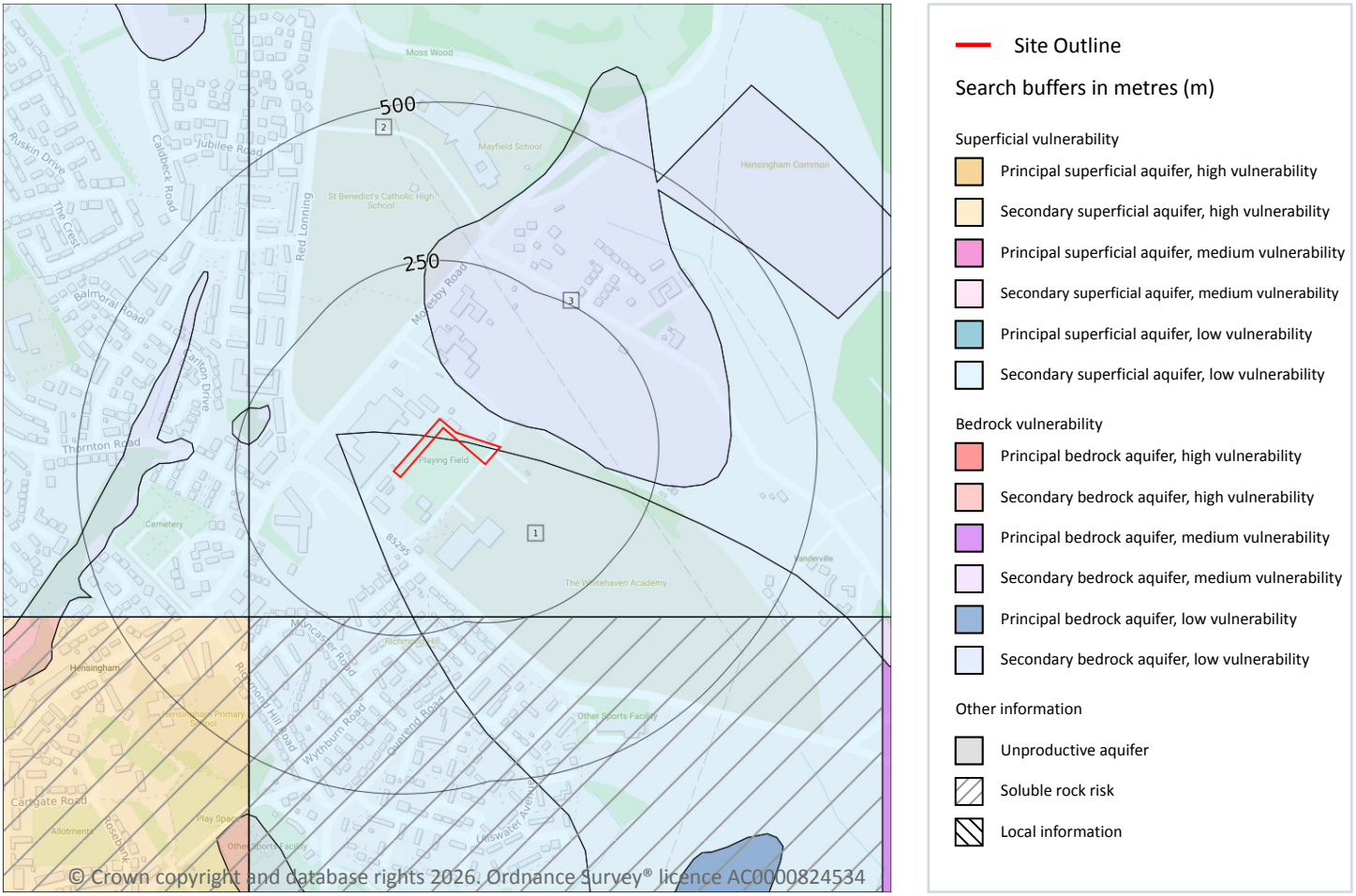
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 34 >**

ID	Location	Designation	Description
1	On site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
2	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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	3

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 36 >**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	**On site**	**Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year**	**Vulnerability: Low Aquifer type: Secondary Thickness: 3-10m Patchiness value: <90% Recharge potential: Low**	**Vulnerability: Low Aquifer type: Principal Flow mechanism: Well connected fractures**
2	**On site**	**Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year**	**Vulnerability: Low Aquifer type: Secondary Thickness: 3-10m Patchiness value: <90% Recharge potential: Low**	**Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures**
3	44m N	Summary Classification: Secondary bedrock aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	**0**

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

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

5.5 Groundwater vulnerability- local information

Records on site	**0**

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

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

Abstractions and Source Protection Zones

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	0

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

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

5.8 Potable abstractions

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 NGD)

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 NGD)

Records within 250m	0

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

This data is sourced from the Ordnance Survey®.

6.2 Surface water features

Records within 250m	0

Covering rivers, streams and lakes (some overlap with OS NGD 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.

This data is sourced from the Ordnance Survey®.

6.3 WFD Surface water body catchments

Records on site	2

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 40 >**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	**On site**	**River**	**Keekle (lower)**	**GB112074070000**	**Ehen-Calder**	**South West Lakes**
2	**On site**	**Coastal Catchment**	**Not part of a river WB catchment**	**356**	**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 40 >**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	1417m SE	River	Keekle (lower)	GB112074070000 ↗	No longer applicable	Does not require assessment	Good	2022

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 40 >**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	**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
- Flood Defences

7.1 Risk of flooding from rivers and the sea

Records within 50m	0

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

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

7.2 Historical Flood Events

Records within 250m	1

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

Features are displayed on the River and coastal flooding map on **page 43 >**

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
1	154m NW	14 August 2017 - Whitehaven	2017-08-14 2017-08-15	Other	Local drainage/surface water	No data

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

7.3 Flood Defences

Records within 250m	0

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

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

7.4 Flood Storage Areas

Records within 250m	0

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

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

River and coastal flooding - Flood Zones

7.5 Flood Zone 2

Records within 50m	0

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

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

7.6 Flood Zone 3

Records within 50m	0

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

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

8 Surface water flooding

8.1 Surface water flooding

Highest risk on site	**Negligible**
Highest risk within 50m	**Negligible**

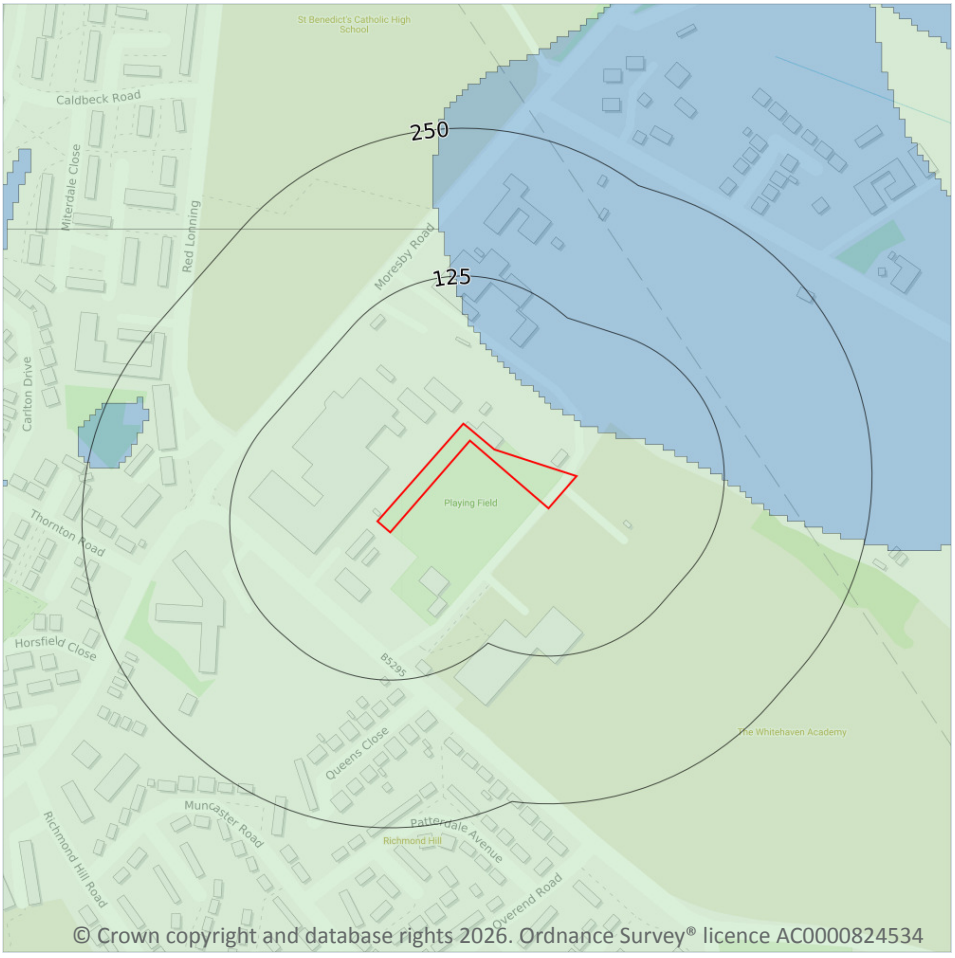
Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year 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.

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	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



Site Outline

Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

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 47 >**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



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Site Outline

Search buffers in metres (m)

Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m	0

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m	0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m	0

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

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

10.7 Designated Ancient Woodland

Records within 2000m	4

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 48 >**

ID	Location	Name	Woodland Type
1	1045m NW	Midgey Wood	Ancient & Semi-Natural Woodland
2	1099m NW	Midgey Wood	Ancient & Semi-Natural Woodland
3	1344m NW	Crowpark Wood	Ancient & Semi-Natural Woodland
4	1345m NW	Crowpark Wood	Ancient & Semi-Natural Woodland

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

10.8 Biosphere Reserves

Records within 2000m	0

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

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

10.9 Forest Parks

Records within 2000m	0

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

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

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

10.11 Green Belt

Records within 2000m	0

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

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

10.12 Proposed Ramsar sites

Records within 2000m	0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

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

This data is sourced from Natural England.

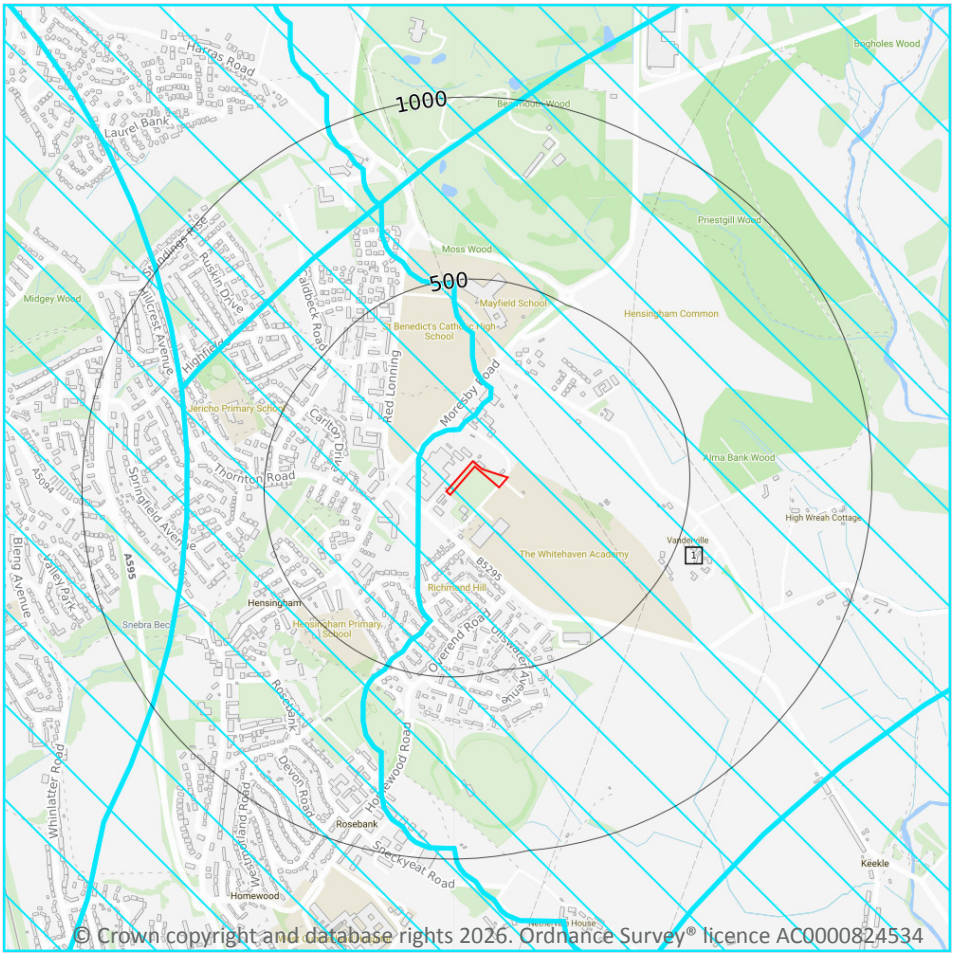
10.16 Nitrate Vulnerable Zones

Records within 2000m	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	1

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

Features are displayed on the SSSI Impact Zones and Units map on **page 53 >**

ID	Location	Type of developments requiring consultation
1	**On site**	**https://irz.geodata.org.uk/IRZ/step2.html?irzcode=0303000430050&notes=&location=301042,518150%20(IRZ%20polygon%20centre)**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	0

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

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

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m	0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

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

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

11.3 National Parks

Records within 250m	0

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

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

11.4 Listed Buildings

Records within 250m	0

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

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

11.5 Conservation Areas

Records within 250m	0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m	0

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

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

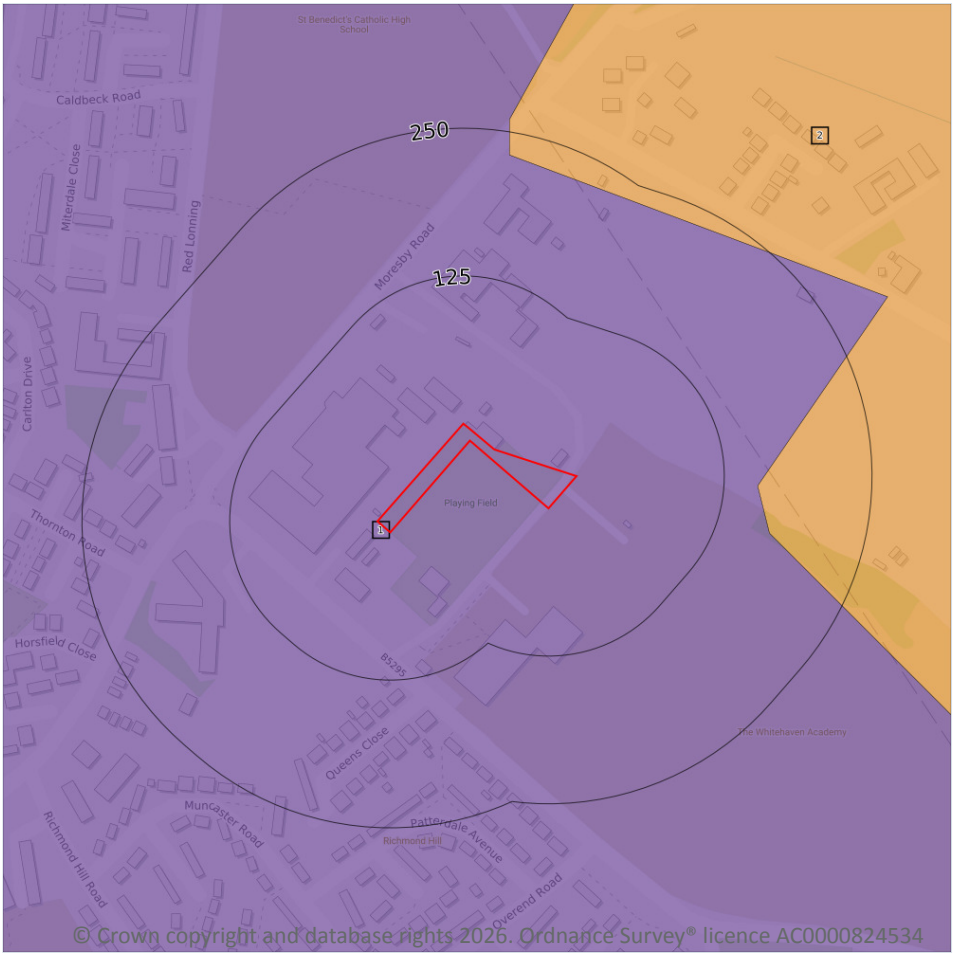
11.7 Registered Parks and Gardens

Records within 250m	0

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

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

12 Agricultural designations



Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m	2

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

Features are displayed on the Agricultural designations map on **page 57 >**

ID	Location	Classification	Description
1	**On site**	**Urban**	**Non-agricultural/no quality assigned**
2	154m E	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	0

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	1

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

Location	Reference	Scheme	Start Date	End Date
54m NE	137794	Countryside Stewardship (Higher Tier)	01/07/2024	30/06/2027

This data is sourced from Natural England.

13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m	0

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

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

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

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m	0

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



Site Outline

Search buffers in metres (m)

Full coverage

Partial coverage

No coverage

14.1 10k Availability

Records within 500m	1

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

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 60 >**

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.

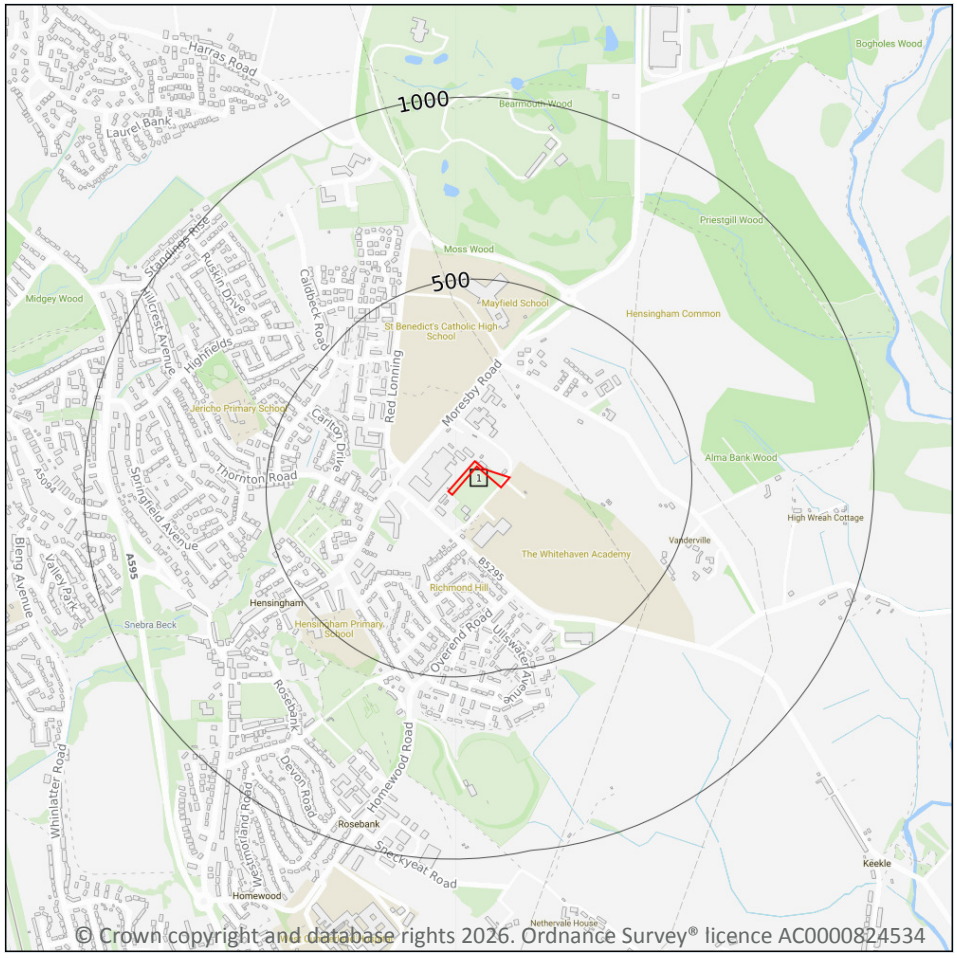
14.6 Bedrock faults and other linear features (10k)

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

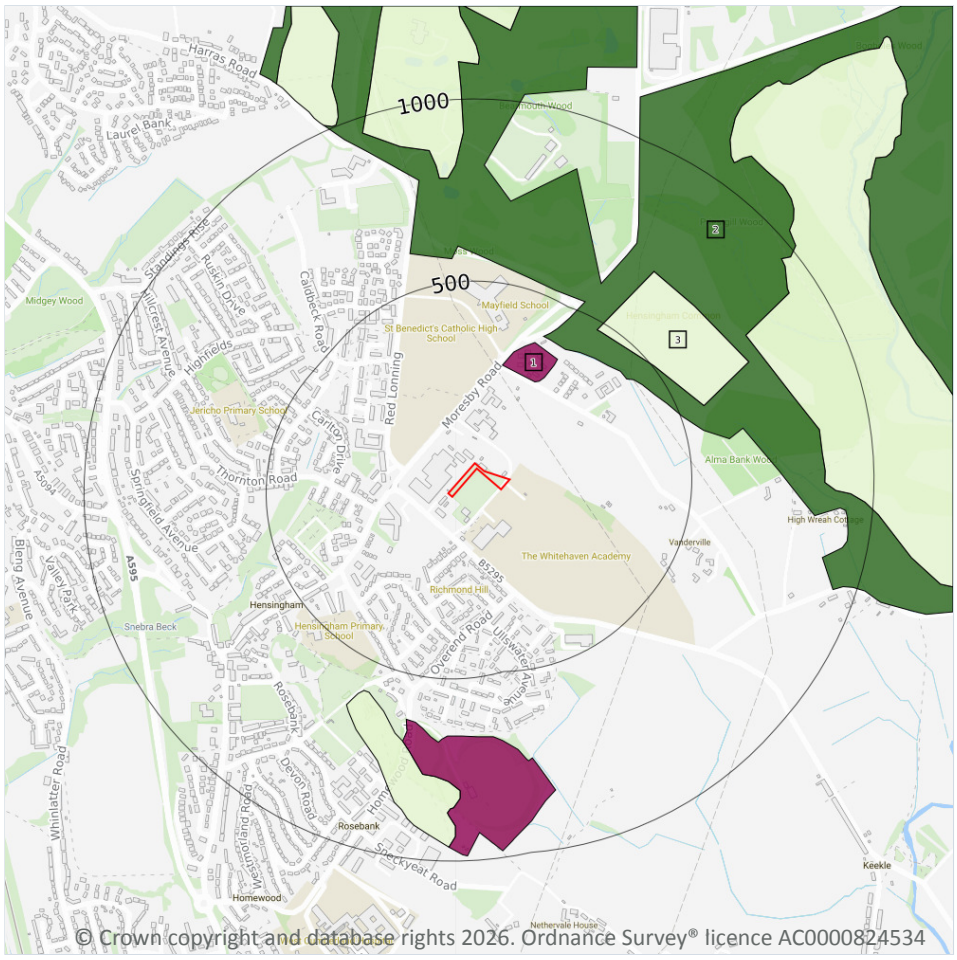
An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 64 >**

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



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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	3

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 65 >**

ID	Location	LEX Code	Description	Rock description
1	274m NE	MGR-ARTDP	Made Ground	Artificial deposit
2	388m NE	LSGR-ARTGR	Landscaped Ground	Artificially modified ground
3	476m NE	WMGR-ARTDP	Infilled Ground	Artificial deposit

This data is sourced from the British Geological Survey.

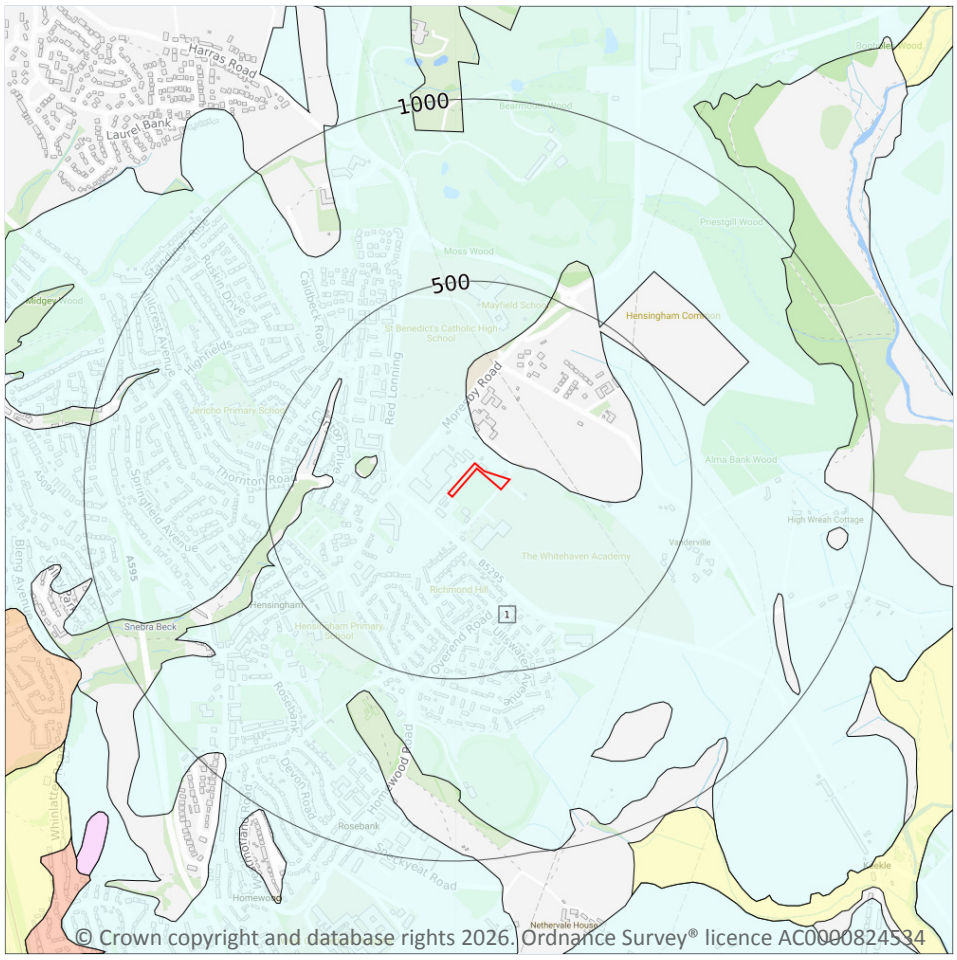
15.3 Artificial ground permeability (50k)

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	1

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 67 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**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	**Mixed**	**High**	**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.

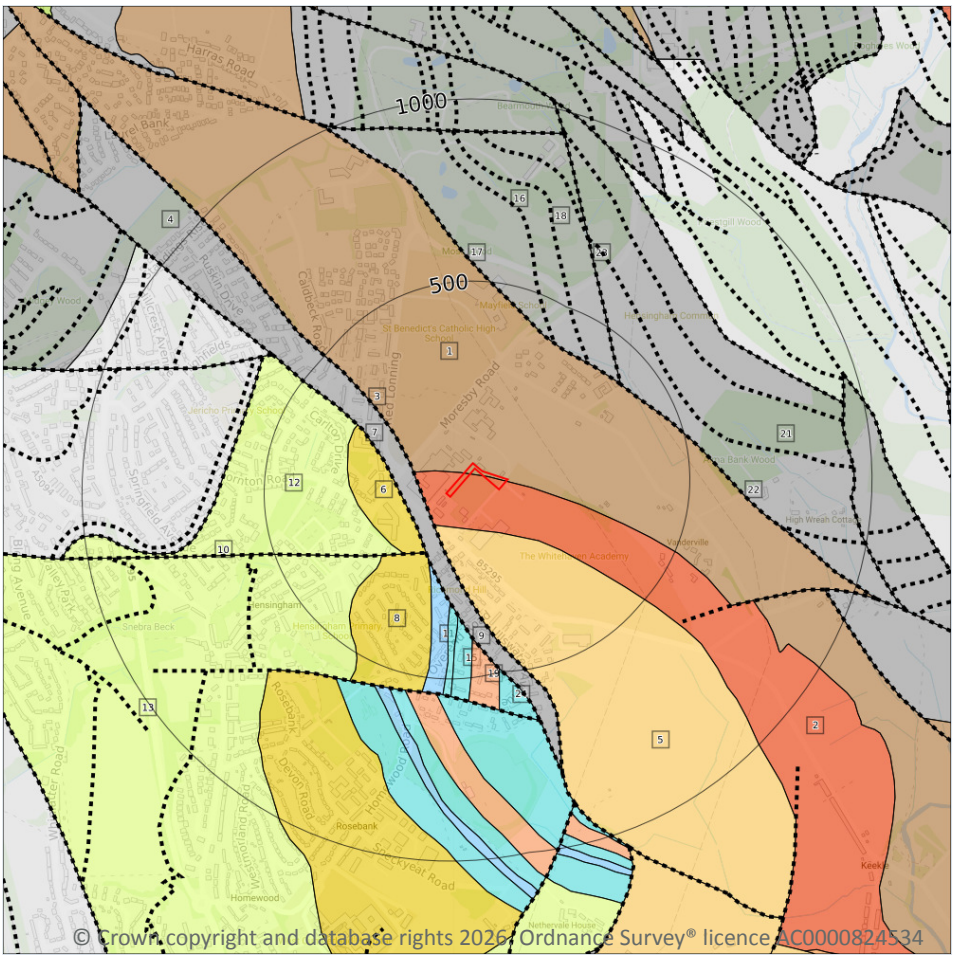
15.7 Landslip permeability (50k)

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 **15**

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 69 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**WS-SDST**	**Whitehaven Sandstone Formation-Sandstone**	**Westphalian**
2	**On site**	**BK-BREC**	**Brockram-Breccia**	**Not Defined**
4	63m W	PMCM-MDSS	Pennine Middle Coal Measures Formation-Mudstone, siltstone and sandstone	Westphalian

ID	Location	LEX Code	Description	Rock age
5	82m S	SBS-SDST	St Bees Sandstone Member-Sandstone	Not Defined
6	113m SW	HG-SDST	Hensingham Grit-Sandstone	Namurian
8	167m SW	HG-SDST	Hensingham Grit-Sandstone	Namurian
11	181m S	SH1-SDSM	First Shale Member-Sandstone, siltstone and mudstone	Visean
12	201m SW	SMGP-MDSS	Stainmore Formation-Mudstone, siltstone and sandstone	Namurian
13	246m SW	SMGP-MDSS	Stainmore Formation-Mudstone, siltstone and sandstone	Namurian
14	291m S	LM1-LMST	First Limestone (Cumbria)-Limestone	Namurian
15	325m S	LM2-LMST	Second Limestone (Cumbria)-Limestone	Visean
16	385m NE	PMCM-MDSS	Pennine Middle Coal Measures Formation-Mudstone, siltstone and sandstone	Westphalian
19	393m S	OBS-SDST	Orebank Sandstone-Sandstone	Visean
21	405m NE	PMCM-MDSS	Pennine Middle Coal Measures Formation-Mudstone, siltstone and sandstone	Westphalian
24	491m S	ESKT-LMST	Eskett Limestone Formation-Limestone	Visean

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	**2**

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Fracture**	**High**	**High**
On site	**Fracture**	**High**	**Moderate**

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	9

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 69 >**

ID	Location	Category	Description
3	63m W	FAULT	Fault, inferred, displacement unknown
7	113m SW	FAULT	Fault, inferred, displacement unknown
9	167m SW	FAULT	Fault, inferred, displacement unknown
10	167m SW	FAULT	Fault, inferred, displacement unknown
17	385m NE	FAULT	Fault, inferred, displacement unknown
18	388m NE	ROCK	Coal seam, inferred
20	395m N	ROCK	Coal seam, inferred
22	405m NE	FAULT	Fault, inferred, displacement unknown
23	405m NE	FAULT	Fault, inferred, displacement unknown

This data is sourced from the British Geological Survey.

16 Boreholes

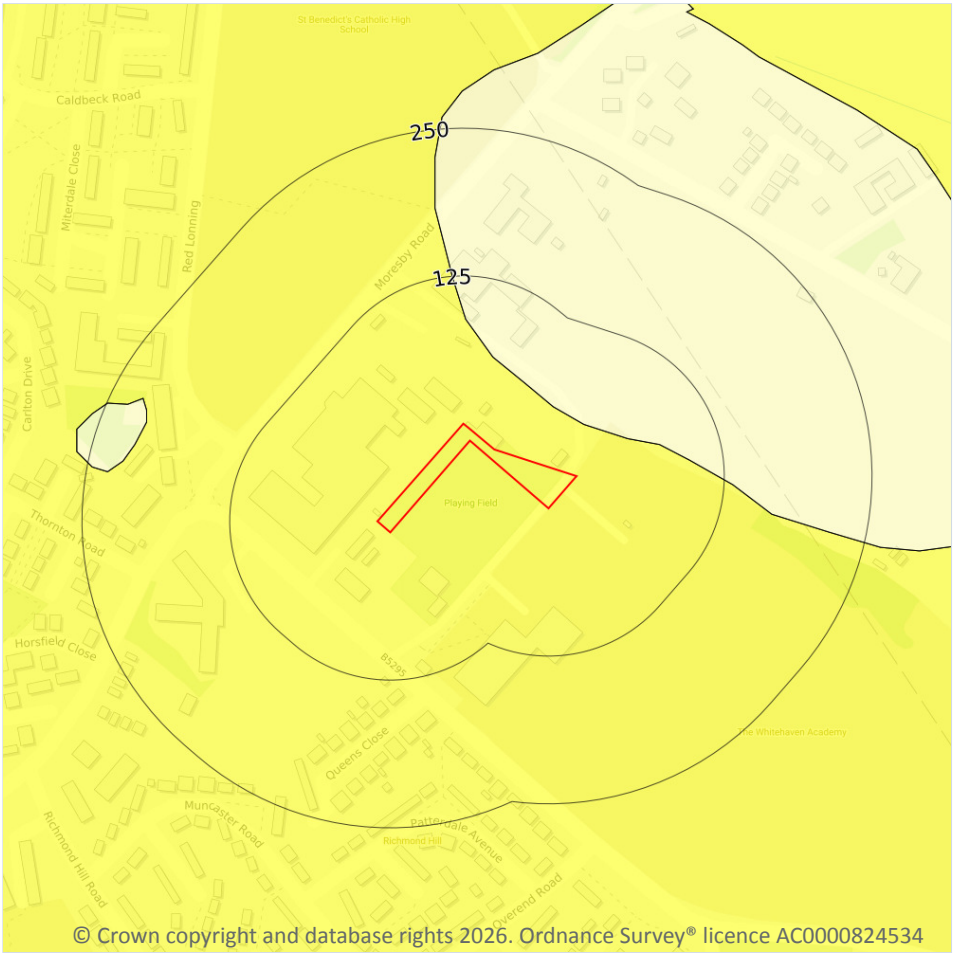
16.1 BGS Boreholes

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	2

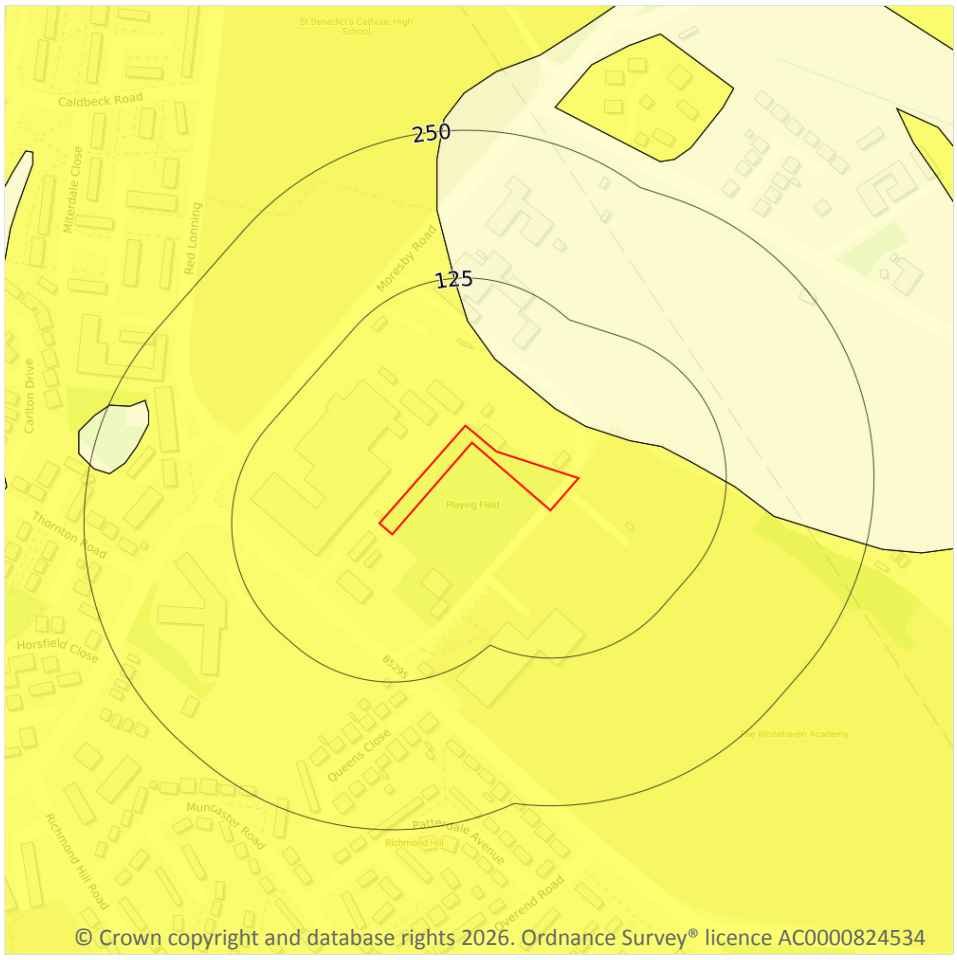
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 73 >**

Location	Hazard rating	Details
On site	**Very low**	**Ground conditions predominantly low plasticity.**
44m N	Negligible	Ground conditions predominantly non-plastic.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.2 Running sands

Records within 50m	2

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

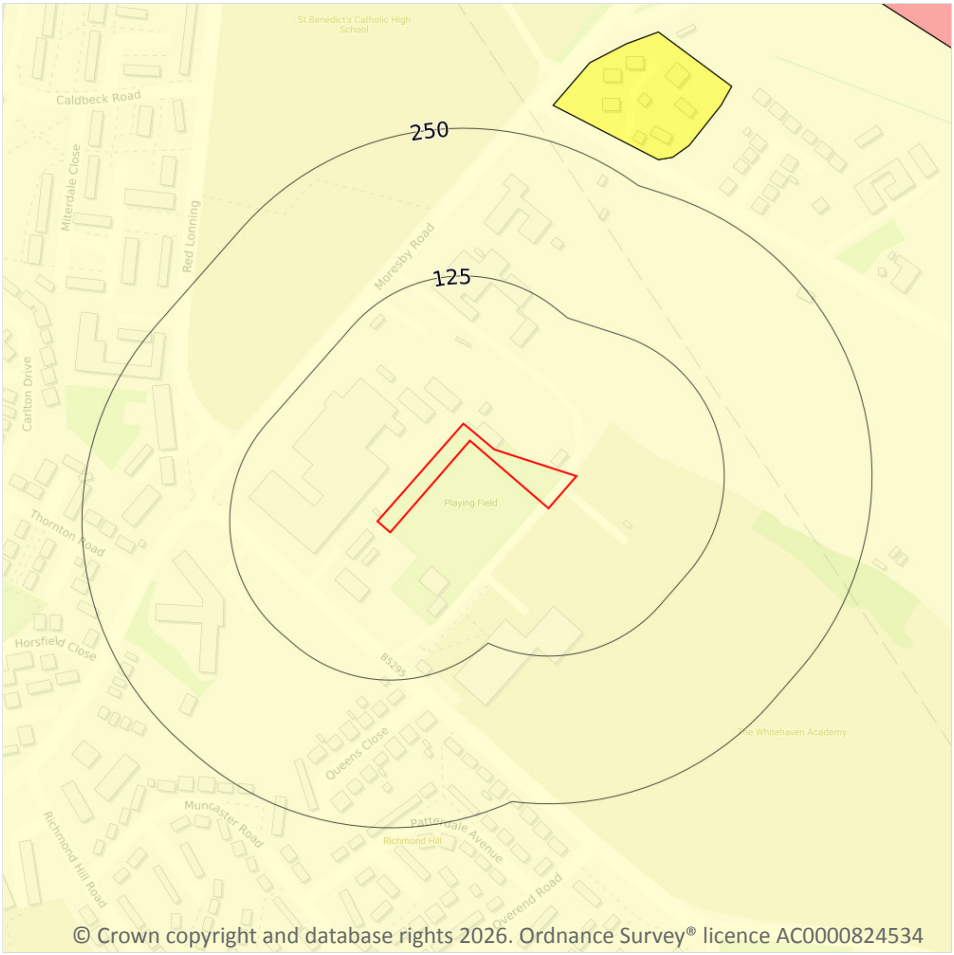
Features are displayed on the Natural ground subsidence - Running sands map on **page 74 >**

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

Location	Hazard rating	Details
44m N	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.

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

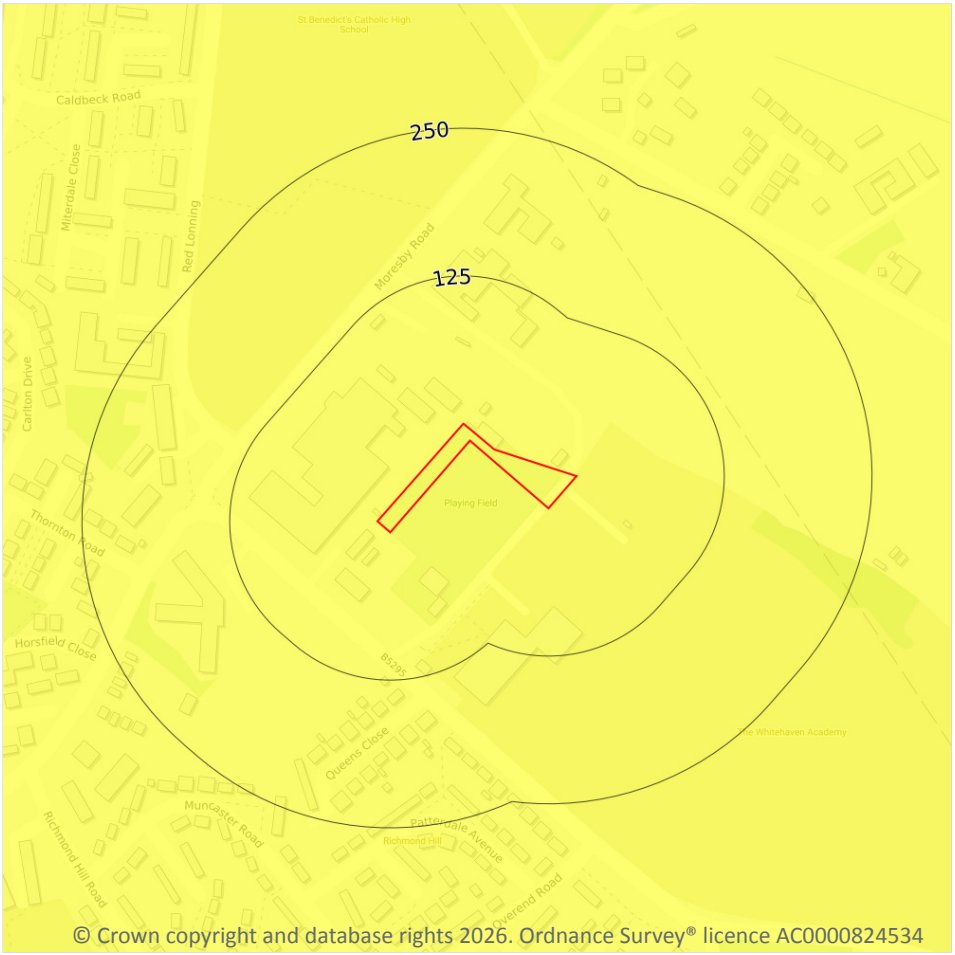
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 76 >**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.4 Collapsible deposits

Records within 50m	1

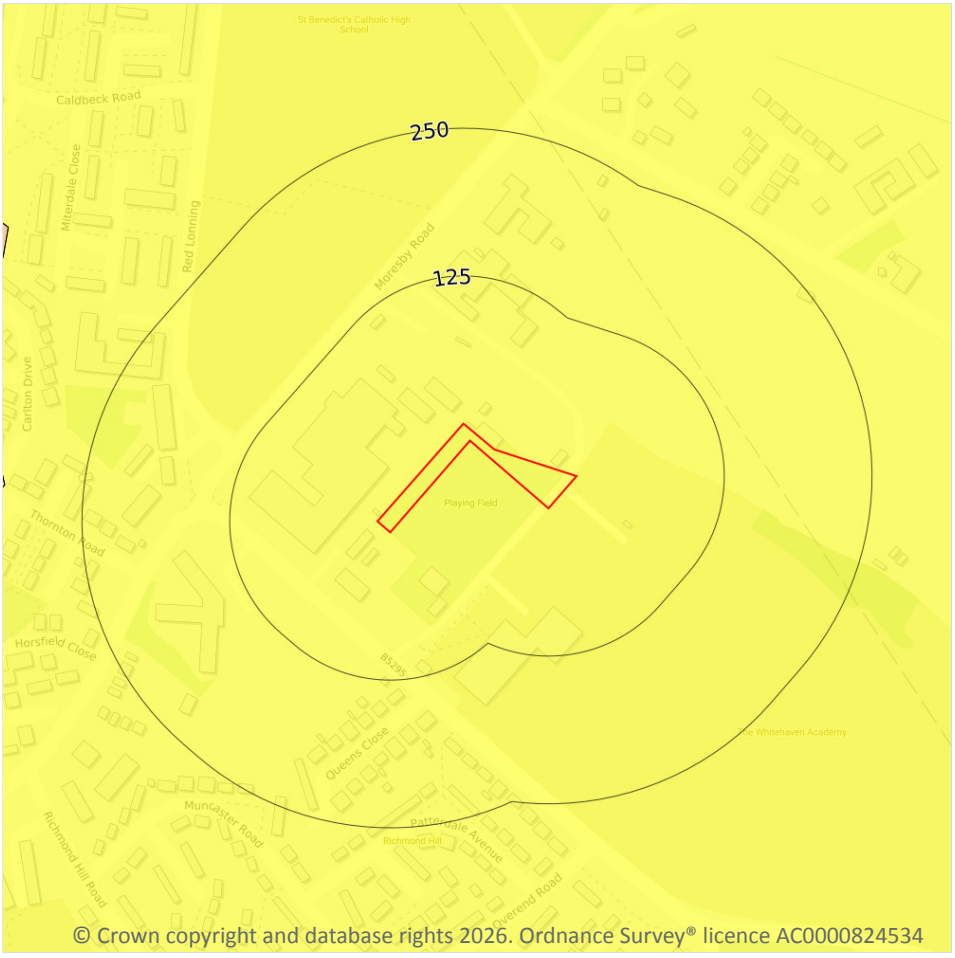
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 77 >**

Location	Hazard rating	Details
On site	**Very low**	**Deposits with potential to collapse when loaded and saturated are unlikely to be present.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.5 Landslides

Records within 50m	1

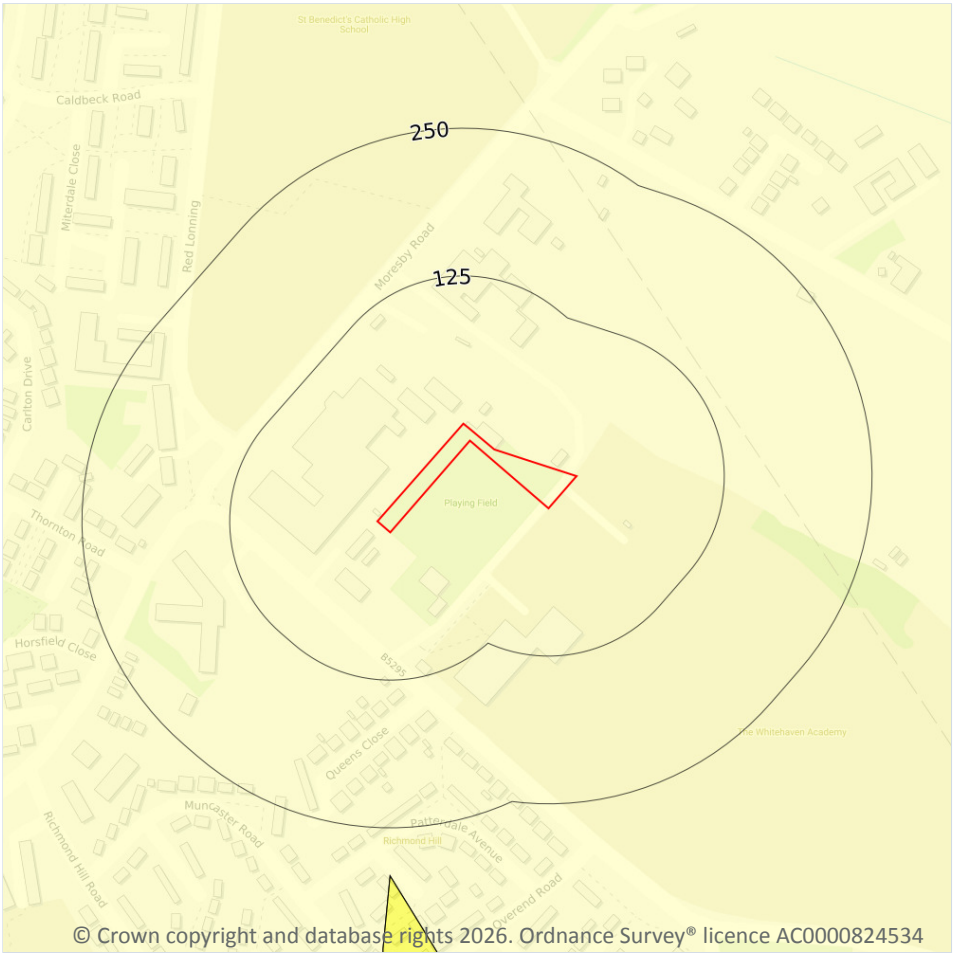
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 78 >**

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



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.6 Ground dissolution of soluble rocks

Records within 50m	1

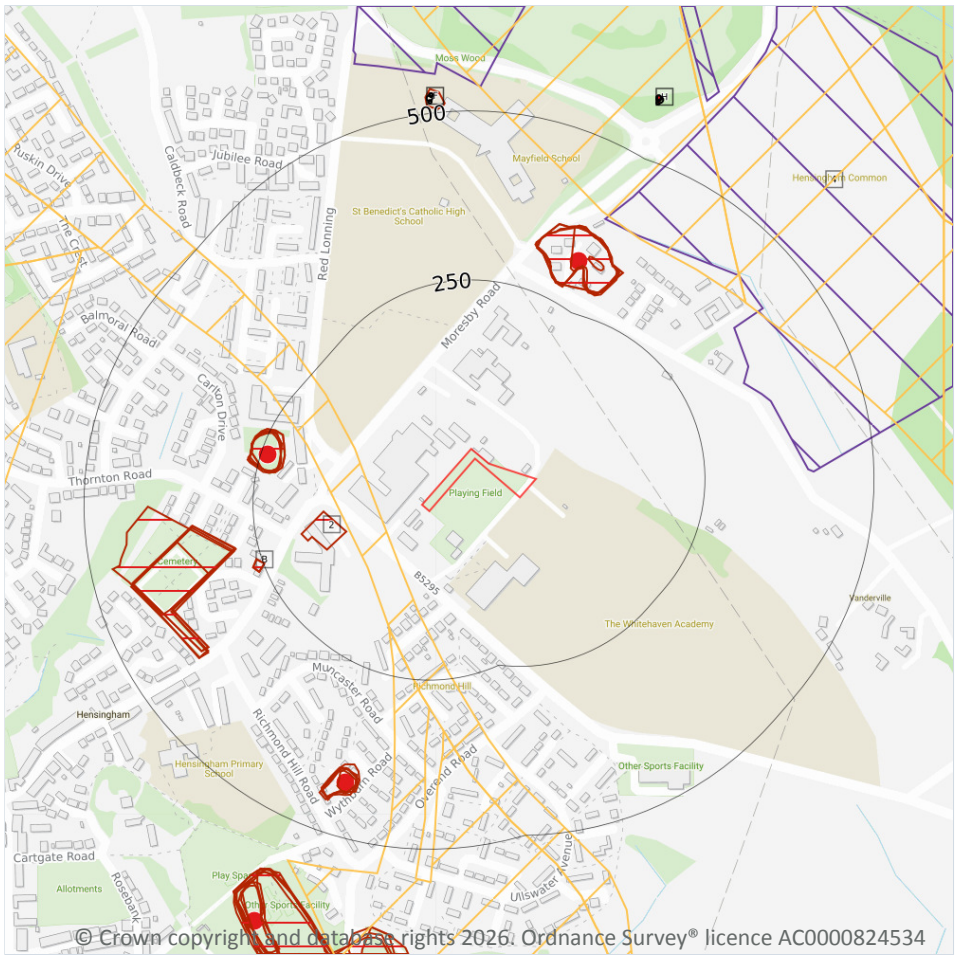
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 79 >**

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 and ground workings



Site Outline

Search buffers in metres (m)

- BritPits
- Surface ground workings
- Underground workings
- Underground mining extents
- Historical mineral planning areas
- TCA non-coal mining

Non Coal Mining

- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 BritPits

Records within 500m	3

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 and ground workings map on **page 81 >**

ID	Location	Details	Description
A	240m W	Name: Bedlam Gill Address: Hensingham, WHITEHAVEN, Cumbria Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Delf, Delph, Gravel Pit, Sand Pit, Sand and Gravel Pit, Clay Pit, Pit, Opencast Coal Site or Surface Mine. It may be mapped as Worked Ground or Worked and Made Ground on BGS mapping. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
C	320m NE	Name: Hensingham Common Address: Hensingham, WHITEHAVEN, Cumbria Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Delf, Delph, Gravel Pit, Sand Pit, Sand and Gravel Pit, Clay Pit, Pit, Opencast Coal Site or Surface Mine. It may be mapped as Worked Ground or Worked and Made Ground on BGS mapping. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
E	420m S	Name: Overend Quarry Address: Wythburn Road, Hensingham, WHITEHAVEN, Cumbria Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Delf, Delph, Gravel Pit, Sand Pit, Sand and Gravel Pit, Clay Pit, Pit, Opencast Coal Site or Surface Mine. It may be mapped as Worked Ground or Worked and Made Ground on BGS mapping. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m **9**

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

Features are displayed on the Mining and ground workings map on **page 81 >**

ID	Location	Land Use	Year of mapping	Mapping scale
2	119m W	Reservoir	1938	1:10560
A	214m W	Unspecified Pit	1926	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
A	214m W	Unspecified Old Quarry	1898	1:10560
A	217m W	Unspecified Pit	1863	1:10560
A	219m W	Unspecified Pit	1938	1:10560
A	219m W	Unspecified Pit	1938	1:10560
A	220m W	Unspecified Pit	1957	1:10560
B	249m W	Reservoir	1926	1:10560
B	249m W	Covered Reservoir	1898	1:10560

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

18.3 Underground workings

Records within 1000m	**23**

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 and ground workings map on **page 81 >**

ID	Location	Land Use	Year of mapping	Mapping scale
F	515m N	Air Shaft	1863	1:10560
F	518m N	Old Air Shaft	1957	1:10560
F	524m N	Old Air Shaft	1926	1:10560
F	524m N	Old Air Shaft	1898	1:10560
H	579m NE	Old Coal Shaft	1863	1:10560
H	582m NE	Unspecified Disused Shaft	1977	1:10000
H	585m NE	Old Coal Shaft	1957	1:10560
H	586m NE	Old Coal Shaft	1926	1:10560
H	586m NE	Old Air Shaft	1898	1:10560
-	724m N	Old Coal Shaft	1863	1:10560
-	730m N	Unspecified Disused Shaft	1977	1:10000
-	730m N	Old Air Shaft	1957	1:10560
-	730m N	Unspecified Old Shaft	1898	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
-	730m N	Old Air Shaft	1926	1:10560
-	860m E	Coal Pit	1863	1:10560
-	889m E	Coal Pit	1863	1:10560
-	891m E	Old Coal Shaft	1957	1:10560
-	893m E	Old Coal Shaft	1926	1:10560
-	893m E	Unspecified Old Shaft	1898	1:10560
-	900m E	Air Shaft	1957	1:10560
-	902m E	Air Shaft	1926	1:10560
-	902m E	Air Shaft	1898	1:10560
-	904m E	Air Shaft	1863	1:10560

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

18.4 Underground mining extents

Records within 500m	**0**

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

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	**1**

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.

Features are displayed on the Mining and ground workings map on **page 81 >**

ID	Location	Site Name	Mineral	Type	Planning Status	Planning Status Date
4	339m NE	Moresby and Keekle	Coal	Surface mineral working	Valid	12/2/80

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	13

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

Features are displayed on the Mining and ground workings map on **page 81 >**

ID	Location	Name	Commodity	Class	Likelihood
1	63m W	Not available	Iron Ore (Bedded)	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
3	181m S	Not available	Vein Mineral	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
5	385m NE	Not available	Iron Ore (Bedded)	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
6	405m NE	Not available	Iron Ore (Bedded)	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
8	593m W	Not available	Iron Ore (Bedded)	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
9	603m E	Not available	Iron Ore (Bedded)	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
10	612m NW	Not available	Iron Ore (Bedded)	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.

ID	Location	Name	Commodity	Class	Likelihood
11	713m NE	Not available	Iron Ore (Bedded)	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
12	715m NE	Not available	Iron Ore (Bedded)	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
-	888m NE	Not available	Iron Ore (Bedded)	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
-	911m N	Not available	Iron Ore (Bedded)	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
-	921m E	Not available	Iron Ore (Bedded)	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
-	931m E	Not available	Iron Ore (Bedded)	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site	0

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

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m	0

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

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m	1

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

Location	Mineral type
487m NE	Unspecified

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m	0

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

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m	0

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

This data is sourced from Groundsure.

18.12 Coal mining

Records on site	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.

18.13 Brine areas

Records on site	0

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

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

18.14 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

Records on site	0

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

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

19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m	0

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

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m	0

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

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m	0

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

This data is sourced from Groundsure.

19.4 Historical incidents

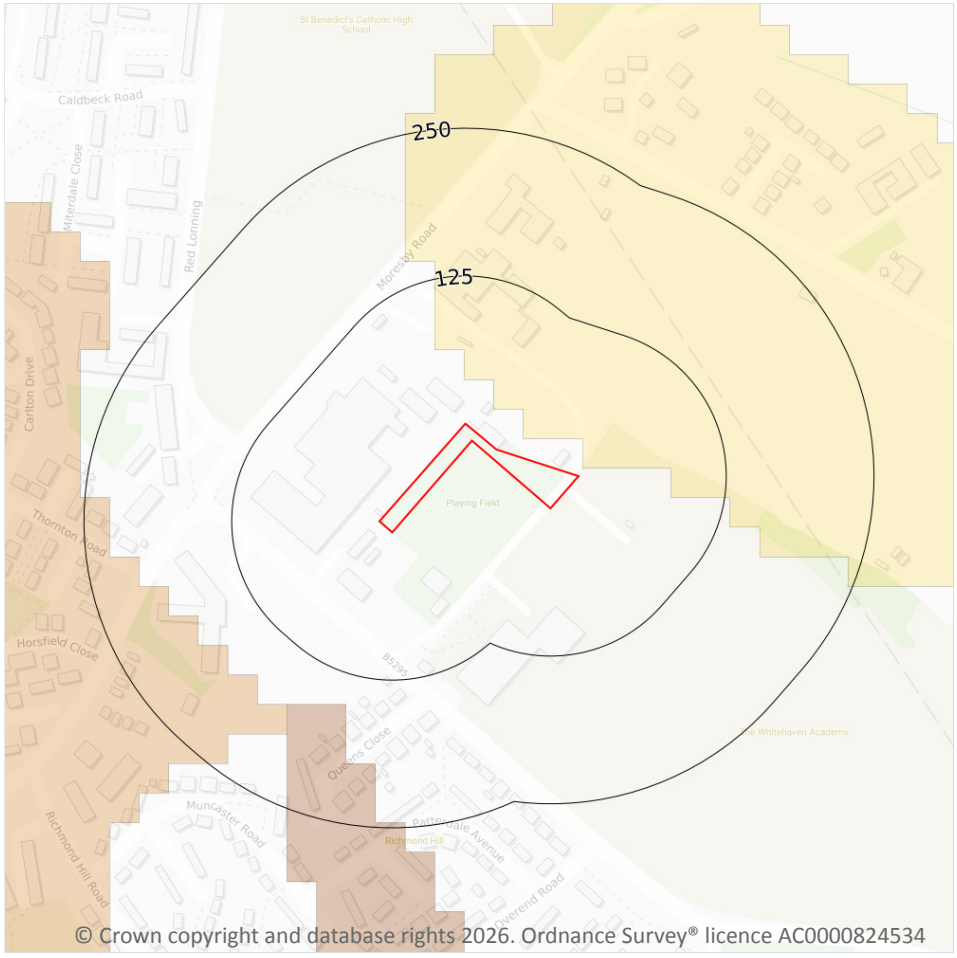
Records within 500m	0

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

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

This data is sourced from Groundsure.

20 Radon



Site Outline

Search buffers in metres (m)

- Greater than 30%
- Between 10% and 30%
- Between 5% and 10%
- Between 3% and 5%
- Between 1% and 3%
- Less than 1%

20.1 Radon

Records on site	1

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

Features are displayed on the Radon map on **page 91 >**

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.

21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m	3

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
44m N	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

21.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

22 Railway infrastructure and projects

22.1 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.

22.2 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.

22.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey® mapping.

This data is sourced from the Ordnance Survey®.

22.4 Historical railway and tunnel features

Records within 250m	0

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

This data is sourced from Ordnance Survey®/Groundsure.

22.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m	0

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

This data is sourced from Ordnance Survey® and OpenStreetMap.

22.8 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. Please note that the Crossrail 2 project has been temporarily suspended. It is possible funding will be received in the future, but there is no guarantee of this.

This data is sourced from publicly available information by Groundsure.

22.9 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

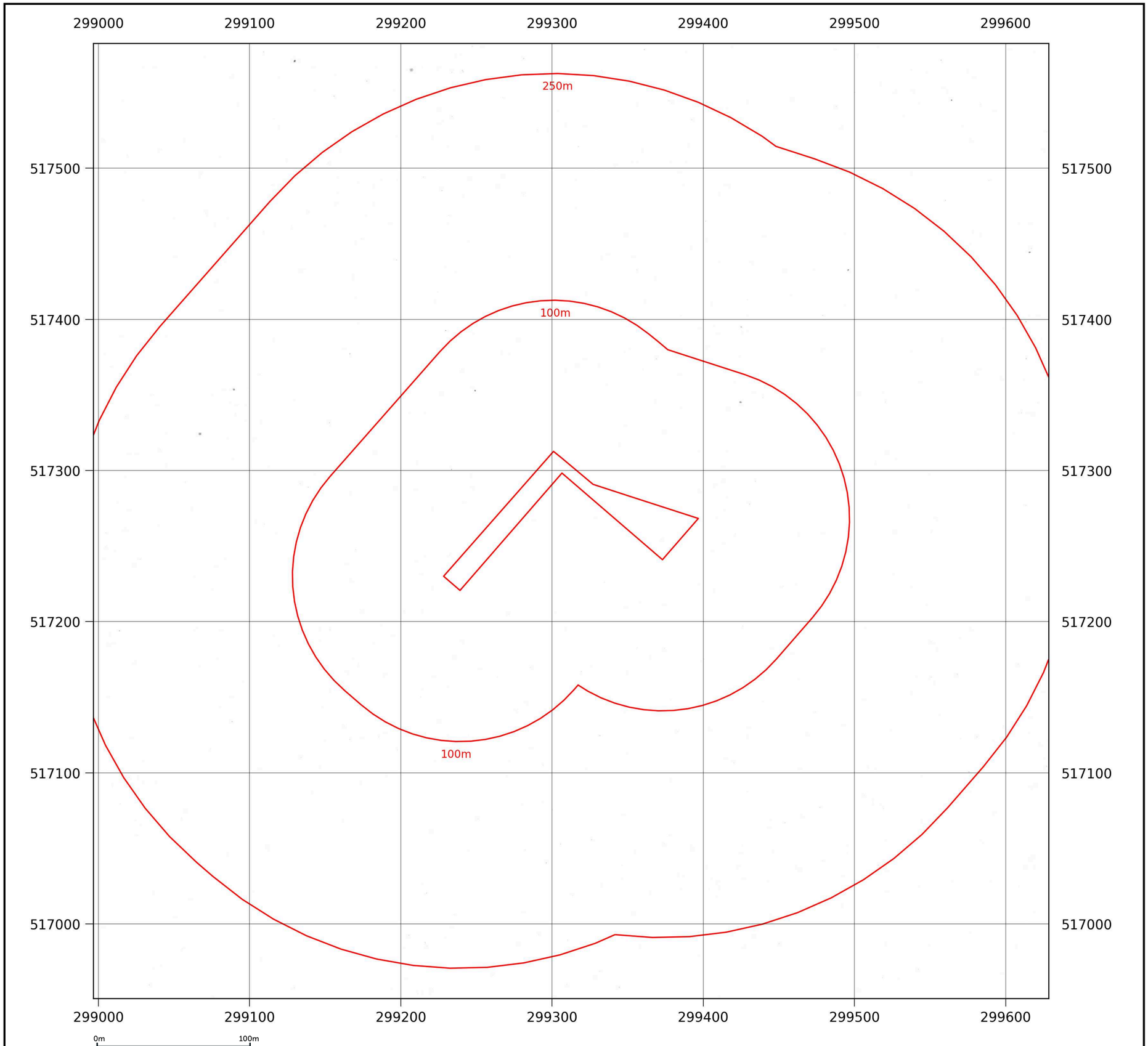
Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see https://www.groundsure.com/sources-reference ↗.

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Appendix III

- Historical Map Extracts



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Map legend available at:
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Geospatial advantage from Idox

Site details:	unspecified
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Report ref:	EMS-1126378_1410820
Grid ref:	299314.63, 517268.42
Production date:	3 September 2026

Map name:	County Series
Map date:	1863
Scale:	1:2,500
Printed at:	1:2,500

N
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Date: 1863
Surveyed: 1863
Revised: 1863

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Report ref:	EMS-1126378_1410820
Grid ref:	299314.63, 517268.42
Production date:	3 September 2026

Map name:	County Series
Map date:	1865
Scale:	1:2,500
Printed at:	1:2,500

N W E S

Date: 1865
Surveyed: 1865
Revised: 1865

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299000 299100 299200 299300 299400 299500 299600

517500 517400 517300 517200 517100 517000

250m
100m
100m

B.M.443·9
B.M.408·4
B.M.417·6

Old Windmill
Windmill
Hensingham Cottage
Well
Richmond Hill
Guide Post
Quarry
rochial School

61 62 62a 64 66 67 78 79 80 81 82 83 85 86 87 89 109 110 112 113 114 116

418 407 411 420 421 431 380

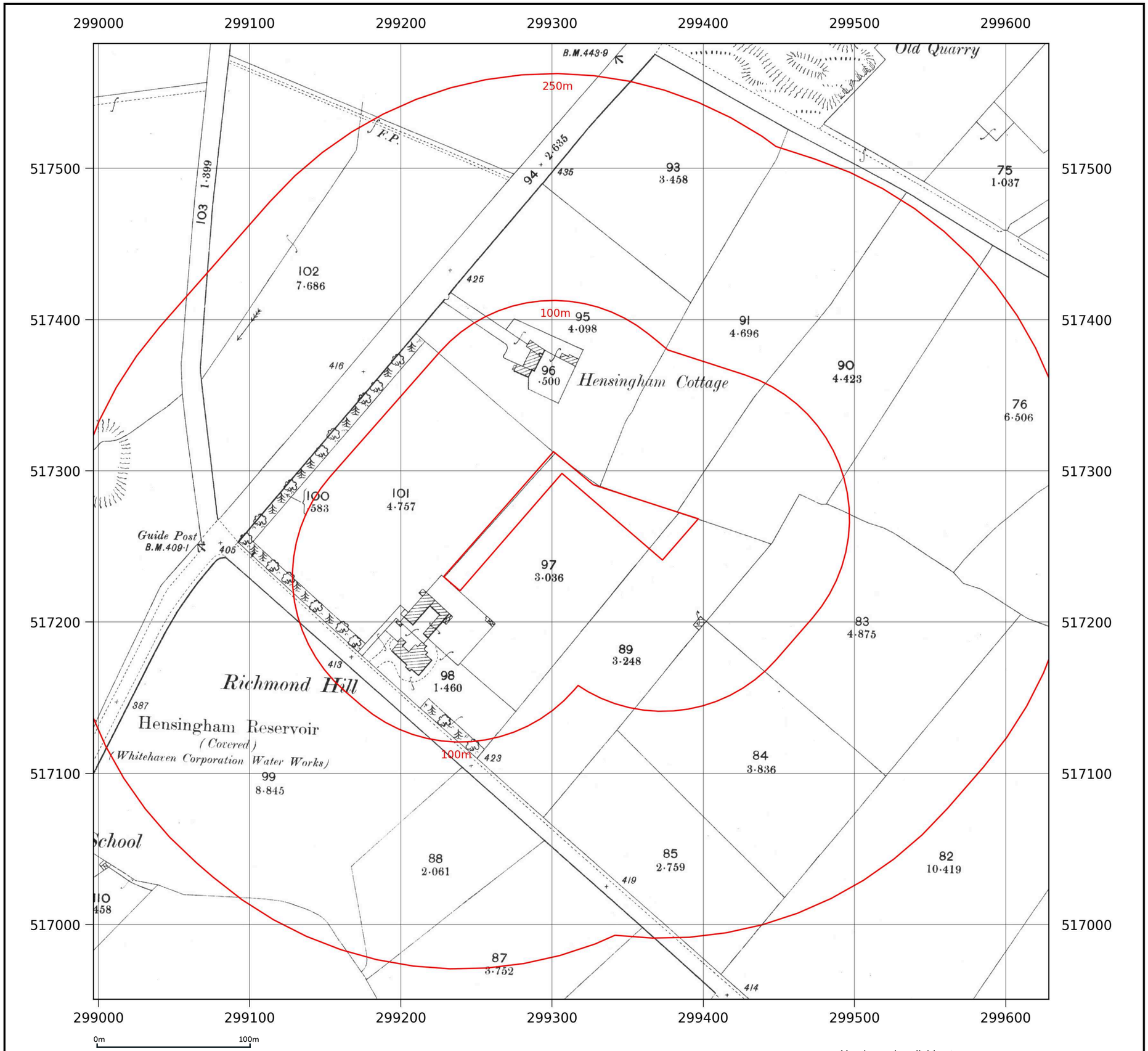
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Grid ref:	299314.63, 517268.42
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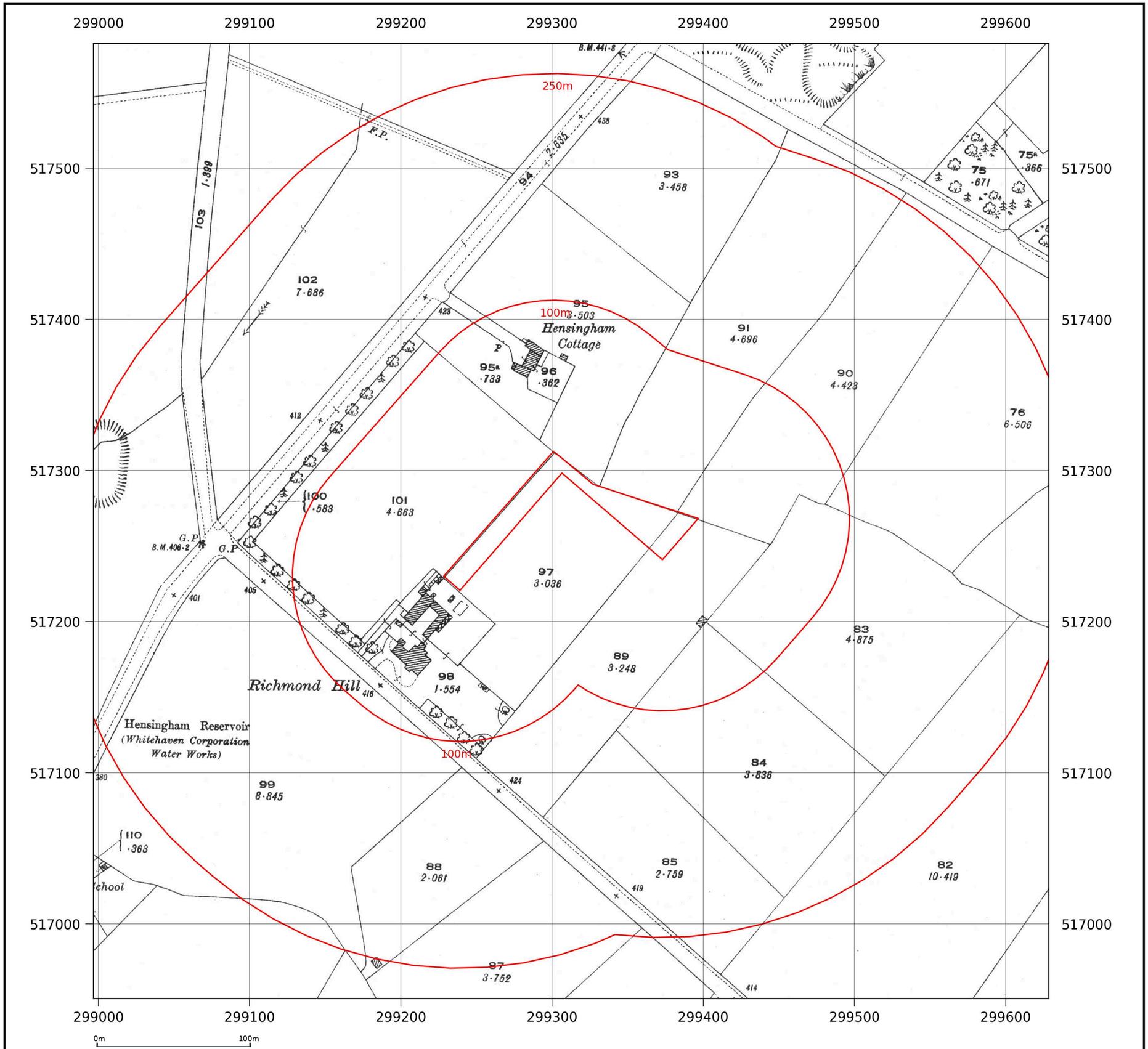
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Date: 1899
Surveyed: 1899
Revised: 1899

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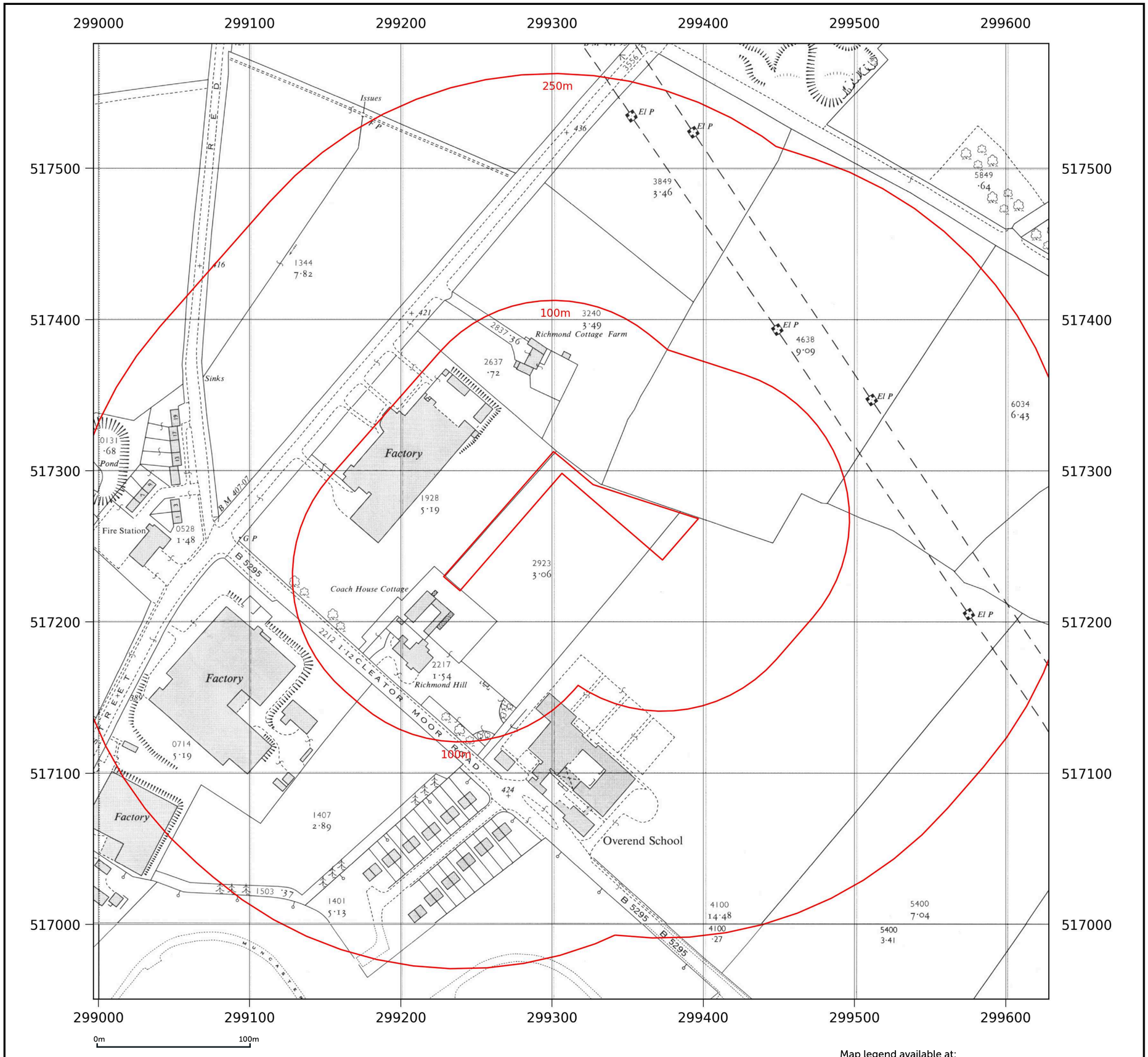
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Date: 1925
Surveyed: 1925
Revised: 1925

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Production date:	3 September 2026

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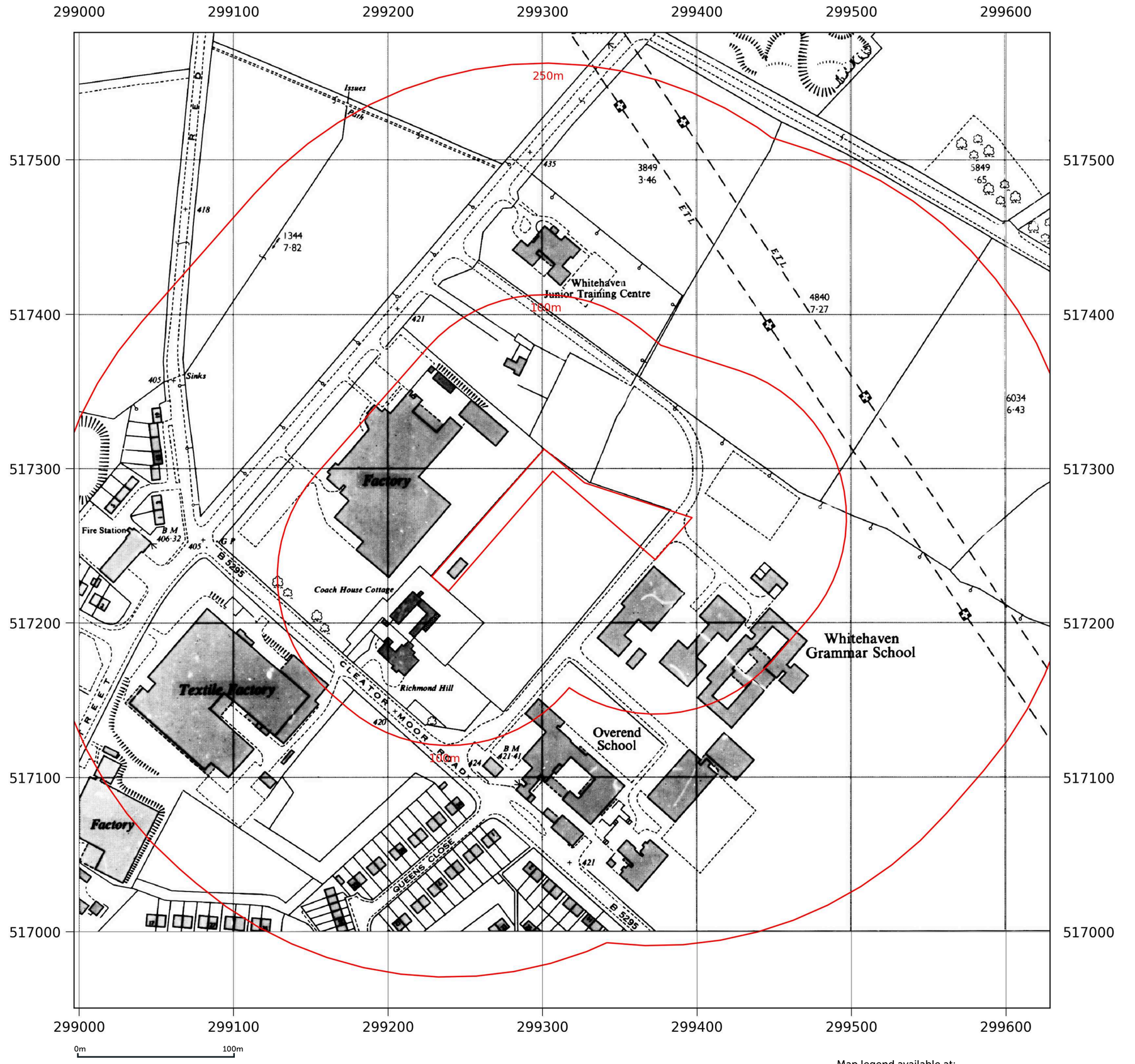
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Revised: 1961
Edition: 1963
Copyright: 1963
Levelled: 1956

Date: 1963
Surveyed: 1961
Revised: 1961
Edition: 1963
Copyright: 1963
Levelled: 1956

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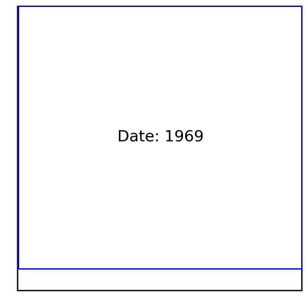
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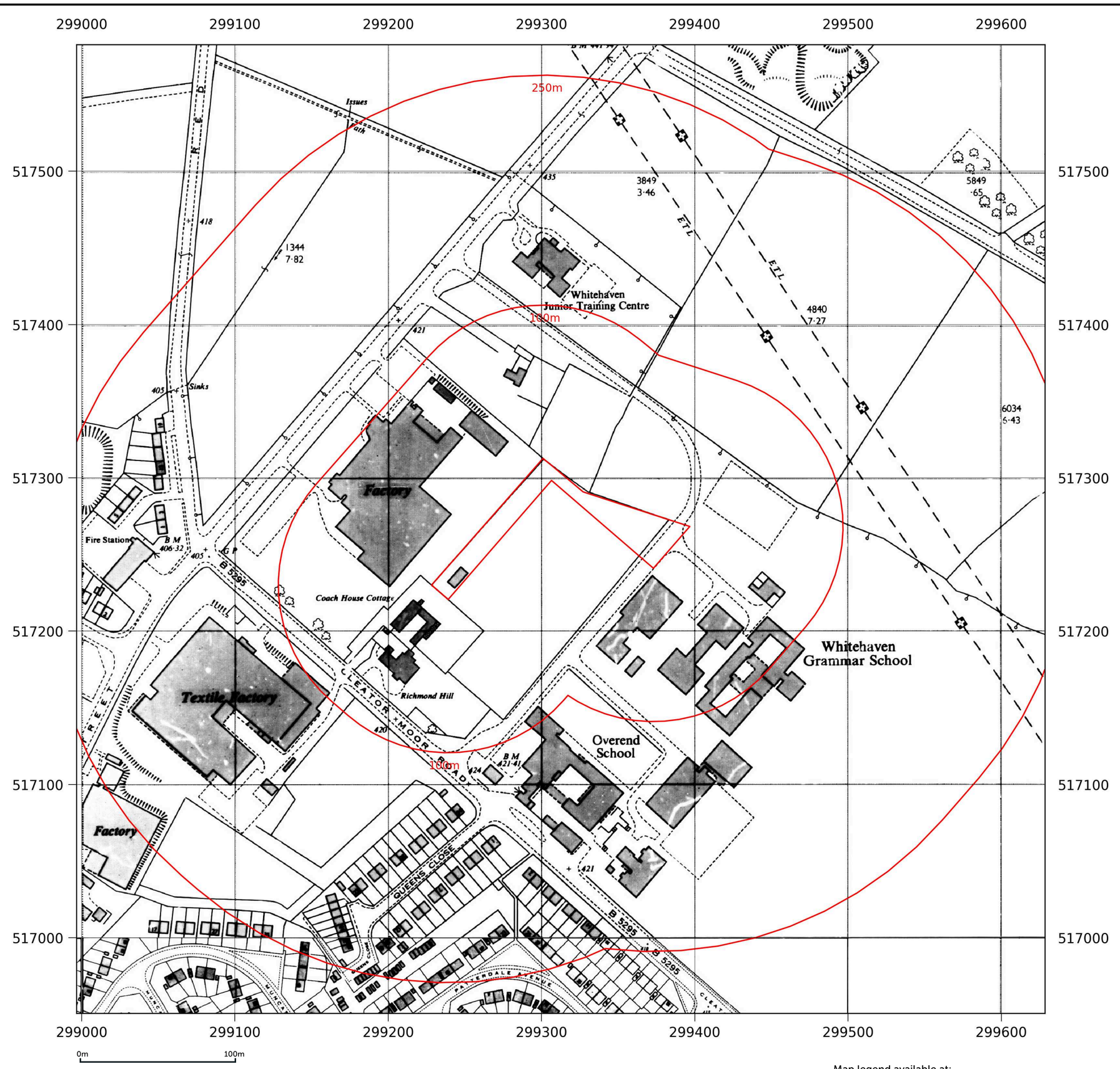
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Grid ref:	299314.63, 517268.42
Production date:	3 September 2026

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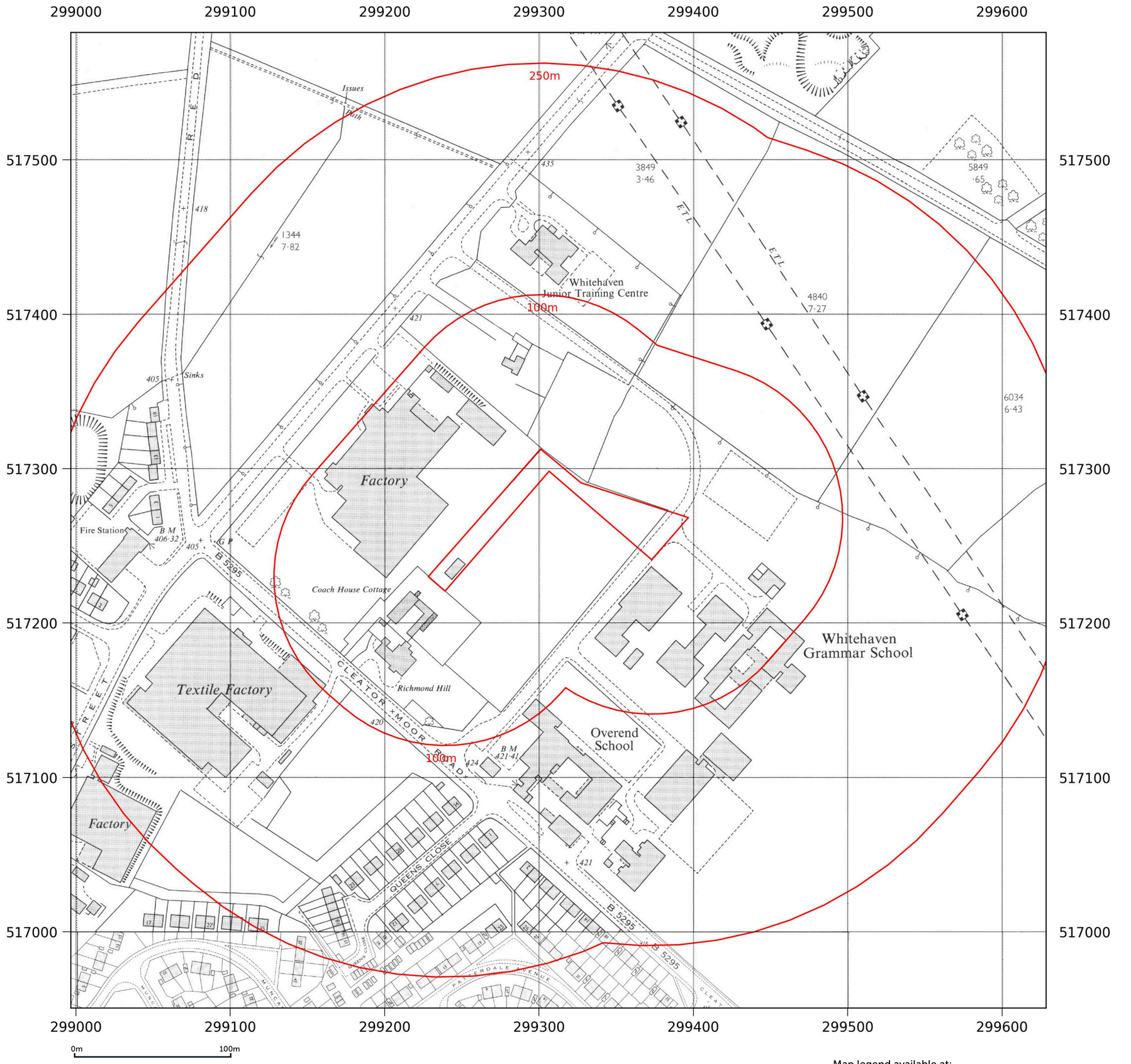
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Date: 1970 Date: 1970

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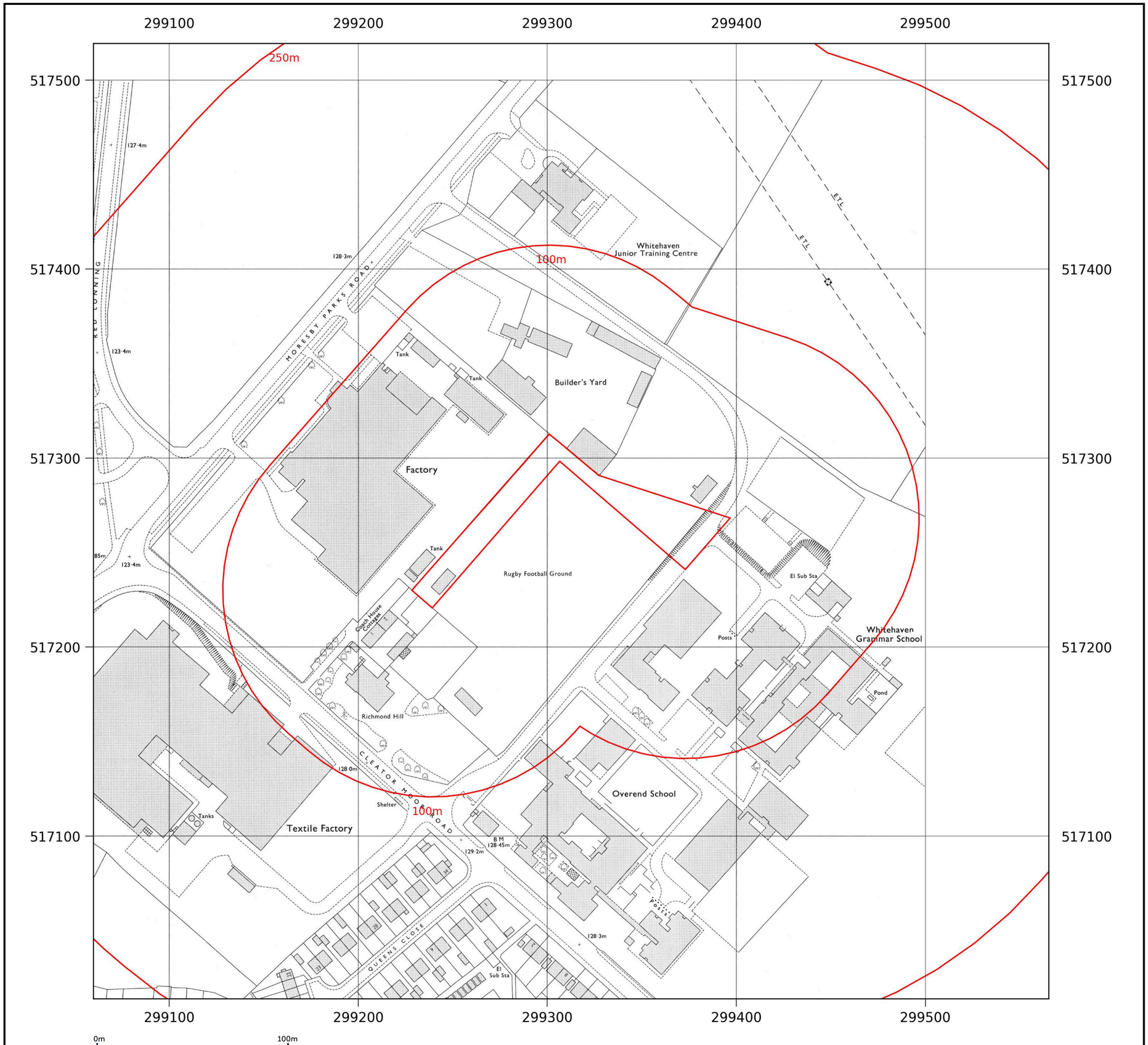
Date: 1969
Surveyed: 1968
Revised: 1968
Copyright: 1969
Levelled: 1965

Date: 1970
Surveyed: 1968
Revised: 1968
Copyright: 1970
Levelled: 1965

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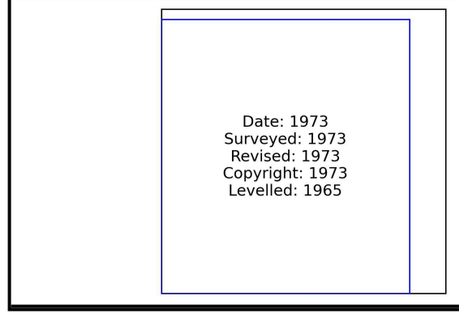
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Geospatial advantage from Idox

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Grid ref:	299314.63, 517268.42
Production date:	3 September 2026

Map name:	National Grid
Map date:	1973
Scale:	1:1,250
Printed at:	1:2,000

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Client ref:	EMS_1126378_1419837
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Grid ref:	299314.63, 517268.42
Production date:	3 September 2026

Map name:	National Grid
Map date:	1990-1994
Scale:	1:1,250
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299100 299200 299300 299400 299500

517500 517400 517300 517200 517100

250m

100m

100m

Adult Training Centre

Adult Training Centre

Hensingham Special School

NORESBY PARKS ROAD

Tank

Factory

Rugby Football Ground

El Sub Sta

Posts

Pond

Club

The Haven (Club)

Richmond Hill

Whitehaven School

Tanks

Shelter

BH 128.45m

QUEENS CLOSE

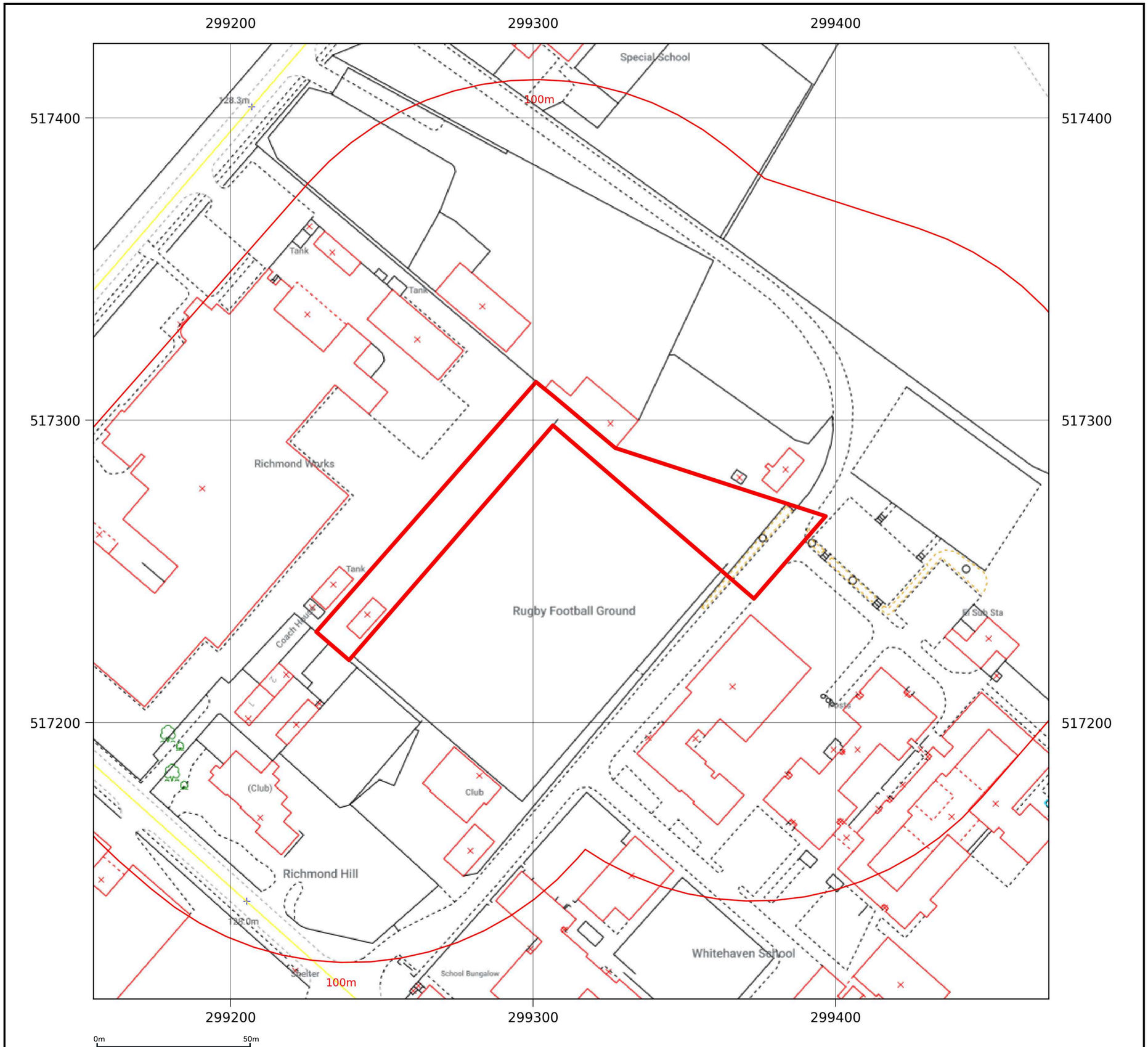
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Client ref:	EMS_1126378_1419837
Report ref:	EMS-1126378_1410820
Grid ref:	299314.63, 517268.42
Production date:	3 September 2026

Map name:	LandLine
Map date:	2003
Scale:	1:1,250
Printed at:	1:1,250

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Date: 2003

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