GEO Environmental Engineering

PHASE 1: DESK TOP STUDY REPORT

(PRELIMINARY RISK ASSESSMENT)

PROPOSED BARN CONVERSION

MOORCOCK FARM

CLITHEROE ROAD

DUTTON, PRESTON

PR3 2YT

FOR:

ADAM & ALEXANDRA DUGDALE

GEO Environmental Engineering

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Client: Adam & Alexandra Dugdale

Consultant: R G Parkins & Partners Limited

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1.0 Introduction

1.1 Instruction

Geo Environmental Engineering Ltd (GEO) has completed a Phase 1: Desk Top Study Report (Preliminary Environmental Risk Assessment – PERA) for land currently occupied by a series of existing agricultural units known as Moorcock Farm within Dutton to determine any potential geohazards that may affect the conversion of the barns for residential purposes. Geo Environmental Engineering Ltd has been commissioned to complete the report by R G Parkins & Partners Limited on behalf of their Client, Adam & Alexandra Dugdale.

The Phase 1: Desk Top Study Report is suitable for submission to the Local Authority as part of any potential planning application as the site is currently undergoing consideration to convert the existing barns for residential purposes with areas of soft landscaping and associated infrastructure. Further development details are available from the Consultant.

1.2 Aims and Objectives

The aims and objectives of this Phase 1: Desk Top Study (DTS) Report are to assess the geological and environmental sensitivity of the development area and the surrounding environs, with particular attention made to any potentially contaminative industries or processes that may have taken place on site or on immediately adjacent sites, 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 DTS has been completed in general accordance with the following documents and includes a site visit (August 2020):

- CLR11: Model Procedures for the Management of Land Contamination. DEFRA/EA, 2004.
- BS10175:2011: Code of Practice for the Investigation of Potentially Contaminated Sites.
- BS5930:1999: Code of Practice for Site Investigations.

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

- British Geological Survey (BGS).
- Environment Agency (EA).
- Ground Sure Reports (Geoinsight and Enviroinsight GSR – Appendix II)
- Historical Ordnance Survey Maps (Appendix III)
- The Coal Authority On-Line Database (CA).

1.3 Limitations of Use

The information, assessments, conclusions and recommendations presented within this DTS are solely based on, and are limited to, the boundaries of the sites, the immediate area around the site, and the historical use(s) as described, with the approximate extent of the site marked on the plans in Appendix I.

This DTS has been completed utilising information relating to the physical, environmental and industrial setting of the development area, highlighting, where possible, any potential geohazards that might be encountered when considering the future redevelopment of this land, with this DTS reflecting a proposed end use, as considered by the developer (i.e. "Best Fit" CLEA classification of Residential). Therefore, if a change in the proposed end use is envisaged, then a reassessment of the development area should be carried out.

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 and feasibility of construction be considered by the developer before commencing acquisition or redevelopment.

Agreement for the use or copying of this report by any Third Party must be obtained in writing from Geo Environmental Engineering Ltd. The use and 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.

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 in order to seek their approval of the findings prior to undertaking any works on site. Geo Environmental Engineering Ltd cannot accept responsibility for the accuracy of third party information.

2.0 Site Location and Development Proposals

2.1 Site Location

The site is irregular in shape, occupying an area of 0.26Ha and is located c.10km southwest of Clitheroe. During the site walkover, the existing buildings and external areas were inspected.

The site is located at National Grid Reference (NGR) 365302, 437867.

2.2 Existing Site Levels

The site as a whole was noted to be relatively level. A topographical survey was not available.

2.3 Existing Site Surfacing and Buildings

A series of existing barns are present on the site as well as a single residential property which are surrounded by hard landscaping (i.e. concrete) and soft landscaping (i.e. grass, shrubs, trees etc.). Surrounding the site, residential properties are located to the north with agricultural land beyond in all directions.

During the site walkover, a single Above Ground Storage Tank (AST) was recorded to the rear of the existing residential property with no visual and/or olfactory evidence of contamination noted at this location or elsewhere on site.

2.4 Surrounding Land Uses

The surrounding land is predominantly agricultural, comprising mostly open fields with occasional residential and farm buildings.

2.5 Existing Infrastructure and Utilities

A review of statutory utility supplier records lies outside the scope of this report. However, as there are structures both on and adjacent to the site it is considered likely that there will be mains utility connections nearby and possibly passing through the site. Consequently, there should be a review of the statutory utility plans should include correspondence with the utility providers to determine the presence of buried utilities prior to commencing any site works.

This will determine if any utilities are present on site that may require easement strips, alterations to proposed layouts or potentially costly diversions/terminations. Determining the presence of on-site utilities will also protect the workforce by reducing the risk of utility strikes during the construction phase.

2.6 Site Proposal

It is understood that the existing barns are to be converted for residential purposes with associated infrastructure. Further details can be obtained from the Consultant.

3.0 Geo-Environmental Setting

Section 3.1 refers to the Ground Sure Report (GSR - Geoinsight) contained in Appendix II, with Sections 3.2 to 3.4 referring to the Ground Sure Report (GSR - Enviroinsight) contained in Appendix II.

3.1 Development Area Geology

A geological review of the site has been undertaken using information provided on published Geological Plans in conjunction with the Ground Sure Report (GSR) contained in Appendix II.

3.1.1 Made Ground

A review of published geological plans and the GSR does not indicate the presence of made ground materials on site or within close proximity. However, as the site has been recorded to have had some form of development since at least c.1847, made ground is expected to some degree.

Made ground may be variable in depth and extent and could potentially comprise a mixture of disturbed natural materials (clay, sand and gravel) with varying quantities of anthropogenic debris (fragments of ash, brick, clinker, coal, etc.).

Numerous historical Surface Ground Workings are located within c.250m of the site which are associated with ponds and unspecified pits, the nearest being located c.120m southeast. If these features have been infilled, they may potentially represent a source of ground gas to the proposed development.

3.1.2 Drift Geological Deposits

A review of published geological plans and the GSR indicates that the site is underlain by Glacial Till deposits typically comprising firm to stiff sandy gravelly clay with cobbles and bands / lenses of sands and gravels.

The GSR (Geoinsight Section 17.0) within Appendix II identifies the following geohazards and indicates a preliminary level of risk:

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

It is recommended that reference be made to Section 17.0 of the Geoinsight GSR (Appendix II). Consequently, Phase 2: Ground Investigation works would be prudent to aid the design of foundations, any retaining structures and highways, should they be deemed necessary by the Design Team.

3.1.3 Solid Geological Deposits

The BGS Geological Plan and GSR indicate that the site is underlain by the Silsden Formation which comprises sandstone with interbedded siltstone, mudstone, shales and thin coal seams,

Although thin coal seams may be present, this geological unit are devoid of productive coal seams (i.e. workable) and there is no risk to this site from this geohazard. There is a negligible hazard rating with respect to dissolution of soluble rocks beneath the site.

In addition, the GSR does not record natural cavities within c.1km of the site.

3.1.4 Geological Features

Inspection of the geological map indicates that there is a geological fault c.75m northwest of the site. The risk to the site is negligible.

3.1.5 Historical Borehole Logs

There are no BGS records on or within close proximity to the site.

3.1.6 Mining and Quarrying Assessment

The solid geological strata are recorded as Silsden Formation. Reference to the GSR indicates that the site is not located within a Coal Authority (CA) referral area.

Reference to the CA on-line database confirms the following:

- No shallow coal seams are noted.
- No recorded shallow coal mine workings are present.
- No suspected shallow coal mine workings are present.
- No mine entries are recorded.
- The site does not lie within a Coal Authority defined "High Risk Development Area".

As a result of the above information, the site is not currently considered to be at potential risk of coal mining related geohazards.

However, GEO is not responsible for third party information and records may be inaccurate or incomplete. Consequently, GEO recommends that care and consideration of potential mining features should be made by the developer during construction.

3.1.7 Non-Coal Mining and Quarrying Assessment

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

> *"Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered."*

In view of the information above, the risk to the site 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

In accordance with the GSR the development site is not located within a Radon Affected Area as defined by the Health Protection Agency (HPA), as less than 1% of properties are above the Action Level. However, in accordance with BR211 no radon protective measures are necessary.

3.2 Site Hydrogeology (Groundwater)

3.2.1 Made Ground/Soils

The made ground materials on site are likely to be classified as high permeability (worst case scenario) until site information is available.

3.2.2 Drift Geology

The GSR indicates that the drift deposits are recorded by the BGS as a Secondary Aquifer (undifferentiated layers). However, as it is anticipated that the drift deposits will comprise clay deposits, it is likely that they will have a low permeability and a negligible significance for water supply or river base flow.

3.2.3 Solid Geology

The bedrock is classified as a Secondary A Aquifer. These deposits are considered to be capable of supporting water supplies at a local rather than a strategic scale.

3.3 Site Hydrology

3.3.1 Groundwater

Given the anticipated ground conditions, shallow groundwater is not anticipated within the cohesive drift deposits although there is a potential for localised pockets of trapped surface infiltration within the upper made ground and granular deposits (where present).

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

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

3.3.2 Surface Water Features

Although no surface water features are identified onsite, numerous water features are present in the surrounding area and within an influencing distance (c.250m). A single Environment Agency (EA) GQA classified river (Duddel Brook with a moderate rating) is located c.239m west. No further rivers, canals, ponds or lakes (biological or chemical monitoring points) are recorded within c.250m of the development area.

3.3.3 Current Surface Water Run-off

The site includes several buildings; therefore, it is considered likely that the majority of surface water will find its way to the existing surface drainage system, where present and undamaged. In areas where soft landscaping is present, infiltration of surface water will infiltrate directly into the ground (topsoil).

3.3.4 Ground Infiltration Potential

The site is indicated to be underlain by clay deposits which typically comprise sandy gravelly clay with occasional bands of sand and gravel. As such, there is limited potential for infiltration where clays are present. However, where thick bands of sand or gravel are present there is a potential for increased infiltration. This should be considered during any ground investigation works.

3.4 Site Environmental Sensitivity

3.4.1 Site Ecology

- No sites of Special Scientific Interest (SSSI) are noted within c.250m.
- No Special Area of Conservation (SAC) is noted within c.250m.
- No Local Nature Reserves (LNR) is recorded within c.250m.
- No Special Protection Areas (SPA) are present within c.250m.
- No RAMSAR sites are present within c.250m.
- An area of Ancient Woodland is recorded within c.221m southeast.
- No World Heritage Sites are recorded within c.250m.
- An Area of Outstanding Natural Beauty (AONB) is noted to be present on site (Forest of Bowland).
- No National Parks are recorded within c.250m.
- The site lies outwith a Nitrate Vulnerable Zone (NVZ).
- No Nitrate Sensitive Areas are within c.250m.
- The site is not recorded to be within a Greenbelt.

It is recommended that reference be made to Section 10.0 of the GSR for further information (Enviroinsight – Appendix II).

3.4.2 Authorisations, Incidents and Registers

- No records of IPC Authorisations are held within c.250m.
- No records of IPPC Authorisations are held within c.250m.
- No records of Water Industry Referrals are held within c.250m.
- No records of Red List Discharge Consents are held within c.250m.
- No records of List 1 Dangerous Substances Inventory sites are held within c.250m.
- No records of List 2 Dangerous Substances Inventory sites are held within c.250m.
- No records of Part A (2) or Part B Activities and Enforcements are recorded within c.250m.
- No records of Category 3 or 4 Radioactive Substances Authorisations are held within c.250m.
- No records of Licensed Discharge Consent are held within c.250m.
- No records of Planning Hazardous Substance Consents or Enforcements are held within c.250m.
- No records of COMAH and NIHHS sites are held within c.250m.
- No Environment Agency Recorded Pollution Incidents (List 1 or 2) are recorded within c.250m.

It is recommended that reference be made to Section 4.0 of the GSR for further information (Enviroinsight – Appendix II).

3.4.3 Determination of Contaminated Land (Part IIA)

A review of the GSR (Enviroinsight) has indicated that the site is not currently recorded as Contaminated Land under Part IIA EPA 1990. In addition, no sites determined as Contaminated Land under Part IIA EPA 1990 are currently recorded within c.500m of the development area.

3.4.4 Historical Industrial Land Uses

- Potentially Contaminative Uses Identified– A series of unspecified pits are recorded with the nearest being c.120m southeast.
- Historical Tank Database – One is noted within c.250m, located c.214m northwest. During the site walkover a single AST was noted to the rear of the existing residential property, no visual / olfactory evidence of hydrocarbons was noted.
- Historical Energy Features – None are noted within c.250m.
- Historical Petrol and Fuel Site Database – None are noted within c.250m.
- Historical Garage Database – None are noted within c.250m.
- Historical Military Land – None are noted within c.250m.

- Potentially Infilled Land– None are recorded within c.250m although if the unspecified pits have been filled, they may potentially represent a risk to the proposed development.

It is recommended that reference be made to Section 1.0 of the GSR for further information (Enviroinsight – Appendix II).

3.4.5 Current Industrial Land Uses

Since the immediate surrounding area is noted to be agricultural land there are no significant industrial land uses noted within c.250m of the site.

During the site walkover, existing structures were present on site which are to be converted for residential purposes which is likely to include areas of soft landscaping and associated hardstanding (i.e. parking).

Although no visual and/or olfactory evidence of hydrocarbons was noted on site, given the presence of the AST as well as the site historically being utilised as a farm there is a potential for "hotspots" of contamination to be present associated with vehicles and machinery used on the site. Photographs taken during August 2020 are contained in Appendix I.

While the risk to the proposed development site is considered to be low it is recommended that reference be made to Section 4.0 of the GSR for further information (Enviroinsight – Appendix II).

3.4.6 Fuel Station Entries

According to information presented in the GSR Enviroinsight there are no fuel stations within c.500m of the site.

3.4.7 Landfill and Waste Regulation/Management – Landfill Sites/Other Waste Sites

- No Environment Agency Registered Landfill Sites are recorded within c.250m.
- No Environment Agency Historic Landfill Sites are recorded within c.250m.
- The BGS/DoE Landfill Site Survey does not record any Landfill Sites within c.250m.
- There are no records of Landfills in Local Authority and Historical Mapping Records.
- No Operational and Non-Operational Waste Treatment, Transfer or Disposal Sites are recorded within c.250m.
- No Environment Agency Licensed Waste Sites are recorded within c.250m.

It is recommended that reference be made to Section 3.0 of the GSR Enviroinsight (Appendix II) for further information.

3.5 Historical Plan Appraisal

Section 3.5 is based on historical plans (Ordnance Survey extracts) obtained as part of the parcel of information within the GSR and provides a summary of the site history, highlighting any industries, processes or activities that may be considered as Geohazards. Copies of old survey plans (1:10,560, 1:10,000, 1:2,500 and 1:1,250 Scale) covering the site and adjacent areas are included in Appendix III. Particular attention is made to the greater detail presented in the 1:2,500 and 1:1,250 scale plans dating between 1892 and 2003.

3.5.1 On Site

The historical plans dated between 1847 to 2019 shows that the site has been developed initially with the presence of the small building structures which were then developed with the existing structures between 1892 to 2020.

On the 1847 plan, various structures are noted to be present on site, all present in the southwest and west of the site. One structure is noted to be the Moor Cock Inn. Additional structures are recorded by c.1932.

By c.1951, the site is known as Moor Cock Farm.

No further significant changes are noted on site.

During the site walkover, the area of the existing structures remain on site with areas of both soft and hard landscaping surrounding the buildings. A single AST was recorded to the rear of the residential property although no evidence of oil/fuel spillages or staining was noted on site.

Areas of the site were being used for the storage for fertiliser and farm machinery.

Photographs taken during the walkover are contained in Appendix I.

3.5.2 Off Site

The historical map extracts indicate that the surrounding area has remained largely undeveloped except for occasional agricultural and residential buildings, although none of these pose a significant risk with respect to contamination issues.

In the surrounding area, numerous ponds and old quarries (i.e. pits) have been recorded some of which have been infilled over various periods.

No further areas of excavation, infilling or significant contaminative issues are noted on the historical plans.

3.5.3 Overview

Consequently, from the review of historical plans available and the site walkover it appears that the site has undergone periods of development and therefore made ground as well as the potential for contamination may be present across the site.

Although no significant areas of potentially infilled ground have been recorded on site as well as the surrounding area, there is the possibility of made ground / infilled ground associated with the historical development of the site as well as the infilling of the small ponds, quarries and pits which may represent a potential source of ground gas.

4.0 Conceptual Site Model

A Conceptual Site Model (CSM) has been designed using the information presented within this P1 DTS to provide a graphical representation of the anticipated ground, groundwater and ground gas conditions below the development area (Existing Site CSM). The CSM is presented within Sections 4.1 to 4.3 and aids the completion of the Preliminary Qualitative Risk Assessment (PQRA – Section 5.0).

The CSM utilises the established *Source – Pathway – Receptor* pollutant linkage model and is designed to provide an improved understanding of the site characteristics, designing a Preliminary Screening Strategy (PSS) for the Potential Contaminants of Concern (PCOC's). 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.

During the P2 GI the CSM can be refined depending 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 end use. The CSM is presented below and on the following page.

4.1 Anticipated Sources – Preliminary Screening Strategy

Sources:
S1 = Generic/Organic Made Ground. The majority of the site is associated with a farm with numerous barns / outbuildings and given the sites history as a farm, some made ground is anticipated with the potential for some contamination on the site although this is unlikely to be significant. Potential Contaminants of Concern (PCOC's) include Arsenic, Cadmium, Chromium (III and VI), Copper, Lead, Mercury, Nickel, Selenium, Zinc, Cyanide (free), pH, Soluble Sulphate, Total Organic Carbon, Speciated PAH and Asbestos. There is also potential for hydrocarbon contamination associated with the AST, farm machinery and vehicles that have been used on site, although any contamination is likely to be localised. Therefore, it would be prudent to expect "hot spots" of hydrocarbon type contamination across the site. If identified, samples may need to be targeted for Speciated TPH's, MTBE, BTEX, VOC's and SVOC's. In addition to the above, a prudent developer should implement a watching brief during the redevelopment works to ensure that if made ground and or visual/olfactory evidence of contamination is identified then works should be stopped, the Local Authority notified, and advice should be sought from an appropriately qualified and experienced Geo-Environmental Engineer.
S2 = Ground Gas. On site, made ground is likely to be present across the site as well as the potential for hydrocarbons which may also represent a source of ground gas vapours and subsequently a risk to the proposed development and end users. At this stage, off site sources include the small infilled ponds, quarries / pits although these are not thought to represent a significant risk to the proposed development given their size as well as the expected presence of cohesive deposits which will hinder the migration of any ground gases. PCOC's include Carbon Dioxide and Methane. Given the potential for made ground on site as well as the potential for hydrocarbons, a programme of ground gas monitoring may therefore be required.

4.2 Anticipated Pathways

Pathways:
P1 = Inhalation of indoor / outdoor air (wind-blown particles)
P2 = Dermal/direct contact (limited risk present through areas of soft landscaping)
P3 = Ingestion (limited risk present through areas of soft landscaping)
P4 = Migration through existing services
P5 = Direct contact with building materials
P6 = Surface Run-Off
P7 = Leaching from Soils

4.3 Anticipated Receptors

Receptors:
R1 = Human Health (Residents)
R2 = Human Health (Construction Workforce) – Not considered within this assessment
R3 = Groundwater
R4 = Building Materials and Buried Utilities
R5 = Flora and Fauna (future private gardens and soft landscaping)

5.0 Preliminary Qualitative Risk Assessment (PQRA)

5.1 Preliminary Qualitative Geotechnical Risk Assessment – Risk Meter

The below Geotechnical Risk Meter determines the potential level of risk associated with the geotechnical properties of the site, considering any potential geohazards identified by the information presented within the DTS.

GEOTECHNICAL			⇩			
RISK =	**NEGLIGIBLE**	**VERY LOW**	**LOW**	**MODERATE**	**HIGH**	**VERY HIGH**

A risk level of LOW is currently determined appropriate for this development area based on the information provided by the BGS, CA and GSR for the following reasons:

- Made ground and buried structures (i.e. foundations and floor slabs) are likely to be present on site associated with the historical and existing development of the site.
- Geological records indicate that the site is underlain by Glacial Till deposits typically firm to stiff sandy gravelly clay with cobbles and occasional bands of sand and gravel which are likely to be present at shallow depth. Glacial Till deposits can be variable given the potential for bands of sand and gravel.
- Where clay soils are present, their soil shrinkability could be affected by mature vegetation such as trees.
- Shallow groundwater is not anticipated although some trapped "perched" water may be present within the made ground and glacial drift deposits.
- Information available from the CA, BGS and GSR suggests that the development site is not considered to be at potential risk of coal mining related geohazards and therefore no remedial measures are required (i.e. grouting).
- The site is not currently considered to be at risk of Radon gas.

Consequently, Phase 2: Ground Investigation works may be prudent to determine ground/groundwater/gas conditions and to aid the design of foundations and highways, should they be deemed necessary by the Design Team.

5.2 Preliminary Qualitative Contamination Risk Assessment – Risk Meter

The following Ground Contamination, Groundwater Contamination and Ground Gas Risk Meter determines the potential level of risk associated with the redevelopment of the site when taking into account the anticipated *Sources – Pathways – Receptors* within the pollutant linkage model and presented in the CSM (Section 4.0).

GROUND CONTAMINATION						
RISK =	NEGLIGIBLE	VERY LOW	LOW	MODERATE	HIGH	VERY HIGH
GROUNDWATER CONTAMINATION						
RISK =	NEGLIGIBLE	VERY LOW	LOW	MODERATE	HIGH	VERY HIGH
GROUND GAS						
RISK =	NEGLIGIBLE	VERY LOW	LOW	MODERATE	HIGH	VERY HIGH

A risk level of VERY LOW to LOW is deemed appropriate for this development with respect to ground contamination. In summary, there is a potential for made ground/organic contamination on site although the potential risks may need to be confirmed.

Therefore, if made ground is encountered that includes anthropogenic debris (such as ash, coal, clinker and tarmac) the Potential Contaminants Of Concern (PCOC's) could include: Arsenic, Cadmium, Chromium (III and VI), Copper, Lead, Mercury, Nickel, Selenium, Zinc, Cyanide (free), pH, Water Soluble Sulphate, Total Organic Carbon, Asbestos and Speciated PAH.

If during any future intrusive works, visual and / or olfactory evidence of hydrocarbons is encountered then targeted sampling and screening will need to be considered and targeted for Speciated TPH (Aliphatic and Aromatic split), MTBE, BTEX, VOC's and SVOC's.

Therefore, it is recommended that excavations be completed on site to confirm the shallow ground conditions especially in any areas of proposed soft landscaping and if made ground is identified (with anthropogenic debris) then contamination screening and a human health risk assessment will be required.

In addition, a watching brief is recommended during the redevelopment works to ensure that if made ground (that includes anthropogenic debris, i.e. ash, clinker etc.) and/or visual/olfactory (malodorous) evidence of potential contamination are identified then works should be stopped, the Local Authority notified and advice sought from an appropriately qualified and experienced Geo-environmental engineer.

A risk level of NEGLIGIBLE is currently thought appropriate for this development with respect to potential groundwater contamination. Whilst there are potential sources of contamination on site which may have the potential to impact receptors there are no EA classified surface water features within close proximity to the site as well as a lack of significant Aquifers. The presence of the natural clay soils (if present) may restrict potential contamination movements to surrounding features.

A risk level of VERY LOW is currently considered appropriate for the site with respect to potential harmful ground gas since there are potential sources of concern on site (i.e. made ground and possible

hydrocarbons). The risk of ground gas migration from off site sources (i.e. infilled ponds, quarries and pits) is likely to be restricted as the potential natural clay soils may potentially act as a natural barrier to reduce ground gas migrations although this may need to be verified by a period of ground gas monitoring to satisfy the Local Planning Authority.

GEO therefore recommends that a "watching brief" and "observational technique" be applied to this site to ensure that if ground conditions appear to vary from those identified within this investigation report then advice should be sought from a suitably qualified and experienced Engineering Geologist, Geotechnical or Geo-Environmental Engineer.

6.0 Conclusions and Recommendations

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

- The site is currently considered to represent a low geotechnical risk.
- The site is currently considered to pose a very low to low risk to the proposed end users (ground contamination).
- The site is currently considered to pose a negligible risk to adjacent sites (the surrounding environment) and controlled waters with respect to potential ground/groundwater contamination.
- A very low risk is currently considered present of ground gas.

Consequently, Phase 2 Ground Investigation works will be required to fully characterise the ground/groundwater conditions and ground gas regime below the development area prior to commencing on site. In summary, the site works should include (as a minimum):

- Mini Percussion boreholes.
- If site disturbance can be tolerated, a series of mechanically excavated trial pit may also be beneficial.
- In-situ geotechnical testing.
- Laboratory based geotechnical screening.
- Laboratory contamination screening for generic and organic analytes as per the PCOC's in Section 4.0.
- Human Health Ground Contamination and Ground Gas risk assessment.

GEO also recommends that a "watching brief" and "observational technique" be applied to this site to ensure that if ground conditions appear to vary from those identified within this investigation report then advice should be sought from a suitably qualified and experienced Engineering Geologist, Geotechnical or Geo-Environmental Engineer.

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 as soon as practicably possible in order to seek their approval of the findings prior to undertaking any works on site. GEO accepts no responsibility for the accuracy of third party information involved within the completion of this report.

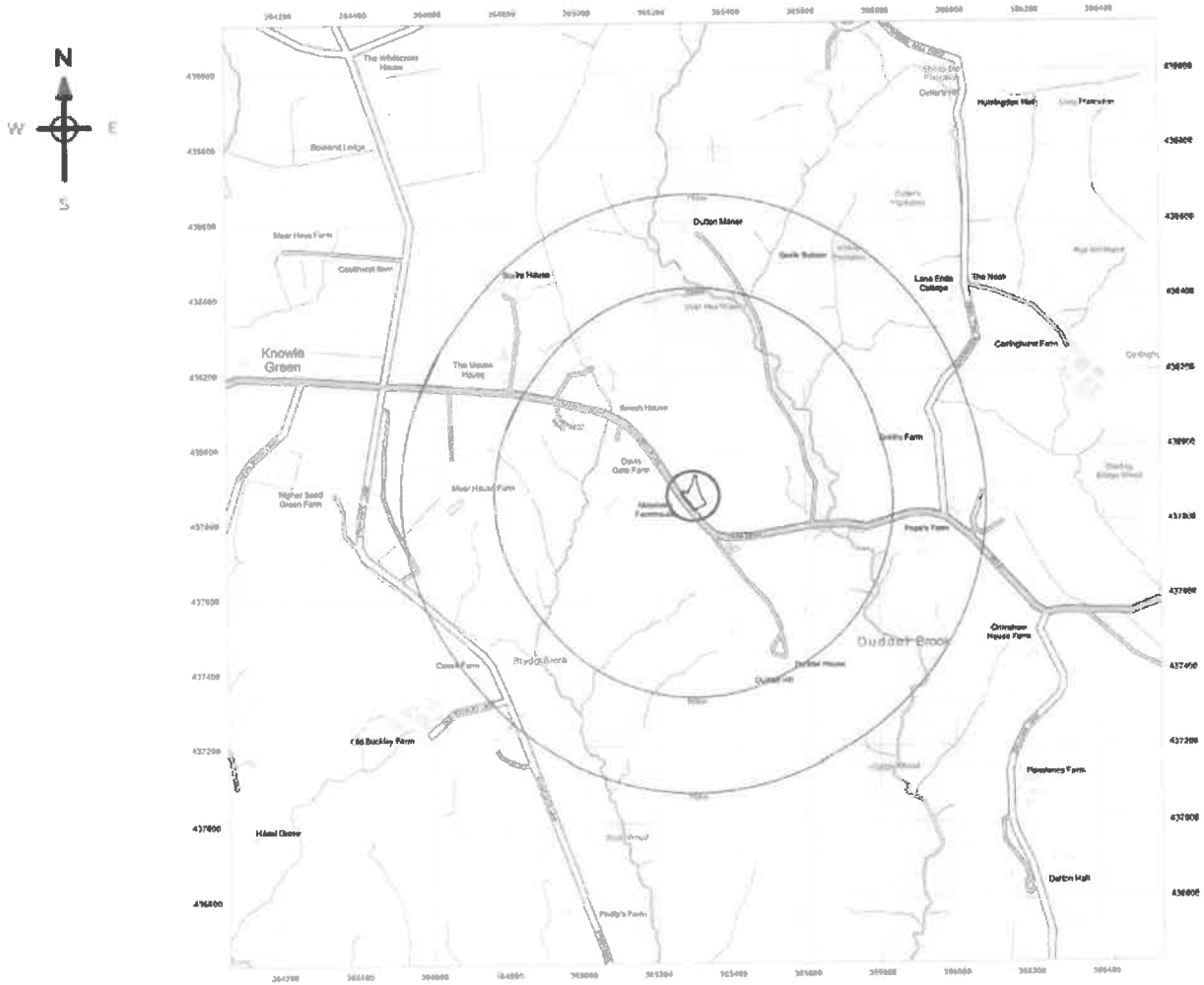
End of Report

Appendix I

- Site Location Plan
- Aerial Photograph Extract
- Existing Site Layout Plan
- Site Images (August 2020)

GEO
Environmental Engineering

GEO2020-4330: Site Location Plan



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GEO
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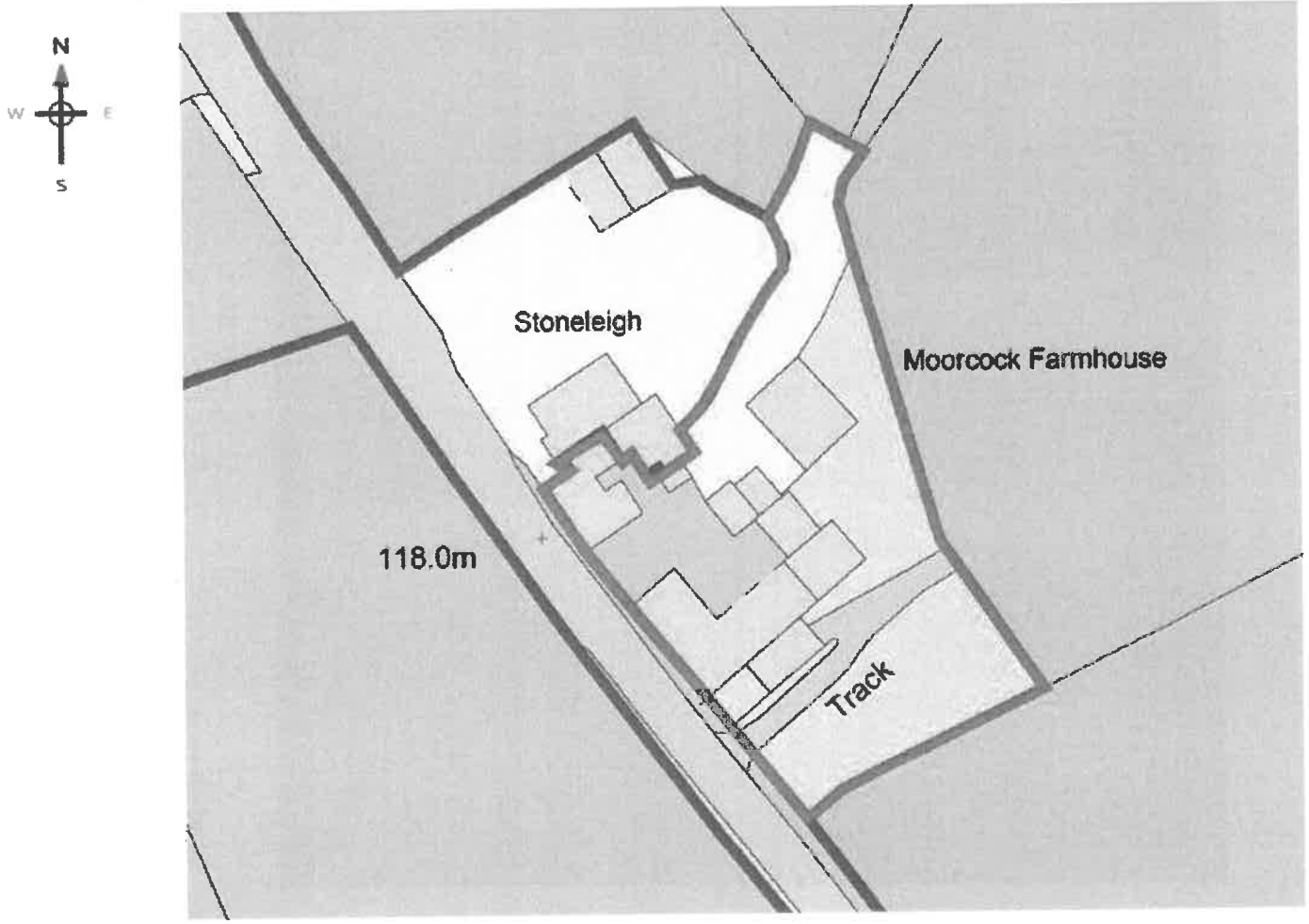
GEO2020-4330: Aerial Photograph Extract

Website: www.geoenvironmentalengineering.com
Email: info@geoenvironmentalengineering.com
Telephone: 08456 768 895

GEO2020-4330: Existing Site Layout Plan



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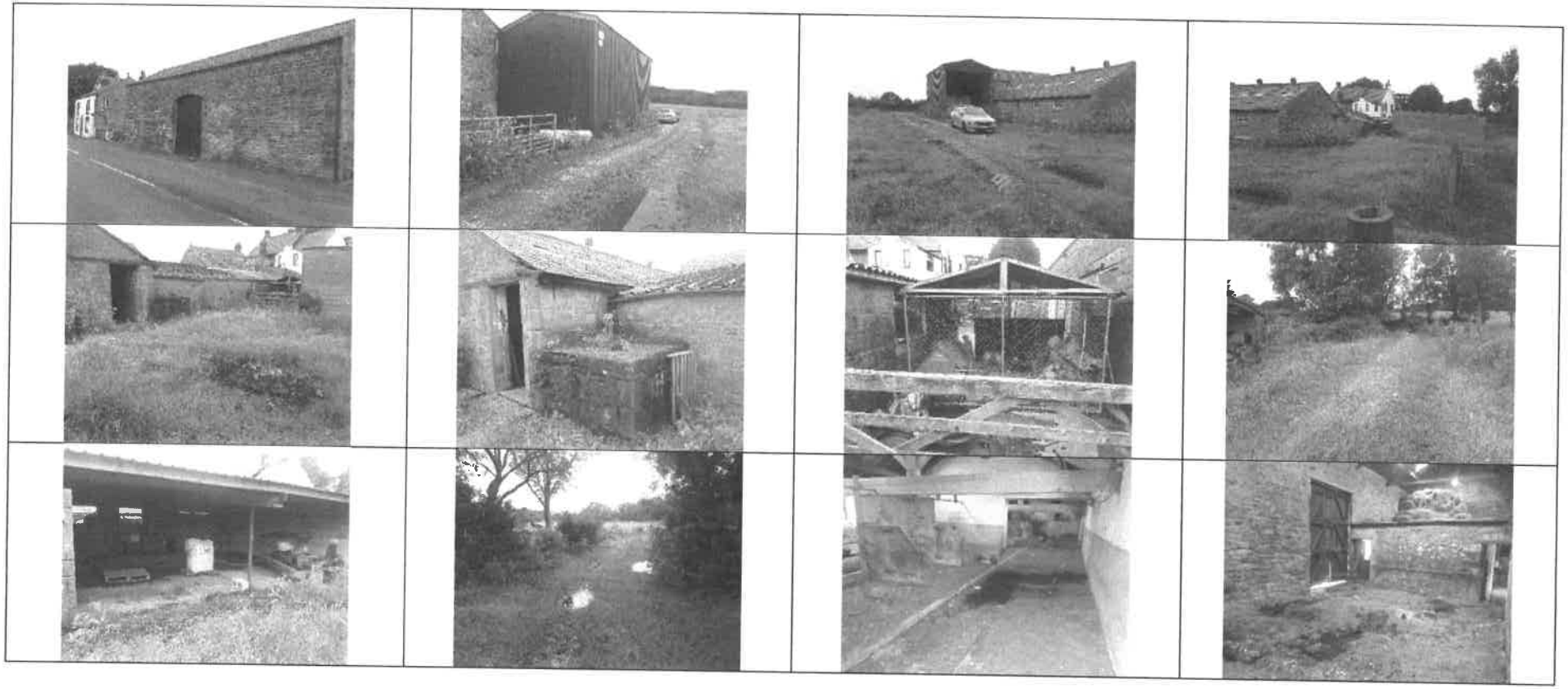
GEO2020-4330: Site Images (August 2020)



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GEO2020-4330: Site Images (August 2020)




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Appendix II

- Ground Sure Report (GSR – GeoInsight and EnviroInsight)

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo Insight

Moorcock Farm, Clitheroe Road, Dutton, Preston, PR3 2YT, Moorcock Farm, Clitheroe Road, Dutton, Preston, PR3 2YT, PR3 2YT,

Order Details

Date: 26/08/2020

Your ref: EMS_629843_838113

Our Ref: EMS-629843_838113

Client: emapsite

Site Details

Location: 365302 437867

Area: 0.26 ha

Authority: Ribble Valley Borough Council

Contact us with any questions at:
info@groundsure.com
08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
12	1.1	Historical industrial land uses	0	0	9	24	-
14	1.2	Historical tanks	0	0	1	3	-
14	1.3	Historical energy features	0	0	0	0	
15	1.4	Historical petrol stations	0	0	0	0	
15	1.5	Historical garages	0	0	0	0	
15	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
16	2.1	Historical industrial land uses	0	0	12	34	
18	2.2	Historical tanks	0	0	2	5	-
19	2.3	Historical energy features	0	0	0	0	-
19	2.4	Historical petrol stations	0	0	0	0	
19	2.5	Historical garages	0	0	0	0	
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
20	3.1	Active or recent landfill	0	0	0	0	
20	3.2	Historical landfill (BGS records)	0	0	0	0	
20	3.3	Historical landfill (LA/mapping records)	0	0	0	0	
20	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
20	3.5	Historical waste sites	0	0	0	0	-
21	3.6	Licensed waste sites	0	0	0	0	
21	3.7	Waste exemptions	0	0	0	0	
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
22	4.1	Recent industrial land uses	0	0	0		
22	4.2	Current or recent petrol stations	0	0	0	0	
23	4.3	Electricity cables	0	0	0	0	-
23	4.4	Gas pipelines	0	0	0	0	-
23	4.5	Sites determined as Contaminated Land	0	0	0	0	

23	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
23	4.7	Regulated explosive sites	0	0	0	0	-
24	4.8	Hazardous substance storage/usage	0	0	0	0	-
24	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
24	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
24	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
24	4.12	Radioactive Substance Authorisations	0	0	0	0	-
25	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
25	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
25	4.15	Pollutant release to public sewer	0	0	0	0	-
25	4.16	List 1 Dangerous Substances	0	0	0	0	-
25	4.17	List 2 Dangerous Substances	0	0	0	0	-
26	**4.18**	**Pollution Incidents (EA/NRW)**	0	0	0	1	-
26	4.19	Pollution inventory substances	0	0	0	0	-
26	4.20	Pollution inventory waste transfers	0	0	0	0	-
26	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
27	**5.1**	**Superficial aquifer**	Identified (within 500m)				
29	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
31	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
32	5.4	Groundwater vulnerability - soluble rock risk	None (within 0m)				
32	5.5	Groundwater vulnerability - local information	None (within 0m)				
33	**5.6**	**Groundwater abstractions**	0	0	0	0	5
35	**5.7**	**Surface water abstractions**	0	0	0	0	9
37	**5.8**	**Potable abstractions**	0	0	0	0	5
39	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 MasterMap)**	0	0	5	-	-

41	**6.2**	**Surface water features**	0	0	6	-	-
41	**6.3**	**WFD Surface water body catchments**	1	-	-	-	-
42	**6.4**	**WFD Surface water bodies**	0	0	1	-	-
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 Sea (RoFRaS)	None (within 50m)				
43	7.2	Historical Flood Events	0	0	0	-	-
43	7.3	Flood Defences	0	0	0	-	-
43	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
44	7.5	Flood Storage Areas	0	0	0	-	-
45	7.6	Flood Zone 2	None (within 50m)				
45	7.7	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	1	2	7
51	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

52	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	-	-
56	**11.2**	**Area of Outstanding Natural Beauty**	1	0	0	-	-
56	11.3	National Parks	0	0	0	-	-
56	11.4	Listed Buildings	0	0	0	-	-
57	11.5	Conservation Areas	0	0	0	-	-
57	11.6	Scheduled Ancient Monuments	0	0	0	-	-
57	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
58	**12.1**	**Agricultural Land Classification**	Grade 4 (within 250m)				
59	12.2	Open Access Land	0	0	0	-	-
59	12.3	Tree Felling Licences	0	0	0	-	-
59	12.4	Environmental Stewardship Schemes	0	0	0	-	-
59	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
60	**13.1**	**Priority Habitat Inventory**	0	0	1	-	-
61	13.2	Habitat Networks	0	0	0	-	-
61	13.3	Open Mosaic Habitat	0	0	0	-	-
61	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
62	**14.1**	**10k Availability**	Identified (within 500m)				
63	14.2	Artificial and made ground (10k)	0	0	0	0	-
64	14.3	Superficial geology (10k)	0	0	0	0	-

64	14.4	Landslip (10k)	0	0	0	0	-
65	14.5	Bedrock geology (10k)	0	0	0	0	-
65	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
66	**15.1**	**50k Availability**	Identified (within 500m)				
67	15.2	Artificial and made ground (50k)	0	0	0	0	-
67	15.3	Artificial ground permeability (50k)	0	0	-	-	-
68	**15.4**	**Superficial geology (50k)**	1	0	0	2	-
69	**15.5**	**Superficial permeability (50k)**	Identified (within 50m)				
69	15.6	Landslip (50k)	0	0	0	0	-
69	15.7	Landslip permeability (50k)	None (within 50m)				
70	**15.8**	**Bedrock geology (50k)**	1	0	1	4	-
71	**15.9**	**Bedrock permeability (50k)**	Identified (within 50m)				
71	**15.10**	**Bedrock faults and other linear features (50k)**	0	0	1	2	-
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)				
75	**17.3**	**Compressible deposits**	Negligible (within 50m)				
76	**17.4**	**Collapsible deposits**	Very low (within 50m)				
77	**17.5**	**Landslides**	Very low (within 50m)				
78	**17.6**	**Ground dissolution of soluble rocks**	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
79	18.1	Natural cavities	0	0	0	0	-
80	18.2	BritPits	0	0	0	0	-
80	**18.3**	**Surface ground workings**	0	0	18	-	-
81	18.4	Underground workings	0	0	0	0	0
81	18.5	Historical Mineral Planning Areas	0	0	0	0	-

81	**18.6**	**Non-coal mining**	1	0	0	1	0
82	18.7	Mining cavities	0	0	0	0	0
82	18.8	JPB mining areas	None (within 0m)				
82	18.9	Coal mining	None (within 0m)				
82	18.10	Brine areas	None (within 0m)				
82	18.11	Gypsum areas	None (within 0m)				
83	18.12	Tin mining	None (within 0m)				
83	18.13	Clay mining	None (within 0m)				

Page	Section	Radon					
84	**19.1**	**Radon**	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
85	**20.1**	**BGS Estimated Background Soil Chemistry**	1	0	-	-	-
85	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
85	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
86	21.1	Underground railways (London)	0	0	0	-	-
86	21.2	Underground railways (Non London)	0	0	0	-	-
86	21.3	Railway tunnels	0	0	0	-	-
86	21.4	Historical railway and tunnel features	0	0	0	-	-
86	21.5	Royal Mail tunnels	0	0	0	-	-
87	21.6	Historical railways	0	0	0	-	-
87	21.7	Railways	0	0	0	-	-
87	21.8	Crossrail 1	0	0	0	0	-
87	21.9	Crossrail 2	0	0	0	0	-
87	21.10	HS2	0	0	0	0	-

Recent aerial photograph

Capture Date: 03/04/2017

Site Area: 0.26ha

Recent site history - 2001 aerial photograph

Capture Date: 12/05/2001

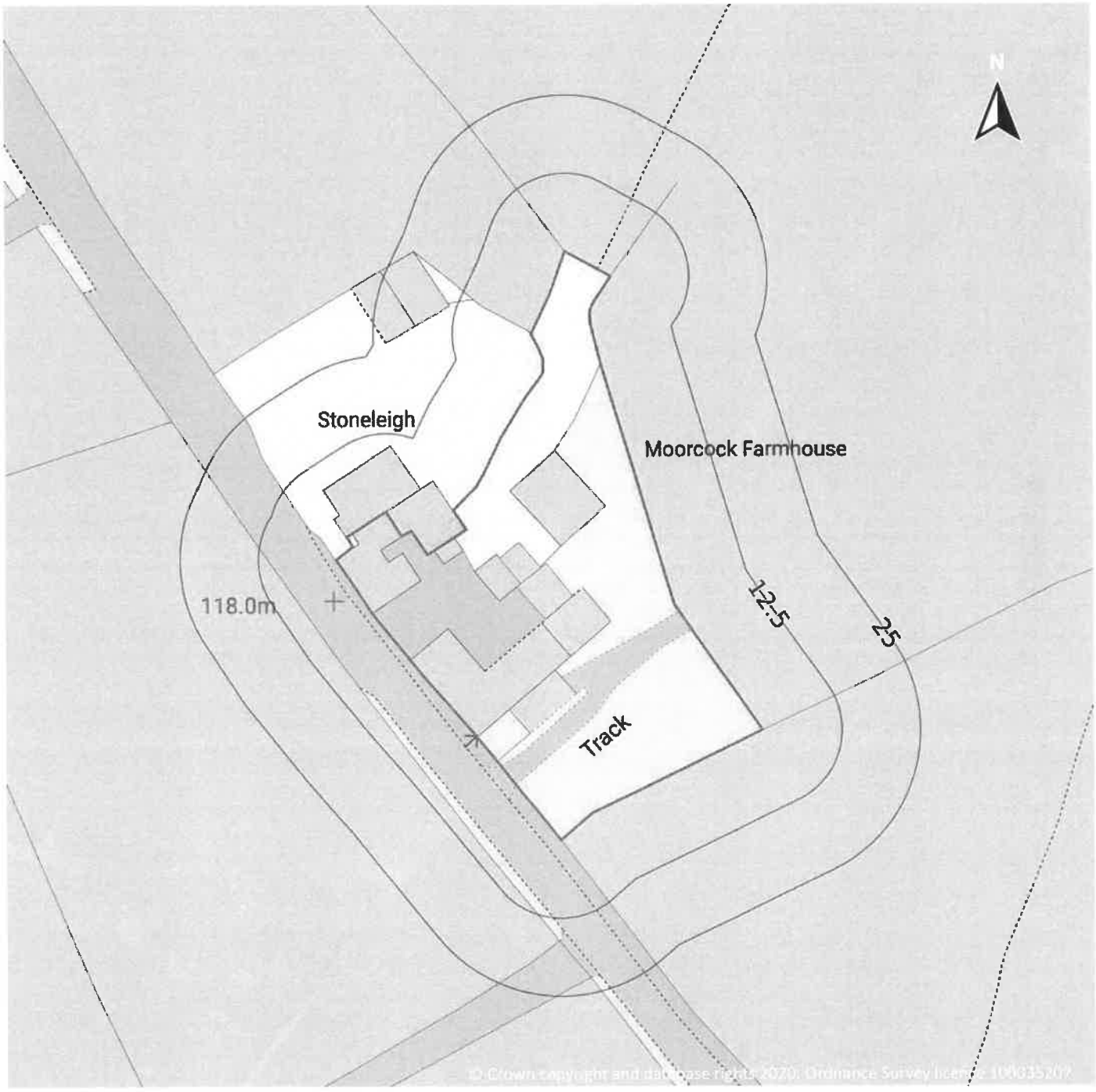
Site Area: 0.26ha

Recent site history - 2000 aerial photograph

Capture Date: 07/05/2000

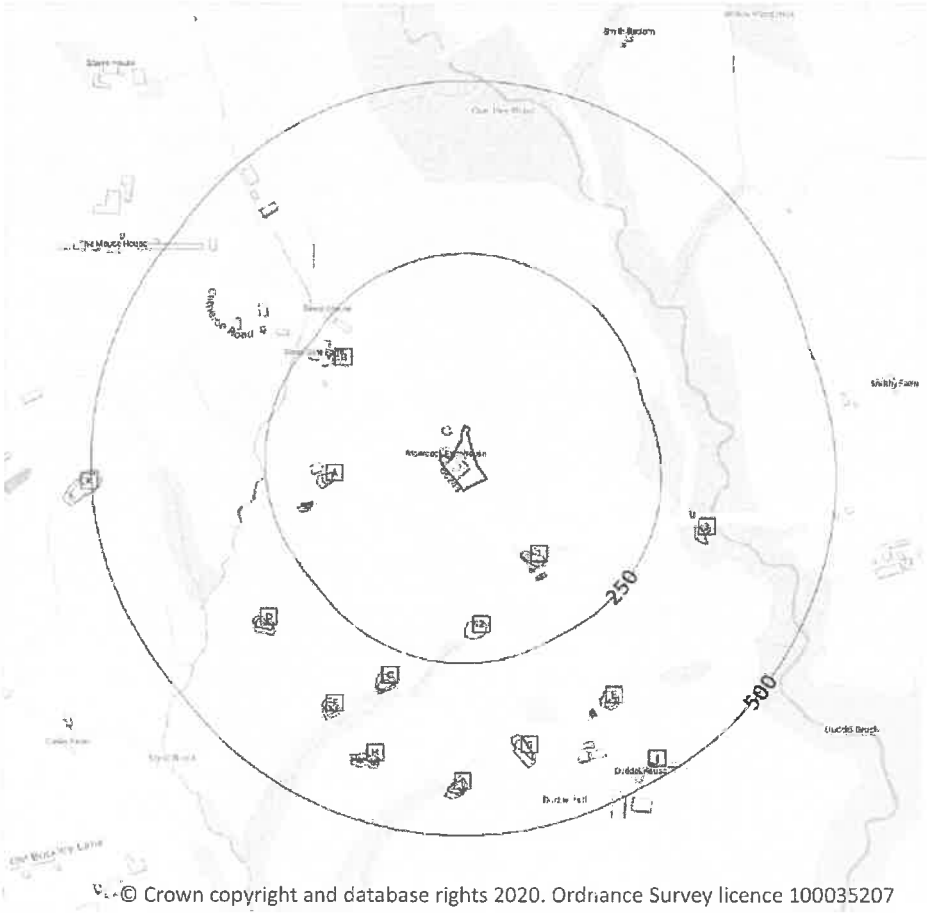
Site Area: 0.26ha

OS MasterMap site plan



Site Area: 0.26ha

1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

1.1 Historical industrial land uses

Records within 500m	33

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 12**

ID	Location	Land use	Dates present	Group ID
1	120m SE	Unspecified Pits	1846	659041

ID	Location	Land use	Dates present	Group ID
A	149m W	Unspecified Pit	1967	698873
A	151m W	Unspecified Pit	1932 - 1951	726851
2	189m S	Unspecified Pit	1932 - 1951	736269
A	191m W	Unspecified Pit	1951	703343
A	191m W	Unspecified Pit	1967	765152
A	194m W	Unspecified Pit	1932	712429
B	197m NW	Unspecified Tank	1910 - 1932	730097
B	203m NW	Unspecified Tank	1951	673932
C	286m S	Unspecified Pit	1951 - 1967	761492
C	294m S	Unspecified Pit	1910 - 1932	726592
3	307m E	Sand Pit	1846	643733
D	332m SW	Unspecified Pit	1951	738445
D	335m SW	Unspecified Pit	1967	736837
D	337m SW	Unspecified Pit	1910 - 1932	777453
E	352m SE	Unspecified Pit	1892	727027
F	355m SW	Unspecified Pit	1910 - 1951	739245
F	358m SW	Unspecified Pit	1967	712321
G	362m S	Unspecified Pit	1892 - 1951	754443
E	366m SE	Unspecified Pit	1967	722368
E	368m SE	Unspecified Tank	1967	674019
G	370m S	Unspecified Pit	1967	779622
H	402m S	Unspecified Ground Workings	1951	755545
H	405m S	Ground Workings	1967	681847
H	410m S	Unspecified Ground Workings	1910 - 1932	784062
I	412m S	Unspecified Pit	1951	752079
I	416m S	Unspecified Pit	1967	703994
I	420m S	Unspecified Pit	1932	758129
J	474m SE	Unspecified Tank	1951	778463

ID	Location	Land use	Dates present	Group ID
J	476m SE	Unspecified Tank	1967	732592
J	478m SE	Unspecified Tank	1932	674017
K	485m W	Unspecified Pit	1932 1951	751411
K	488m W	Unspecified Pit	1967	755915

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	4

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 12**

ID	Location	Land use	Dates present	Group ID
B	214m NW	Unspecified Tank	1967 - 1994	88649
E	367m SE	Unspecified Tank	1967 1994	99726
J	475m SE	Unspecified Tank	1967 1994	99830
J	477m SE	Unspecified Tank	1892	82086

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	0

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'.

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	0

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

This data is sourced from Ordnance Survey / Groundsure.

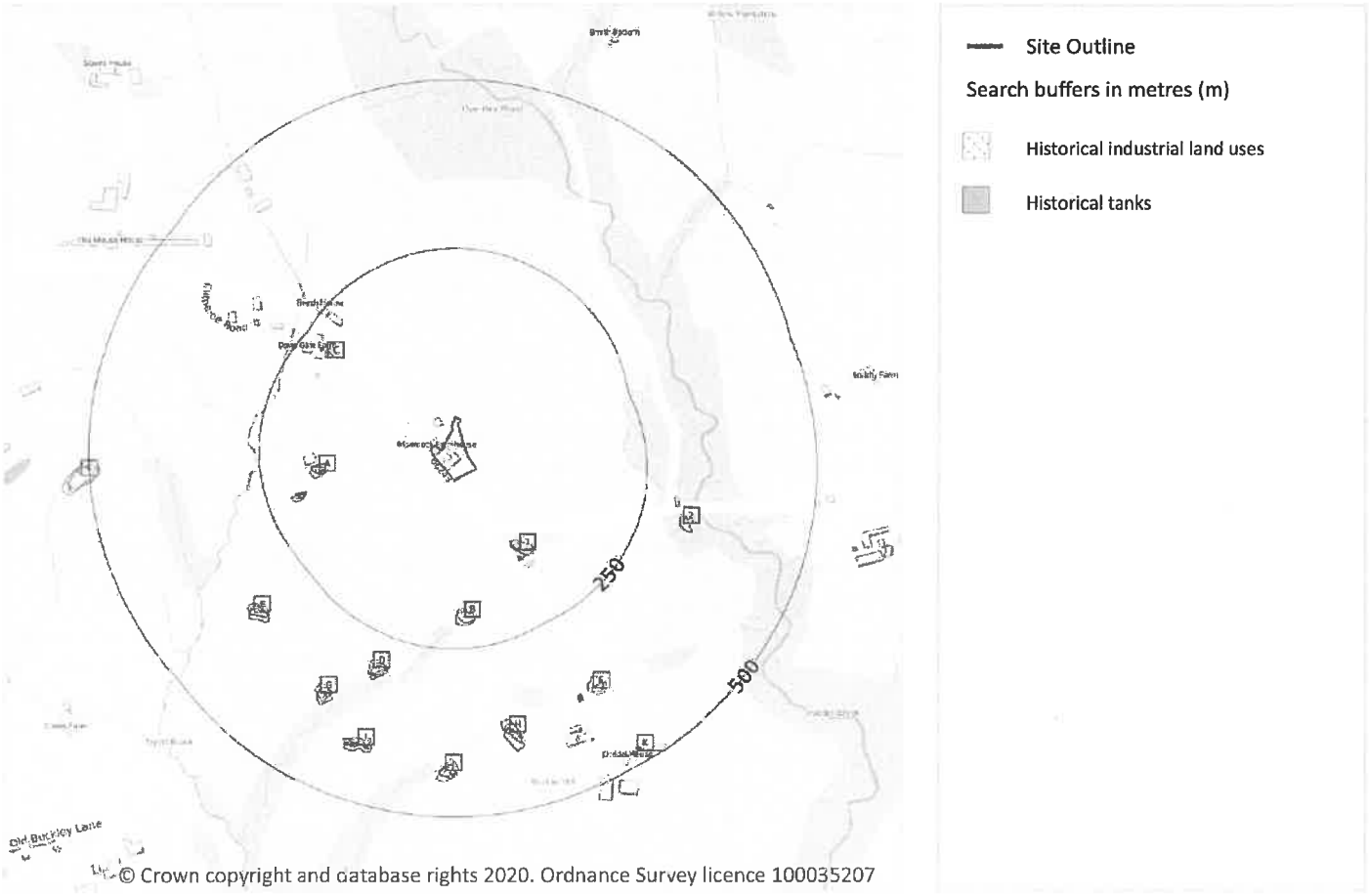
1.6 Historical military land

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



2.1 Historical industrial land uses

Records within 500m	46

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 16**

ID	Location	Land Use	Date	Group ID
1	120m SE	Unspecified Pits	1846	659041
A	149m W	Unspecified Pit	1967	698873
A	151m W	Unspecified Pit	1951	726851

ID	Location	Land Use	Date	Group ID
A	155m W	Unspecified Pit	1932	726851
B	189m S	Unspecified Pit	1951	736269
A	191m W	Unspecified Pit	1951	703343
A	191m W	Unspecified Pit	1967	765152
A	194m W	Unspecified Pit	1932	712429
B	195m S	Unspecified Pit	1932	736269
C	197m NW	Unspecified Tank	1932	730097
C	197m NW	Unspecified Tank	1910	730097
C	203m NW	Unspecified Tank	1951	673932
D	286m S	Unspecified Pit	1951	761492
D	292m S	Unspecified Pit	1967	761492
D	294m S	Unspecified Pit	1932	726592
D	294m S	Unspecified Pit	1910	726592
2	307m E	Sand Pit	1846	643733
E	332m SW	Unspecified Pit	1951	738445
E	335m SW	Unspecified Pit	1967	736837
E	337m SW	Unspecified Pit	1932	777453
E	337m SW	Unspecified Pit	1910	777453
F	352m SE	Unspecified Pit	1892	727027
G	355m SW	Unspecified Pit	1951	739245
G	358m SW	Unspecified Pit	1967	712321
H	362m S	Unspecified Pit	1951	754443
G	363m SW	Unspecified Pit	1932	739245
G	363m SW	Unspecified Pit	1910	739245
F	366m SE	Unspecified Pit	1967	722368
F	368m SE	Unspecified Tank	1967	674019
H	370m S	Unspecified Pit	1967	779622
H	375m S	Unspecified Pit	1932	754443

ID	Location	Land Use	Date	Group ID
H	375m S	Unspecified Pit	1910	754443
H	375m S	Unspecified Pit	1892	754443
I	402m S	Unspecified Ground Workings	1951	755545
I	405m S	Ground Workings	1967	681847
I	410m S	Unspecified Ground Workings	1932	784062
I	410m S	Unspecified Ground Workings	1910	784062
J	412m S	Unspecified Pit	1951	752079
J	416m S	Unspecified Pit	1967	703994
J	420m S	Unspecified Pit	1932	758129
K	474m SE	Unspecified Tank	1951	778463
K	476m SE	Unspecified Tank	1967	732592
K	478m SE	Unspecified Tank	1932	674017
L	485m W	Unspecified Pit	1951	751411
L	488m W	Unspecified Pit	1967	755915
L	494m W	Unspecified Pit	1932	751411

This data is sourced from Ordnance Survey / Groundsure.

2.2 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. 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 16**

ID	Location	Land Use	Date	Group ID
C	214m NW	Unspecified Tank	1967	88649
C	214m NW	Unspecified Tank	1994	88649
F	367m SE	Unspecified Tank	1994	99726
F	368m SE	Unspecified Tank	1967	99726
K	475m SE	Unspecified Tank	1994	99830

ID	Location	Land Use	Date	Group ID
K	476m SE	Unspecified Tank	1967	99830
K	477m SE	Unspecified Tank	1892	82086

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	0

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'.

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill

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.

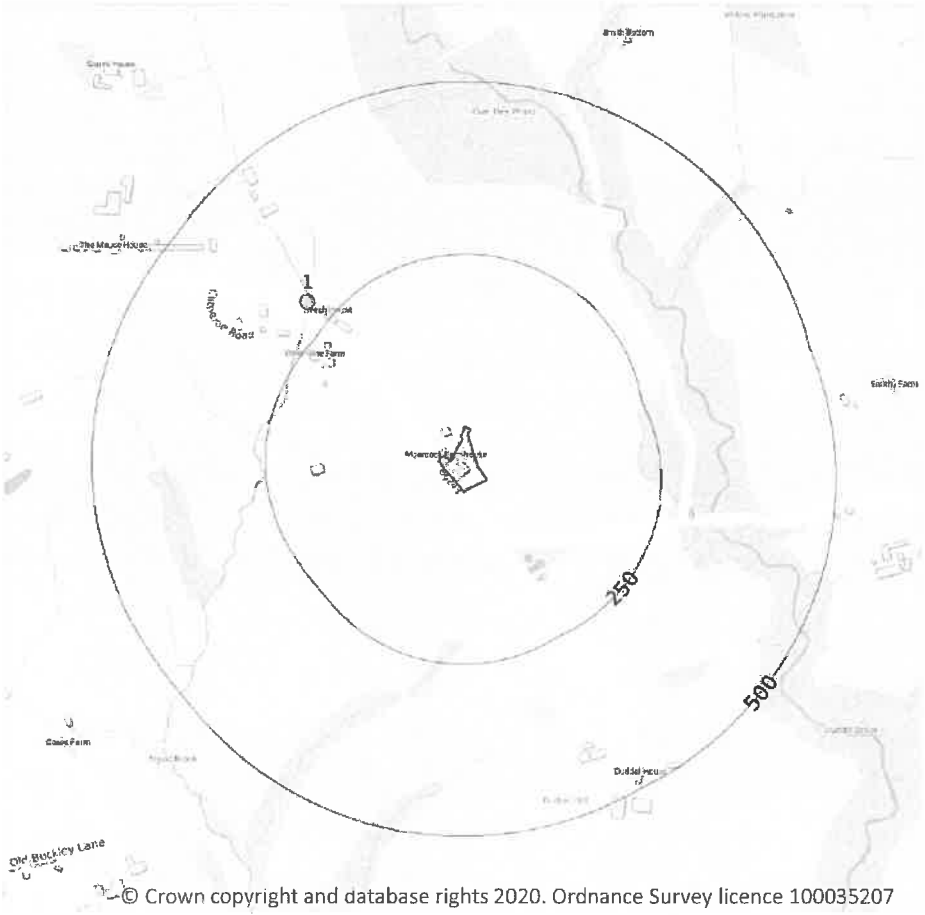
3.7 Waste exemptions

Records within 500m	0

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.

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

4 Current industrial land use



Site Outline

Search buffers in metres (m)

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	0

Current potentially contaminative industrial sites.

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	0

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	0

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m	0

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

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

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

Records within 500m	0

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

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	0

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m	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.

4.14 Pollutant release to surface waters (Red List)

Records within 500m	0

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

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

4.15 Pollutant release to public sewer

Records within 500m	0

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m	0

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

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

4.17 List 2 Dangerous Substances

Records within 500m	0

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	1

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

Features are displayed on the Current industrial land use map on **page 22**

ID	Location	Details	
1	290m NW	Incident Date: 02/10/2002 Incident Identification: 112107 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m	0

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

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

4.20 Pollution inventory waste transfers

Records within 500m	0

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

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

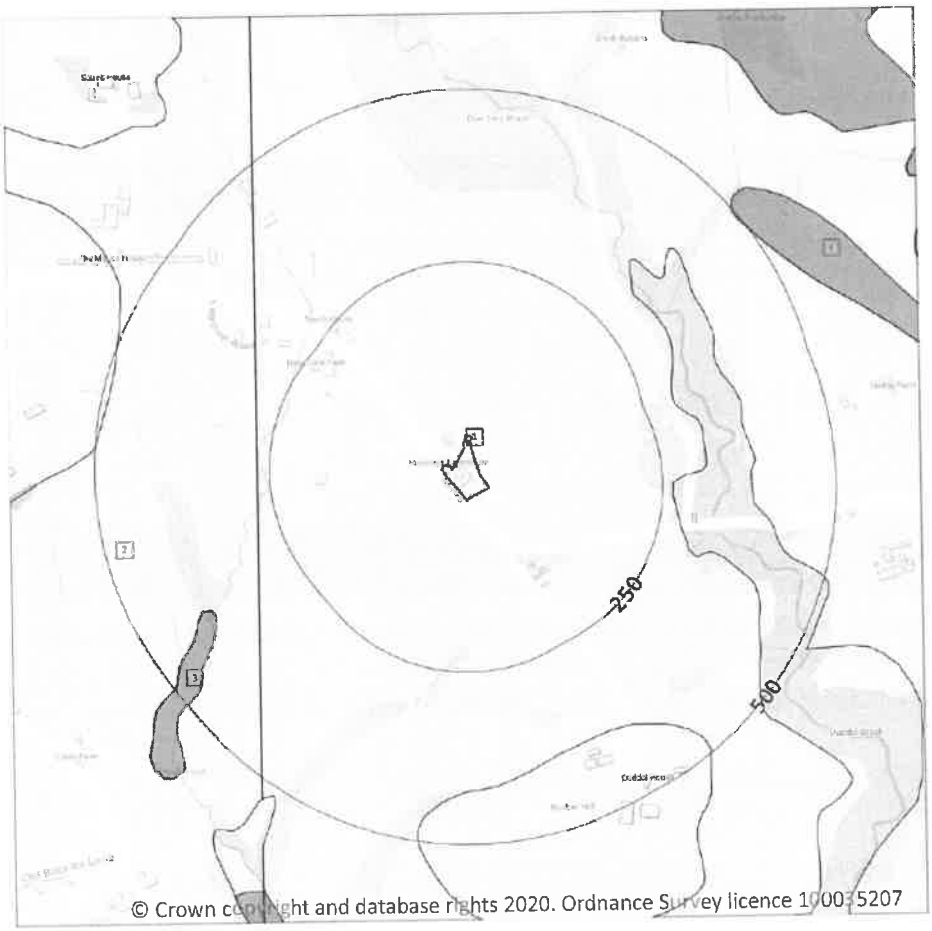
4.21 Pollution inventory radioactive waste

Records within 500m	0

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

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

5 Hydrogeology - Superficial aquifer



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive
- Unknown

5.1 Superficial aquifer

Records within 500m 4

Aquifer status of groundwater held within superficial geology.

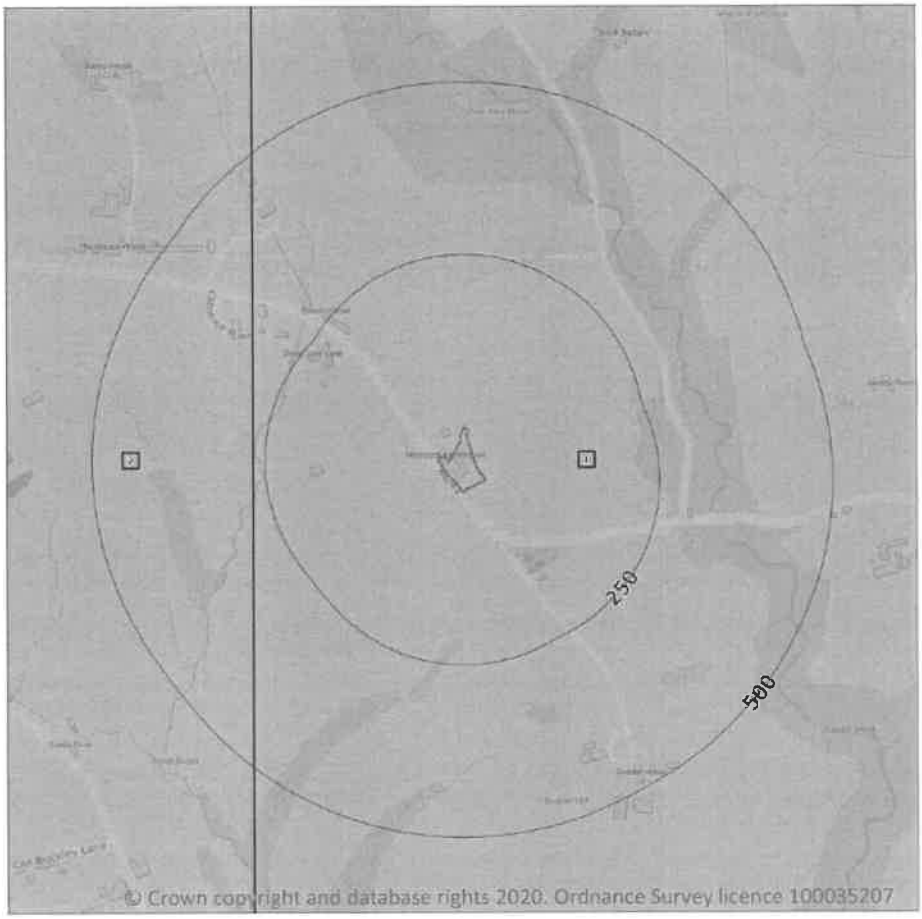
Features are displayed on the Hydrogeology map on **page 27**

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**
2	267m W	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non aquifer in different locations due to the variable characteristics of the rock type

ID	Location	Designation	Description
3	391m SW	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	497m NE	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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**

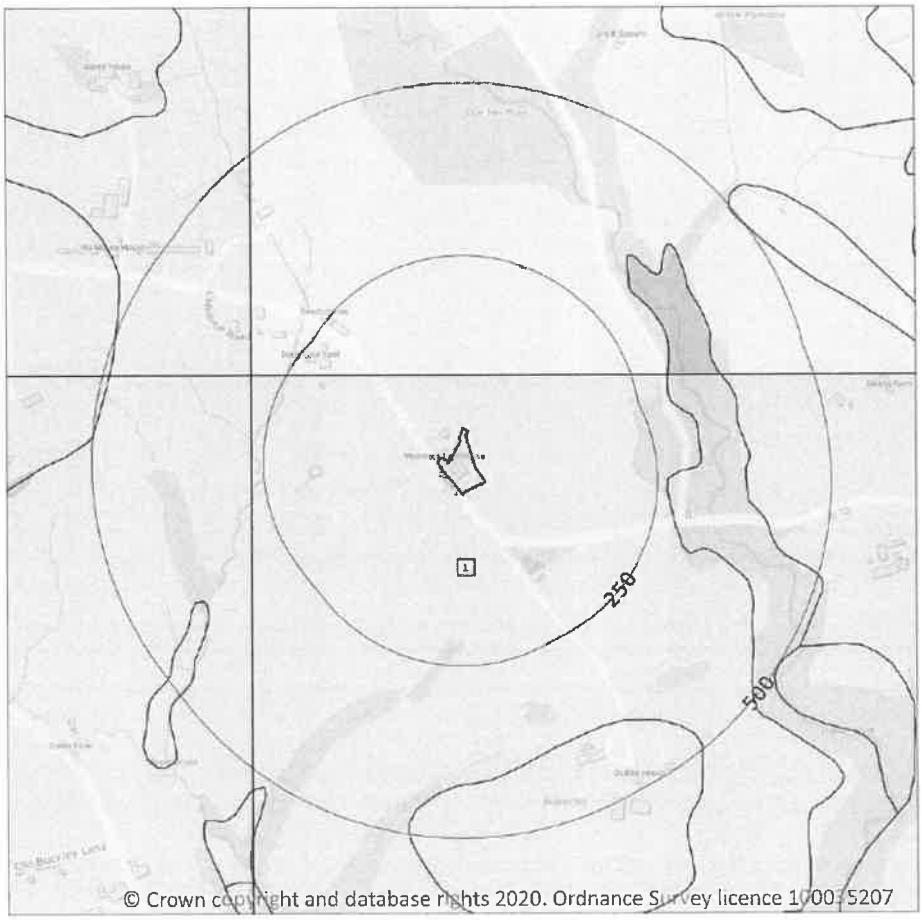
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 29**

ID	Location	Designation	Description
1	On site	Secondary A	**Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers**
2	267m W	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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

Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability
- Principal superficial aquifer, high vulnerability
- Secondary superficial aquifer, high vulnerability
- Principal superficial aquifer, medium vulnerability
- Secondary superficial aquifer, medium vulnerability
- Principal superficial aquifer, low vulnerability
- Secondary superficial aquifer, low vulnerability

Bedrock vulnerability
- Principal bedrock aquifer, high vulnerability
- Secondary bedrock aquifer, high vulnerability
- Principal bedrock aquifer, medium vulnerability
- Secondary bedrock aquifer, medium vulnerability
- Principal bedrock aquifer, low vulnerability
- Secondary bedrock aquifer, low vulnerability

Other information
- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	1

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 31**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	**On site**	**Summary Classification: Secondary bedrock aquifer - Medium 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: High**	**Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures**

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0

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

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

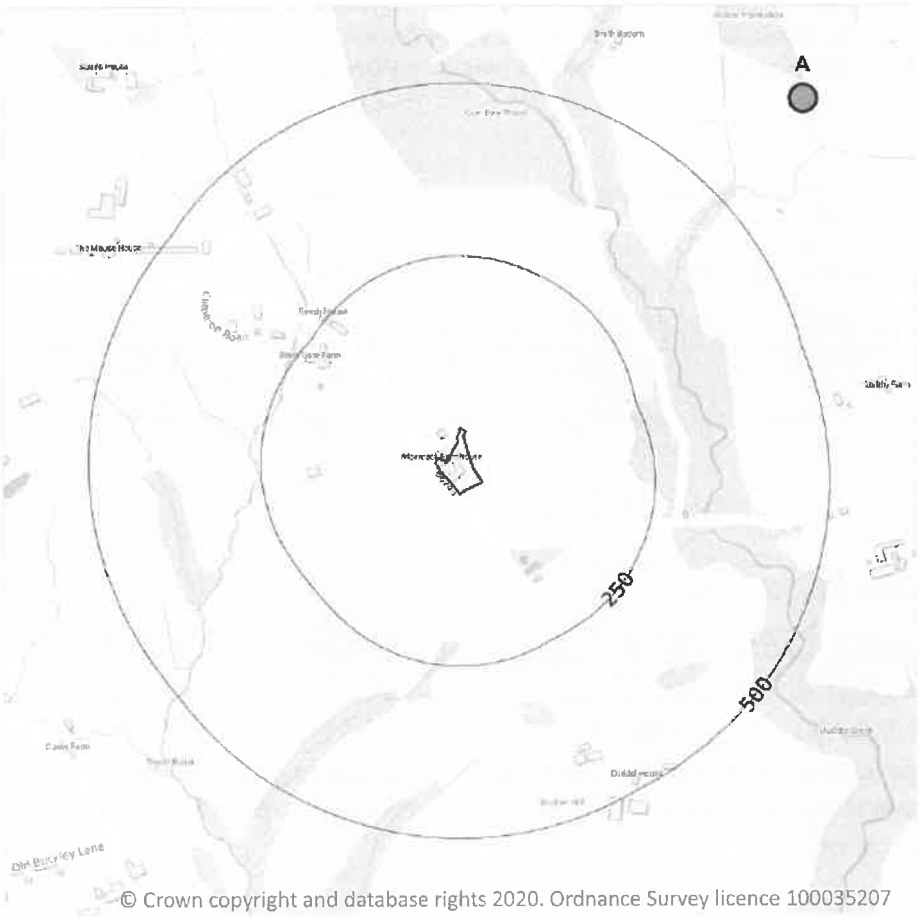
5.5 Groundwater vulnerability- local information

Records on site	0

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

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

Abstractions and Source Protection Zones



Site Outline

Search buffers in metres (m)

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

5.6 Groundwater abstractions

Records within 2000m	5

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 33**

ID	Location	Details	
-	1400m NW	Status: Historical Licence No: 2671338031 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: UNDERGROUND STRATA IN RIBCHESTER Data Type: Point Name: BARR Easting: 364420 Northing: 439010	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 23/10/1996 Expiry Date: - Issue No: 100 Version Start Date: 23/10/1996 Version End Date: -
-	1954m S	Status: Historical Licence No: 2671338033 Details: General Farming & Domestic Direct Source: Ground Water - North West Region Point: "BOREHOLE AT HOLMES FARM, RIBCHESTER" Data Type: Point Name: PARKER Easting: 365840 Northing: 435950	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 1 Version Start Date: 22/10/1999 Version End Date: -
-	1954m S	Status: Historical Licence No: 2671338033 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT HOLMES FARM, RIBCHESTER" Data Type: Point Name: PARKER Easting: 365840 Northing: 435950	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 1 Version Start Date: 22/10/1999 Version End Date: -
-	1954m S	Status: Historical Licence No: 2671338033 Details: General Farming & Domestic Direct Source: Ground Water - North West Region Point: BOREHOLE AT HOLMES FARM, RIBCHESTER Data Type: Point Name: PARKER Easting: 365840 Northing: 435950	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 1 Version Start Date: 22/10/1999 Version End Date: -
-	1954m S	Status: Historical Licence No: 2671338033 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT HOLMES FARM, RIBCHESTER Data Type: Point Name: PARKER Easting: 365840 Northing: 435950	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 1 Version Start Date: 22/10/1999 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	9

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 33**

ID	Location	Details	
A	685m NE	Status: Historical Licence No: 2671338019 Details: General Farming & Domestic Direct Source: "Surface, Non-Tidal - North West Region" Point: "SPRING AT WILLOW PLANTATION,DUTTON LONGRIDGE,PRESTON." Data Type: Point Name: JACKSON Easting: 365800 Northing: 438400	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 07/04/1967 Expiry Date: - Issue No: 100 Version Start Date: 16/12/1993 Version End Date: -
A	685m NE	Status: Historical Licence No: 2671338019 Details: General Farming & Domestic Direct Source: Surface, Non-Tidal - North West Region Point: SPRING AT WILLOW PLANTATION,DUTTON LONGRIDGE,PRESTON. Data Type: Point Name: JACKSON Easting: 365800 Northing: 438400	Annual Volume (m^3): - Max Daily Volume (m^3): Original Application No: Original Start Date: 07/04/1967 Expiry Date: - Issue No: 100 Version Start Date: 16/12/1993 Version End Date: -
-	1343m NW	Status: Historical Licence No: 2671338021 Details: General use relating to Secondary Category (Medium Loss) Direct Source: "Surface, Non Tidal - North West Region" Point: "SPRING AT NEW DROP,RIBCHESTER." Data Type: Point Name: BARR Easting: 364500 Northing: 439000	Annual Volume (m^3): Max Daily Volume (m^3): Original Application No: - Original Start Date: 17/10/1969 Expiry Date: Issue No: 100 Version Start Date: 24/10/1996 Version End Date: -

ID	Location	Details	
-	1343m NW	Status: Historical Licence No: 2671338021 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: "Surface, Non-Tidal - North West Region" Point: "SPRING AT NEW DROP,RIBCHESTER." Data Type: Point Name: BARR Easting: 364500 Northing: 439000	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/10/1969 Expiry Date: - Issue No: 100 Version Start Date: 24/10/1996 Version End Date: -
-	1343m NW	Status: Historical Licence No: 2671338021 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Surface, Non-Tidal - North West Region Point: SPRING AT NEW DROP,RIBCHESTER. Data Type: Point Name: BARR Easting: 364500 Northing: 439000	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/10/1969 Expiry Date: - Issue No: 100 Version Start Date: 24/10/1996 Version End Date: -
-	1343m NW	Status: Historical Licence No: 2671338021 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Surface, Non-Tidal - North West Region Point: SPRING AT NEW DROP,RIBCHESTER. Data Type: Point Name: BARR Easting: 364500 Northing: 439000	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/10/1969 Expiry Date: - Issue No: 100 Version Start Date: 24/10/1996 Version End Date: -
-	1754m NW	Status: Historical Licence No: 2671338012 Details: Potable Water Supply - Direct Direct Source: "Surface, Non-Tidal - North West Region" Point: "INTAKE FROM COWLEY BRK, DUTTON" Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 364100 Northing: 439200	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 30/06/1966 Expiry Date: - Issue No: 100 Version Start Date: 16/01/1995 Version End Date:

ID	Location	Details	
-	1754m NW	Status: Active Licence No: 2671338012 Details: Potable Water Supply - Direct Direct Source: Surface, Non Tidal - North West Region Point: INTAKE FROM COWLEY BRK, DUTTON Data Type: Point Name: United Utilities Water Ltd Easting: 364100 Northing: 439200	Annual Volume (m^3): 3,532,969 Max Daily Volume (m^3): 37,277.20 Original Application No: - Original Start Date: 30/06/1966 Expiry Date: - Issue No: 100 Version Start Date: 16/01/1995 Version End Date: -
-	1765m E	Status: Historical Licence No: 2671338029 Details: General Farming & Domestic Direct Source: Surface, Non Tidal - North West Region Point: SPRING AND CATCHPIT AT HURST GREEN Data Type: Point Name: PENNINGTON Easting: 367100 Northing: 437900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 11/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/03/1966 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	5

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.

Features are displayed on the Abstractions and Source Protection Zones map on **page 33**

ID	Location	Details	
-	1343m NW	Status: Historical Licence No: 2671338021 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: "Surface, Non-Tidal - North West Region" Point: "SPRING AT NEW DROP,RIBCHESTER." Data Type: Point Name: BARR Easting: 364500 Northing: 439000	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/10/1969 Expiry Date: - Issue No: 100 Version Start Date: 24/10/1996 Version End Date:

ID	Location	Details	
-	1343m NW	Status: Historical Licence No: 2671338021 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Surface, Non-Tidal - North West Region Point: SPRING AT NEW DROP,RIBCHESTER. Data Type: Point Name: BARR Easting: 364500 Northing: 439000	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/10/1969 Expiry Date: - Issue No: 100 Version Start Date: 24/10/1996 Version End Date: -
-	1400m NW	Status: Historical Licence No: 2671338031 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: UNDERGROUND STRATA IN RIBCHESTER Data Type: Point Name: BARR Easting: 364420 Northing: 439010	Annual Volume (m^3): - Max Daily Volume (m^3): Original Application No: - Original Start Date: 23/10/1996 Expiry Date: - Issue No: 100 Version Start Date: 23/10/1996 Version End Date: -
-	1754m NW	Status: Historical Licence No: 2671338012 Details: Potable Water Supply Direct Direct Source: "Surface, Non-Tidal - North West Region" Point: "INTAKE FROM COWLEY BRK, DUTTON" Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 364100 Northing: 439200	Annual Volume (m^3): - Max Daily Volume (m^3): Original Application No: - Original Start Date: 30/06/1966 Expiry Date: - Issue No: 100 Version Start Date: 16/01/1995 Version End Date: -
-	1754m NW	Status: Active Licence No: 2671338012 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: INTAKE FROM COWLEY BRK, DUTTON Data Type: Point Name: United Utilities Water Ltd Easting: 364100 Northing: 439200	Annual Volume (m^3): 3,532,969 Max Daily Volume (m^3): 37,277.20 Original Application No: - Original Start Date: 30/06/1966 Expiry Date: - Issue No: 100 Version Start Date: 16/01/1995 Version End Date: -

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.

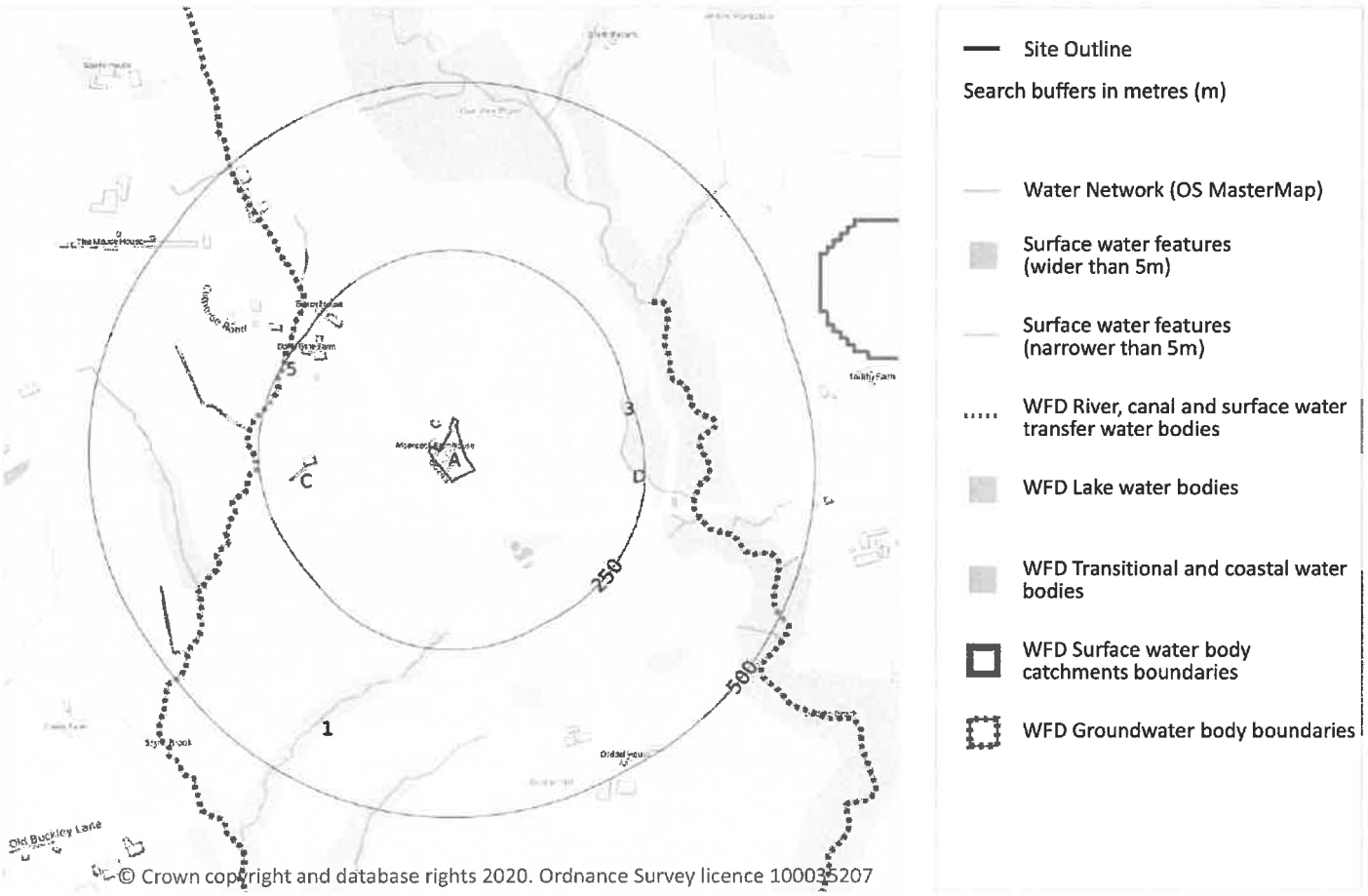
5.10 Source Protection Zones (confined aquifer)

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



6.1 Water Network (OS MasterMap)

Records within 250m 5

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

Features are displayed on the Hydrology map on **page 40**

ID	Location	Type of water feature	Ground level	Permanence	Name
C	178m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
D	216m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
1	224m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
3	237m NE	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
5	239m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Stydd Brook

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	6

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

Features are displayed on the Hydrology map on **page 40**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	1

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

Features are displayed on the Hydrology map on **page 40**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	**On site**	**River WB catchment**	**Duddel Brook**	**GB112071065700**	**Big Ribble**	**Ribble**

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
4	239m W	River	Duddel Brook	GB112071065700	Moderate	Good	Moderate	2016

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**	**Ribble Carboniferous Aquifers**	**GB41202G103000**	**Good**	**Good**	**Good**	**2015**

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

7 River and coastal flooding

7.1 Risk of Flooding from Rivers and Sea (RoFRaS)

Records within 50m	0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition; 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).

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

7.2 Historical Flood Events

Records within 250m	0

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

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

7.3 Flood Defences

Records within 250m	0

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	0

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

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

7.5 Flood Storage Areas

Records within 250m	0

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

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

River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0

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

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

7.7 Flood Zone 3

Records within 50m	0

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

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

8 Surface water flooding

8.1 Surface water flooding

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

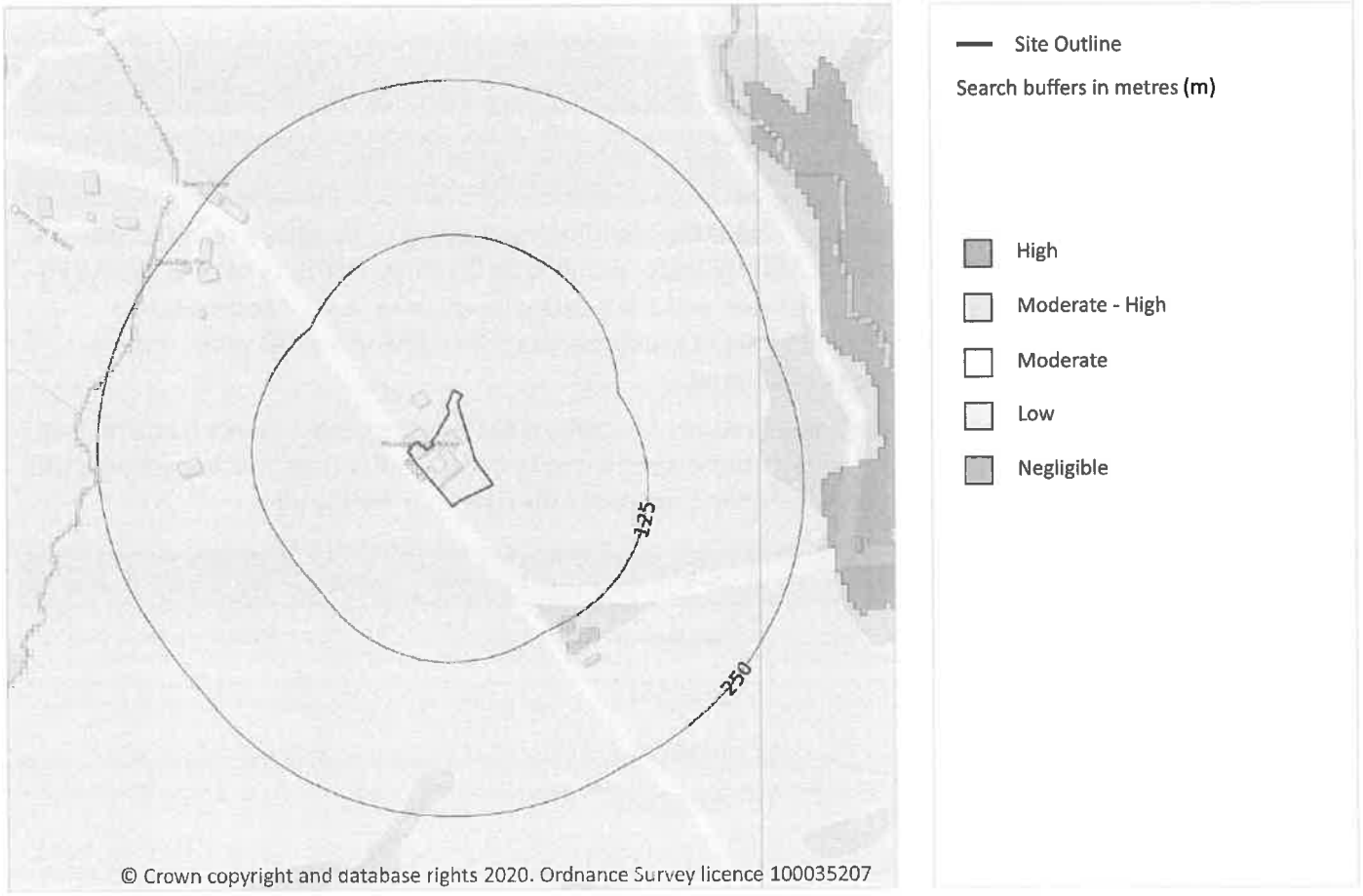
Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year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



9.1 Groundwater flooding

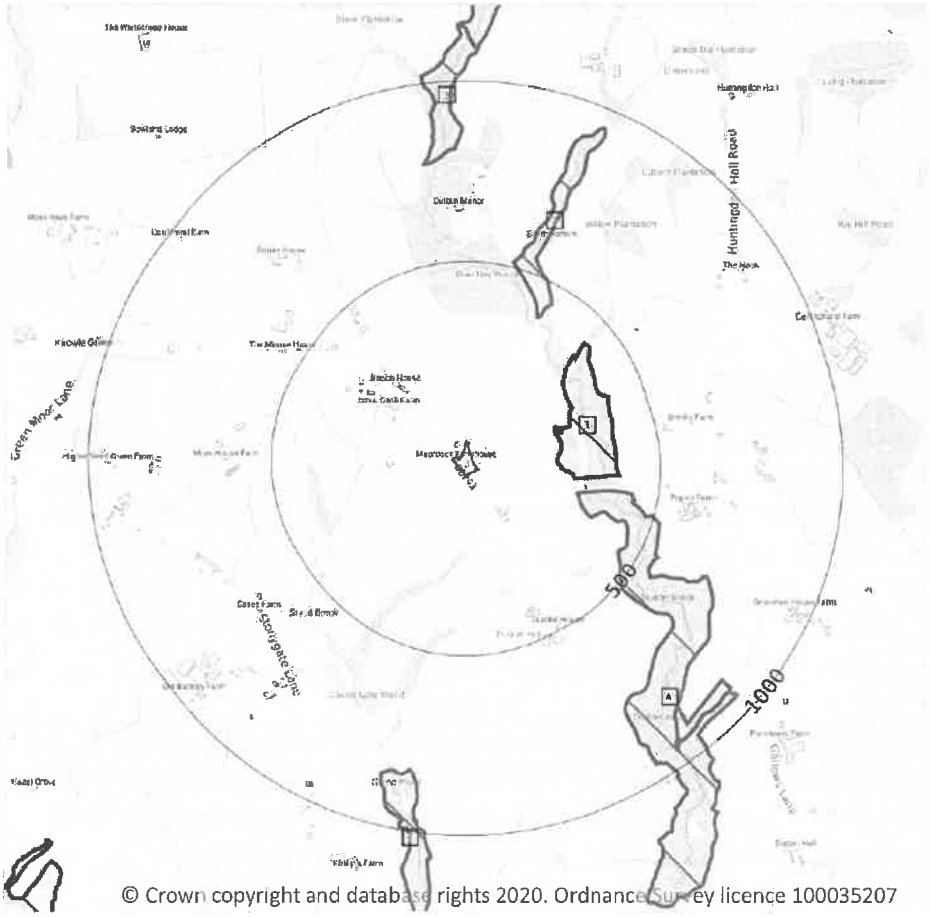
Highest risk on site	**Low**
Highest risk within 50m	**Low**

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



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	**10**

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	221m E	Unknown	Ancient & Semi-Natural Woodland
A	281m E	DUDDEL WOOD	Ancient & Semi-Natural Woodland
2	396m NE	OVERHEY WOOD	Ancient & Semi-Natural Woodland
3	777m N	Unknown	Ancient & Semi-Natural Woodland
4	830m S	STIDD WOOD	Ancient & Semi-Natural Woodland
A	860m SE	DUDDEL WOOD	Ancient Replanted Woodland
5	1085m N	Unknown	Ancient & Semi-Natural Woodland
6	1523m SW	BUCKLEY WOOD	Ancient & Semi-Natural Woodland
-	1582m S	LITTLE STIDD WOOD	Ancient & Semi-Natural Woodland
-	1854m E	CLOUGH BANK 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.

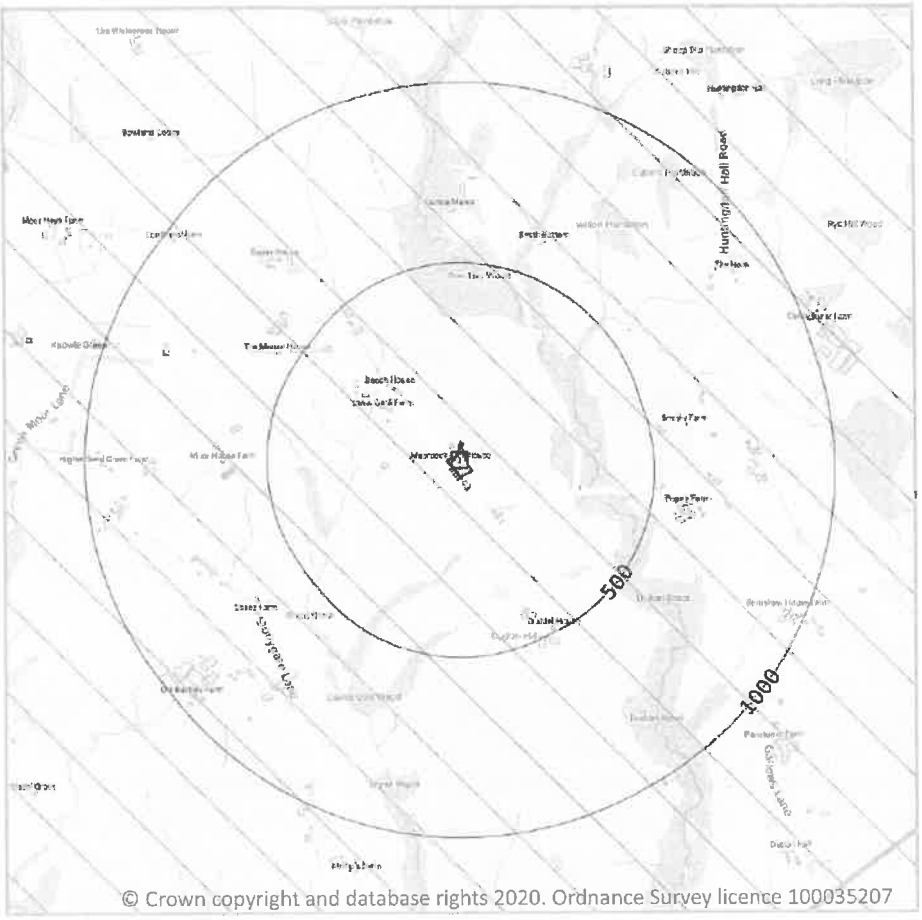
10.16 Nitrate Vulnerable Zones

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**	**Infrastructure - Airports, helipads and other aviation proposals.** **Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons > 4000m².** **Combustion - General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.** **Discharges - Any discharge of water or liquid waste of more than 20m³/day to ground (ie to seep away) or to surface water, such as a beck or stream (NB This does not include discharges to mains sewer which are unlikely to pose a risk at this location).**

This data is sourced from Natural England.

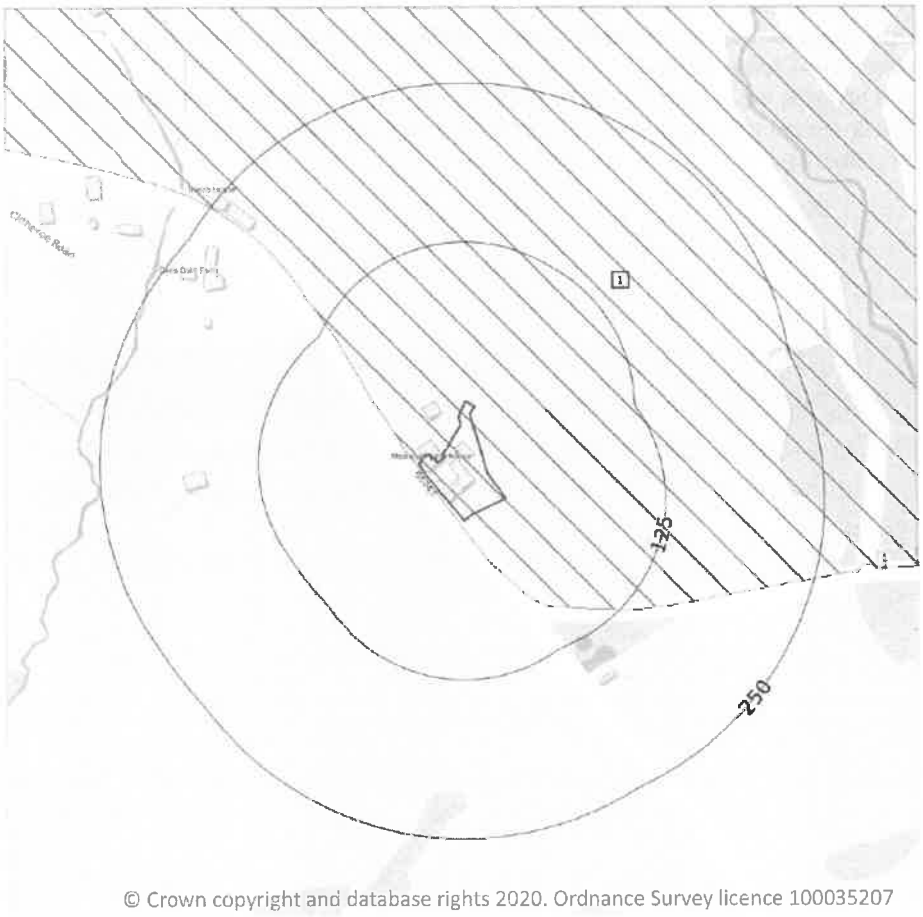
10.18 SSSI Units

Records within 2000m	**0**

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

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

11 Visual and cultural designations



Site Outline

Search buffers in metres (m)

Listed buildings

Conservation areas

Conservation areas - no data

National Parks

Areas of Outstanding Natural Beauty

Registered parks and gardens

Scheduled Monuments

World Heritage Sites

11.1 World Heritage Sites

Records within 250m	0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	1

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.

Features are displayed on the Visual and cultural designations map on **page 55**

ID	Location	NAME	Data Source
1	**On site**	**Forest Of Bowland**	**Natural England**

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 English Heritage, 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 English Heritage, 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 English Heritage, Cadw and Historic Environment Scotland.

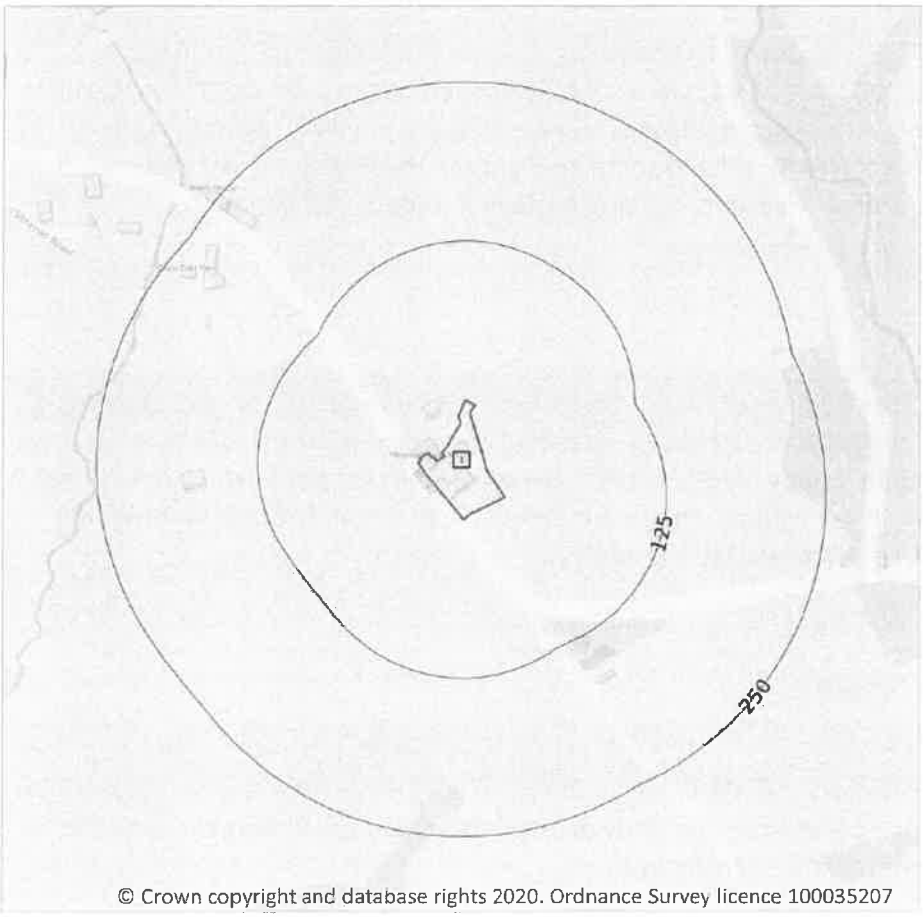
11.7 Registered Parks and Gardens

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 English Heritage, Cadw and Historic Environment Scotland.

12 Agricultural designations



Site Outline

Search buffers in metres (m)

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

12.1 Agricultural Land Classification

Records within 250m	1

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

Features are displayed on the Agricultural designations map on **page 58**

ID	Location	Classification	Description
1	On site	Grade 4	**Poor quality agricultural land. Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.**

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.

This data is sourced from Natural England.

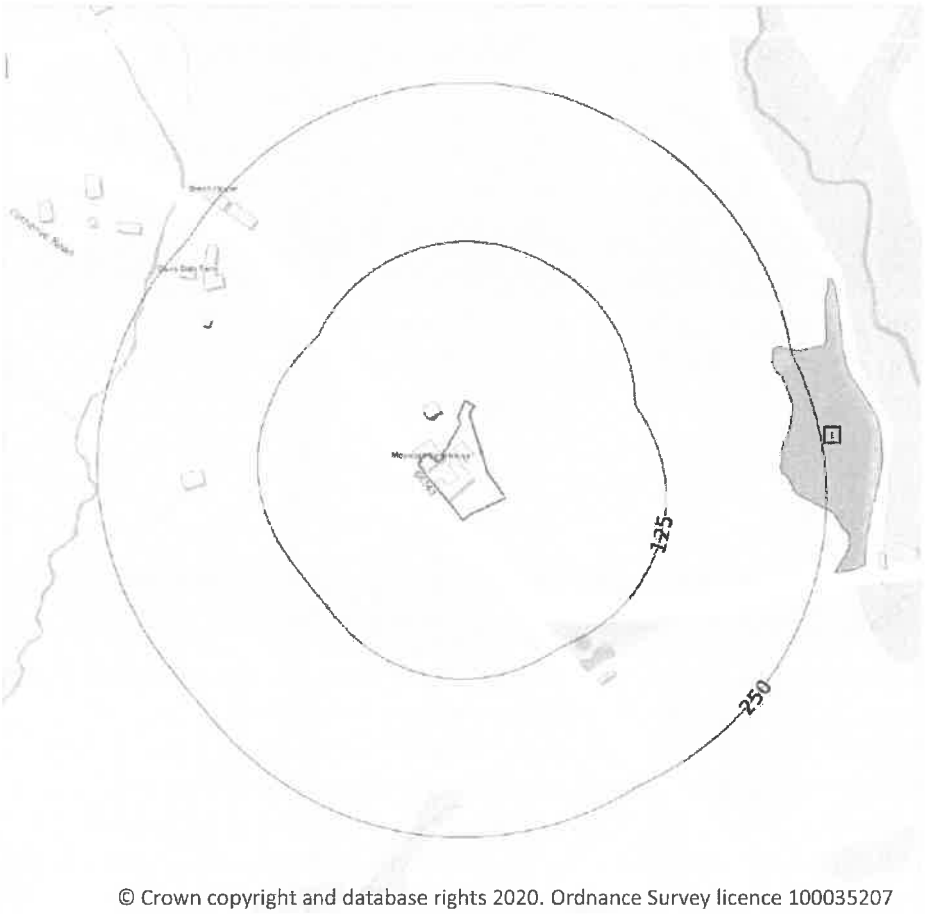
12.5 Countryside Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

13 Habitat designations



Site Outline

Search buffers in metres (m)

Priority Habitat Inventory
Open Mosaic Habitat
Limestone Pavement Orders

Habitat Networks

Primary Habitat
Restorable Habitat
Associated Habitats
Habitat Restoration-Creation
Network Enhancement Zone 1
Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m	1

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

Features are displayed on the Habitat designations map on **page 60**

ID	Location	Main Habitat	Other habitats
1	215m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

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

This data is sourced from Natural England.

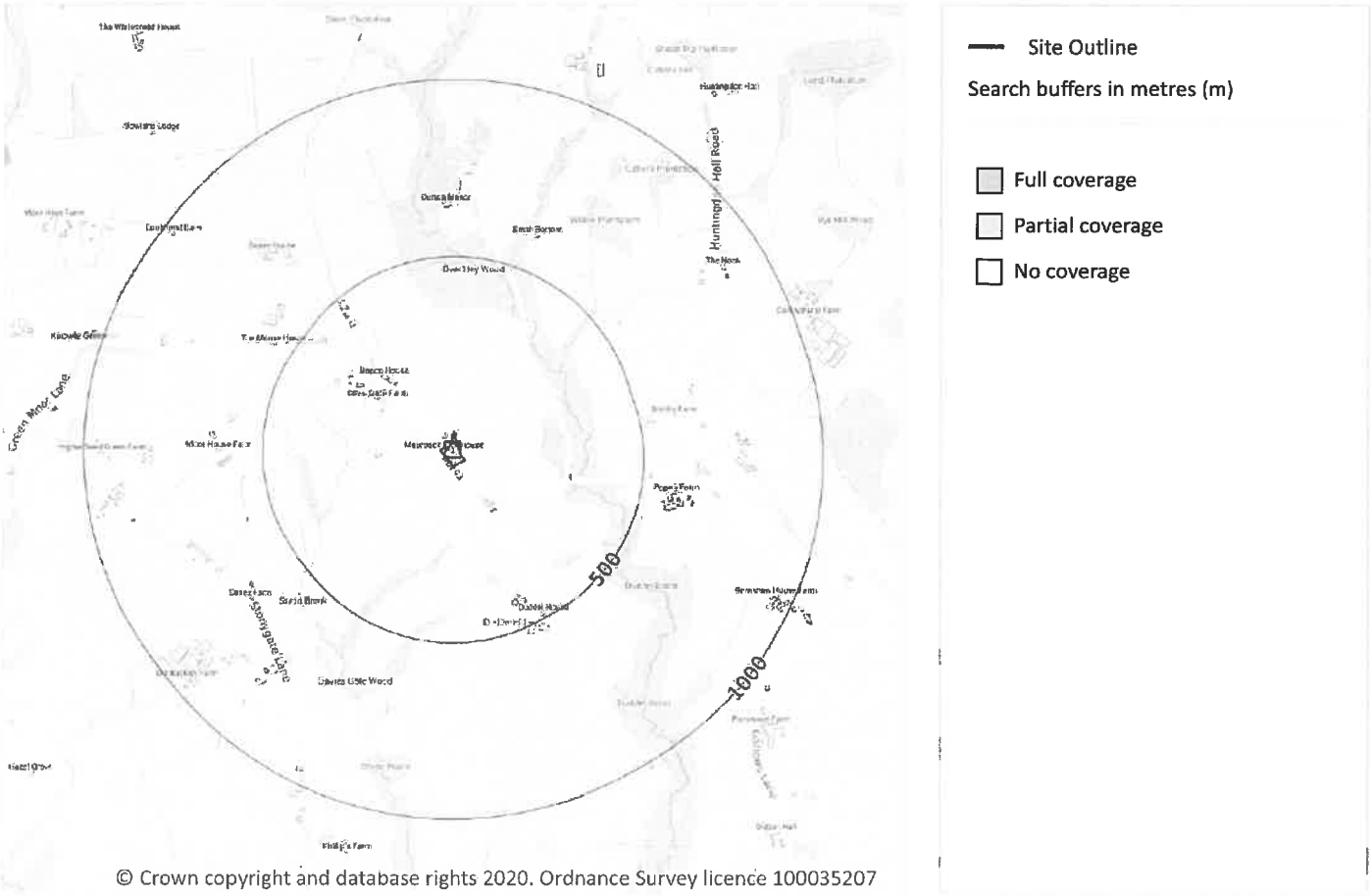
13.4 Limestone Pavement Orders

Records within 250m	0

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

This data is sourced from Natural England

14 Geology 1:10,000 scale - Availability



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 62**

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.

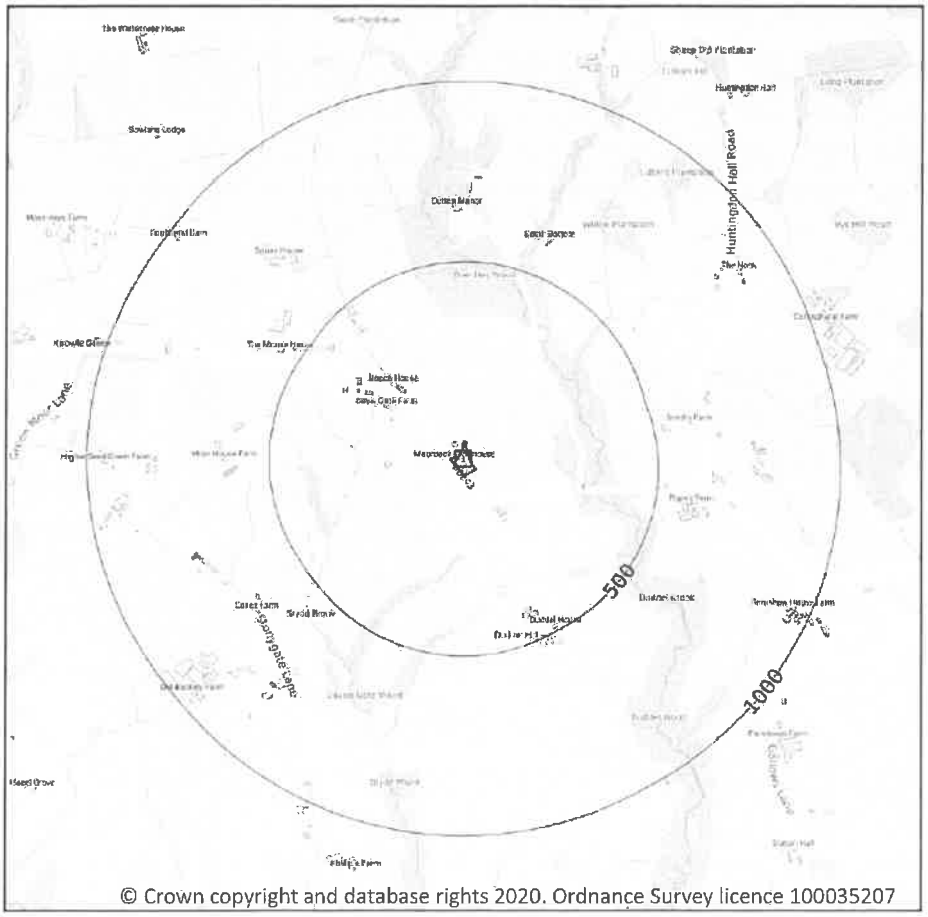
14.6 Bedrock faults and other linear features (10k)

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 66**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**EW067_garstang_v4**

This data is sourced from the British Geological Survey.

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

15.2 Artificial and made ground (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

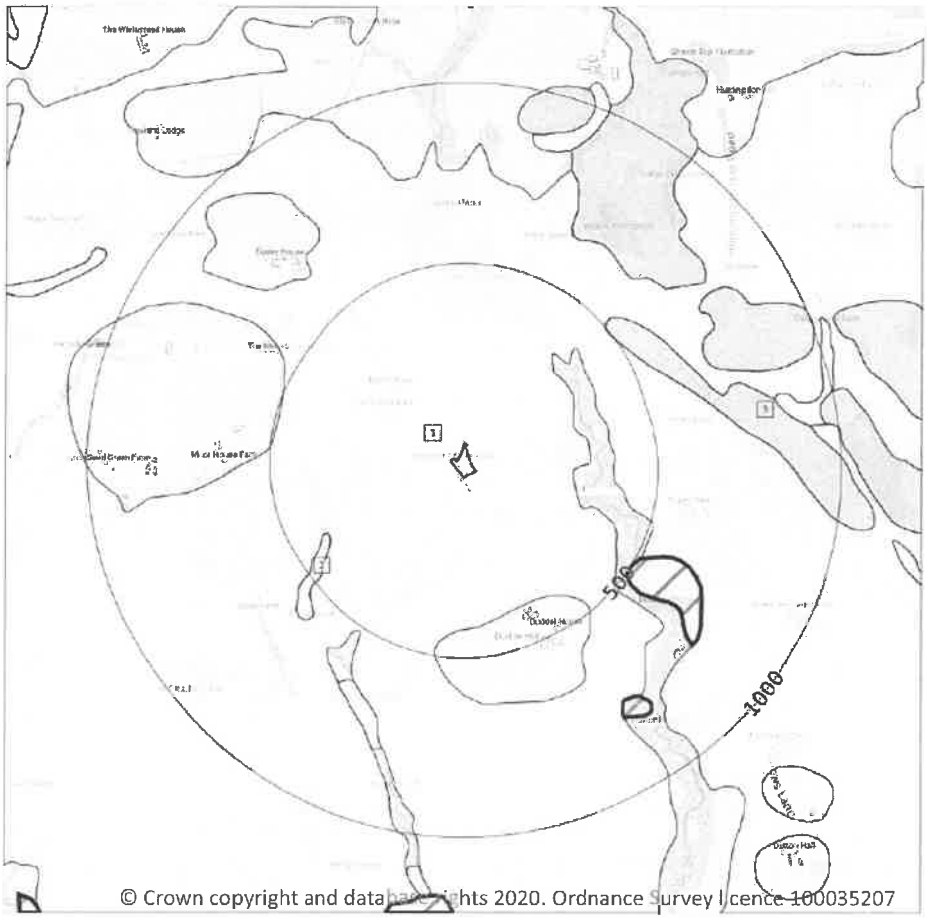
15.3 Artificial ground permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m 3

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 68**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TILLD-DMTN**	**TILL, DEVENSIAN**	**DIAMICTON**
2	391m SW	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
3	497m NE	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL

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.

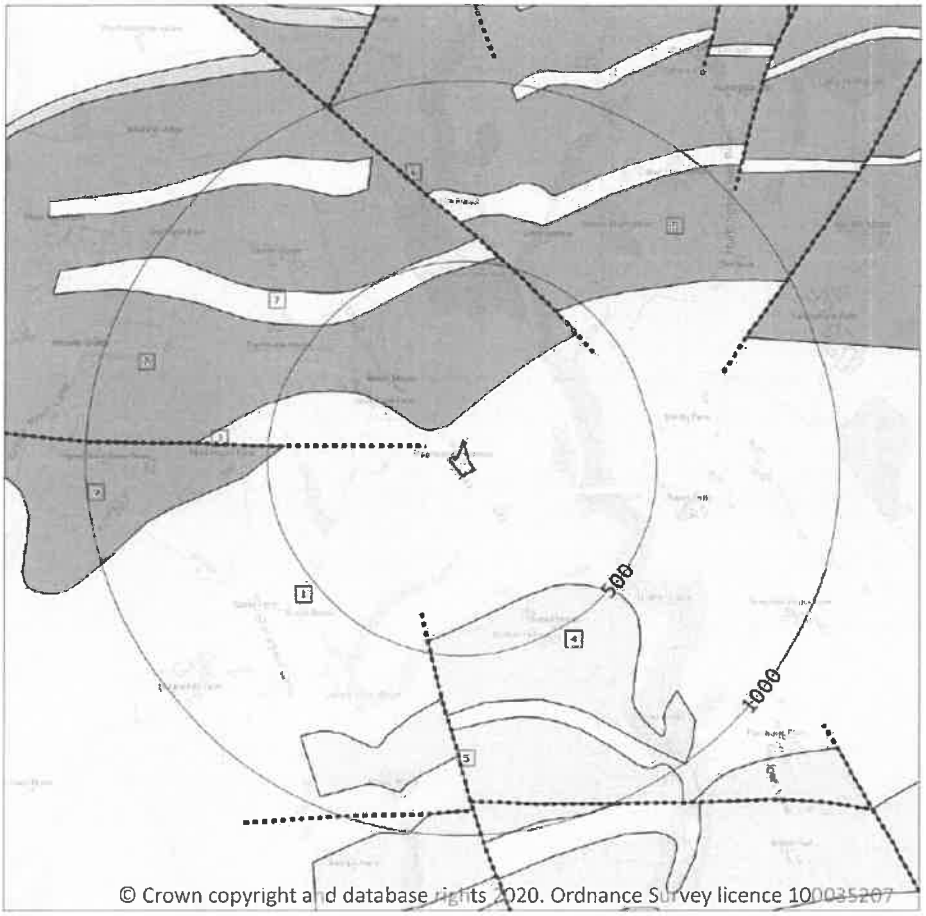
15.7 Landslip permeability (50k)

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 6

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 70**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**SILS-MDST**	**SILSDEN FORMATION - MUDSTONE**	**NAMURIAN**
2	63m NW	WWG-SDST	WARLEY WISE GRIT - SANDSTONE	NAMURIAN
4	378m SE	SILS-SDST	SILSDEN FORMATION - SANDSTONE	NAMURIAN

ID	Location	LEX Code	Description	Rock age
7	440m NW	WWG-STMD	WARLEY WISE GRIT - SANDSTONE AND MUDSTONE	NAMURIAN
8	441m NE	WWG-SDST	WARLEY WISE GRIT - SANDSTONE	NAMURIAN
9	456m W	WWG-SDST	WARLEY WISE GRIT - SANDSTONE	NAMURIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m **1**

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

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

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m **3**

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 70**

ID	Location	Category	Description
3	75m NW	FAULT	Fault, inferred
5	398m S	FAULT	Fault, inferred
6	428m NE	FAULT	Fault, inferred

This data is sourced from the British Geological Survey.

16 Boreholes

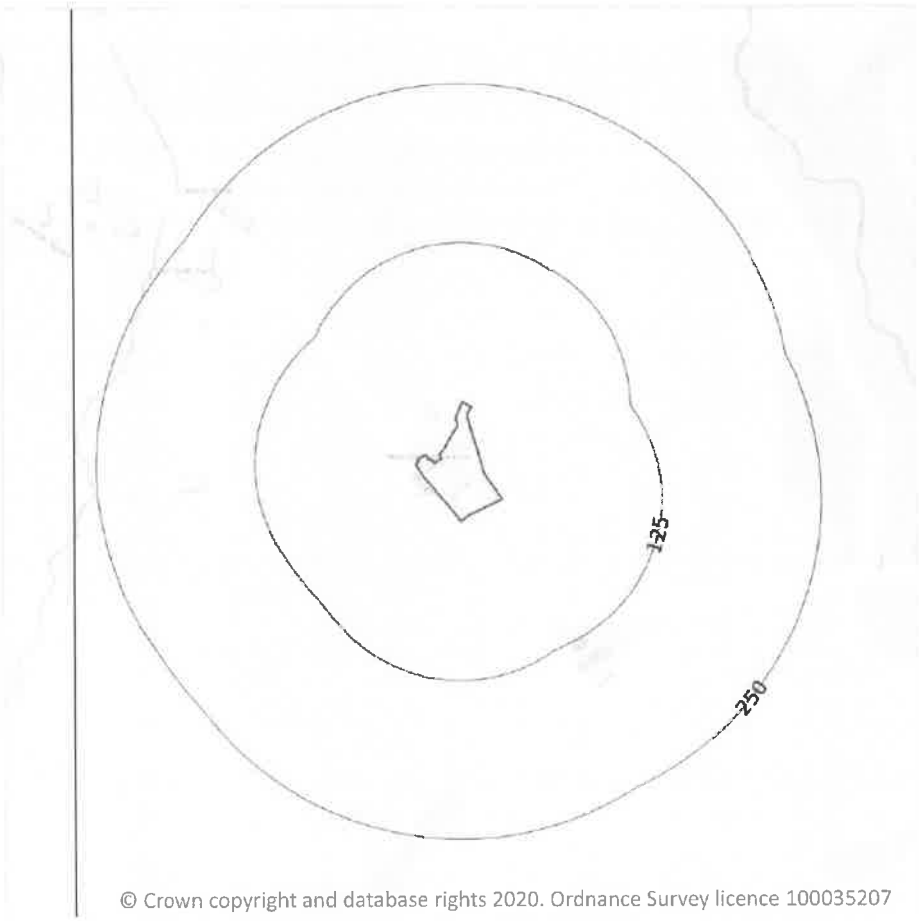
16.1 BGS Boreholes

Records within 250m	0

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

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

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

17.1 Shrink swell clays

Records within 50m	1

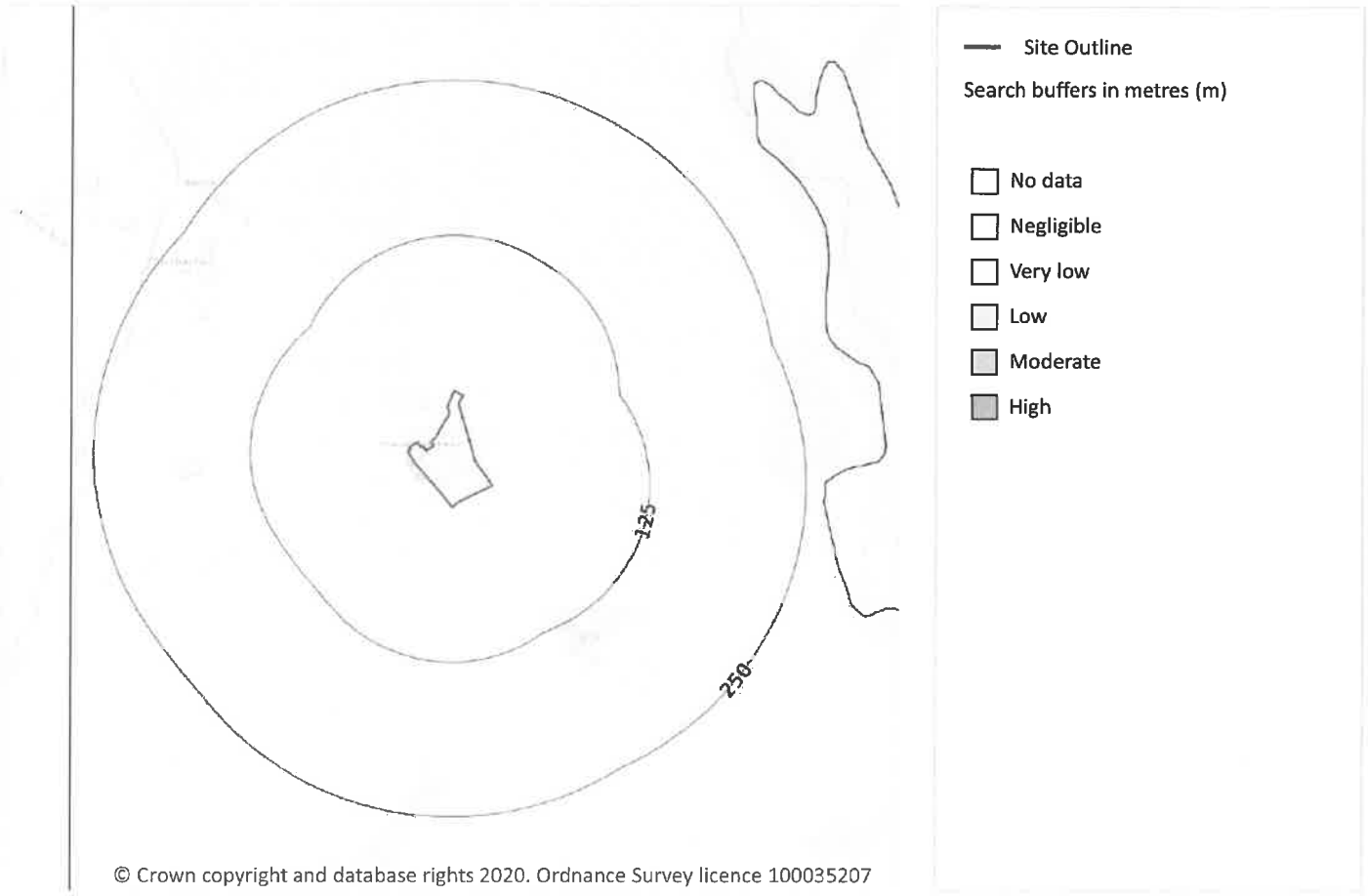
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

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

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



17.2 Running sands

Records within 50m	1

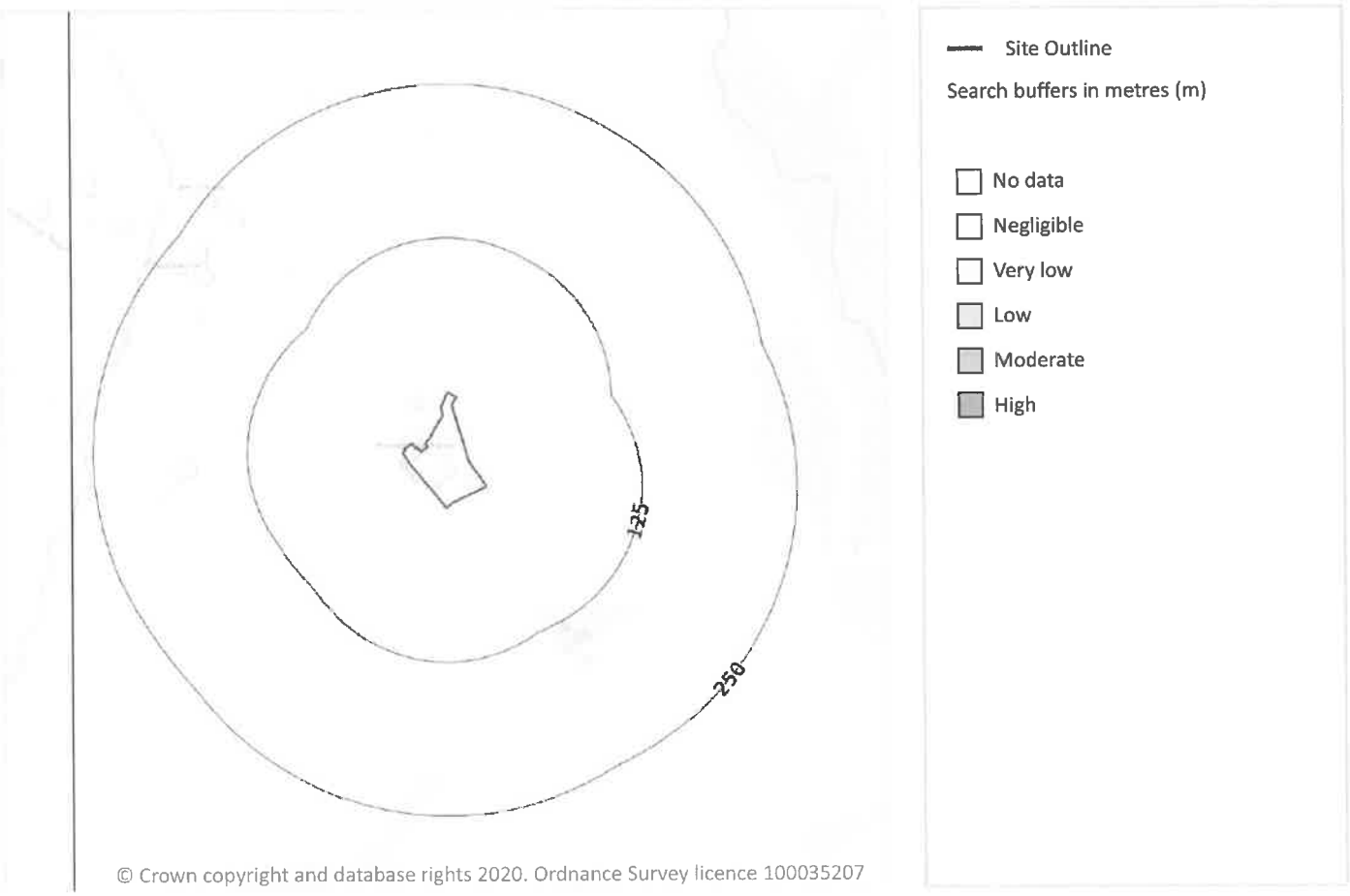
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



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 75**

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

17.4 Collapsible deposits

Records within 50m	1

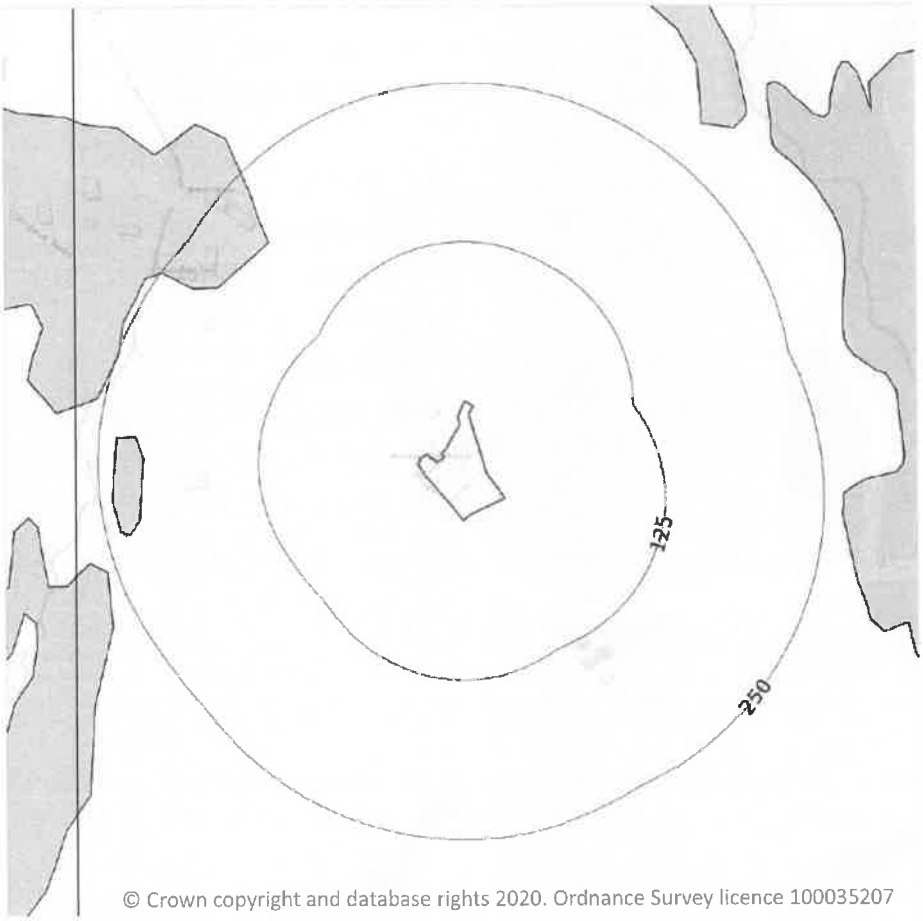
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

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

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 77**

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

17.6 Ground dissolution of soluble rocks

Records within 50m	1

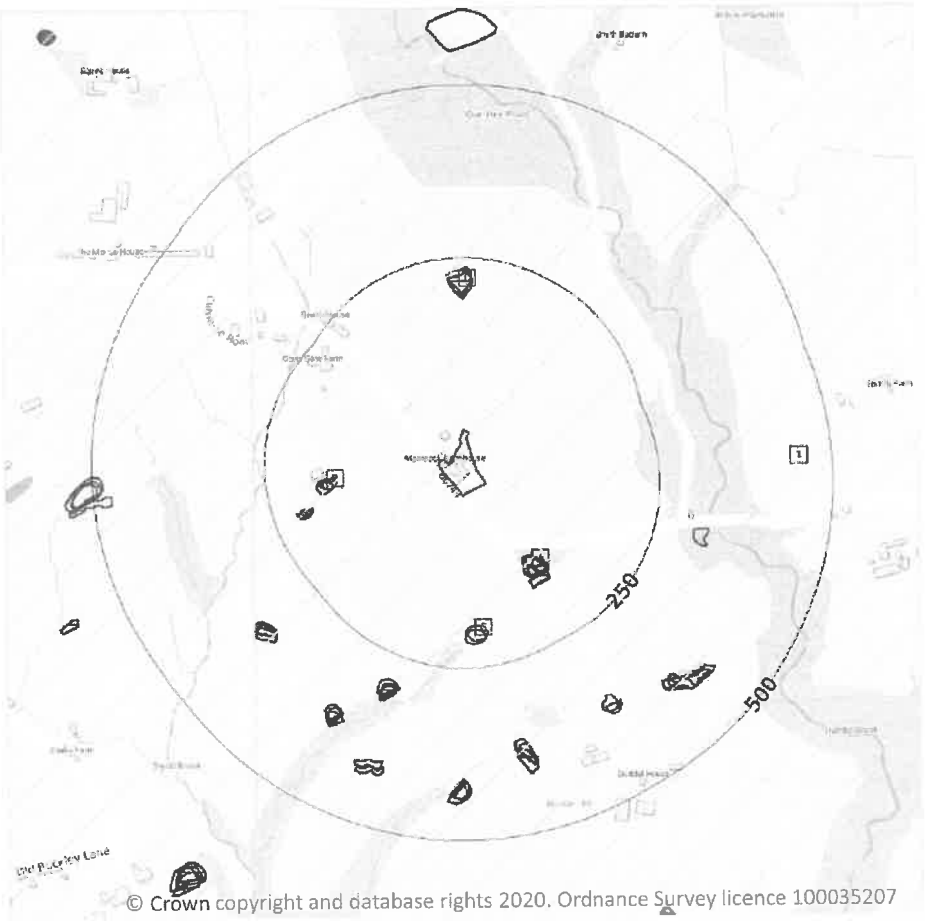
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 78**

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

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



Site Outline

Search buffers in metres (m)

Natural cavities (Area)

Natural cavities (Point)

BritPits

Surface ground workings

Underground workings

Historical Mineral Planning Areas

Mining Cavities

Non Coal Mining

Sporadic underground mining of restricted extent possible

Localised small scale underground mining possible

Small scale mining possible

Underground mining known or likely within or in close proximity

Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m	0

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

This data is sourced from Peter Brett Associates (PBA).

18.2 BritPits

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	18

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 79**

ID	Location	Land Use	Year of mapping	Mapping scale
A	120m SE	Unspecified Pits	1846	1:10560
A	121m SE	Ponds	1951	1:10560
A	121m SE	Ponds	1970	1:10000
A	134m SE	Ponds	1932	1:10560
A	134m SE	Ponds	1910	1:10560
A	134m SE	Ponds	1892	1:10560
B	149m W	Unspecified Pit	1967	1:2500
B	151m W	Unspecified Pit	1951	1:10560
B	155m W	Unspecified Pit	1932	1:10560
C	189m S	Unspecified Pit	1951	1:10560
B	191m W	Unspecified Pit	1951	1:10560
B	191m W	Unspecified Pit	1967	1:2500
D	192m N	Pond	1932	1:10560
D	192m N	Pond	1910	1:10560
B	194m W	Unspecified Pit	1932	1:10560
C	195m S	Unspecified Pit	1932	1:10560
D	199m N	Pond	1970	1:10000

ID	Location	Land Use	Year of mapping	Mapping scale
D	199m N	Pond	1951	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	0

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

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	2

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 79**

ID	Location	Name	Commodity	Class	Likelihood
1	**On site**	**Not available**	**Vein Mineral**	**A**	**Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered**
2	267m W	Not available	Vein Mineral	A	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered

This data is sourced from the British Geological Survey.

18.7 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 Peter Brett Associates (PBA).

18.8 JPB mining areas

Records on site	0

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

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	0

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

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	0

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

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

18.11 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Mining Searches UK.

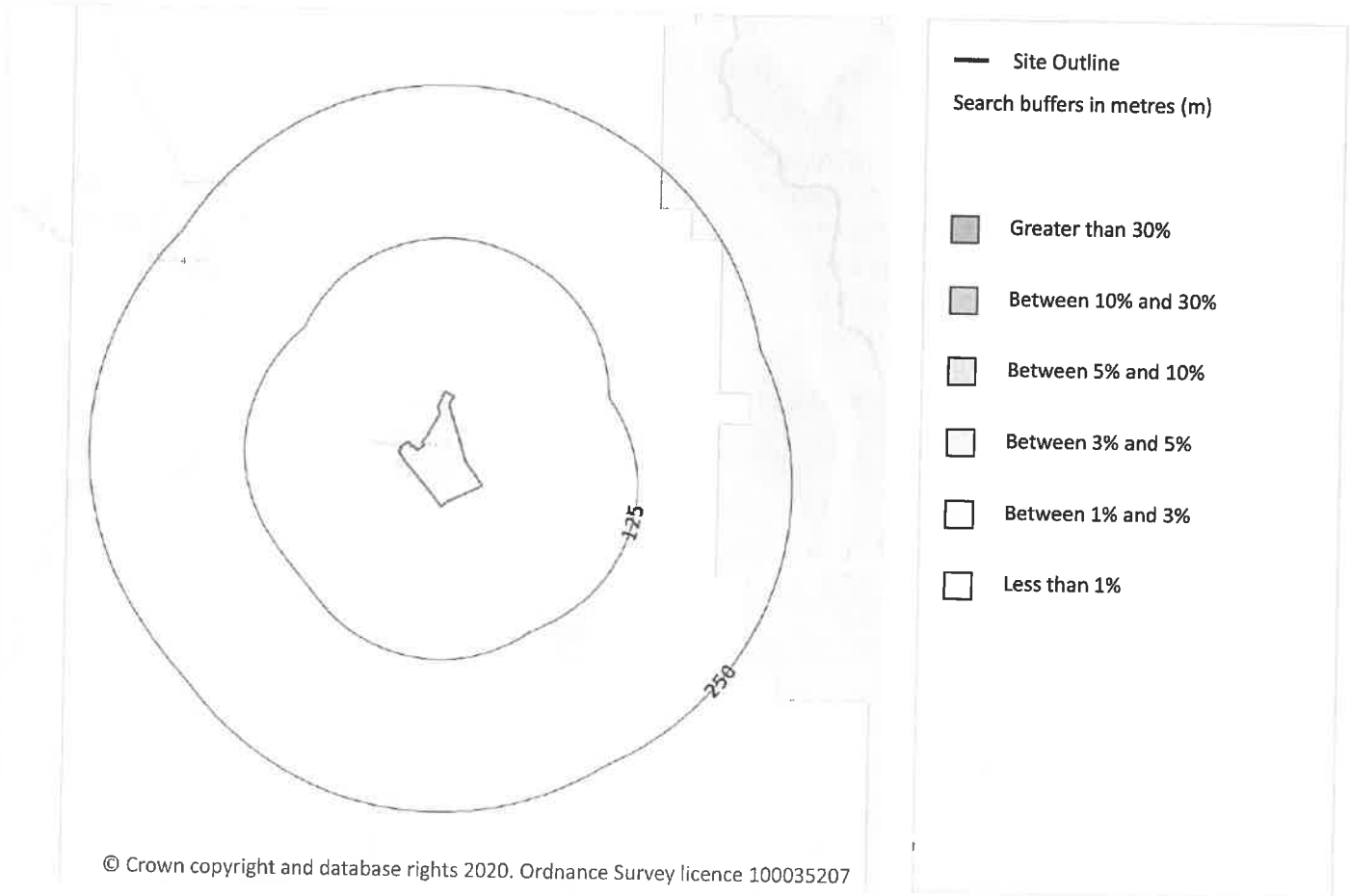
18.13 Clay mining

Records on site	0

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

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

19 Radon



19.1 Radon

Records on site	1

Estimated percentage of dwellings exceeding the Radon Action Level. This data is the highest resolution radon dataset available for the UK and is produced to a 75m level of accuracy to allow for geological data accuracy and a 'residential property' buffer. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain. The data was derived from both geological assessments and long term measurements of radon in more than 479,000 households.

Features are displayed on the Radon map on **page 84**

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

This data is sourced from the British Geological Survey and Public Health England.

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	1

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	30 - 45 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects

21.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	**0**

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

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	0

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

This data is sourced from HS2 ltd.

Data providers

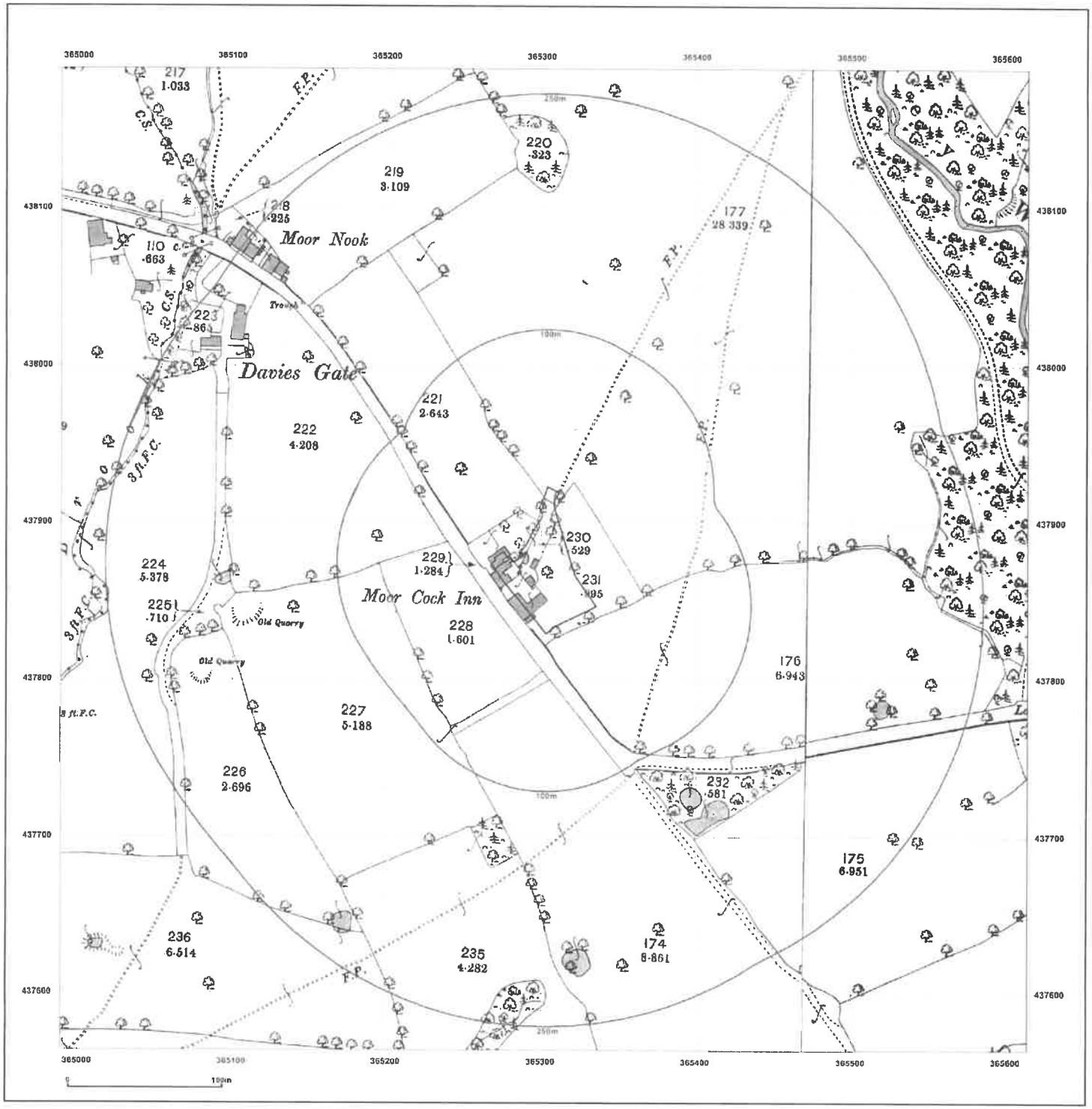
Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see https://www.groundsure.com/sources-reference.

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: https://www.groundsure.com/terms-and-conditions-jan-2020/.

Appendix III

- Ground Sure Report Historical Map Extracts (GSR – Mapinsight)



emapsite™

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Report Ref: EMS-629843_838112
Grid Ref: 365301, 437876

Map Name: County Series
Map date: 1892
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed 1892
Revised 1892
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1892
Revised 1892
Edition N/A
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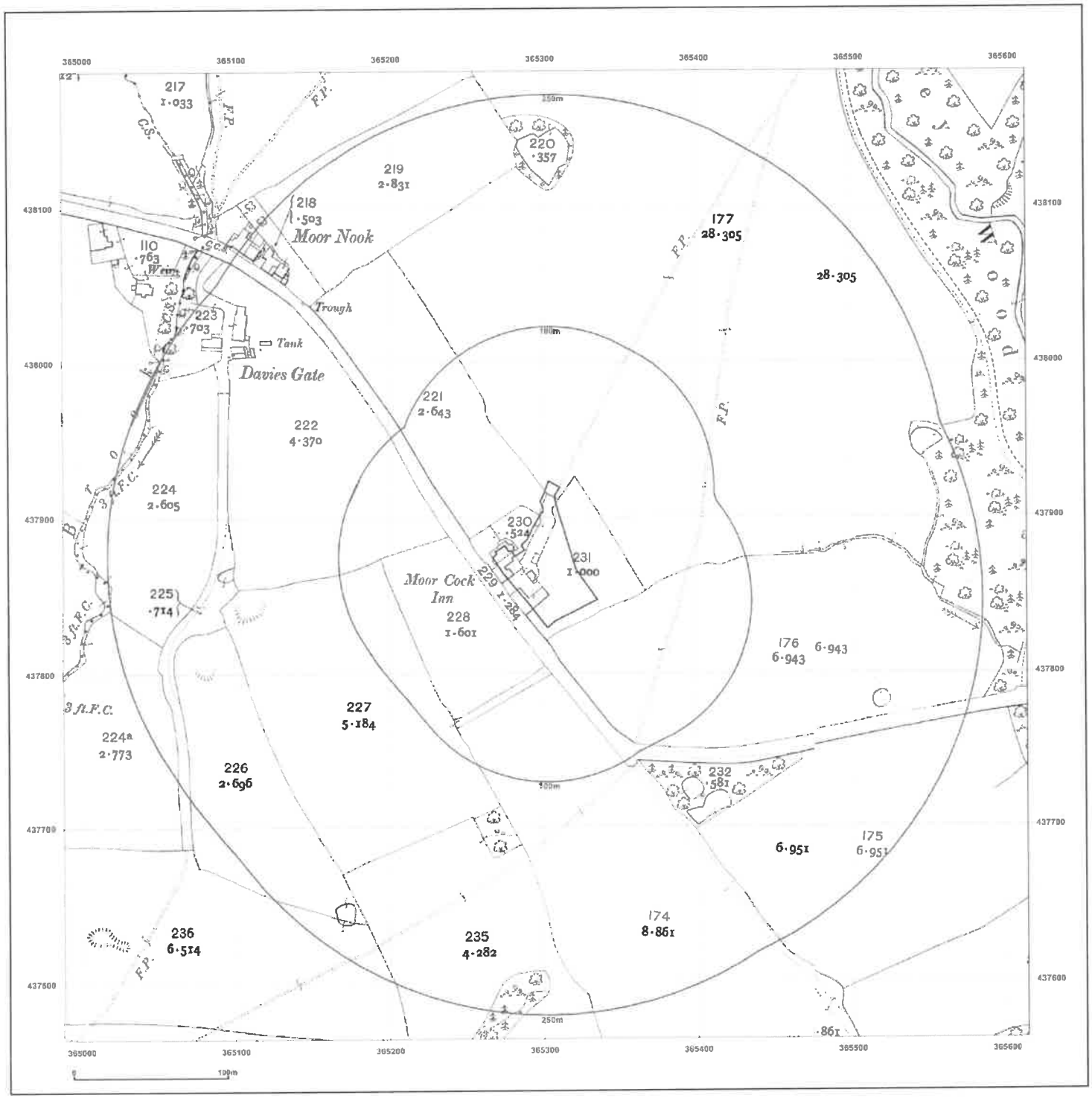

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Grid Ref: 365301, 437876

Map Name: County Series
Map date: 1912
Scale: 1:2,500
Printed at: 1:2,500

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Revised 1912
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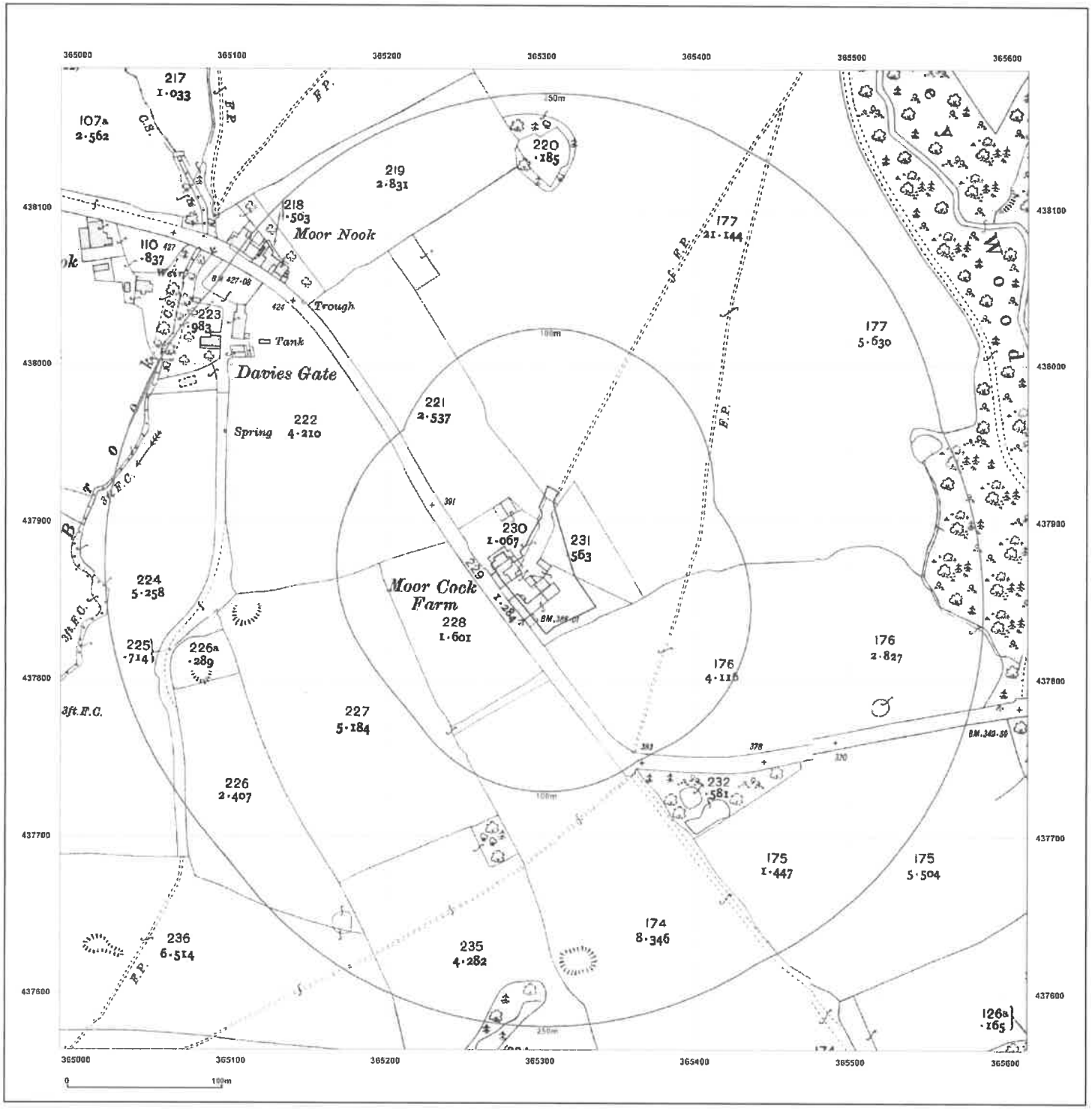

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Client Ref: EMS_629843_838112
Report Ref: EMS-629843_838112
Grid Ref: 365301, 437876

Map Name: County Series
Map date: 1932
Scale: 1:2,500
Printed at: 1:2,500

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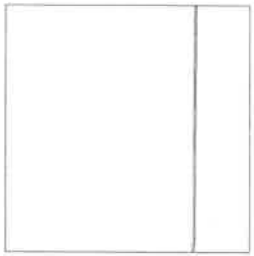
Surveyed 1932
Revised 1932
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1932
Revised 1932
Edition N/A
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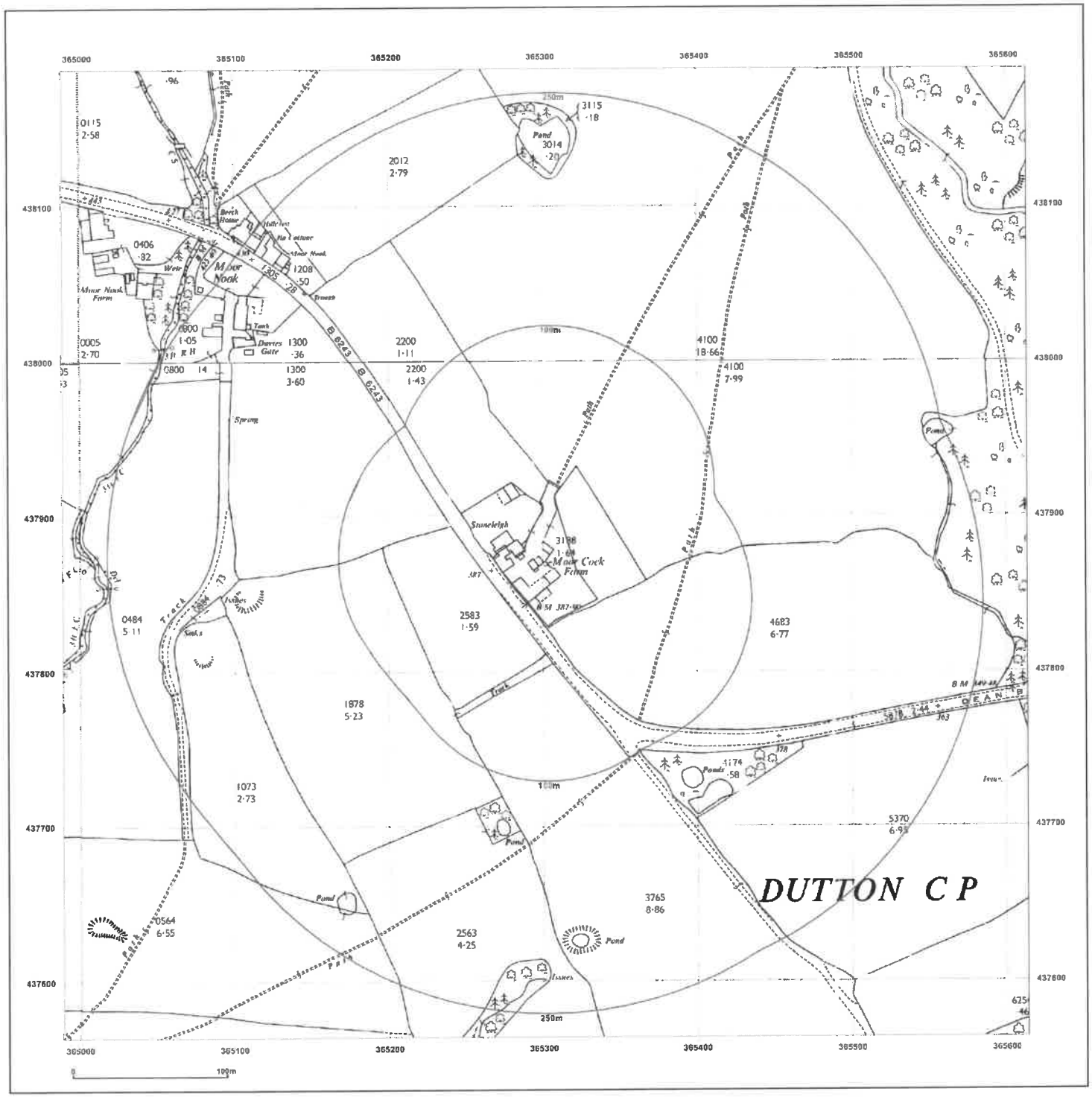

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Site Details:

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Dutton, Preston, PR3
2YT,Moorcock Farm, Clitheroe
Road,Dutton, Preston, PR3
2YT,PR3 2YT

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Report Ref: EMS-629843_838112
Grid Ref: 365301, 437876

Map Name: National Grid
Map date: 1967
Scale: 1:2,500
Printed at: 1:2,500

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

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

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
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Revised N/A
Edition N/A
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Production date: 26 August 2020

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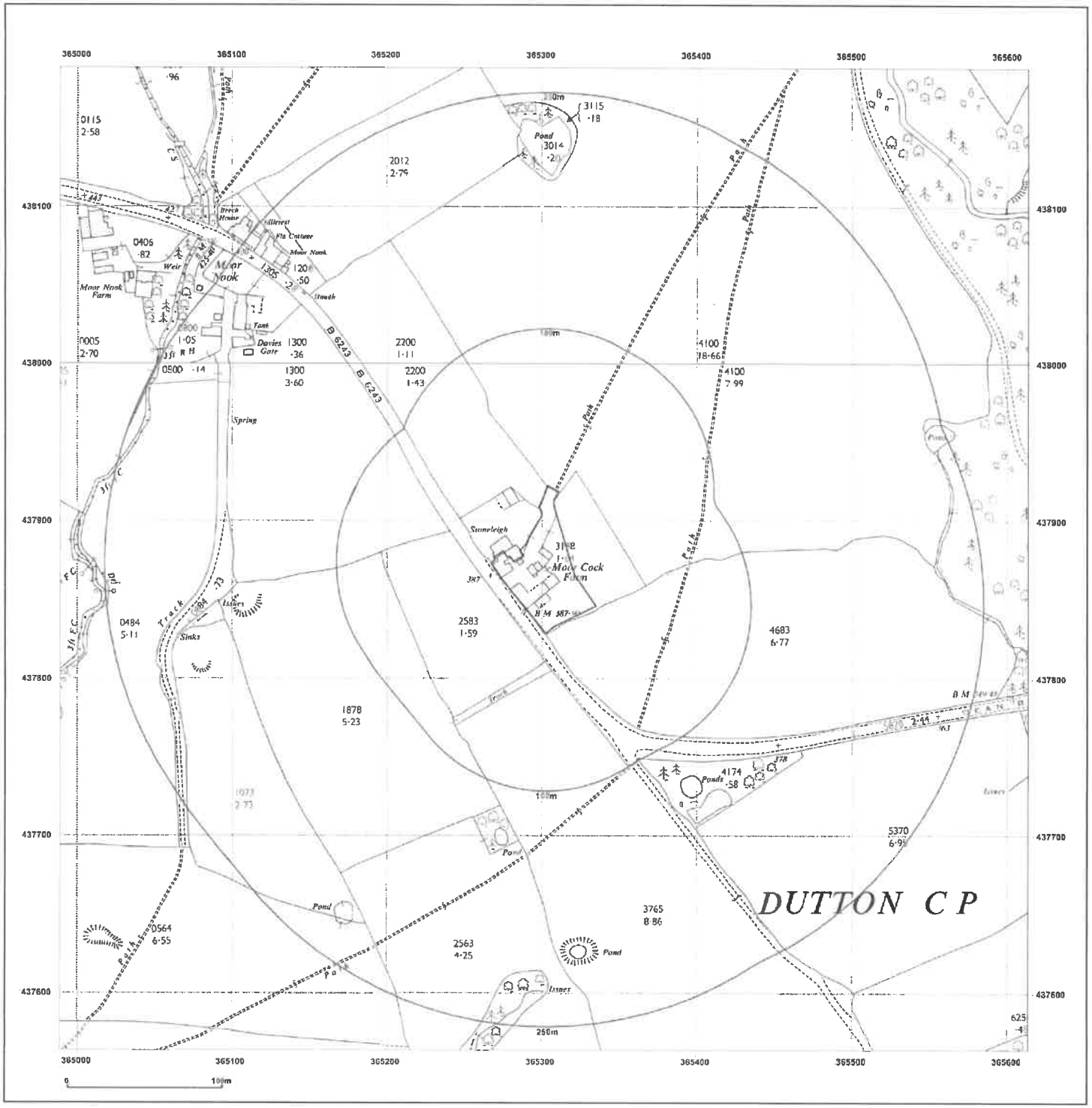

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Site Details:

Moorcock Farm, Clitheroe Road, Dutton, Preston, PR3 2YT,Moorcock Farm, Clitheroe Road,Dutton, Preston, PR3 2YT,PR3 2YT

Client Ref: EMS_629843_838112
Report Ref: EMS-629843_838112
Grid Ref: 365301, 437876

Map Name: National Grid
Map date: 1967
Scale: 1:2,500
Printed at: 1:2,500

N
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Surveyed 1967
Revised 1967
Edition N/A
Copyright 1967
Levelled 1961

Surveyed 1967
Revised 1967
Edition N/A
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Levelled 1961

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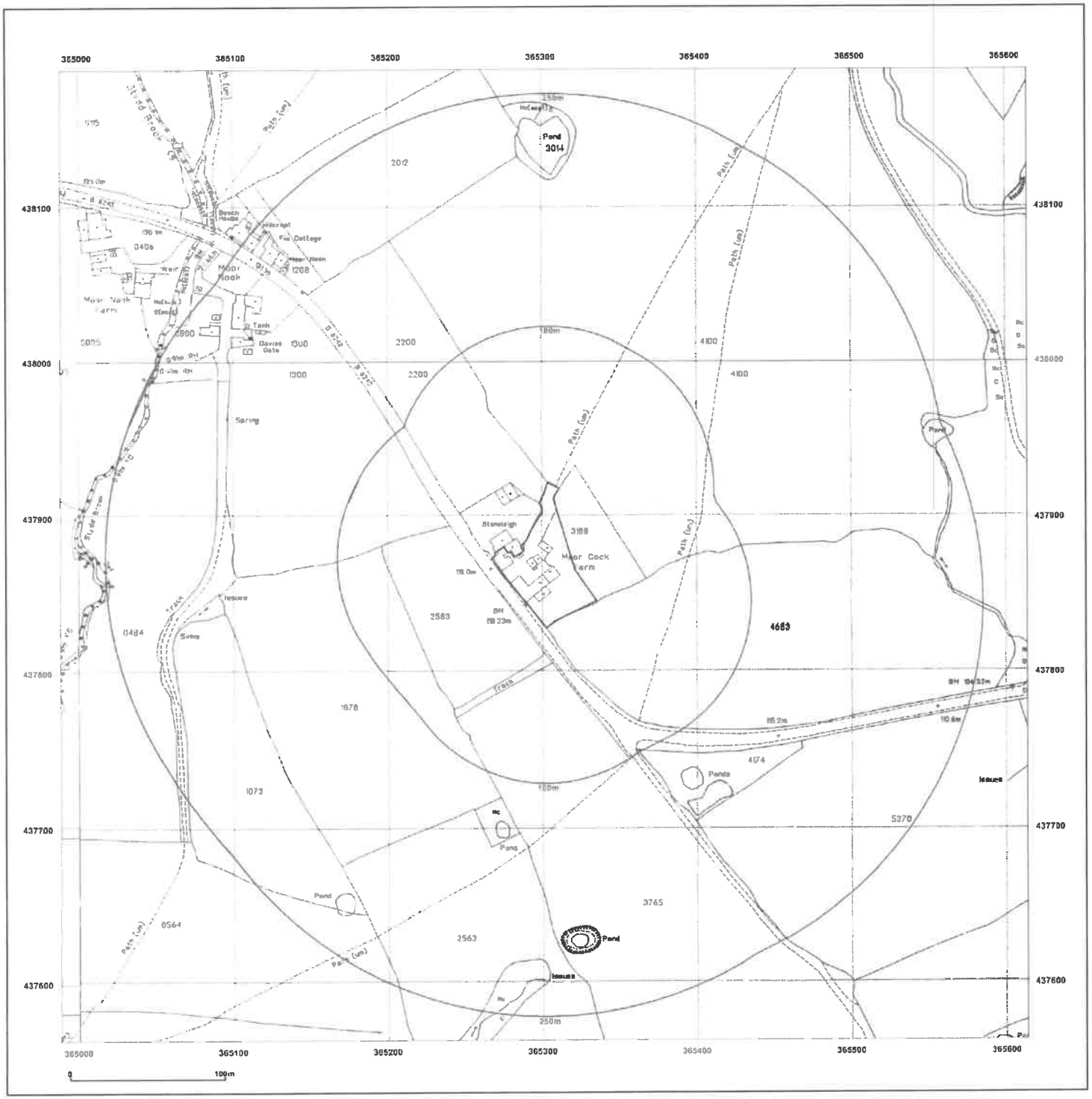

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Site Details:

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Dutton, Preston, PR3
2YT,Moorcock Farm, Clitheroe
Road,Dutton, Preston, PR3
2YT,PR3 2YT

Client Ref: EMS_629843_838112
Report Ref: EMS-629843_838112
Grid Ref: 365301, 437876

Map Name: National Grid
Map date: 1994
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed 1994
Revised N/A
Edition N/A
Copyright 1994
Levelled N/A

Surveyed 1994
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Edition N/A
Copyright 1994
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Surveyed 1994
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Edition N/A
Copyright 1994
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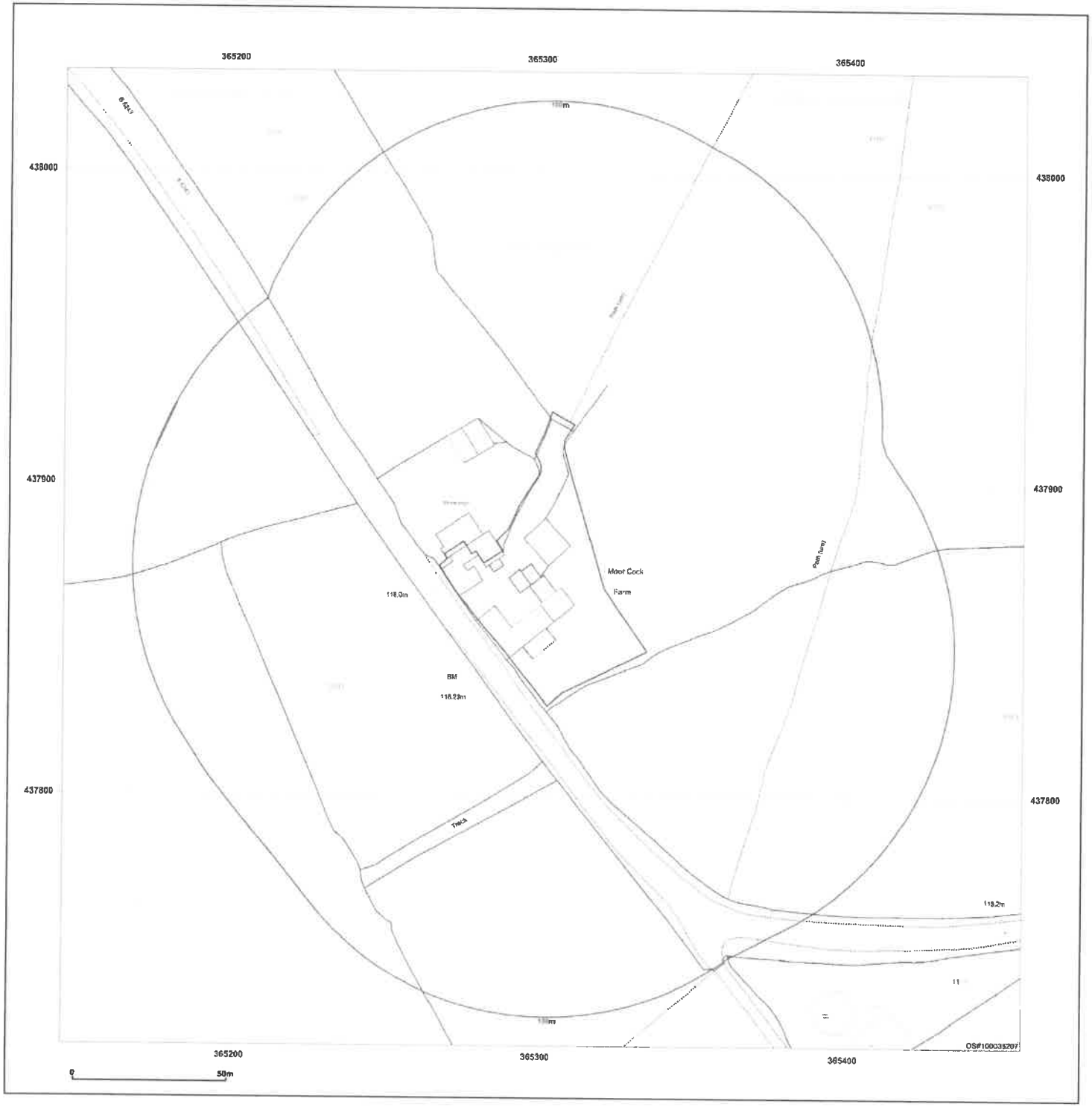

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Client Ref: EMS_629843_838112
Report Ref: EMS-629843_838112
Grid Ref: 365301, 437876

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

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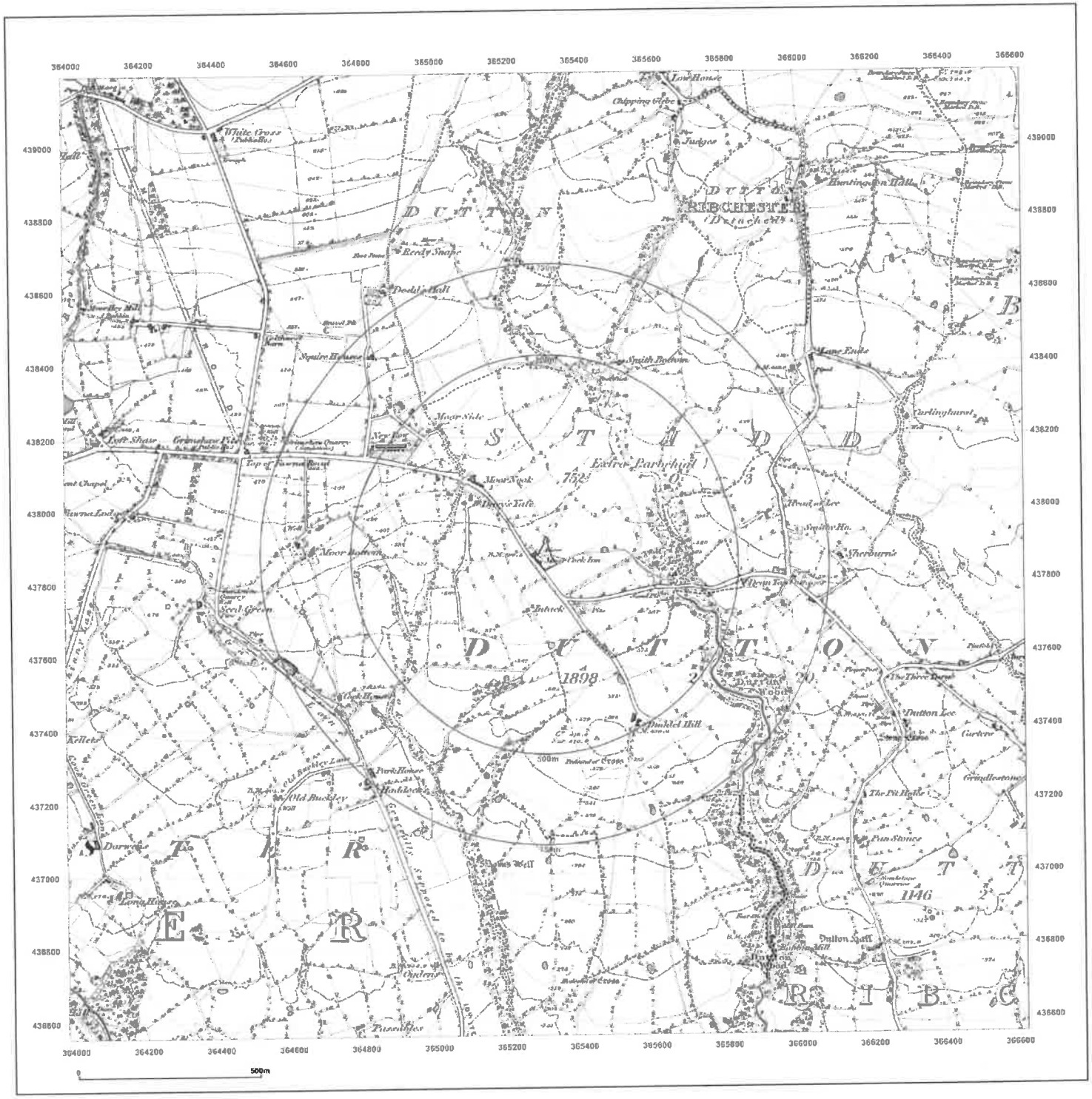

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Site Details:

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Client Ref: EMS_629843_838112
Report Ref: EMS-629843_838112
Grid Ref: 365301, 437876

Map Name: County Series
Map date: 1847
Scale: 1:10,560
Printed at: 1:10,560

N
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Surveyed 1844
Revised N/A
Edition 1847
Copyright N/A
Levelled N/A

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Production date: 26 August 2020

Map legend available at:
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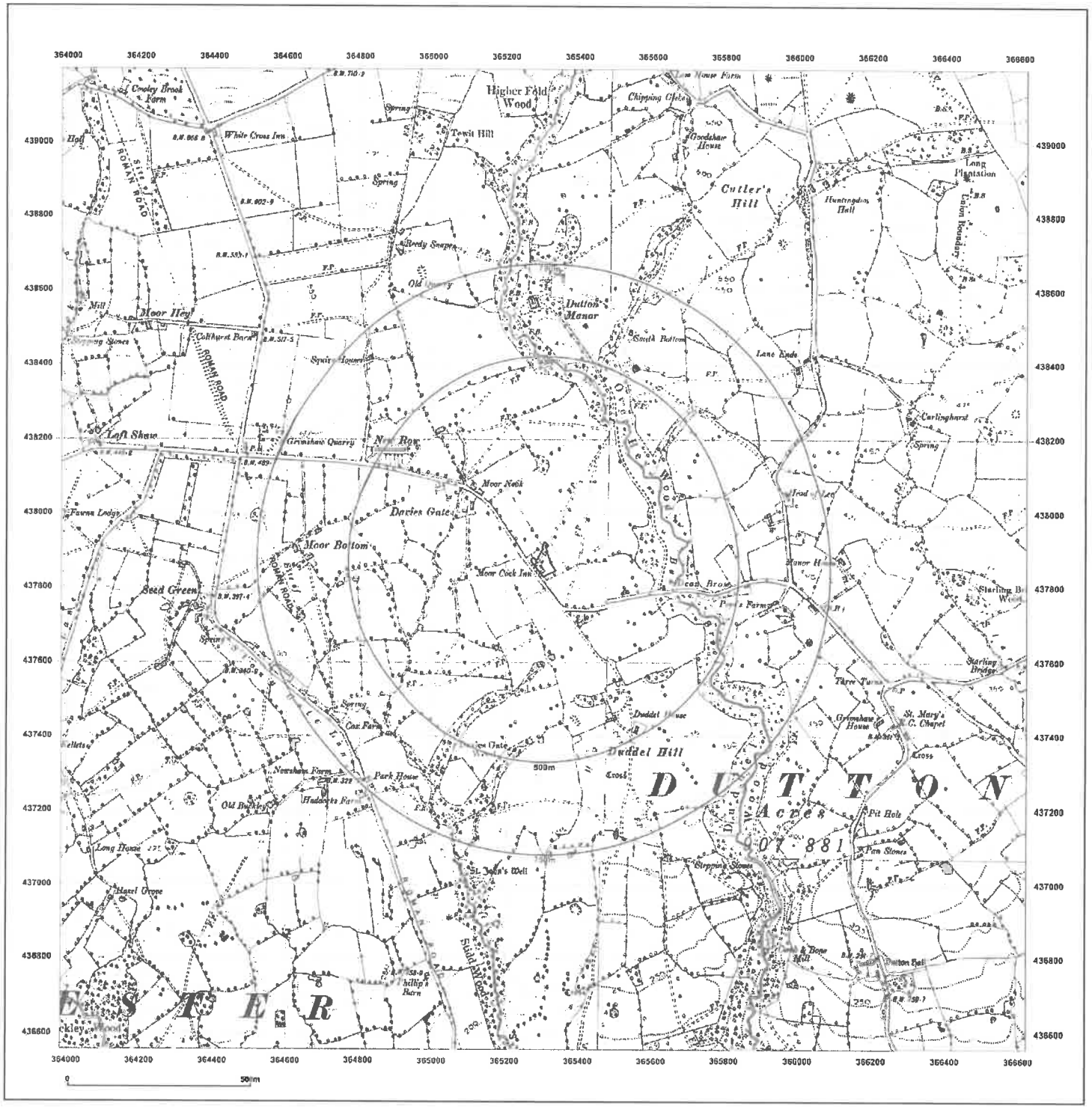

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Site Details:

Moorcock Farm, Clitheroe Road, Dutton, Preston, PR3 2YT,Moorcock Farm, Clitheroe Road,Dutton, Preston, PR3 2YT,PR3 2YT

Client Ref: EMS_629843_838112
Report Ref: EMS-629843_838112
Grid Ref: 365301, 437876

Map Name: County Series
Map date: 1892
Scale: 1:10,560
Printed at: 1:10,560

N
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Surveyed 1892
Revised 1892
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1892
Revised 1892
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1892
Revised 1892
Edition N/A
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Levelled N/A

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Revised 1892
Edition N/A
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Production date: 26 August 2020

Map legend available at:
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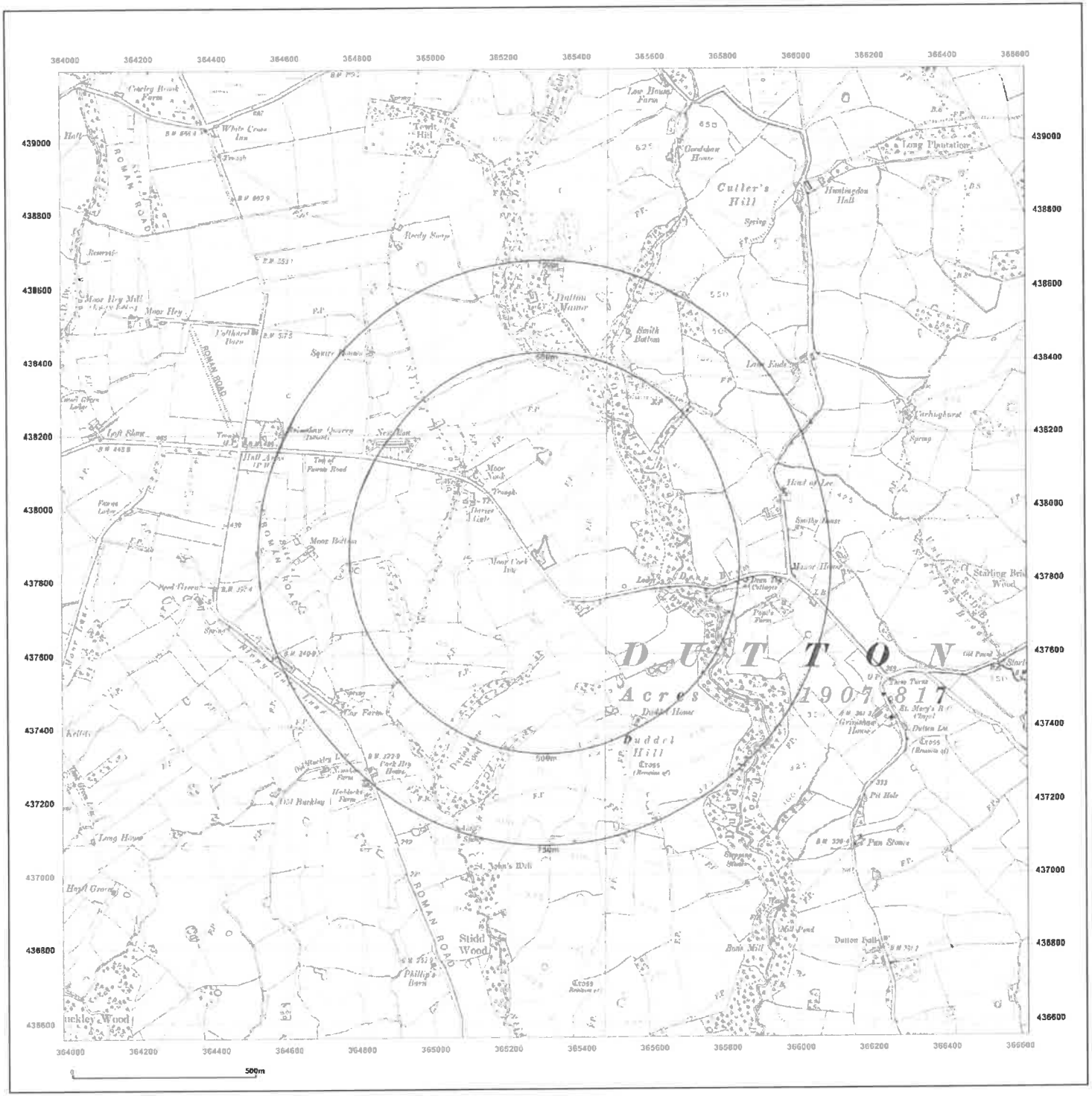

emapsite™

Site Details:

Moorcock Farm, Clitheroe Road, Dutton, Preston, PR3 2YT,Moorcock Farm, Clitheroe Road,Dutton, Preston, PR3 2YT,PR3 2YT

Client Ref: EMS_629843_838112
Report Ref: EMS-629843_838112
Grid Ref: 365301, 437876

Map Name: County Series
Map date: 1910-1913
Scale: 1:10,560
Printed at: 1:10,560

N
W E
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Surveyed 1844
Revised 1910
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1844
Revised 1913
Edition 1913
Copyright N/A
Levelled N/A

Surveyed 1844
Revised 1910
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1844
Revised 1910
Edition N/A
Copyright N/A
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Production date: 26 August 2020

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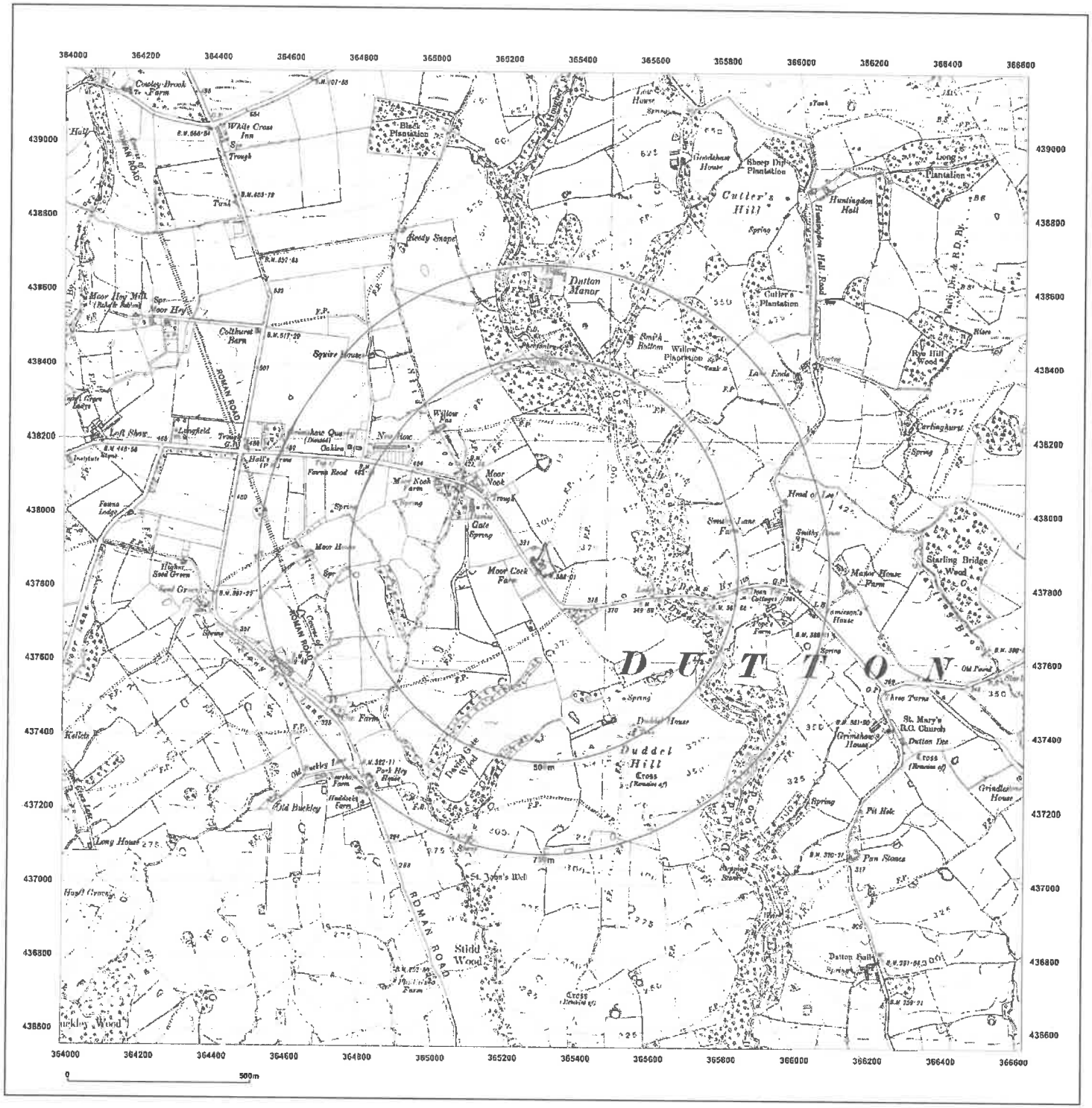

emapsite™

Site Details:

Moorcock Farm, Clitheroe Road, Dutton, Preston, PR3 2YT,Moorcock Farm, Clitheroe Road,Dutton, Preston, PR3 2YT,PR3 2YT

Client Ref:	EMS_629843_838112
Report Ref:	EMS-629843_838112
Grid Ref:	365301, 437876

Map Name:	County Series
Map date:	1932
Scale:	1:10,560
Printed at:	1:10,560

N W E S

Surveyed 1844
Revised 1932
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1844
Revised 1932
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1844
Revised 1932
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1844
Revised 1932
Edition N/A
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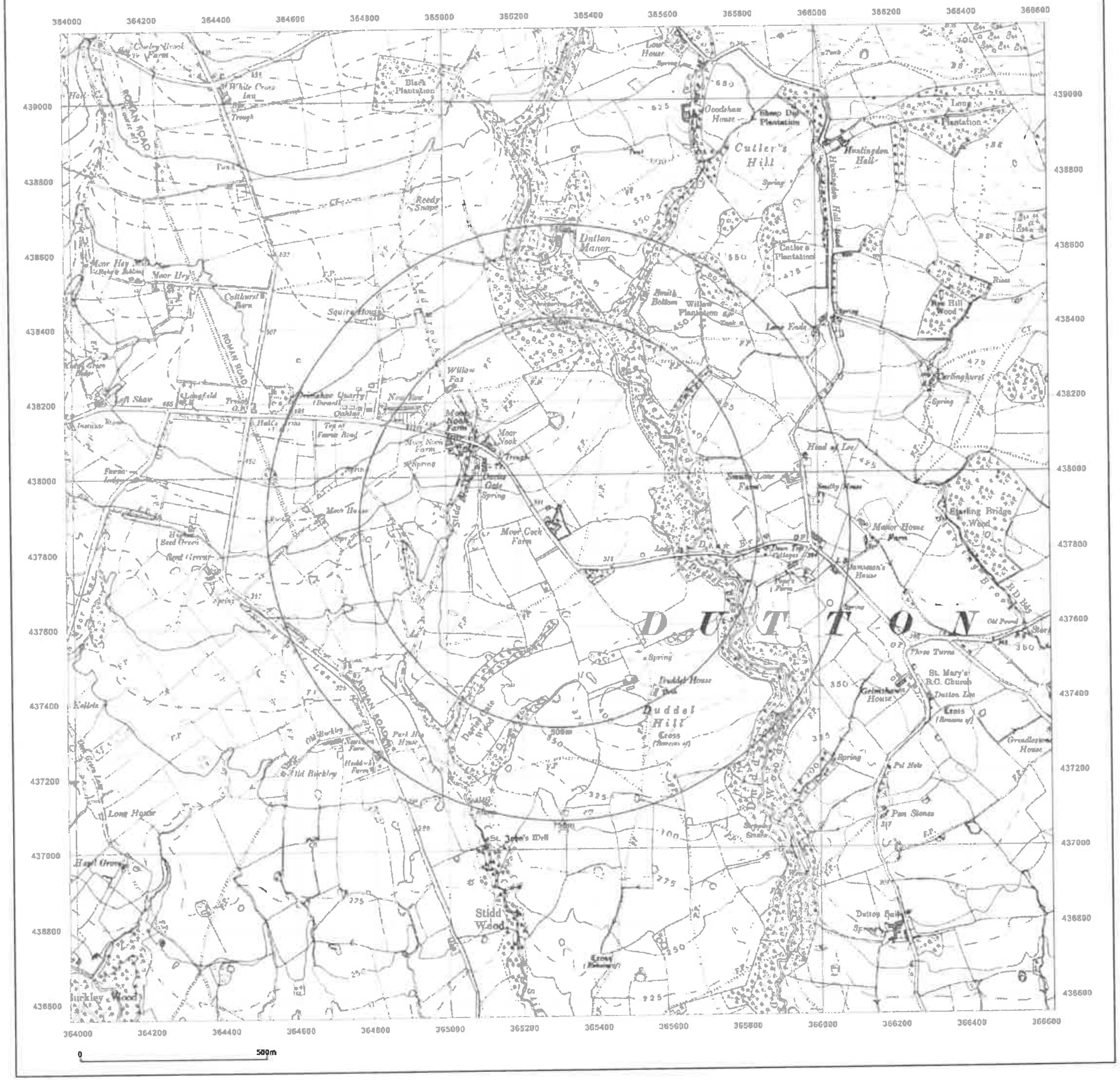


emapsite™

Site Details:

Moorcock Farm, Clitheroe Road, Dutton, Preston, PR3 2YT,Moorcock Farm, Clitheroe Road,Dutton, Preston, PR3 2YT,PR3 2YT

Client Ref: EMS_629843_838112
Report Ref: EMS-629843_838112
Grid Ref: 365301, 437876

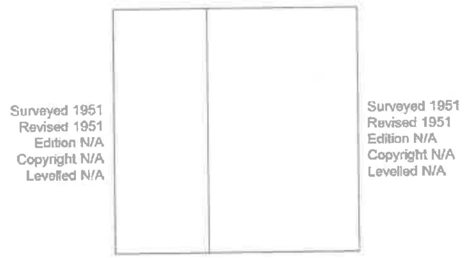
Map Name: Provisional

Map date: 1951

Scale: 1:10,560

Printed at: 1:10,560

N W E S



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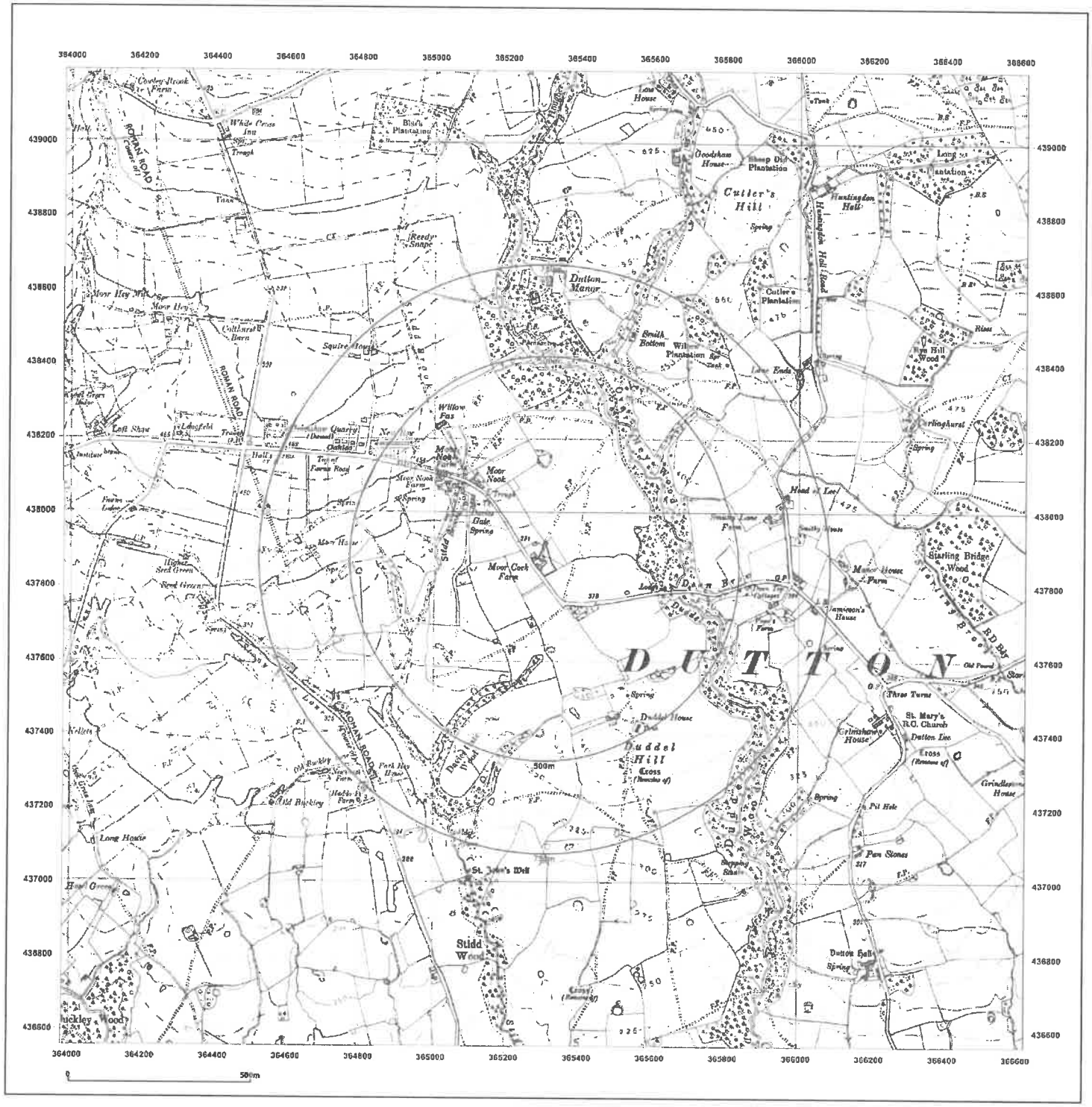

emapsite™

Site Details:

Moorcock Farm, Clitheroe Road, Dutton, Preston, PR3 2YT,Moorcock Farm, Clitheroe Road,Dutton, Preston, PR3 2YT,PR3 2YT

Client Ref: EMS_629843_838112
Report Ref: EMS-629843_838112
Grid Ref: 365301, 437876

Map Name: Provisional
Map date: 1951
Scale: 1:10,560
Printed at: 1:10,560

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Surveyed 1951
Revised 1951
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1951
Revised 1951
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 26 August 2020

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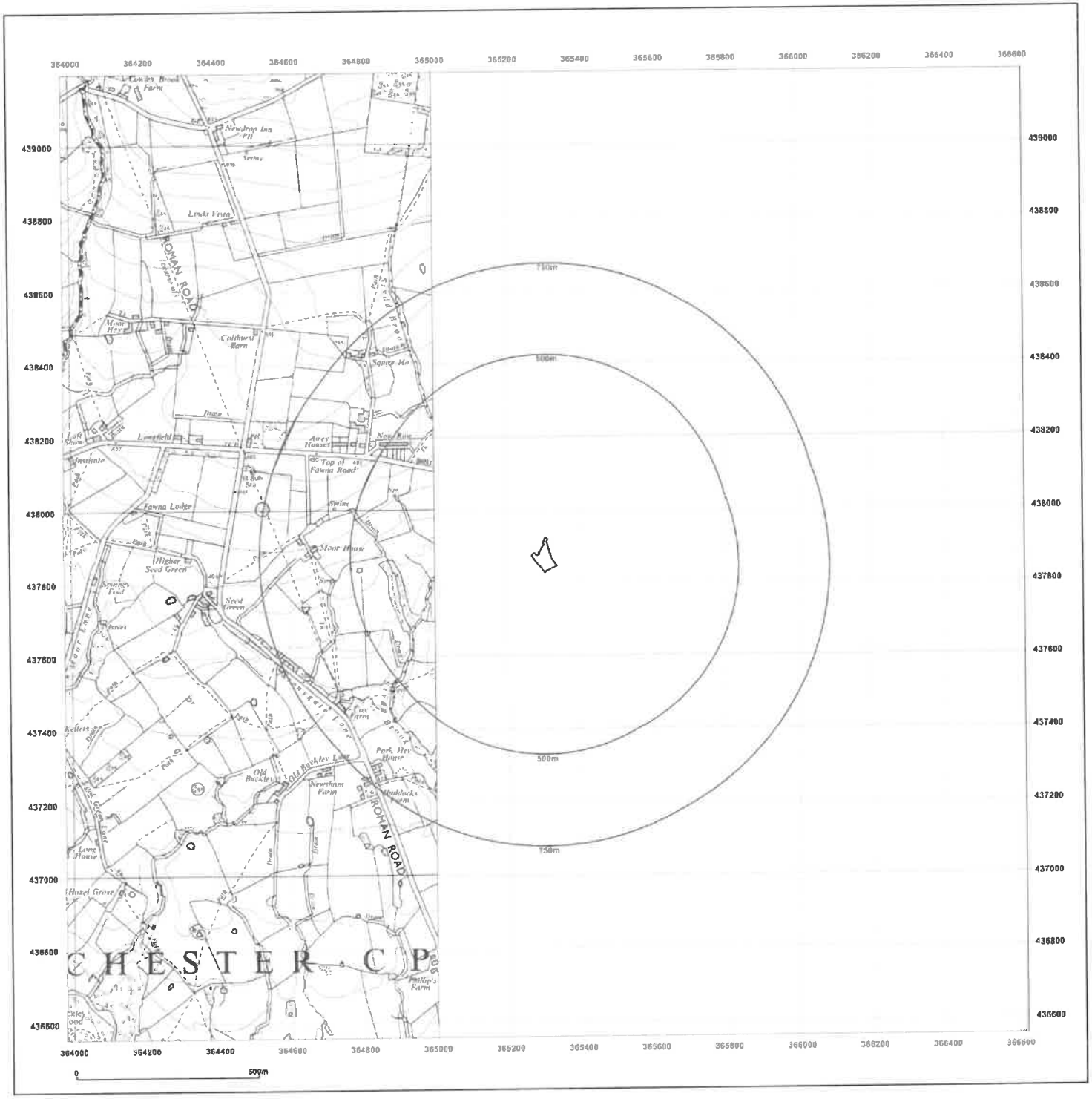

emapsite™

Site Details:

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Client Ref: EMS_629843_838112
Report Ref: EMS-629843_838112
Grid Ref: 365301, 437876

Map Name: Provisional
Map date: 1969
Scale: 1:10,560
Printed at: 1:10,560

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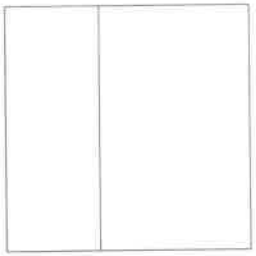

Surveyed 1969
Revised 1969
Edition N/A
Copyright N/A
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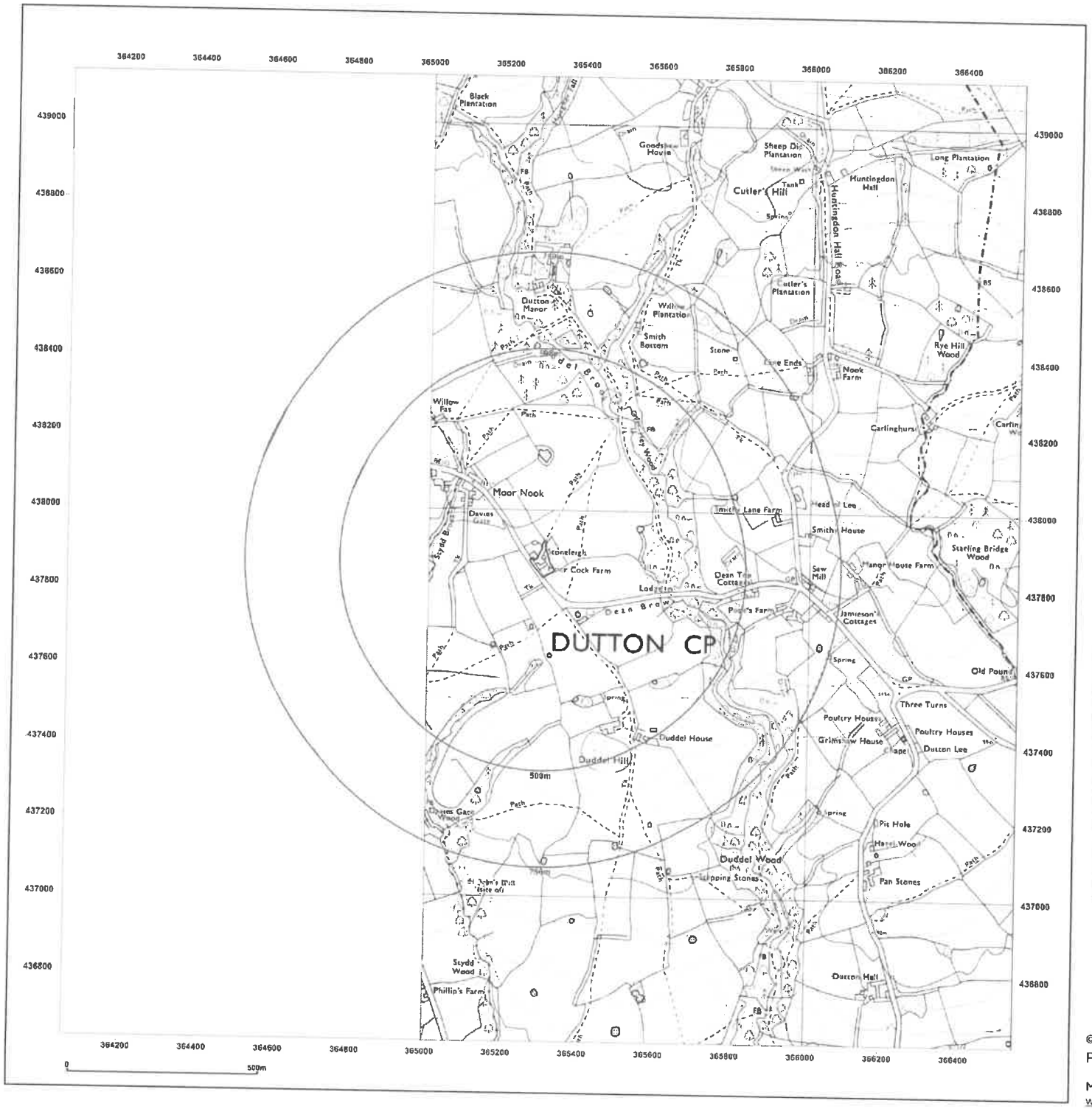

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Site Details:

Moorcock Farm, Clitheroe Road, Dutton, Preston, PR3 2YT,Moorcock Farm, Clitheroe Road,Dutton, Preston, PR3 2YT,PR3 2YT

Client Ref: EMS_629843_838112
Report Ref: EMS-629843_838112
Grid Ref: 365301, 437876

Map Name: National Grid
Map date: 1970
Scale: 1:10,000
Printed at: 1:10,000

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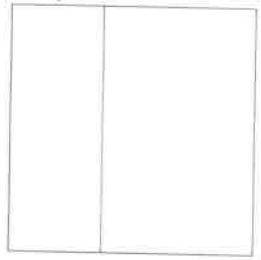

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Revised 1970
Edition N/A
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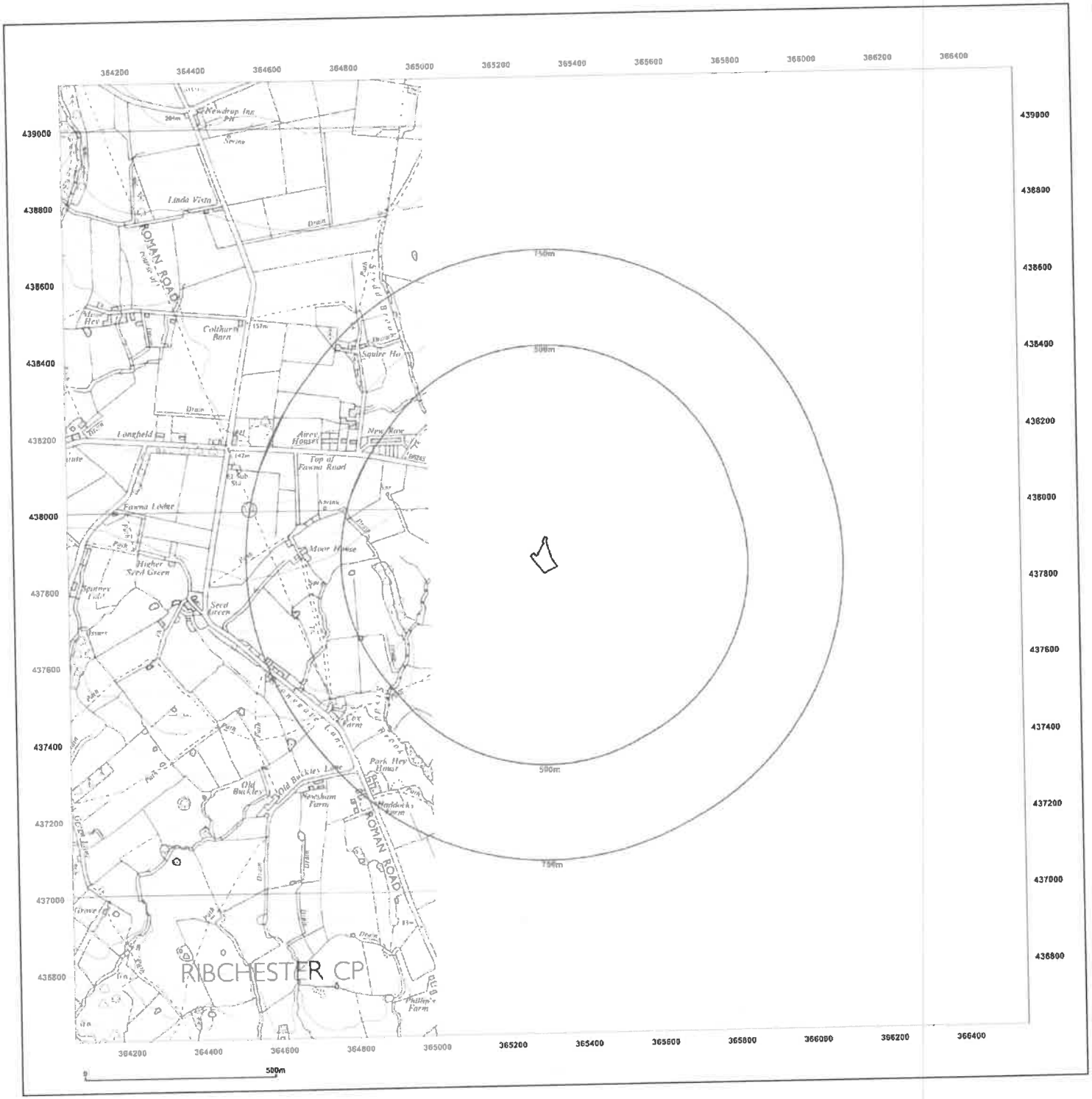

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Site Details:

Moorcock Farm, Clitheroe Road, Dutton, Preston, PR3 2YT,Moorcock Farm, Clitheroe Road,Dutton, Preston, PR3 2YT,PR3 2YT

Client Ref: EMS_629843_838112
Report Ref: EMS-629843_838112
Grid Ref: 365301, 437876

Map Name: National Grid
Map date: 1994
Scale: 1:10,000
Printed at: 1:10,000

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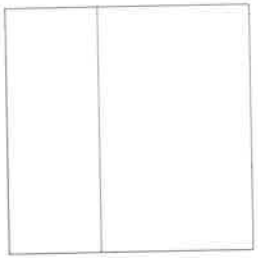

Surveyed 1967
Revised 1994
Edition N/A
Copyright N/A
Levelled N/A

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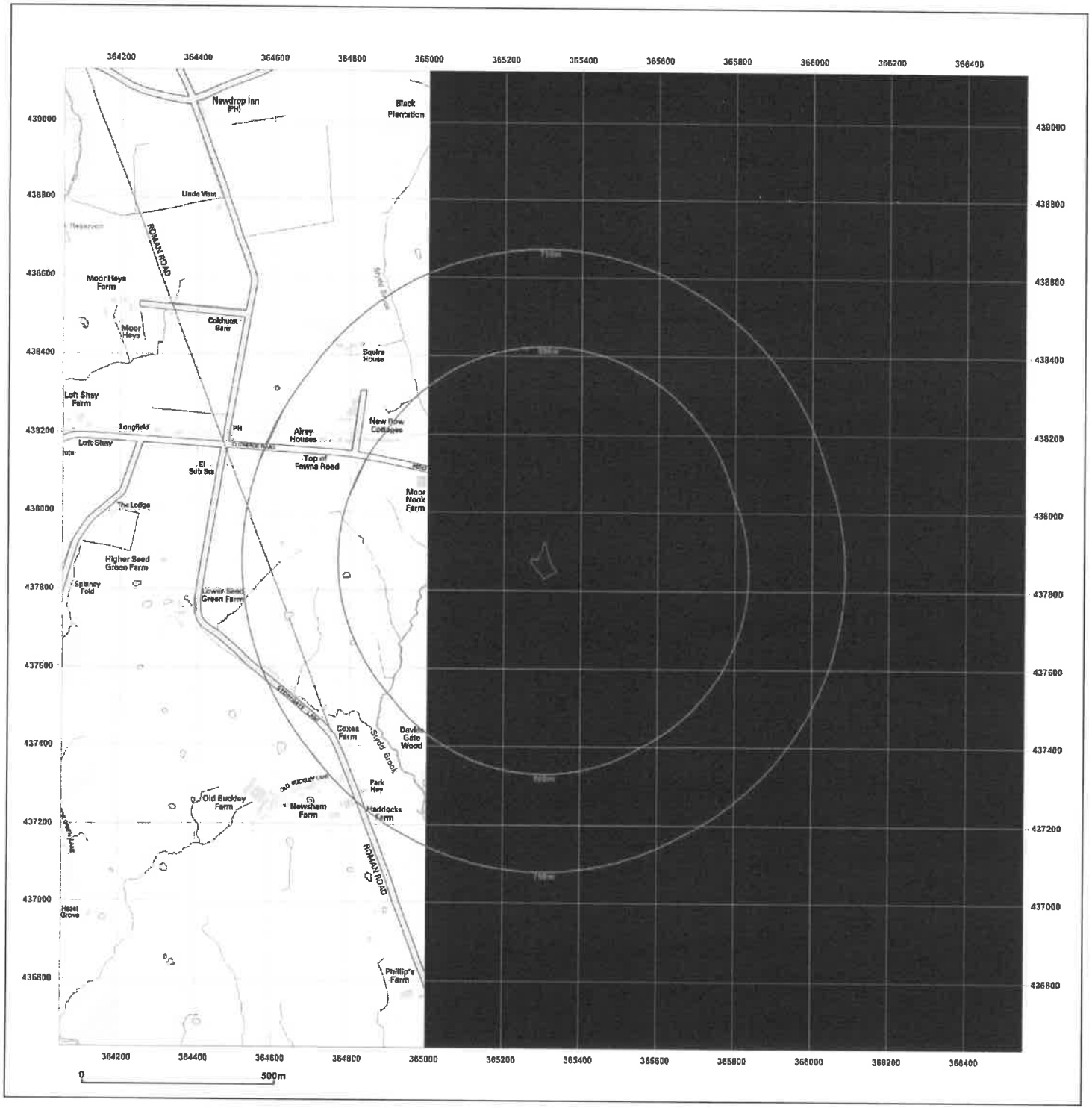

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Site Details:

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Client Ref: EMS_629843_838112
Report Ref: EMS-629843_838112
Grid Ref: 365301, 437876

Map Name: National Grid
Map date: 2001
Scale: 1:10,000
Printed at: 1:10,000

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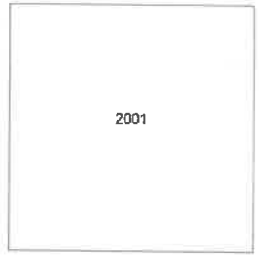

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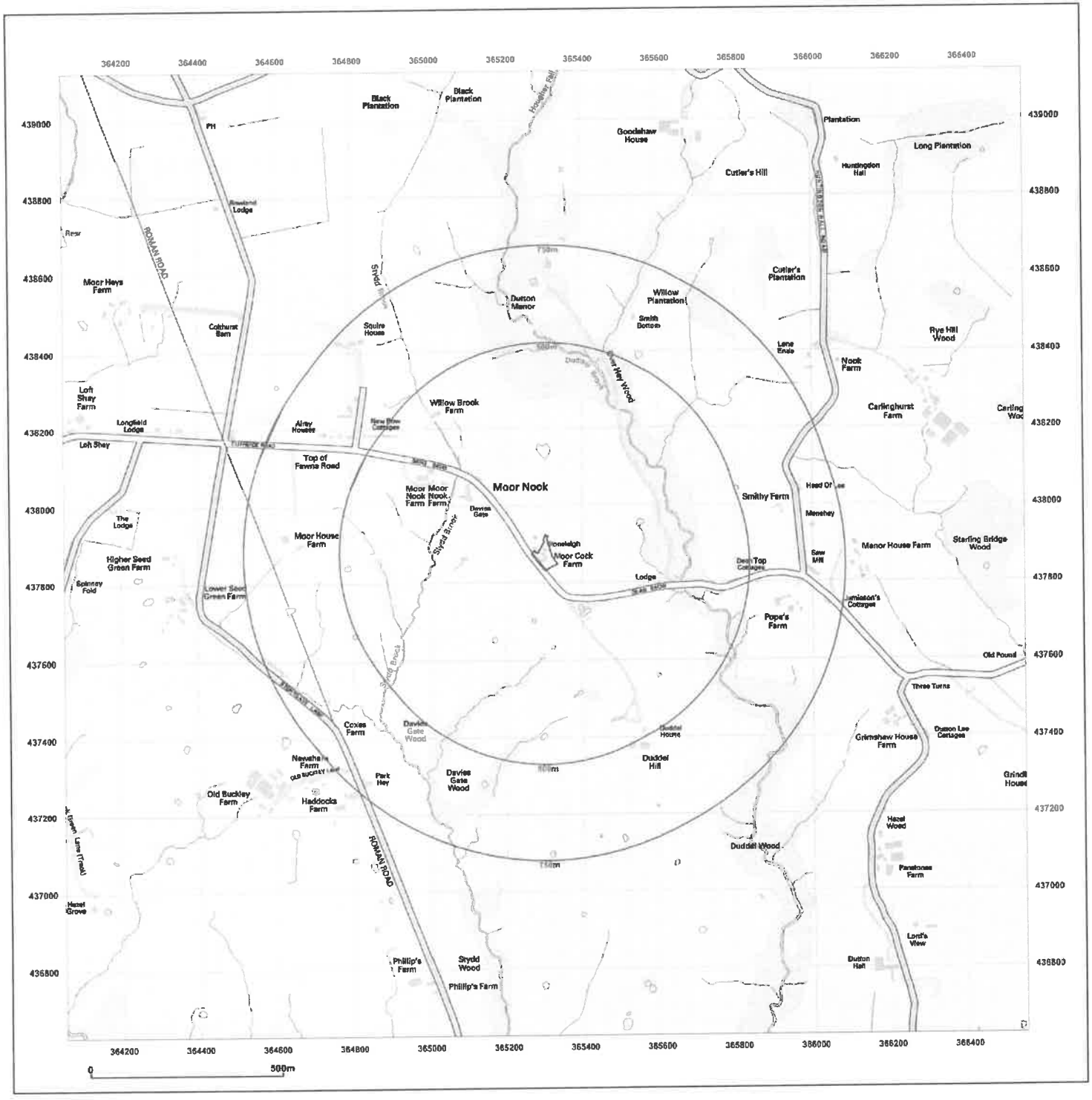

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Client Ref: EMS_629843_838112
Report Ref: EMS-629843_838112
Grid Ref: 365301, 437876

Map Name: National Grid
Map date: 2010
Scale: 1:10,000
Printed at: 1:10,000

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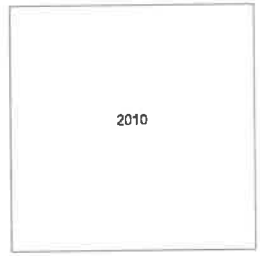

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Production date: 26 August 2020

Map legend available at:
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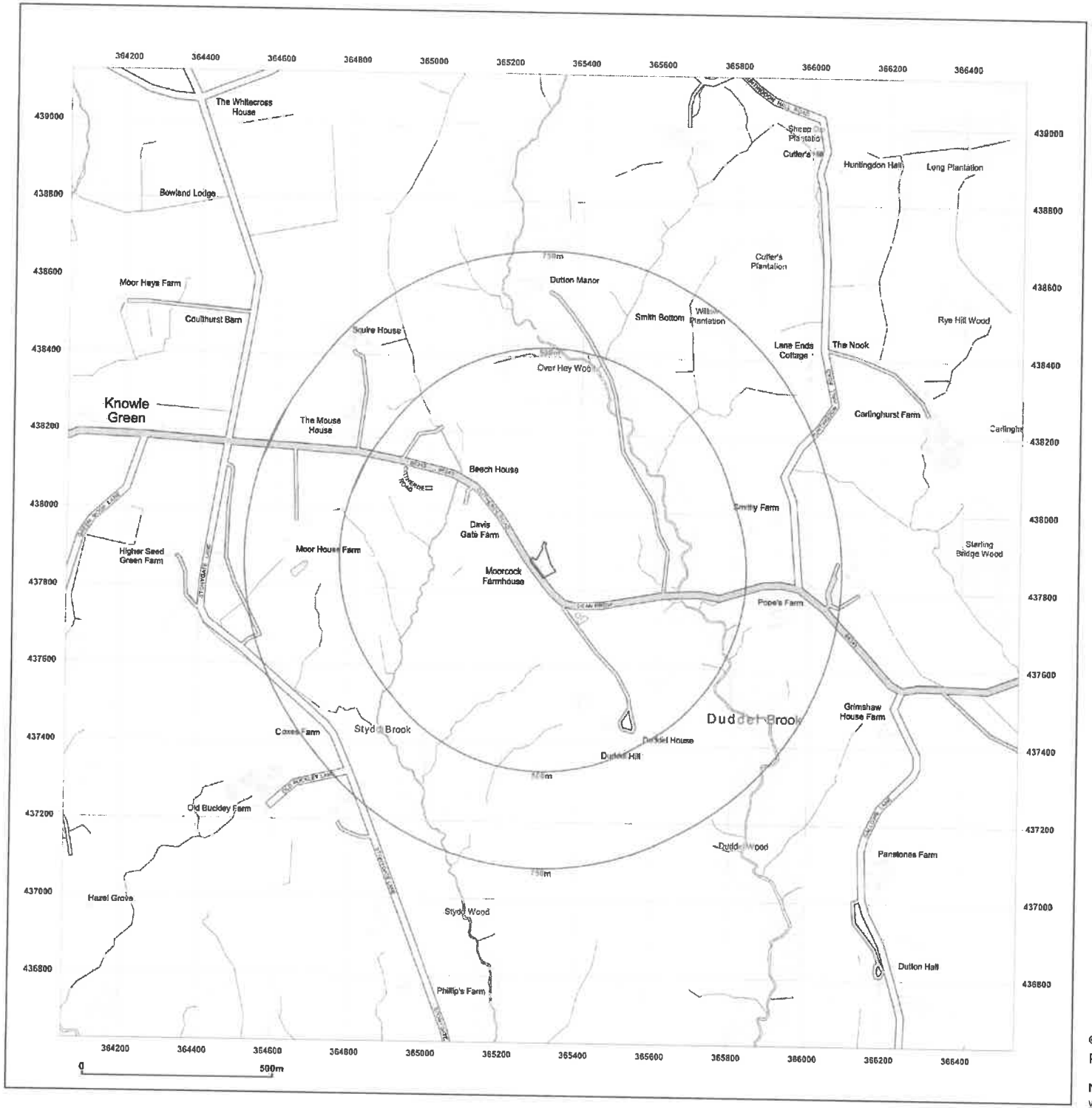

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Client Ref: EMS_629843_838112
Report Ref: EMS-629843_838112
Grid Ref: 365301, 437876

Map Name: National Grid
Map date: 2020
Scale: 1:10,000
Printed at: 1:10,000

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Production date: 26 August 2020

Map legend available at:
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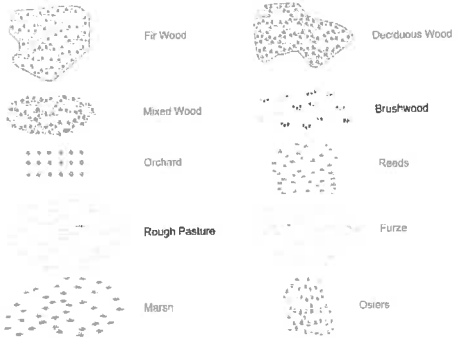
County Series 1:10,560 scale

VEGETATION



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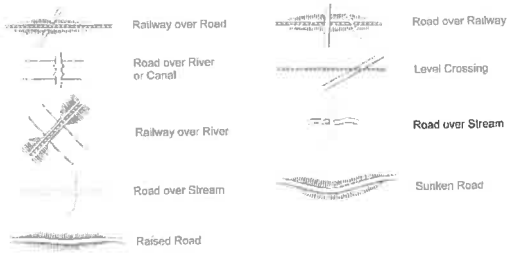


RAILWAYS

GENERAL FEATURES

BOUNDARIES

National Grid 1:10,000 scale

HEIGHTS (METRES)

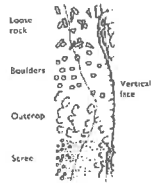
Values are given in metres above mean sea level at Newlyn.

Surface heights determined by ground survey / air survey

Bench marks and their values are shown on large scale maps, and bench mark lists containing fuller and possibly later levelling information are obtainable from the Director General, Ordnance Survey.

Contours are at 5 metres vertical interval.

ROCK FEATURES



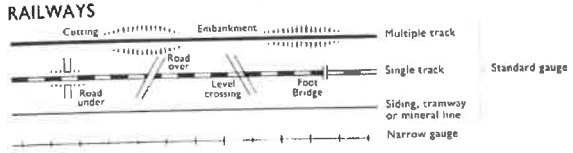
CONVERSION SCALE

ABBREVIATIONS

BP,BS	Boundary Post or Stone	PO	Post Office
Ch	Church	PC	Public Convenience
CH	Club House	PH	Public House
F Sta	Fire Station	S	Stone
FB	Foot Bridge	Spr	Spring
Fn	Fountain	TCB	Telephone Call Box
GP	Guide Post	TCP	Telephone Call Post
MP,MS	Mile Post or Stone	TH	Town Hall
P	Pole or Post	W	Well
Pol Sta	Police Station	Y	Youth hostel

ROADS

RAILWAYS



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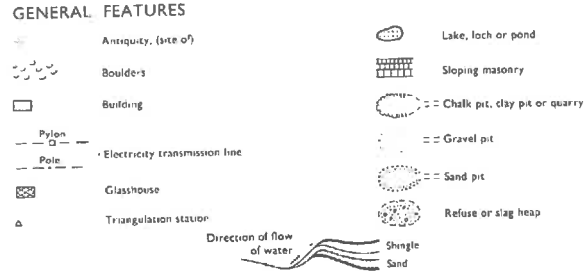
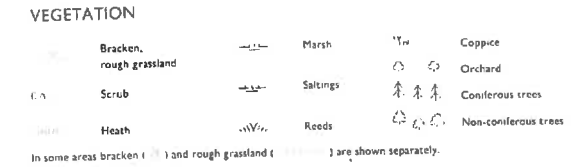


VEGETATION



In some areas bracken ( ) and rough grassland ( ) are shown separately.

GroundSure

Historical Map Pack Legend

County Series & National Grid

1:10,560 scale

Information present on these legends is sourced from the same Ordnance Survey mapping as the maps used in this product.

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Technical Helpline

Tel 08444159000

groundsureinsight@groundsure.com

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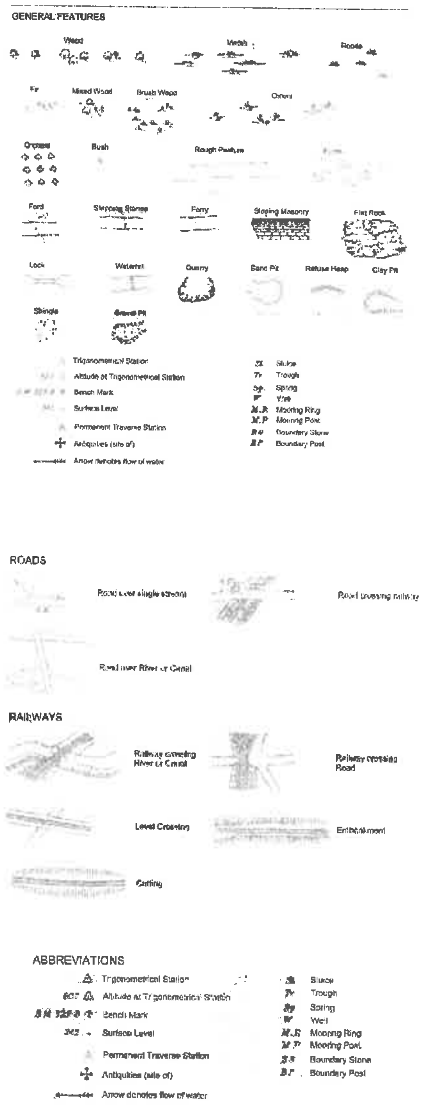
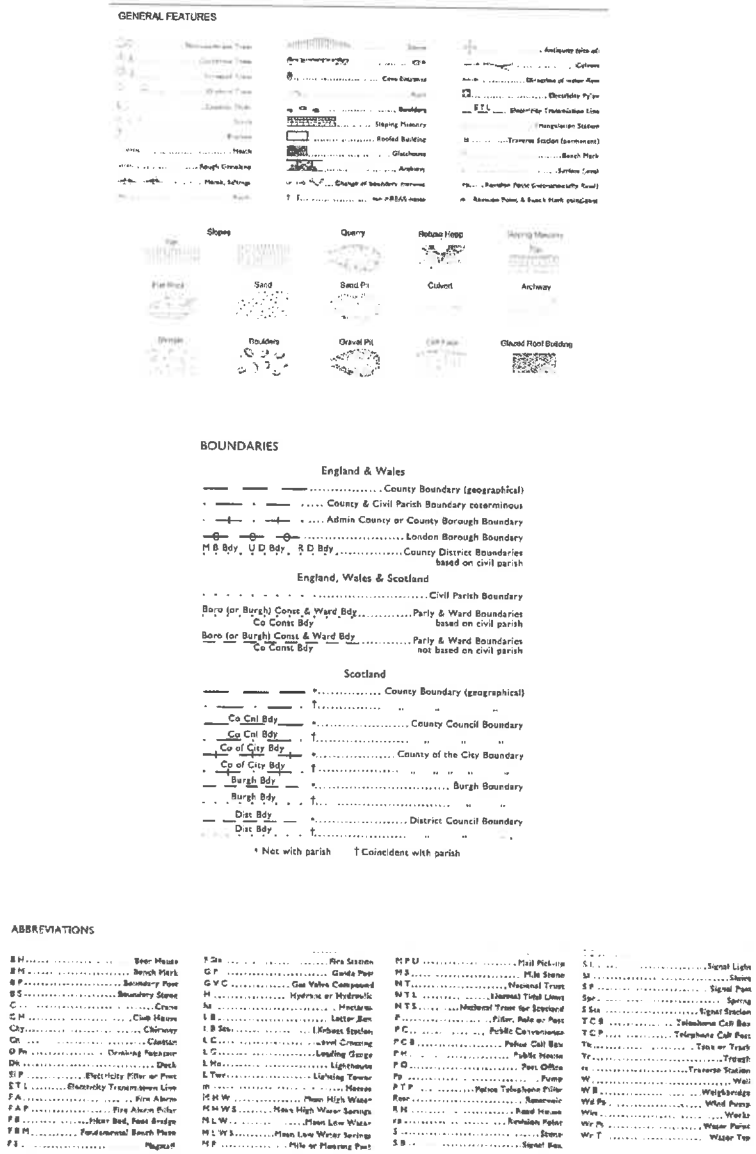
County Series 1:2,500 scale



National Grid 1:2,500 / 1:1,250 scale



Historical Map Pack Legend

County Series

1:1,250 scale

~

County Series & National Grid

1:2,500 scale

Information present on these legends is sourced from the same Ordnance Survey mapping as the maps used in this product.

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