

Preliminary Risk Assessment

Scout Moor II Further Environmental Information

June 2026



P e l l F r i s c h m a n n

Scout Moor II Wind Farm

Preliminary risk assessment (PRA)

Land contamination risk management

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Executive Summary			
Site name	Scout Moor II Wind Farm		
Location	3.4km northwest of the centre of Rochdale (north of Manchester)		
Development proposals	A series of 12 wind turbines with connecting cable runs, a new substation, associated access tracks, habitat management and peatland enhancement work, plus road widening and temporary works including a construction compound and earthworks.		
Topography	The scheme lies within an extensive central upland area of peat moorland, largely above 300m Ordnance Datum (mAOD), with a maximum mapped elevation of 477mAOD. Approximately 48% of this central area is situated above 400mAOD.		
Site history	Most of the site and surrounding area has comprised moorland or fields between the 1850s and the present day, interspersed with frequent evidence of mines and quarries. Mineral extraction appears to have declined significantly circa the 1930s onwards and the majority are marked as disused by the late 1960s.		
Geology and hydrogeology	<i>Geology</i>		<i>Hydrogeology</i>
	Artificial ground	Made Ground and infilled ground in localised areas	n/a
	Superficial	Discontinuous, localised Peat, Till, Head Deposits or Glaciofluvial Deposits	Unproductive to Secondary B
	Bedrock	Pennie Lower Coal Measures (PLCM) Formation and Rossendale Formation	Secondary A Aquifer
Radon	The high resolution BGS radon data indicates that radon risks vary significantly across the site from low to intermediate. The need for basic radon protection measures in new buildings has been identified in some areas.		
Mining and quarrying	The site is located within a Mineral Safeguarding Area for coal, brick clay and sandstone. BGS mineral site data indicates circa nine ‘deep’ coal mines onsite. The desk study indicates that the site has a history of mining and quarrying including deep coal mining and sandstone mining and quarrying. Approximately 20% of the site is classified as a high development risk zone associated with underlying coal-bearing formations. Historical records indicate multiple former deep coal mines both onsite and in the surrounding area, highlighting a significant legacy of coal mining that may pose potential ground stability and development constraints. A separate Coal Mining Risk Assessment for the scheme (ref: 109692-PEF-ZZ-XX-RP-GT-6001) has been written, this should be read in conjunction with the PRA to understand the risk from legacy mining at the site and any future recommendations for further work.		
Hydrology	Multiple small brooks rise on this central upland moorland site and either discharge to a series of offsite reservoirs or to tributaries of local rivers. Several small ponds have been noted onsite, plus a large ‘pond’ associated with the former Cragg Quarry in the northwest and a large pond in the south within the ‘Bottom of Rooley Moor’ area. Ten reservoirs have been identified, in close proximity but offsite, most of which are operated by United Utilities Water Ltd for potable public water supply. A small number of springs are recorded onsite. Numerous issues and sinks are also mapped suggesting a degree of groundwater - surface water interaction. Surface waters onsite may receive some limited groundwater baseflow.		
Waste	The available waste records (including from Envirocheck) indicate that there are no known landfill sites, waste treatment or waste transfer sites onsite or within 250m of the site. However, with respect to the proposed temporary works, a potential landfill site has been identified associated with Scout Moor Quarries. The same area is noted as a Local Authority Landfill Site which accepted ‘inert, sludge waste’.		
Unexploded ordnance (WW2)	The unexploded bomb (UXB) risk map from Zetica classifies the site and the surrounding area with a potential low bomb risk. However, a site-specific pre-desk study assessment (PDSA) recommended that a detailed desk study is undertaken to assess, and potentially zone, the UXO hazards level onsite.		

Executive Summary	
Preliminary Risk Assessment (PRA) summary	Based on the mining/quarrying history onsite it is likely that the scheme will encounter areas of Made Ground. However, risks to future operators of the wind farm are likely to be very low to negligible as any work activities are unlikely to involve close contact with the ground and the nature of the proposed scheme will not significantly alter the ground conditions and no further assessment is considered to be required. Potential ground contamination risks to construction and site maintenance workers can be mitigated by the adoption of suitable working methods, utilising appropriate personal protective equipment (PPE) and maintaining good hygiene (via the construction stage RAMS - risk assessment and method statements). Former underground coal mines have been identified onsite. The locations of the underground workings have not been determined. The mine shafts and underground workings have been identified as a potential source of mine gas that could be disturbed/released during construction (and potential up front site investigation). The only building that is proposed as part of this scheme is the substation building (it is noted that substation building tend to be well ventilated by their nature/function). Parts of Scout Moor Quarries have been used for landfilling; the landfill boundary crosses the temporary works area (in the west) near the proposed temporary access track widening. Information about the nature of the fill material is limited but appears to indicate that the fill was derived from the quarrying activities. If this is the case, then it is considered that risks to site preparation and construction worked will be low. (Note the proposed wind farm scheme will not introduce human health end-users within this area and there are no proposed buildings in this area – therefore only the temporary works H&S contaminant linkage requires consideration). Parts of the site have elevated radon risks, where basic radon protection measures will be required for new occupied buildings. The only scheme building will be the new substation (it is noted that substation buildings tend to be well ventilated by their nature/function).
Land contamination risk management (LCRM) Recommendations and next steps	Further investigation and assessment will be required with respect to the existing mine entries and shallow underground mine workings onsite. A geotechnical ground investigation and mining investigation will be required within the scheme footprint (including access tracks/roads, each wind turbine location and areas of significant earthworks) it would be prudent to undertake geochemical analysis of any Made Ground encountered to provide geochemical data that the contractor can reference to inform their risk assessment and method statements. It is essential, that the design team read the Coal Mining Assessment report in full as specific recommendations or requirements are noted.

1 Introduction

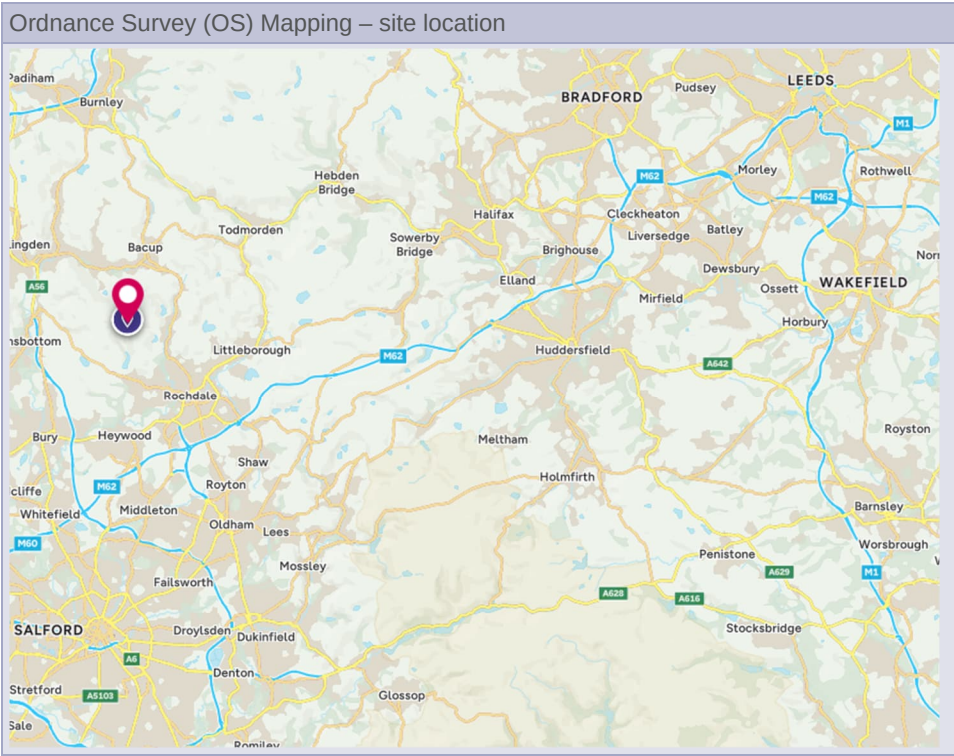
1.1 Commission

This Preliminary Risk Assessment (PRA) has been prepared by Pell Frischmann on behalf of Cubico UK Development (Wind 1) Limited (*‘the Applicant’ or ‘Cubico’*). It is submitted as part of Further Environmental Information (*‘FEI’*) in respect of the cross-boundary applications for full planning permission (*‘the Applications’*) relating to the construction and operation of a new onshore wind farm (to be known as *‘Scout Moor II’*), alongside a comprehensive moorland restoration scheme (the *‘Proposed Development’*), on land at Rooley Moor (*‘the Site’*).

The site lies approximately 3.4km northwest of the centre of Rochdale (north of Manchester), as shown in Figure 1-1. The approximate National Grid Reference (NGR) for the centre of the site is 385510, 418620. The Site crosses the administrative boundaries of Rossendale Borough Council (*‘RBC’*) and Rochdale Metropolitan Borough Council (*‘RMBC’*) (collectively referred to as *‘the Councils’*). The Councils are the Local Planning Authorities (*‘LPA’s’*) responsible for the determination of the Applications, which were originally submitted on 23 July 2025 and were validated by the Councils on 07 August 2025 (RBC ref. 2025/0267 and RMBC ref. 25/00680/FUL).

The overall aim of the preliminary risk assessment is to identify potential land contamination risks and geoenvironmental constraints which could impact upon or restrict the proposed scheme.

Figure 1-1 Site location



1.2 Proposed scheme

The original proposed scheme comprised a series of 17no. 180m high wind turbines with a generating capacity of up to 99.9MW together with access tracks and electrical infrastructure required to connect the wind farm to the Rossendale Bulk Supply Point (BSP) Substation in Rawtenstall (circa 3km northwest of the site).

Following the completion of an extended period of statutory consultation on the Applications, the Applicant has evolved the Proposed Development to respond to comments received from statutory and non-statutory consultees, the public and other interested stakeholders and is hereby formally amending the Applications through the submission of Further Environmental Information. The Environment Agency and Salford City Council Environmental Health Officer were consulted upon the layout proposed within the original application submission and had no objections (see Appendix G). It was stated that any recommendations for further work should be secured in the next stages of the Land Contamination Risk Management process (see section 1.3).

The FEI supersedes the information submitted in July 2025 (*‘the 2025 Submission’*) and will be subject to further statutory consultation by the Councils. A summary of the amendments to the Applications is set out in detail in the Planning, Design and Access Statement (prepared by Turley), but in summary includes the reduction in turbine numbers from *‘up to 17 turbines’* to *‘up to 12 turbines’*, alongside the relocation/repositioning of turbine positioning, access track layout and the layout and design of other associated infrastructure. The scheme will connect into the Rossendale Bulk Supply Point (BSP) Substation in Rawtenstall (circa 3km northwest of the site). Two potential connection routes are currently being considered (Option A and Option C (a new route to replace Option B).

The proposed revised Infrastructure Layout plan (ref: SK02 Rev P3, dated April 2026) is presented in Appendix A.

Pell Frischmann have updated the text within the report to reflect any pertinent changes, however, updated third-party information has not been purchased and not all figures updated. Although the distances to notable offsite landmarks within the third-party data may vary slightly, the modification to the redline boundary and infrastructure layout is not considered to adversely affect the conclusions for the site.

1.3 Scope of work

1.3.1 Land contamination risk management

The Environment Agency (EA) Land Contamination Risk Management guidance (LCRM), sets out the process that should be followed for managing the risk from land contamination. This includes ensuring that the scheme will be *‘suitable for its proposed use’* in line with National Planning Policy (NPPF). LCRM should be used to:

- *Identify and assess if there is an unacceptable risk/s.*
- *Assess what remediation options are suitable to manage the risk/s.*

- *Plan and carry out remediation.*
- *Verify that remediation has worked.*

LCRM includes three risk-based stages (1) risk assessment, (2) options appraisal, (3) remediation and verification. Table 1-1 presents Pell Frischmann’s simplified summary of the LCRM process.

Table 1-1 Land contamination risk management stages – simplified

1 Risk Assessment		2 Options appraisal	3 Remediation and verification		
Preliminary risk assessment	Site investigation scheme	Quantitative risk assessment	Remediation options appraisal	Remediation strategy & verification plan	Remediation Verification
PRA	Quantitative risk assessment	ROA	RS	RV	
Desk study to identify sources of contamination and sensitive receptors. PRA to identify potential S-P-R contamination linkages (CLs) [this report]	SIS: Investigate potential sources and receptors	GQRA/DQRA: Quantitative risk assessment to assess risks for each CL to identify and assess unacceptable risks	Identify remediation option to address unacceptable risks	Strategy: steps and measures required to implement remediation onsite. Verification plan: activities and records that must be kept during remediation Record of all remediation activities as evidence that remediation has been successful	

1.3.2 Preliminary risk assessment

Pell Frischmann were commissioned to prepare a preliminary risk assessment (PRA) for the proposed scheme, with subsequent updates as the scheme evolved. The PRA includes a land contamination desk study, a walkover survey and the development of a *preliminary* conceptual site model (CSM). The desk study and a walkover survey were undertaken to:

- identify potential contaminants or *‘sources’* of contamination in, on or under the land (this process includes identifying potentially contaminative past and present land-uses onsite and in the surrounding area),
- identify *‘receptors’* that could be adversely affected by a contaminant, and
- identify exposure *‘pathways’* – a route by which a receptor is or could be adversely affected by a contaminant.

The *preliminary* conceptual site model (CSM) summarises the *potential* ‘source-pathway-receptor’ contaminant linkages (CLs) that have been identified for the proposed scheme. Each *potential* contaminant linkage (pCL) has been assigned a qualitative level of risk before considering what further action is needed.

Land contamination risk management is an iterative process the PRA defines the scope and extent of effort required for the subsequent LCRM stages.

1.3.3 Data clarifications and limitations

The Landmark data referenced in this report was purchased for the first edition of the Preliminary Risk Assessment in 2024. Most features in this data are recorded as either *‘onsite’* or *‘metres offsite’* based on the site boundary (at the time the order was placed). In this latest revision of the Preliminary Risk Assessment (2026) the report text has been updated to reflect any pertinent changes. However, distances to notable offsite features may vary slightly and where figures based on Landmark data

cannot be updated, the original figures (from 2024) showing pertinent information have been kept in the report.

The modifications to the redline boundary and infrastructure layout is not considered to **adversely** affect the risk assessment and conclusions for the site.

2 Land contamination desk study

2.1 Data sources

The following ‘desk-based’ geoenvironmental data sources were selectively reviewed to assess the geoenvironmental setting of the site and its surroundings and to identify potential land contamination sources, pathways and receptors.

- Historical and current Ordnance Survey maps and aerial photographs (Envirocheck and Google),
- Site specific geoenvironmental database search results (Envirocheck),
- British Geological Survey (BGS) maps and records,
- Environment Agency (EA) data, and
- Internet-based data sources.

2.2 PRA areas and site-specific data

For this ‘outline design stage’ preliminary risk assessment, the site has been divided into the following assessment areas:

Table 2-1 PRA areas

Area	Description of proposed scheme elements in these areas	Colour
Wind farm area	Wind turbines (with connecting cable runs), new substation and associated access route. This area includes the Turbine Development Zones.	Red
Temporary works area	Section of Scout Road including the proposed road widening (western switchbacks) plus the temporary compound/laydown area.	Purple
Compensation	Common land compensation area – no known changes proposed in this area.	Grey
Connection routes	Route A to the north	Green
	Route B to the west	Blue

Site specific geoenvironmental data was procured from Landmark Information Group (Landmark) in 2024 for the wind farm and temporary works areas (red and purple respectively). Due to the size of the wind farm area, the geoenvironmental data for this area (red) was procured in a digital GIS format, whereas the data for the purple area was procured as a standard set of PDF reports (site sensitivity, geology and historic maps) with access to Landmark’s digital Envirocheck Analysis online map viewer. Copies of these PDF-reports are available on request or as zip files (due to their size) and therefore are not included as Appendices to this report.

The Envirocheck data was procured at the start of the commission (Oct-24) and therefore the data reflects the site boundary at that point in time. Where the boundary has previously expanded (in the east), the data was manually adjusted and included where possible. The data has not been adjusted based on the most recent boundary change (April 2026).

When referencing Landmark information, the distances to identified features are measured from the nearest point on the subject site boundary, unless stated otherwise. Table 2-2 summarises key topics included in the Landmark records.

Site-specific data has not been procured for the potential connection routes. Readily available information (including Pell Frischmann’s site-specific Site Screening Report, SSR- Appendix B) has been reviewed to provide provisional information about these routes only. However, given that the scheme is considered unlikely to materially alter potential land contamination exposure conditions along these connection routes, changes from the baseline conditions in respect to land contamination risks are considered likely be very low/negligeable.

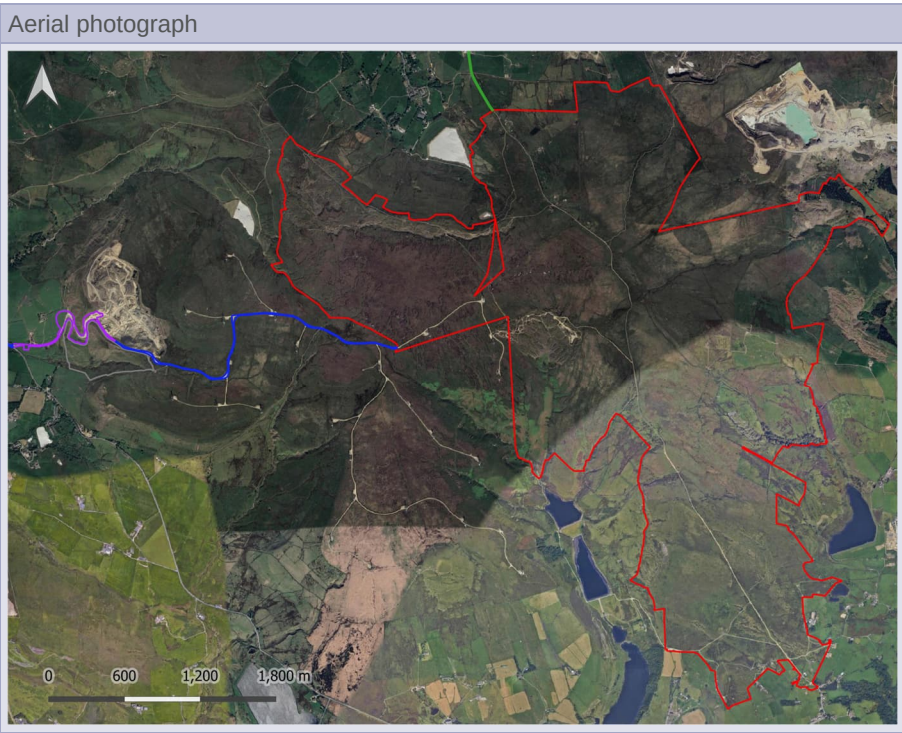
Table 2-2 Landmark topics

Envirocheck Report	Geology Report
➤ Environment Agency records ➤ Hydrology and hydrogeology ➤ Waste ➤ Hazardous substances ➤ Industrial land uses ➤ Sensitive land uses	➤ Artificial ground and landslip map ➤ Superficial geology map ➤ Bedrock and faults map ➤ Combined geology map

2.3 Site setting and description

The site is set in an area of upland moorland (as shown in Figure 2-1) with a history of quarrying and mining (coal and sandstone); and overlaps with the existing Scout Moor Wind Farm to the west (with two existing turbines onsite).

Figure 2-1 Site setting



Several access tracks are mapped onsite including Rooley Moor Road which runs north-south across the site. Two sets of overhead powerlines cross east to west in the south of the main site and ten pylons are located onsite. Most of the site is common land and Countryside and Rights of Way Act (2000) (CRoW) access land, and several tracks, cycle routes and public footpaths cross the site.

Several disused coal mines/collieries/coal pits are documented onsite, as discussed further in Section 2.7. Several former quarries, with associated spoil heaps, are onsite, including Toe Edge Sandstone Quarry and Cragg Quarry to the northwest, Ab Tor Quarry to the northeast, Cat Stones Quarry in the central east and Reddyshore and ‘Bottom of Rooley Moor’ Quarries to the south. The old quarry workings and spoil heaps are generally overgrown by vegetation, and some are used for mountain bike trails. A lake is present within a former quarry area in the northwest. Several small buildings/ruins are mapped in areas of former mines and quarries.

Several brooks rise on this site and discharge either to surrounding reservoirs (all offsite) or to larger brooks/tributaries off site. Limited areas of woodland are noted onsite, including Fern Isle Wood and Danes Wood in the east and an area of coniferous woodland adjacent to Ab Tor Quarry in the northeast.

Purple area: the temporary compound/laydown area next to Scout Road is within a field, circa 80m east of the junction with the A680 (circa 4.2km from the turbine development area following Scout Road/existing access tracks and 2km in a straight line). Temporary earthworks are required to widen the access track for a series of tight switchbacks on Scout Road, just west of Scout Moor Quarries.

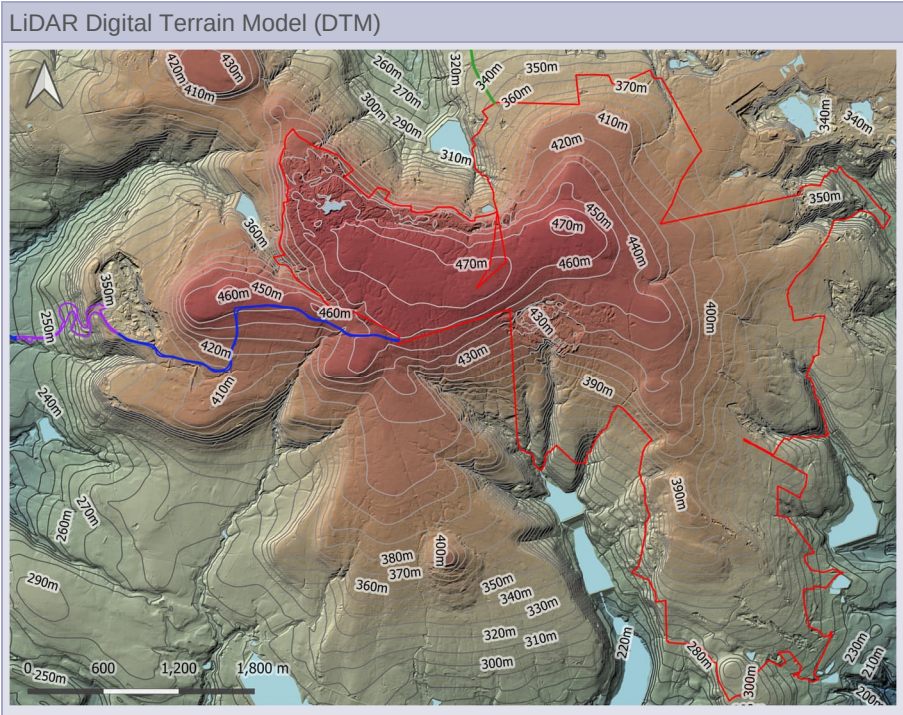
These switchbacks are between 1.4 and 1.7km west of the wind farm area and immediately west of Scout Moor Quarries. The road widening earthworks will be in fields to the north and moorland to the south. (Note: the entrance to Scout Moor Quarries and associated quarry buildings are currently shown within the client supplied site boundary).

Offsite: the surrounding area predominantly comprises open moorland and fields; with several reservoirs in the surrounding area, Scout Moor Wind Farm to the west, and the active Whitworth Quarry less than 250m northeast.

2.4 Topography

The scheme lies within an extensive central upland area of peat moorland, largely above 300m Ordnance Datum (mAOD), with a maximum mapped elevation of 477mAOD. Approximately 48% of this central area is situated above 400mAOD. Access routes to the north, west, and south predominantly consist of existing public highways within the River Irwell valley, at elevations ranging from approximately 150m to 240mAOD. Minor roads, including Scout Road to the west and Rooley Moor Road to the north, ascend to the central area, reaching elevations above 350mAOD. The site topography is represented in Figure 2-2.

Figure 2-2 Site topography



2.5 Historical mapping

The following records have been reviewed to provide an overview of the site’s history and to help identify potentially contaminative historical land uses both onsite and in the immediate surrounding area:

- Historical County Series and Ordnance Survey (OS) map editions (main site as GIS), and
- Aerial photographs (source: Google & Landmark).

Commercially available historical mapping, typically start around the mid-1800s; while these maps capture key periods of history such as industrialisation for land contamination risk assessments - in former mining areas key features and activities from the 18th century and up to the mid-19th century are not captured. There are records of underground coal mines and underground sandstone and flagstone quarries and adits, as well as shallow workings and open cast coal mining and sandstone quarrying in the Scout Moor area dating back to the early 19th century. The available mining data/records are summarised in Section 2.7.

In summary, the historical maps indicate most of the site and surrounding area has comprised moorland or fields between the 1850s and the present day, interspersed with evidence of mines and quarries. Mineral extraction appears to have declined significantly circa the 1930s onwards and the majority are marked as disused by the late 1960s. A summary of the historical map review findings is presented in Table 2-3 to Table 2-5. A selection of images from the historical maps and aerial photographs are included in Chapter 5.

Table 2-3 Historical maps summary - onsite

Onsite	Features/notes
1851	Multiple "old" collieries and coal pits are recorded onsite. Multiple quarries are located across the site, ranging from <20m in width to >350m in width. Many are indicated as Sandstone Quarries and the larger ones are typically named; for example, Toe Edge Sandstone Quarry (NW), Ab Top Quarry (sandstone) (NE), Reddyshore (W). Multiple springs marked & Reservoir shown in the S.
1894/95	NW Cragg Quarry shown covering a larger area (>1750m in width) and connecting to Toe Edge Quarry. Ab Top Quarry (NE) has also expanded, joining into other small surrounding quarries. Quarries in the S of the site are now labelled Bottom of Rooley Moor and have also expanded. Many of the smaller quarries & Ragen Quarry are now labelled as "old / disused" Many of the Old Collieries and coal pits are no longer shown.
1911/12	Ab Top Quarry expanded. Military shooting range in NE, with Riffle range butts & targets shown.
1930/31	Cragg Quarry labelled disused. Rubbing Mill Reservoir and associated Pumping station shown onsite N. Rifle range no longer shown but butts and targets remain marked (not annotated just symbols).
1967	Rubbing Mill Reservoir (now much smaller). Butts and targets no longer shown.
1992	Former Rubbing Mill Reservoir - shown as a Pond connected to Sluices (in the location of the former pumping station).
2013	Two wind turbines are shown in E with associated access tracks.

The purple area includes Scout Road which is shown as an unnamed road on the 1851 map and named ‘Scout Road’ by 1893. Scout Road only extends to Scout Moor Quarries/ formerly up to Scout Fold farm; east of the quarry the road becomes an access track. This area is predominantly shown as moorland up to 2013. Further details are included in Table 2 4.

Table 2-4 Historical maps summary – Temporary works (purple area)

Onsite	Features/notes
1851	Scout road runs up to Scout Fold (farm) before becoming a track at roughly the switchback 1 and leading up onto the moorland roughly up to switchback 3. A series of small structures (associated with Scout Fold) are shown at switchback 1. Near switchback 3, site crosses the southern extent of Scout Delf Sandstone Quarry. Southern extent of switchback 1 located within fields / heath.
1893	Some of the small structures no longer shown. The quarry workings (now Scout Moor Quarries) have expanded within the site boundary.
1912	Expansion to Scout Moor Quarries workings.
1963	Former Scout Moor Quarries area now shown as a Refuse tip.
1983	Most of eastern extent within an area marked Roughs and Scout Moor Quarries (disused).
2001	Road shown up to switchback 3 leading to a building and quarry workings (at Scout Moor Quarries). Eastern extent of the site is within the quarry workings.
2013	Access track/route east of the quarry buildings in its current layout.

Table 2-5 Historical maps summary - offsite

Offsite	
1851	Multiple sandstone quarries are shown to the N, E, W, SW and NW. Heywood Water Work Reservoirs and Great Lodge Reservoir noted 180m to the W. Green Booth Mills (woollen) is 460m SW. A Colliery and multiple Old Coal pits marked along the upper parts of Whittle Pike and Colliery between 114m to >1km W (within 100m to 300m E of the western switchbacks).
1893-1895	Middle Reservoirs added to the Heywood Water Work Reservoirs. Spring Mill Reservoir (135m E) & Cowm Reservoir (200m E). Additional large sandstone quarries later referred to as Ding Quarry (adjacent W), Greens Moor (195m N), Britanna (225m NE) and Brandwood Quarries (530m N) with associated tramways and mills.
1911/1912	Cowpe Reservoir (adjacent to the N of the site), Cragg High Level tank reservoir (17m NW) and Scoot Moor High Level Reservoir (200m NW) are shown. Heywood Water Work Reservoirs renamed Naden Reservoirs. Expansion of Ding Quarry to the west.
1967	All large quarries except for Greens Moor Quarry and Ding Quarry are recorded as disused. Greenbooth Reservoir (180m SW) is shown in the location of the former Green Booth Mills.
1980s	Greens Moor Quarry recorded as disused. Two old shafts indicated to northeast (>1km offsite)

2.6 Published geology

2.6.1 Introduction

The published geology for the site is shown on the British Geological Survey (BGS) geological map for Rochdale (Sheet 76, scale 1:50,000); as shown in Table 2-6. Derivatives of the BGS mapping are included in the Landmark data/reports and further geological information (including descriptions for each stratum) has been obtained from the BGS website.

2.6.2 Superficial geology

The superficial geology mapping indicates discontinuous superficial deposits across circa 40-50% of the site which are more likely to be present in the north. The superficial deposits are shown to consist of discontinuous areas of Peat, and more limited Till, Head and Glaciofluvial Deposits.

Peat is shown to cover large portions of the northern and central parts of the site (typically in areas above 350m elevation), while Till, Head and Glaciofluvial Deposits are mapped only locally within isolated areas in the southern third of the site. Superficial deposits are shown to be absent across much of the southern half of the site.

Peat typically comprises ‘*partially decomposed mass of semi-carbonized vegetation which has grown under waterlogged, anaerobic conditions, usually in bogs or swamps*’.

Till (Devensian): typically comprises ‘*unsorted and unstratified drift, generally over consolidated, deposited directly by and underneath a glacier without subsequent reworking by water from the glacier. They are a heterogenous mixture of clay, sand, gravel, and boulders varying widely in size and shape*’.

Head Deposits: typically comprise ‘*poorly sorted rock debris/ or clayey hill wash and soil creep, comprises gravel, sand and clay depending on upslope source and distance from source. Locally with lenses of silt, clay or peat and organic material*’.

Glaciofluvial Deposits: typically comprise sand and gravel, with lenses of silt, clay or organic material’ deposited by meltwater streams.

2.6.3 Bedrock geology

It is estimated that half of the site is directly underlain by bedrock comprising Carboniferous age strata including the Pennine Lower Coal Measures (PLCM) Formation and the older Rossendale Formation (the latter being part of the Millstone Grit Group).

The Pennine Coal Measures consist mainly of cyclical sequences of sandstones, mudstones, siltstones, and coal seams. The older Rossendale Formation comprises thick, coarse sandstones, often referred to as gritstones, interbedded with finer beds of mudstone and siltstone. These formations influence the local topography, with the more erosion-resistant sandstones and gritstones of the Rossendale Formation typically forming prominent ridges and steep escarpments. However, the topographic relationship between these units is not straightforward, as significant outcrops of the Pennine Lower Coal Measures also occur at high elevations where these deposits have not been eroded away. This stratigraphic and topographic relationship reflects the complex depositional and subsequent weathering history of the region, characteristic of the South Pennines.

The northeastern and southern areas of the main site are underlain by a sequence of the Pennine Lower Coal Measures Formation overlying the Rossendale Formation. The central and northwestern areas of the main site, and the western switchback area, are underlain by the Rossendale Formation. The older Marsden Formation (which underlies the Rossendale Formation) outcrop offsite to the north and west. The Marsden Formation comprises ‘*sandstone, interbedded with grey siltstone and mudstone with subordinate marine black shales, thin coals and seatearths*’.

2.6.4 Geological features

The geological mapping identifies several faults trending southeast-northwest and southwest-northeast onsite. Several named coal seams are mapped onsite, mainly in the north or south, including the following: Upper Foot coal seam, Lower Mountain coal seam, Lower Foot Little coal seam, Bassy coal seam, and Sand Rock coal seam (Rossendale Formation).

No natural cavity records are recorded within 1km of the site (Envirocheck).

2.6.5 BGS Artificial ground mapping

The BGS artificial ground shows localised areas of Made and Infilled Ground onsite as shown in Table 2-6.

The BGS defines these deposits as follows:

- Made Ground (undivided): ‘*an area where the preexisting land surface is raised by artificial deposits*’.

- Infilled Ground: ‘*an area where the preexisting land surface has been excavated (worked ground) and subsequently partially or wholly backfilled. Composition variable*’.

Several of these areas correlate with areas of former mining and quarrying, see Section 2.7 Mining and Quarrying. It is considered likely that Made Ground will also be present in localised areas in other parts of the site.

2.6.6 BGS borehole archive

The BGS maintains an archive of historical borehole records which includes scanned borehole, shafts and well records. The only reported onsite records relate to Cowpe Moss Spring (SD81NW36) in the northwest and Far Fold Farm Spring (SD82SW147) in the far northwestern tip of the site which do not contain any geological information.

Most of the offsite records relate to springs rather than geological borehole records. Three offsite borehole records have been referenced which indicate the following:

- 11m SE (SD81NE86): relates to domestic water supply borehole, drilled in 2018 up to 120m below ground level (bgl), which noted a sequence of Made Ground, over clay over interbedded mudstones and sandstones. A thin coal seam was noted at 31mbgl, and water was struck at 4m and 107mbgl.
- 50m E (SD81NE4): relates to a well at Spring Mill Reservoir, drilled to 255m depth in 1914, which noted a sequence of interbedded sandstones and shales. A coal seam was encountered at 113mbgl.
- 1480m W (SD81NW9): relates to a borehole drilled in 1975 up to 23mbgl, which encountered sandstone plus a likely coal seam at 3.6mbgl. This borehole was located just east of Scout Moor Quarries and circa 100m east of the proposed temporary works for the western switchbacks.

The locations of the BGS boreholes described above are shown in Table 2-6 and copies of the borehole records are included in Appendix C.

2.6.7 Ground stability

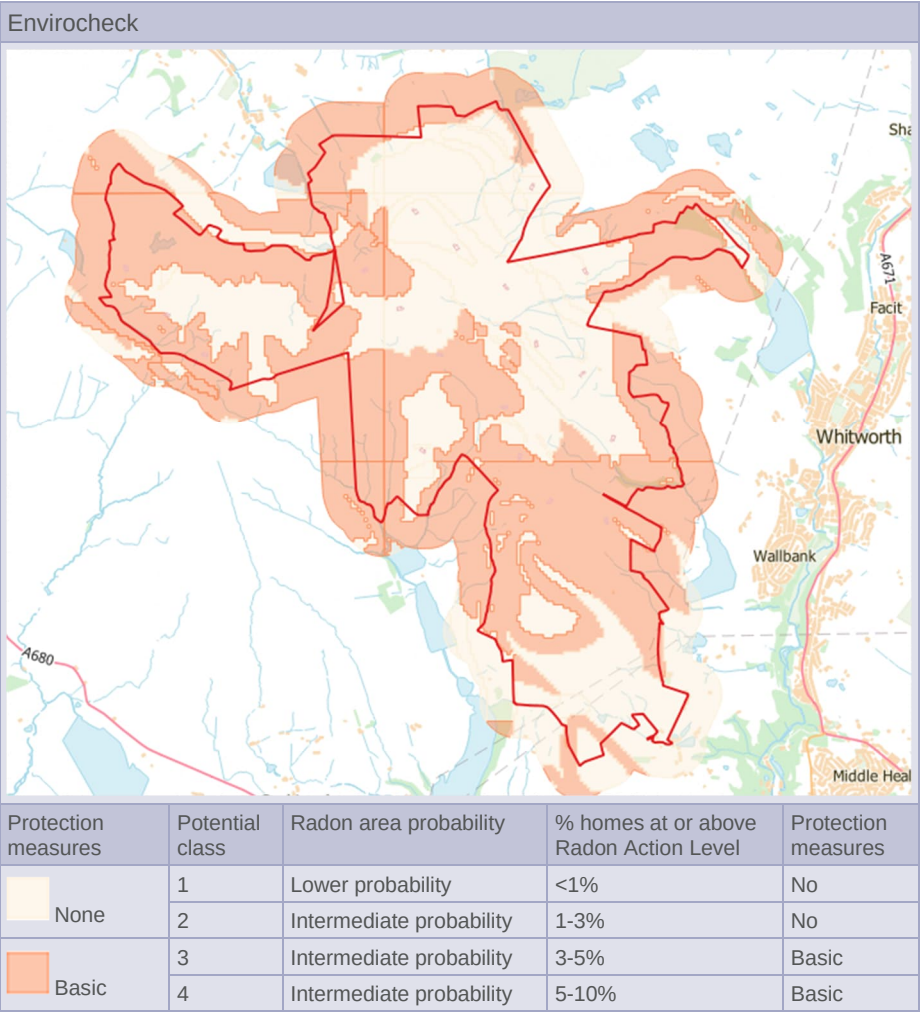
The natural ground stability hazards records from Envirocheck indicated ‘no hazard to very low’ hazard ratings for: collapsible deposits, ground dissolution, running sand and shrinking or swelling clay. Compressible deposits: Approximately 70% of the site is classed as no hazard, but Moderate hazards are recorded, generally in areas of former quarries / spoil heaps, and High hazards within areas of Peat, as shown in Table 2-6.

Landslides: BGS records identify eight landslides within the Assessment Boundary, of which only one is located within the Turbine Development Zones. The landslide hazard rating follows the topography and is typically Very Low across >95% of the site, but high in steeper areas to the west, as shown Table 2-6.

2.6.8 Radon

The high resolution BGS radon data (Envirocheck, available on request) indicates that radon risks vary significantly across the site. The resulting ‘radon protection area’ plan is shown in Figure 2-3.

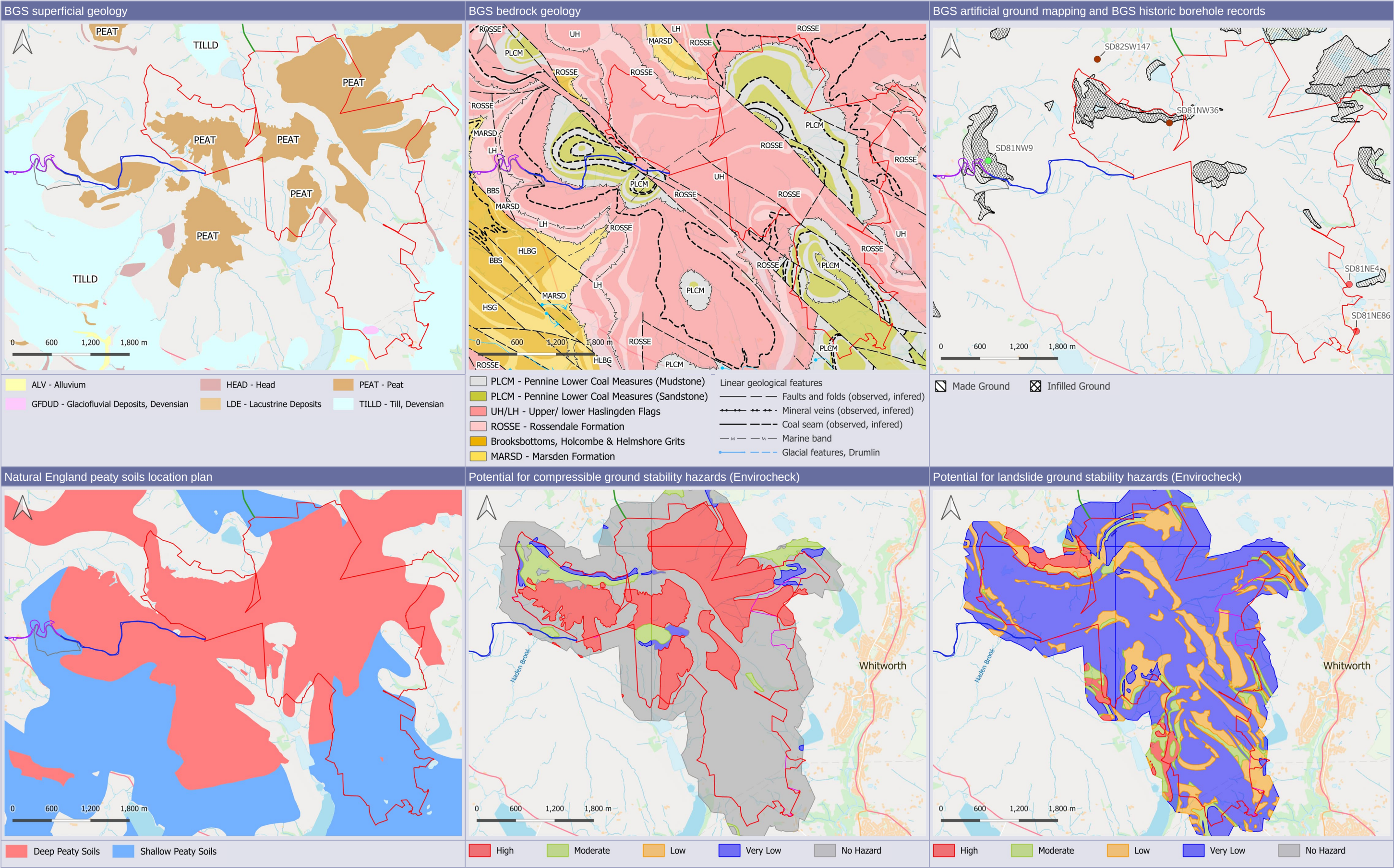
Figure 2-3 Radon protection areas



If any new ‘occupied’ buildings are proposed in areas where 3% or more of homes are at or above the Radon Action Level – these buildings will require radon protection measures in line with the BRE report ‘Radon, Guidance of protective measures for new buildings’ (BR211, 2015). Alternatively, the design process could mitigate risks by locating new ‘occupied’ buildings in areas where radon risks are lower and protection measures are not required.

At the time of reporting the only permanent building within the Wind Farm Area will be the proposed electricity substation. Depending on the final location of this building and the nature of the building design, radon protection measures may be required.

Table 2-6 Published geological information and mapping



2.7 Mining and quarrying

2.7.1 Introduction

Coal and sandstone commodities have been mined (underground) and open cast mined/quarried in the local area and onsite. Mining/quarrying in the Scout Moor area dates back at least to the 18th and 19th centuries, when small-scale and later larger-scale mining and quarrying operations were established; in particular to meet the demand for coal during the Industrial Revolution. In the mid-19th century larger surface quarries became more dominant leading to a decline in underground mining. Coal mining in the region declined in the 20th century and most coal mining operations had ceased by the mid-20th century. Sandstone quarrying has also declined over time but is still active in proximity to the site.

2.7.2 Mineral Safeguarding Areas

The site is located within a Mineral Safeguarding Area. The BGS mineral resources maps for Greater Manchester and Lancashire indicate that the mineral resources onsite include coal, brick clay and sandstone associated with the Pennine Lower Coal Measures Formation and the Rossendale Formation. A Mineral Resource Assessment report has been produced separately for the scheme (ref: 109692-PEF-ZZ-XX-RP-7002_P04 dated May 2026).

2.7.3 Coal mining

The whole site is in a Coal Authority (now the Mining Remediation Authority) reporting area and approximately 20% of the site is within a Coal Authority ‘high development risk area’ as shown in Figure 2-4 which broadly follows the Pennine Lower Coal Measures Formation (bedrock geology) and coal seams within the Rossendale Formation.

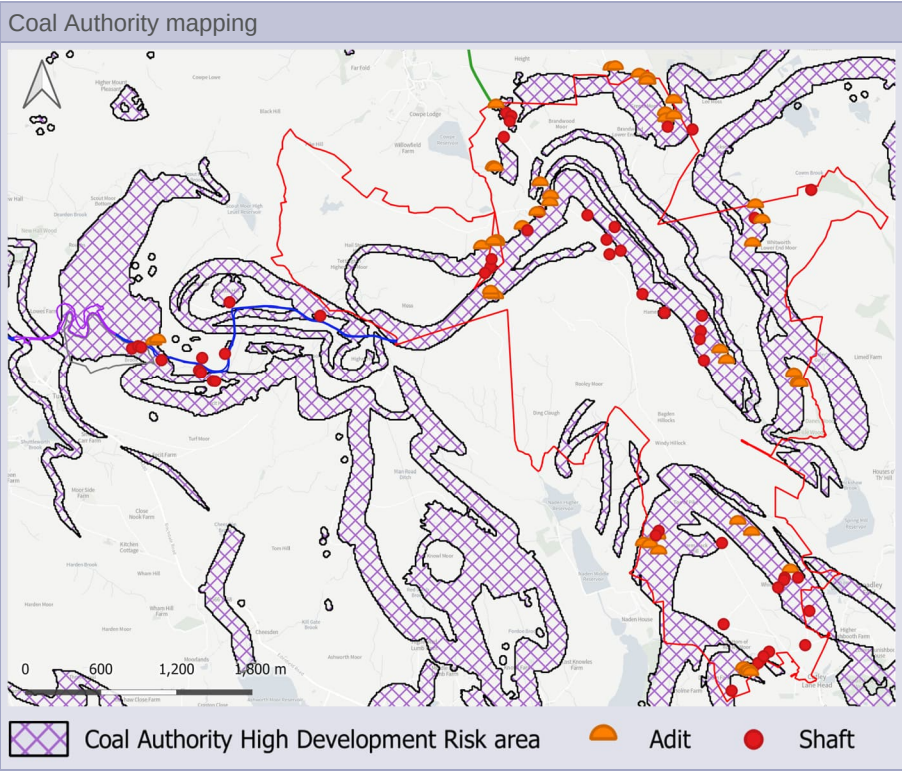
The BGS mineral site data (Envirocheck) includes 14 records relating to circa nine ‘deep’ coal mines onsite: Bartle Cown Colliery, Greenland Coal Pit, Helm Clough Colliery, Higher Croft mine, Intake Colliery, Rooley Moor Bottom Colliery and Rooley Moor Colliery, Whimsy Coal Pit, Withens Meadow Colliery and Coal Pit, see Figure 2-5.

There are also eight records for deep coal mines offsite: Brandwood Colliery, Cowm Brook Levels, Fold Head Colliery, Houses O’ Th’ Hill Mine, Lee Clough Coal Pit, Lee Moss Levels, Snipe Barn Colliery, plus Helm Clough Colliery (the latter is also listed above as an onsite mine and therefore may span the site boundary).

A site specific ‘Consultants Coal Mining Report’ (Ref. 71009810321002, Oct-24) has been procured from the Coal Authority to gain additional information about the former coal mining onsite. A copy of the report including a map showing the locations of disused mine shafts and adits onsite is included in Appendix D. A Mining Risk Assessment report summarising this information has been produced by Pell Frischmann separately for the scheme (ref: 109692-PEF-ZZ-XX-RP-GT-6001).

The Coal Authority high development risk area mapping and the site specific mine entries are shown in Figure 2-4.

Figure 2-4 Coal Authority - high development risk area and mine entries



2.7.4 Non-coal mines underground

While sandstone operations were generally surface-based, records indicate that historically smaller underground Sandstone and Flagstone mining (associated with the Rossendale Formation) is likely to have occurred in the local area, including onsite. The sandstone was extracted in underground quarries and via adits (horizontal) into the hillside where high-quality stone layers were located deeper below the surface. These underground sites typically comprised small scale operations that targeted specific layers of flagstone that were characterised by thin bedding planes that split easily into slabs. The underground mining declined over time due to the depletion of easily accessible underground stone veins. Consequently, disused adits and shallow mine workings may be present onsite.

The Envirocheck ‘non-coal mining affected area’ records includes 11 records of onsite areas where ‘rare: sporadic underground mining of restricted extent may have occurred’ (commodity: ‘vein mineral’); 11 ‘likely’ records where ‘underground mining is known or considered likely to have occurred within or close to the area’ for ‘Sandstone – Flagstone/Vein’ and a further 10 ‘likely’ records relating to ‘Vein/mineral/Flagstone’. The BGS mineral site records only identified offsite underground sandstone mining records; all five records related to ‘Britannia Mines’ (~250m NE, now in an area occupied by the offsite Whitworth Quarry).

2.7.5 Quarries

The BGS recorded mineral site data (Envirocheck) indicates that there are no remaining active quarries onsite.

The remaining records relate to former quarries/‘ceased’ operations including: one former sand and gravel quarry - Prickshaw Gravel Pit and circa 25 former sandstone quarries onsite (the records include multiple duplicates including up to 6 records for one quarry, it is estimated that the 52 BGS opencast sandstone quarry records relate to 25 named sandstone quarries onsite).

There are multiple BGS ‘mineral site’ records for: sand and gravel, common clay and shale and sandstone quarries offsite. There are just under 120 records (several contain duplicates or multiple records for the same quarry/operation); three records are recorded as ‘active’: Ding Quarry (adjacent west), Whitworth Quarry (383m northeast) and Scout Moor Quarries (circa 1km west of the permanent works area, adjacent to Scout Road and the proposed temporary works for the western switchbacks).The BGS mineral site records have been filtered to show the ‘underground’ mine records for both sandstone and coal. This shows Britannia Mines (sandstone) offsite to the northwest, and several coal mines in the northeast, centre and south of the site.

Figure 2-5 BGS mineral sites records - underground mine records

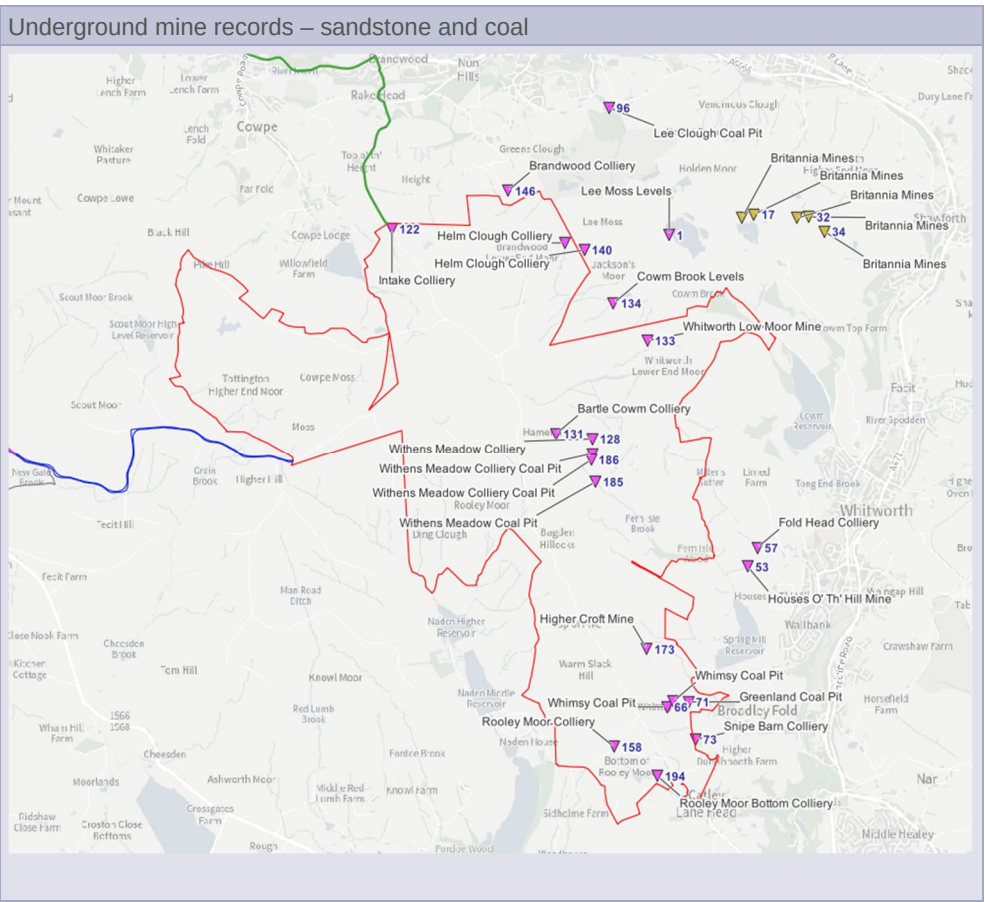
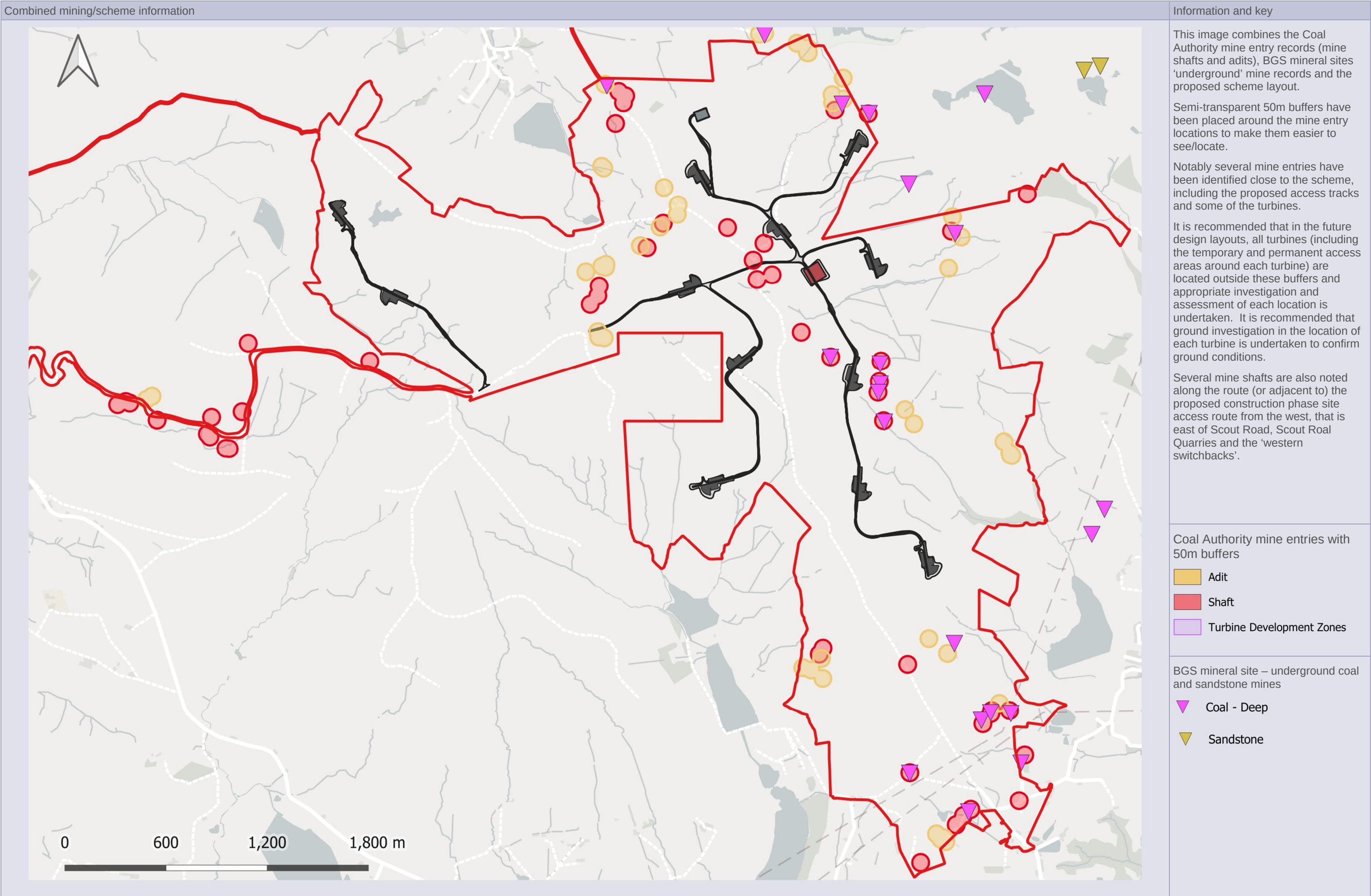


Figure 2-6 Underground mines and the proposed scheme



2.8 Hydrology and hydrogeology

2.8.1 Hydrology

Multiple small brooks rise on this central upland moorland site and either discharge to a series of offsite reservoirs or to tributaries of local rivers. The site lies within the catchment area of at least two rivers including the following:

- River Irwell (~900m north) flowing west towards Rawtenstall before turning south towards Manchester.
- The River Spodden (~730m east) flowing south to the River Roch (3.2km south in Rochdale).

Several small ponds have been noted onsite, plus a large ‘pond’ associated with the former Cragg Quarry in the northeast and a large pond in the south within the ‘Bottom of Rooley Moor’ area.

Brooks such as Well Clough, are present onsite in the north, with Miller's Gutter (northeast), Fern Isle Brook (east) and Ding Clough (south) also noted, but most brooks onsite are unnamed. As introduced above, several of the brooks onsite discharge to surrounding offsite reservoirs for example Prickshaw Brook crosses in and out of the site along the northeast boundary, before being joined by Fern Isle Brook and leading into Springmill Reservoir offsite to the east (see below).

Ten reservoirs have been identified (listed below), most of which are operated by United Utilities Water Ltd for potable public water supply, as reflected in the licenced surface water abstractions records. (Note: there are no reservoirs recorded onsite).

- Cowpe Reservoir (directly adjacent NW).
- Cragg High Level Tank (17m NW).
- Scout Moor High Level Reservoir (200m NW).
- Cowm Reservoir (200m E).
- Springmill Reservoir (135m E).
- Pickshaw Dams (15m SE).
- Naden Higher Reservoir (100m SW).
- Naden Middle Reservoir (180m W).
- Naden Lower Reservoir (310m W).
- Greenbooth Reservoir (180m W).

There are no additional records of surface water abstractions (i.e. onsite or within 50m offsite). There are no records of active discharge consents to surface waters onsite or within 50m offsite. The closest active discharge consent is recorded 95m southwest which relates to treated effluent (via a reedbed) from multiple domestic properties.

2.8.2 Hydrogeology

A small number of springs are recorded onsite. Numerous issues and sinks are also mapped suggesting a degree of groundwater : surface water interaction. Surface waters onsite may receive some limited groundwater baseflow.

The Environment Agency aquifer designations for the underlying superficial deposits and bedrock, and the associated groundwater vulnerability classifications for these strata are summarised in Table 2-7. The Aquifer Designation plans are included in Figure 5-2.

Table 2-7 Aquifer designations and groundwater vulnerability

Stratum	Aquifer designation and Groundwater vulnerability (GV)	Hydraulic characteristics
Peat (superficial)	Unproductive	Unproductive strata are largely unable to provide usable water supplies and are unlikely to have surface water and wetland ecosystems dependent on them.
Head (superficial)	Secondary B aquifer (GV high)	Secondary B aquifers are mainly lower permeability layers that may store and yield limited amounts of groundwater through characteristics like thin cracks (called fissures) and openings or eroded layers.
Till, Devensian (superficial)	Secondary undifferentiated (GV medium)	Secondary undifferentiated are aquifers where it is not possible to apply either a Secondary A or B definition because of the variable characteristics of the rock type. These have only a minor value.
Glaciofluvial Deposits (superficial)	Secondary A aquifer	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.
Bedrock	Secondary A aquifer (GV low to high)	These are generally aquifers formerly classified as minor aquifers.

Based on Environment Agency data from the Envirocheck data.

- There are no records of active groundwater discharge consents within 1km.
- The site is not within a groundwater source protection zone (SPZ) and there are no SPZs within 1km.
- One active groundwater abstraction licence is recorded onsite at ‘Knack’s Farm’ in the southeast for general farming and domestic water use (Knacks Farm).
- Four groundwater abstraction boreholes ‘Scout Moor Quarries Boreholes’ (BH1, BH2, BH3 and BH4) are recorded circa 1.4km west of the site. These boreholes are grouped on the southwest side of the Scout Moor Quarries, adjacent to Scout Road and are within 100m of the proposed temporary works for the western switchbacks. The abstraction is operated by Marshalls Mono Ltd for mineral products process water use.

Extracts of the BGS groundwater flooding susceptibility map are included in Figure 5-3 which indicates that small, localised parts of the site may be susceptible to groundwater flooding.

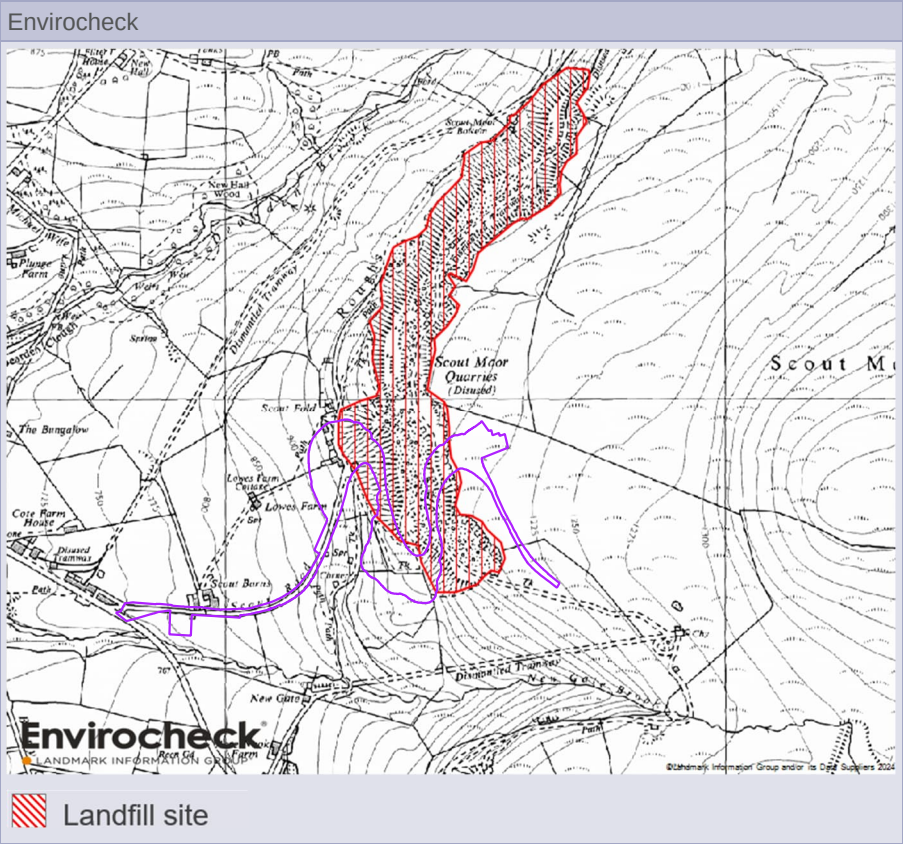
2.9 Waste records

The available waste records (including from Envirocheck) indicate that there are no known landfill sites, waste treatment or waste transfer sites onsite or within 250m of the Wind farm area.

However, with respect to the proposed temporary works, a potential landfill site has been identified associated with Scout Moor Quarries - at the eastern end of the western switchbacks and circa 1.4km west of the permanent works area/main site. The quarry is labelled ‘refuse tip’ in the 1963 map. The same area is mapped as a Local Authority Landfill Site in the Envirocheck waste records and the BGS artificial ground maps shows this area as Made Ground in the west and Infilled Ground (artificial deposit) in the east. The waste records indicate that the site accepted ‘inert, sludge waste’. It is considered likely that the ‘licenced waste management facility’ record for the ‘management of inert or extractive waste’ (issued 31-May-2011) by Marshalls Mono Limited (which has an approximate location only) may also relate to the same site/quarry.

Recent aerial photographs and evidence from the site walkover indicates that the quarry is likely active again. The waste records do not provide information about when landfilling activities started or finished or if they are ongoing.

Figure 2-7 Landfill sites



2.10 BGS surface geochemistry of the UK

The Geochemical Baseline Survey of the Environment (G-BASE) project by the British Geological Survey (BGS) surveyed the surface geochemistry of the UK working south from northern Scotland (1960s) to southern England (2014). The project started with stream sediment and stream water sampling, routine soil sampling was introduced in 1986, and urban soil sampling commenced in 1991. The resulting data provides preliminary information about the local ‘background’ soil geochemistry.

In rural environments stream sediment and water samples were collected at an average density of one per 1.5–2 km² and soil samples were collected at an average density of one every 2 km². The published G-Base data comprises ‘point data’ (i.e. measured concentrations at sample locations) and geochemical maps (showing interpolated data based on the nearest point sample data). Table 2-8 summarises the G-BASE concentrations based on mapped data.

Table 2-8 Estimated background concentrations G-BASE data (mg/kg)

Contaminant	Arsenic	Lead	Cadmium	Chromium	Nickel
Concentrations (mg/kg)	<15 - 25	<100 - 200	<1.8 – 6.0	60 - 120	15 - 45

2.11 Additional geoenvironmental records

The following geoenvironmental records from the he Envirocheck data are considered noteworthy with respect to this preliminary land contamination risk assessment:

- The site is not on the Contaminated Land Register (i.e. the site is not within land determined as ‘contaminated land’ under Part 2A of the Environmental Protection Act 1990) and there are no Contaminated Land Register Entries within 1km.
- There are no fuel station entries within 1km of the site (Wind Farm or Switchback areas).

2.12 Unexploded ordnance (UXO)

Parts of the United Kingdom were heavily bombed during World War 2 (WW2); a significant number of bombs did not detonate on impact and some of these bombs may still be in the ground. As an initial step towards a preliminary UXO risk assessment (in line with CIRIA report C681, 2009), a non-specialist screening exercise has been carried out for the site.

The unexploded bomb (UXB) risk map from Zetica classifies the site and the surrounding area with a potential low bomb risk. However, a site-specific pre-desk study assessment (PDSA) ordered from Zetica recommended that **a detailed desk study is undertaken to assess, and potentially zone, the UXO hazards level onsite** due to the following: *“During WW2, military training including the use of Armoured Fighting Vehicles (AFVs) occurred on the site” and “1No. British trainer aircraft and 1No. American fighter aircraft crashed on the site”*. In addition, although *‘no readily available records have*

been found indicating that the site was significantly bombed’ The bombing densities for the local boroughs ranged between 0.2 to 1.6 bombs per 405ha. The UXB map and PDSA from Zetica are included in Appendix E.

2.13 Potential ecological system receptors

Table 2-9 summarises potential land contamination ‘ecological system receptors’ on or near the site¹.

Table 2-9 Ecological system receptors

Receptor	Onsite	Offsite (within 1km)
Marine nature reserves or European marine site	No	None
Nature reserve (local or national)	No	None
Ramsar site	No	None
Site of Special Scientific Interest (SSSI)	No	Yes - Lee Quarry
Special Area of Conservation (SACs)	No	None
Candidate Special Areas of Conservation (cSACs)	No	None
Special Protection Areas (SPAs)	No	None
Potential Special Protection Areas (pSPAs)	No	None
Potential geoenvironmental constraints		
Areas of outstanding natural beauty	No	None
World Heritage Sites	No	None

The adjacent Lee Quarry in the NE is designated as a Site of Special Scientific Interest (SSSI) because of its geological importance. The SSSI boundary is less than 1m from the site’s northeastern site boundary.

The quarry exposes rock formations that are significant for the study of the Carboniferous period; is noted for its fossil-bearing rock layers and is ‘important for research into past environments, making it valuable for both scientific study and conservation’. A copy of the citation (2000040) is included as Appendix F.

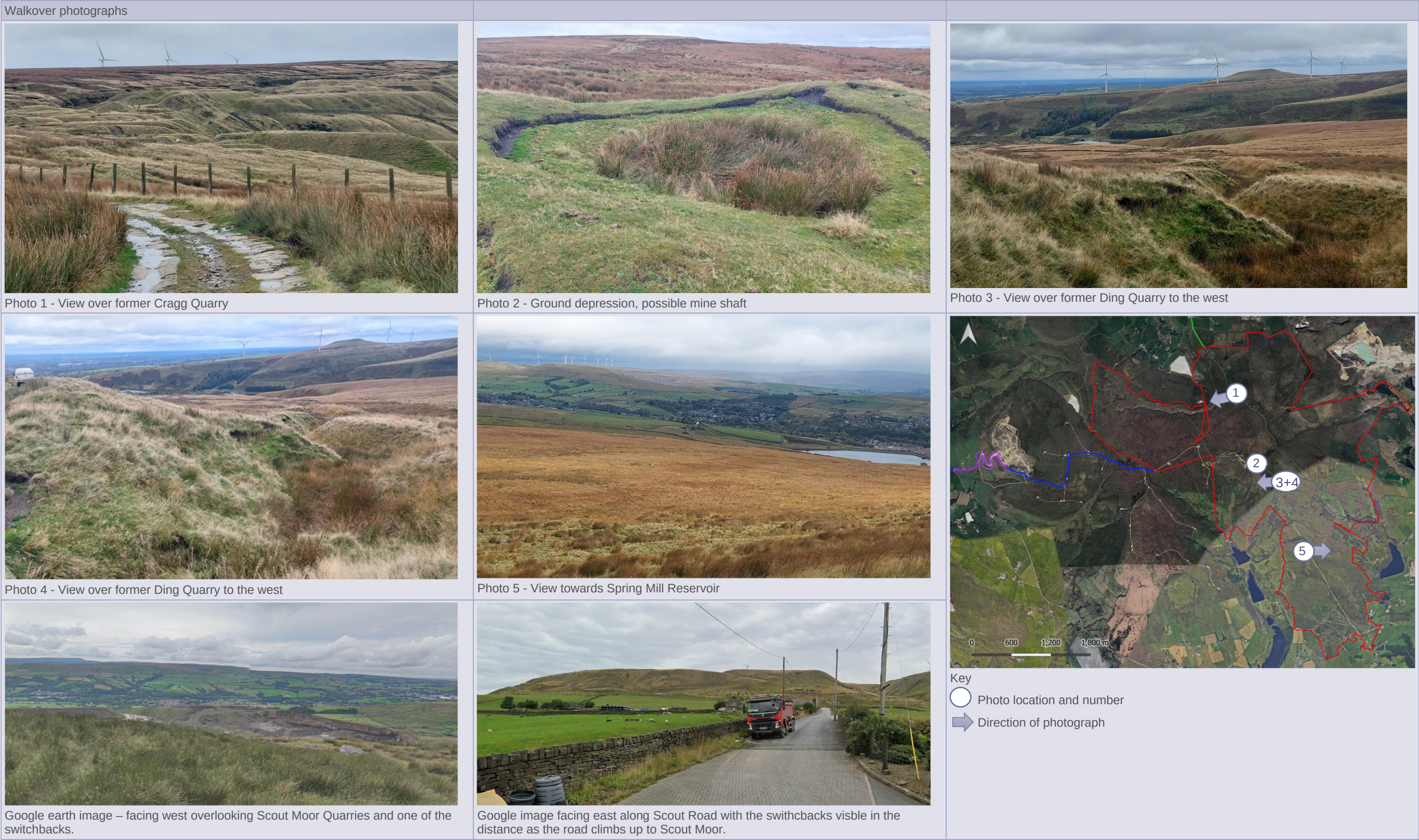
With respect to this land contamination preliminary risk assessment if is not anticipated that the scheme will impact the offsite SSSI therefore this receptor will not be carried into the conceptual site modal for the scheme.

¹ The ecological system receptors that have been considered are based on reference to “The Environmental Protection Act 1990: Part 2A, Contamination Land Statutory Guidance (Department for Environment Food and Rural Affairs, Defra, 2012)” and “An ecological risk assessment framework for contaminants in soil, Science Report SC070009/SR1 (Environment Agency, 2008)”.

2.14 Walkover survey

A walkover survey was carried out by a Pell Frischmann geotechnical consultant on the 9 October 2024. The main aims of the survey were to observe the current site conditions (including ground cover), look for features of geoenvironmental significance, identify potentially contaminative land-uses onsite or adjacent to the site, and to consider likely access options or restrictions for future site investigation equipment (if required). A selection of site photographs taken during the walkover are shown Figure 2-8, along with a Google Earth map indicating the respective locations and direction of each image.

Figure 2-8 Walkover survey photographs



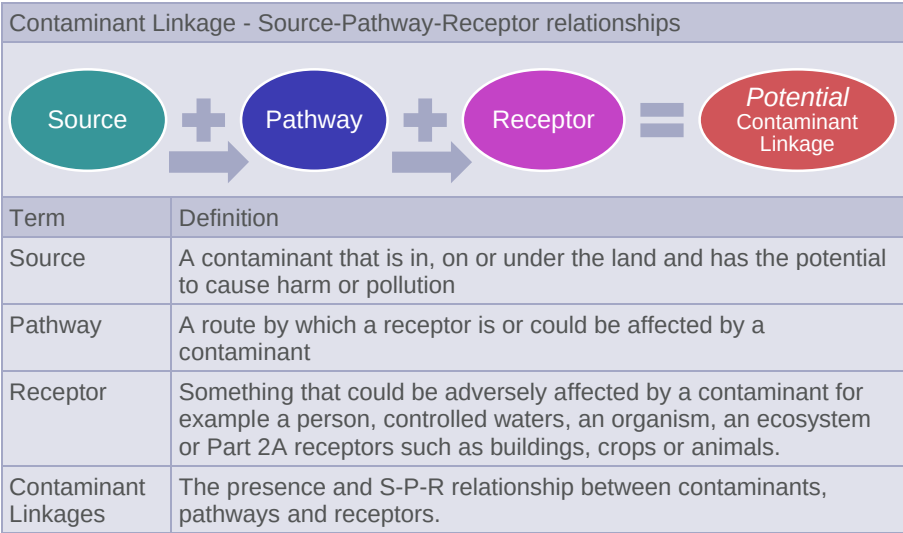
3 Preliminary risk assessment (PRA)

3.1 Introduction

The land contamination desk study, summarised in Chapter 2, has been undertaken to begin to identify potential land contamination risks which could significantly impact or restrict the proposed scheme and to inform the preliminary risk assessment process. This preliminary risk assessment chapter is based on the available data presented in this report and has been progressed using qualitative judgement only.

The preliminary risk assessment (PRA) includes the development of an 'initial', 'outline' or preliminary conceptual site model (CSM) for the proposed scheme. A conceptual site model shows the possible relationships between contaminants, pathways and receptors based on the source-pathway-receptor (S-P-R) approach, as shown in Figure 3-1.

Figure 3-1 Contaminant Linkages (S-P-R)



All three elements (S-P-R) of a contaminant linkage must be present for a land contamination risk to exist, i.e. even if a contaminant has been identified but there is no receptor or no pathway then the S-P-R linkage is incomplete and there is not a risk - *“A contaminant linkage must be present for there to be a S-P-R relationship. Without a linkage, there is not a risk – even if a contaminant is present”* (LCRM, 2020).

3.2 Potential sources

Table 3-1 summarises the potentially contaminative land-uses or potential contaminant sources that have been identified onsite, and in proximity to the site, that have been considered for inclusion in the conceptual site model.

Table 3-1 Potential sources

Onsite
➤ Historical mining and quarrying activities (onsite) including localised areas of Made Ground (e.g. spoil and infilled ground) and underground mine workings. Mine/ground gas associated with below ground workings. ➤ Landfill within Scout Moor Quarries (temporary works area only). ➤ Radon.
Offsite
➤ Historical mining Ground gas associated with historical mine shafts and possible shallow mine workings.

3.3 Potential receptors

Table 3-2 summarises the potential receptors that have been identified with respect to the site and the proposed development, in line with the contaminated land statutory guidance (Part 2A, 2012). Where the future end-uses are known and when changes to the end-uses are likely to result from the proposed development of the site, it is important that these future receptors are also considered within the Conceptual Site Model.

Table 3-2 Potential receptors

Receptor	Details
Human health - end users	Limited (site operators/maintenance only)
Human health - during site preparation and construction	Yes (in areas of Made Ground)
Controlled waters	
Surface water	The onsite brooks discharge to offsite reservoirs and rivers
Groundwater	Secondary Aquifer (superficial deposits & bedrock).
Other	
Buildings and structures	Substation only – and depends on location
Ecological systems	No

3.4 Conceptual site model and preliminary risk ratings

The *preliminary* Conceptual Site Model summarising the potential contaminant linkages (pCLs) for the proposed scheme is presented Table 3-3 overleaf. Potential risk ratings have been assigned for each potential contaminant linkage. These ratings are based on the available data (presented in this report) and qualitative judgement only. Each risk rating considers the 'severity of the consequence' and the 'probability of the likelihood' (as shown in the risk matrix Table 3-4, overleaf); and is based on the absence of any 'mitigation' or 'remediation' measures.

It should be noted that the assigned risk ratings do not take into account any mitigation or remediation measures as the preliminary risk assessment is based on potential contaminant linkages only.

During the risk assessment stage, the term '*potential*' contaminant linkage is used which reflects that these CLs are not confirmed. The CSM is an iterative process that needs to be updated as a scheme progresses through the Land Contamination Risk Management process, this may result in potential CLs being discounted/closed in the future and others the risk ratings may need to be refined. As stated in the LCRM guidance, the CSM should be used to *“inform the basis of your initial assessment and all future decisions as you progress through Land Contamination Risk Management”* (LCRM, 2020).

The conceptual site model predominantly focuses on future risks once the development is complete and operational/in use based on the absence of mitigation or remediation measures (as introduced above); however, potential risks that relate to the construction phase and temporary works have also been included for information these linkages are prefixed with the letter “T”.

Table 3-3 Preliminary conceptual site model and preliminary risk ratings

pCL	Source/s	Pathway/s	Receptor/s	Probability	Consequence	Risk rating	Comments
101	Contaminants within localised Made Ground onsite	Ingestion, inhalation and dermal contact	Human health of end users	Low likelihood	Minor	Very low	Based on the mining/quarrying history onsite it is likely that the scheme will encounter areas of Made Ground. However, the nature of Made Ground where present, is most likely to reflect worked ground and quarrying and mining spoil rather than Made Ground of anthropogenic origin, and significant risks to future operators of the wind farm are likely to be very low or negligible as end users are unlikely to have close contact with the ground and the nature of the proposed scheme will not significantly alter the ground conditions. Recommendations: No further assessment required.
T01	Contaminants within localised Made Ground onsite	Ingestion, inhalation and dermal contact	Health and safety (H&S) of site preparation and construction workers	Low likelihood	Mild	Low	Based on the mining/quarrying history onsite it is likely that the scheme will encounter areas of Made Ground. It is anticipated that potential ground contamination risks to construction and site maintenance workers can be mitigated by the adoption of suitable working methods, utilising appropriate personal protective equipment (PPE) and maintaining good hygiene (via the construction stage RAMS) Recommendations: It is recommended that geotechnical ground investigation is undertaken as part of the design process for this scheme. This will include drilling a series of boreholes in each turbine location and also along the access tracks. It is recommended that any future ground investigations aim to establish the presence/absence of Made Ground around the proposed wind turbine locations and that soil samples are collected and subjected to geochemical analysis (including screening for asbestos) to provide suitable data to assess the geochemical ground conditions onsite and to assess potential risks.
201	Mine gas (from onsite underground coal mine workings)	Migration and accumulation	Substation building onsite	Low likelihood	Medium	Moderate/ low	Former underground coal mines have been identified onsite. The locations of the underground workings have not been determined. The mine shafts and underground workings have been identified as a potential source of mine gas that could be disturbed/released during construction (and potential up-front site investigation). The only building that is proposed as part of this scheme is the substation building (it is noted that substation buildings tend to be well ventilated by design due to their nature/function). Recommend: Specialist mining investigations will be required in areas of proposed wind turbines (to include dynamic sampling with rotary core follow on) to identify suitable locations free from underground mine workings/mine entries, it is recommended the ground gas investigations are undertaken alongside these 'geotechnical' focused investigations to provide data to inform construction phase risks and ground/mine gas migration potential.
203		Inhalation of indoor air within the substation building	Human health of end users	Unlikely	Mild	Very Low	
T02	Mine gas (from onsite underground coal mine workings)	Inhalation of within trenches/excavations	H&S of site preparation and construction workers	Low likelihood	Medium	Moderate/ low	
T03		Migration during site investigation or construction	Offsite buildings	Unlikely	Medium	Low	
301	Landfill material	Ingestion, inhalation and dermal contact	n/a – no receptors	n/a	n/a	n/a	Parts of Scout Moor Quarries have been used for landfilling; the landfill boundary crosses the temporary works area (in the west) near the proposed temporary access track widening. Information about the nature of the fill material is limited but appears to indicate that the fill was derived from the quarrying activities. If this is the case, then it is considered that risks to site preparation and construction workers are likely to be low. (Note the proposed final scheme will not introduce human health end-users in this area and there are no proposed buildings in this area – therefore only the temporary works H&S contaminant linkage requires consideration). Recommend: site investigation scheme to establish the ground conditions in the areas of the track widening to establish if fill is present within the footprint of the proposed road widening. If fill is encountered then further sampling, analysis and risk assessment may be required.
T04	Landfill material	Ingestion, inhalation and dermal contact	H&S of site preparation and construction workers	Low likelihood	Mild	Low	
302	Landfill gas	Migration and accumulation into buildings	n/a - No receptors	n/a	n/a	n/a	
401	Radon	Inhalation of indoor air within the substation building	Human health of substation end users	Low likelihood	Medium	Moderate/ low	Parts of the site have elevated radon risks where basic radon protection measures will be required for new 'occupied' buildings. The only scheme building will be the new substation (it is noted that substation buildings tend to be well ventilated by their nature/function). Recommend: locate the substation in a low radon risk area where radon protection measures are not required or review the radon protection requirements for the sub-station building considering the final building design (including ventilation) and design in basic radon protection measures if/as required.
501	Contaminants localised within Made Ground	Migration through the unsaturated zone	Secondary A aquifers	Unlikely	Mild	Very low	As detailed for pCL101, while ground conditions within the Wind Turbine Area will include Made Ground, the natural origin of most of these materials (from significant quarrying and some coal mining) is unlikely to give rise to significant contaminants that will be notably influenced by the proposed scheme. As such, it is considered unlikely that the development will notably raise contamination risks to the superficial or bedrock aquifers below the site. Given this low groundwater risk and the fact that the wind turbine locations are designed to be 50m away from existing watercourses, land contamination risks to controlled waters including the reservoirs surrounding the site are considered to be very low Recommendations: No further specific assessment required. Turbine location site investigation data should be kept open to review if unexpected ground conditions are identified that may require further assessment.
502			Surface waters	Unlikely	Mild	Very Low	

T = potential contaminant linkages that relate to temporary works/construction phase

Table 3-4 Risk matrix

Risk = probability x consequence		Consequence			
		Severe	Medium	Mild	Minor
Probability	High likelihood	Very high	High	Moderate	Moderate/ low
	Likely	High	Moderate	Moderate/ low	Low
	Low likelihood	Moderate	Moderate/ low	Low	Very low
	Unlikely	Moderate/ low	Low	Very low	Very low
	No linkage	Without a linkage, there is not a risk – even if a contaminant is present (LCRM 2020)			

Based on the CIRIA good practice guide (C552, 2001).

4 Conclusions and recommendations

4.1 Summary and conclusions

The desk study indicates that the site has a history of mining and quarrying including deep coal mining and sandstone mining and quarrying. Approximately 20% of the site is classified as a high development risk zone associated with underlying coal-bearing formations. Historical records indicate multiple former deep coal mines both onsite and in the surrounding area, highlighting a significant legacy of coal mining that may pose potential ground stability and development constraints.

The BGS artificial ground mapping identified areas of Made Ground and infilled/worked ground onsite, with these areas typically correlating with areas of former mining and quarrying. It is also considered likely that Made Ground will be present in localised parts of the site beyond the BGS artificial ground mapped areas. Where Made Ground is present onsite, the potential for contamination to be present within this material cannot be discounted, however most of the Made Ground is likely to be of natural origin reworked quarry and mine spoil. Based on the nature of the proposed scheme this is unlikely to present significant contamination risks; however, the likelihood of contaminated Made Ground onsite will need to be accounted for in the contractor’s risk assessment and method statement (RAMS).

Mining hazards associated with subsidence/voids (for example mine shafts, adits and shallow underground workings) will need to be considered as part of the ongoing design process. It is understood that there have been several iterations to date in relation to the design around specific constraints identified within this report. Future work to design-out-risks will be to undertake confirmatory drilling to prove the presence/absence of underground mining features throughout the scheme footprint. Any works that could disturb underground mining features will need to consider potential risks for mobilising ground gas; however, land contamination ground gas risk assessment will not be required with respect to the completed scheme due to the lack of receptors, except for the substation building or any notable structures or engineered voids where ground gas could potentially accumulate.

It is essential, that the design team read the Coal Mining Risk Assessment for the scheme (ref: 109692-PEF-ZZ-XX-RP-GT-6001) to understand the risk from legacy mining at the site and for any future recommendations for further work.

With respect to the temporary works, namely the earthworks-based road widening on Scout Road (west), historical mapping and waste records indicate that a landfill has operated within the footprint of Scout Moor Quarries. This will require further investigation with respect to potential health and safety during enabling/construction (and to inform geotechnical design). If Made Ground/fill is encountered within the footprint of the proposed temporary works, then additional risk assessment may be required.

Additionally, depending on the location of the substation, basic radon protection measures may be required. It is however noted that substation buildings tend to be well ventilated by design, and this should be factored into the risk assessment process.

4.2 Recommendations

Further investigation and assessment will be required with respect to the existing mine entries and shallow underground mine workings onsite (to include dynamic sampling and rotary core drilling in areas of proposed infrastructure) and where possible the ongoing design process should aim to locate scheme elements in lower risk areas. Such investigation is expected to be completed post-application where it will support requisite detailed design and may also be secured under an appropriately worded planning condition.

As geotechnical ground investigation and mining investigation will be required within the scheme footprint (including access tracks/roads, each wind turbine location and areas of significant earthworks), it would be prudent to undertake geochemical analysis of any Made Ground encountered to provide geochemical data that the contractor can reference to inform their risk assessment and method statements.

5 Additional figures

Figure 5-1 Site history

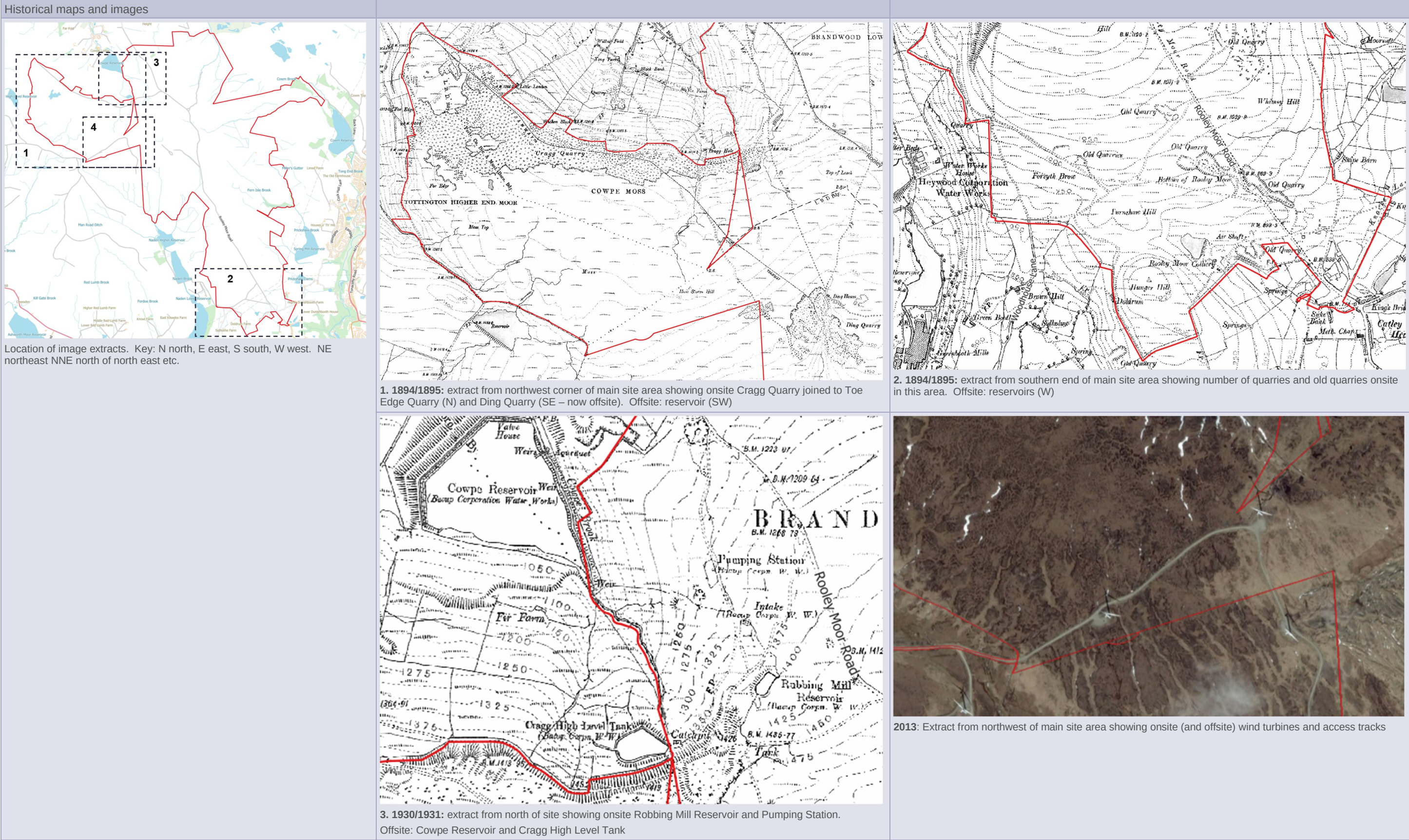


Figure 5-2 Aquifer designations mapping

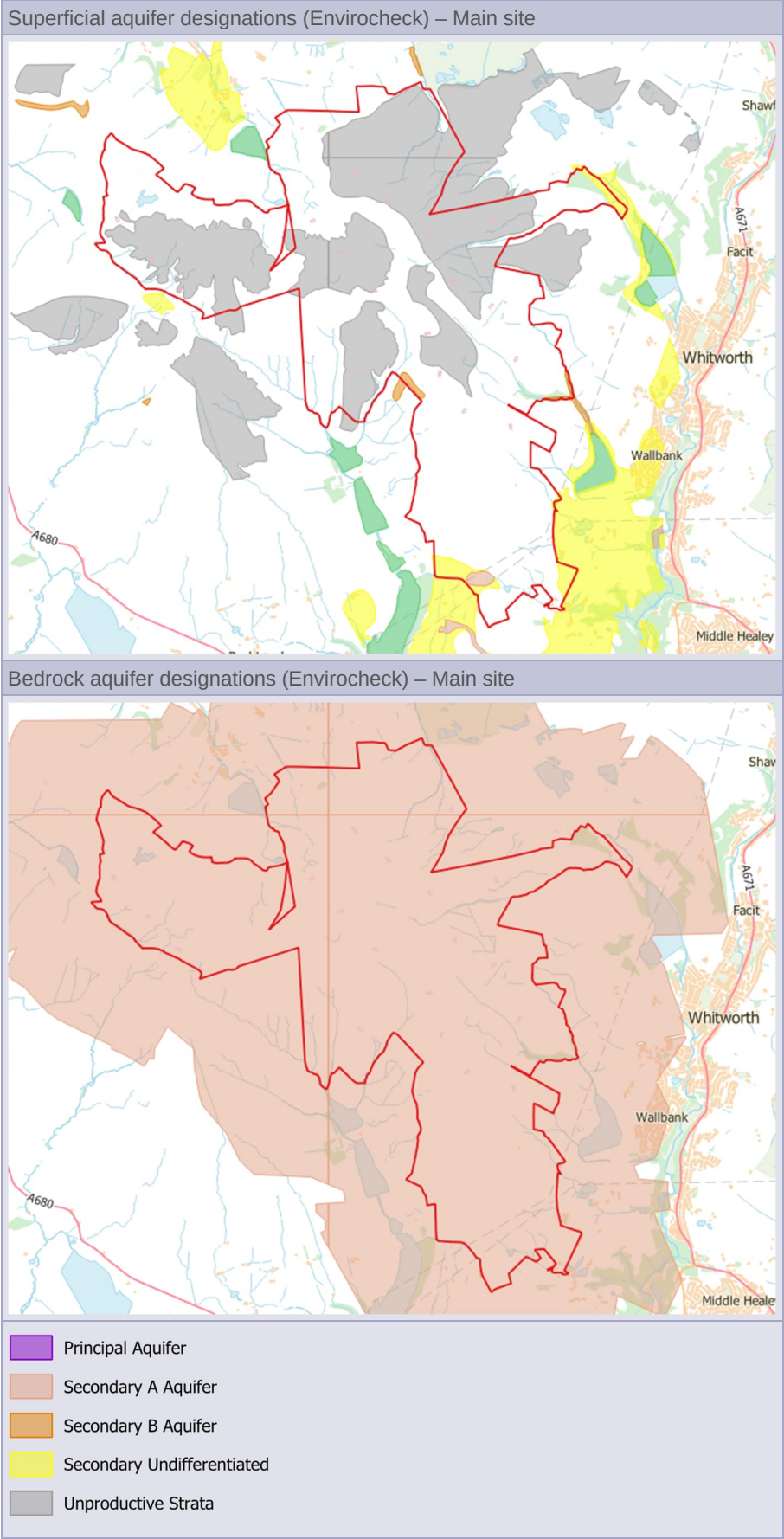
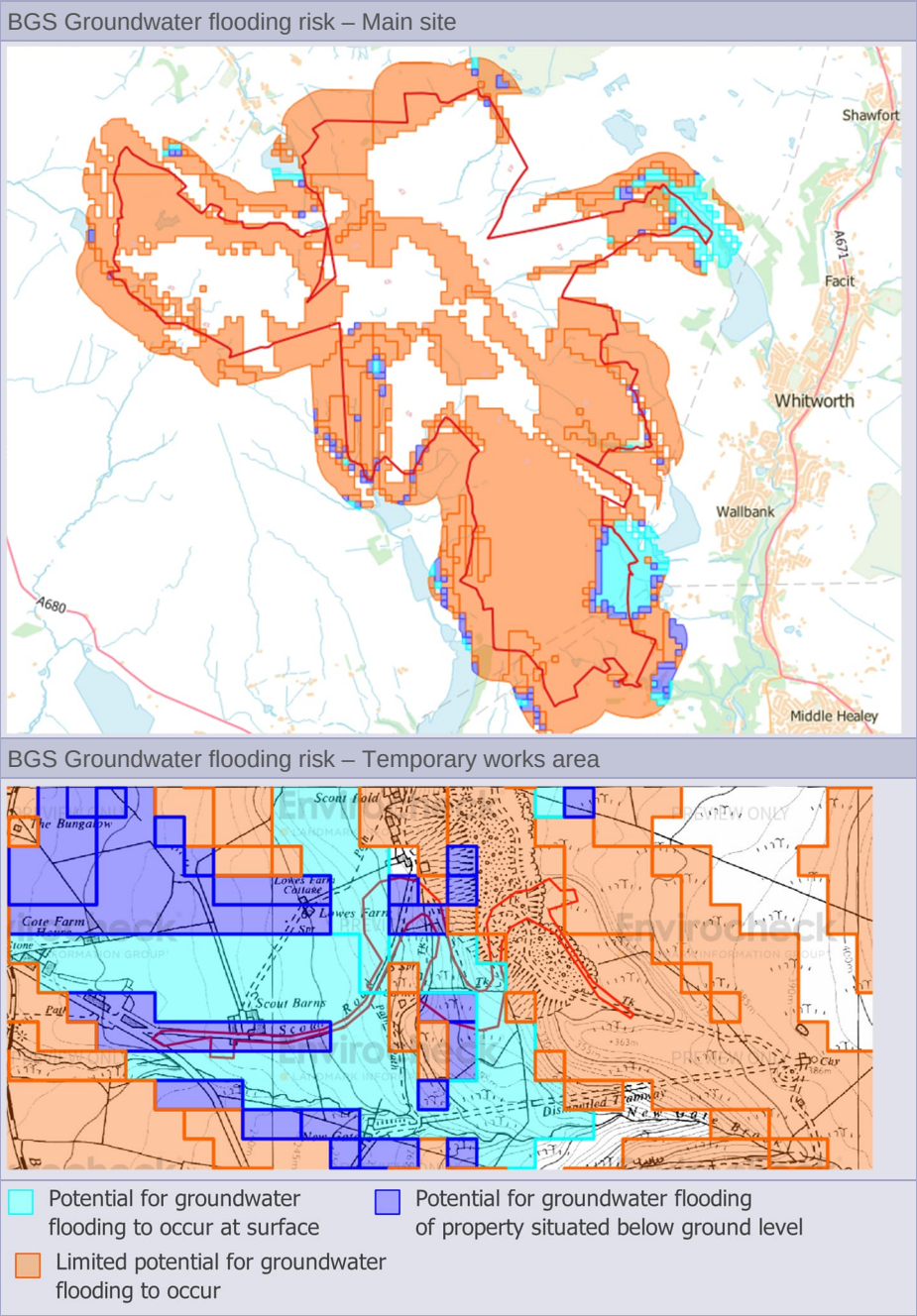


Figure 5-3 Groundwater flooding risk



6 Limitations and liabilities

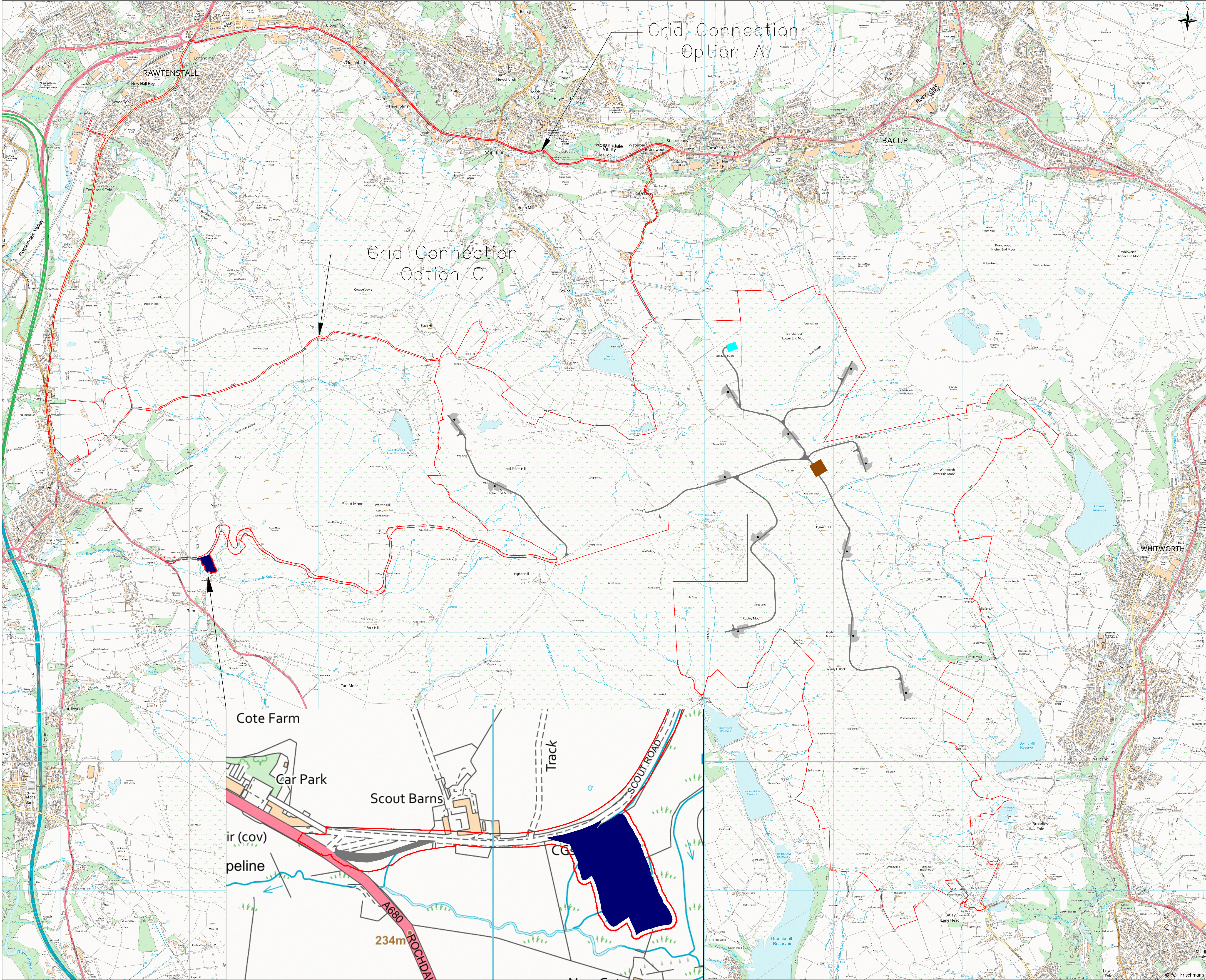
This report has been prepared by Pell Frischmann with reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the Client in accordance with the agreed scope of services.

This report has been prepared to provide pre-development geoenvironmental and land contamination information for Scout Moor II Wind Farm. The report contents should only be used in that context and Pell Frischmann disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.

The report details the findings of work carried out by Pell Frischmann during a study period from October to December 2024, with subsequent updates in May 2025 and May 2026. The report has been prepared based on available data and information obtained during the 2024 study period and updated scheme information only in 2025 and 2026. No new or additional data was procured or reviewed in 2025 or 2026. Information provided by the referenced third parties has been used in good faith and is taken at face value; however, Pell Frischmann cannot guarantee its accuracy or completeness.

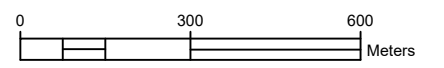
Although every reasonable effort has been made to gather all relevant information within the context of the agreed scope of work, all potential environmental constraints or liabilities associated with the site may not have been revealed. Should additional Information become available (including new legislation and changed practices), after the date of the report submission, Pell Frischmann reserves the right to reconsider the recommendations and alter the report accordingly.

Notwithstanding any site observations concerning the presence or otherwise of archaeological sites, asbestos-containing materials or invasive weeds such as Japanese knotweed, this report does not constitute a formal or specific survey of these potential development hazards. Unless otherwise stated, no assessment has been made for the presence of radioactive substances or unexploded ordnance.



- NOTE:
1. ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE SPECIFICATION FOR HIGHWAY WORKS AND THE TURBINE MANUFACTURERS STANDARDS AND ALL RELEVANT DRAWINGS WITHIN THE PROJECT DESIGN PACKAGE.
 2. ALL WORKS TO BE EXECUTED IN ACCORDANCE WITH THE DMRB, THE MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS, DESIGN MANUAL FOR ROADS AND BRIDGES, AND TRAFFIC SIGNS MANUAL.
 3. ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE. ALL LEVELS ARE IN METRES AND RELATE TO ORDNANCE DATUM.
 4. DO NOT SCALE FROM ANY DRAWING. WORK TO FIGURED DIMENSIONS ONLY. ANY DISCREPANCIES IN DIMENSIONS ARE TO BE REFERRED TO THE DESIGNER BEFORE WORK IS PUT TO HAND.
 5. ALL DIMENSIONS AND LEVELS ARE TO BE CHECKED ON SITE BY THE CONTRACTOR PRIOR TO PREPARING ANY WORKING DRAWINGS OR COMMENCING ON SITE.
 6. ALL WORKS BY THE CONTRACTOR MUST BE CARRIED OUT IN SUCH A WAY THAT ALL REQUIREMENTS UNDER THE HEALTH AND SAFETY AT WORK ACT ARE SATISFIED.
 7. ALL WORKS ARE TO BE CARRIED OUT IN COMPLIANCE WITH THE REQUIREMENT OF THE STATUTORY AUTHORITIES AND CONSTRUCTION DESIGN MANAGEMENT REGULATIONS.

- KEY:
- SITE BOUNDARY
 - TURBINE LOCATIONS
 - TURBINE HARDSTANDING
 - TRACK
 - CONSTRUCTION COMPOUND
 - SUBSTATION
 - LAYDOWN AREA



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Client
CUBICO UK DEVELOPMENT (WIND 1) LIMITED

Project
SCOUT MOOR II WIND FARM

Drawing Title
Infrastructure Layout

	Name	Date	Scale	1:10000 @ A1
Designed	CN	22.04.2026	File	260422 Scout Moor Site Plans
Checked	SM	22.04.2026	Drawing Status	PLANNING
Drawing No.	SK02			Revision P3

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Lancashire And Furness Published 1910

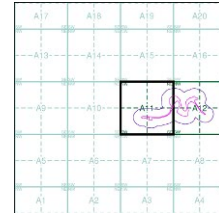
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Map Name(s) and Date(s)



Historical Map - Segment A11



Order Details

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Site Details

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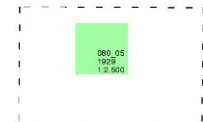
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Lancashire And Furness Published 1929

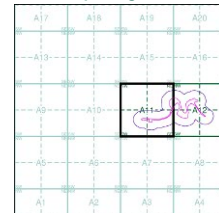
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Ordnance Survey Plan Published 1963

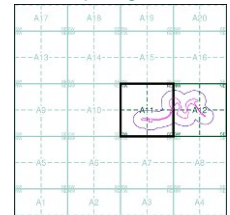
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SD8018 1963 1:2,500	SD8118 1963 1:2,500

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Ordnance Survey Plan Published 1976 - 1983

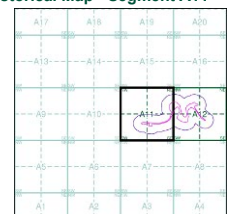
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Map Name(s) and Date(s)

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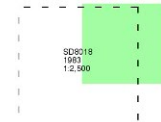
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Ordnance Survey Plan Published 1983

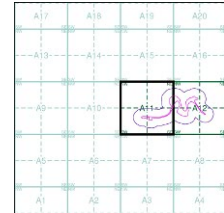
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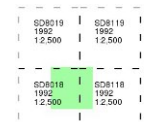
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Large-Scale National Grid Data Published 1992

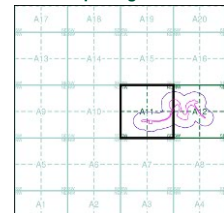
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'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the forerunners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



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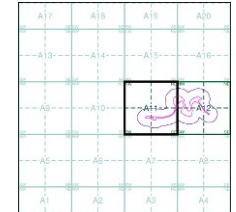
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Historical Aerial Photography

Published 2001

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain.

Historical Aerial Photography - Segment A11



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Lancashire And Furness

Published 1893

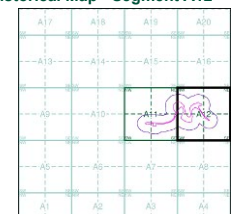
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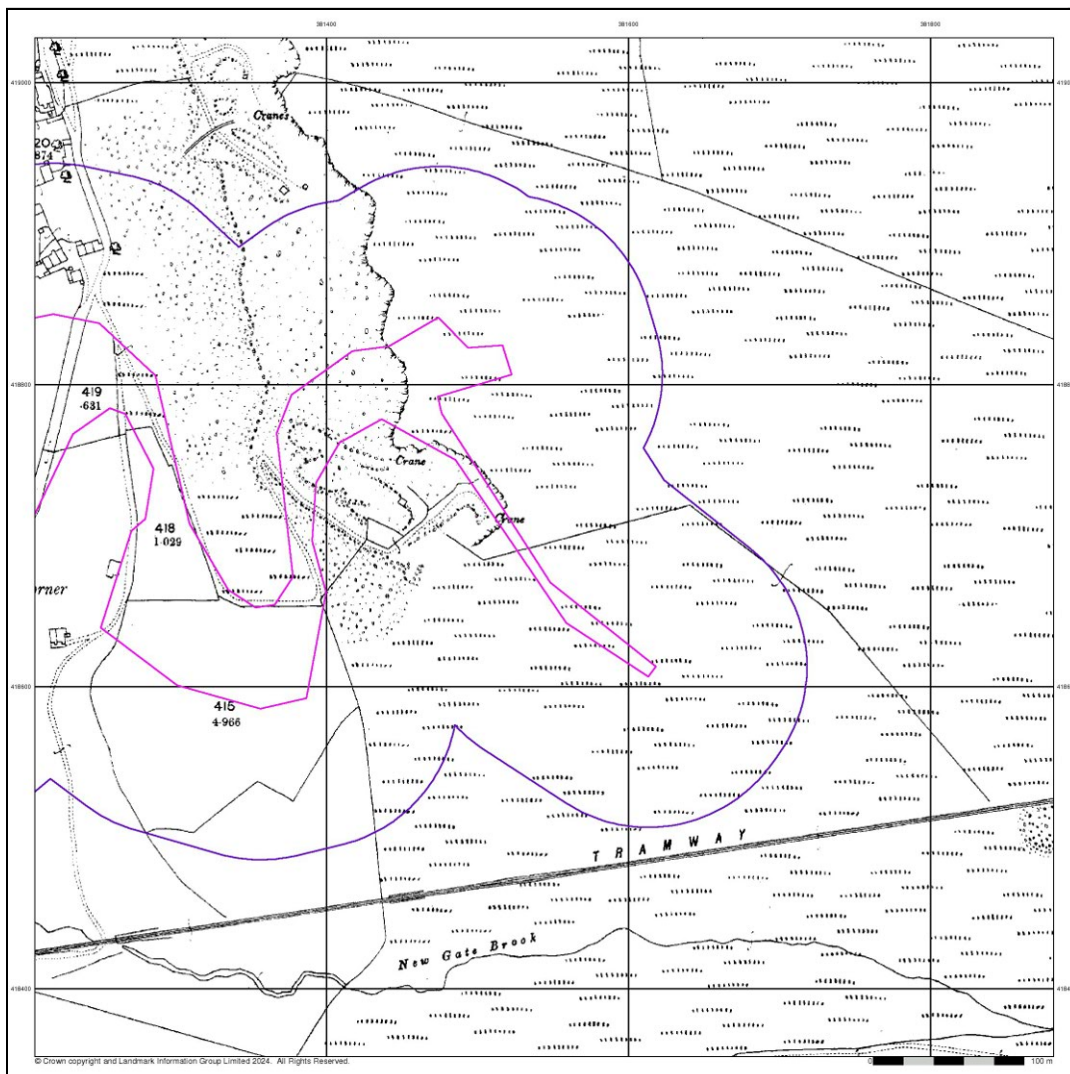
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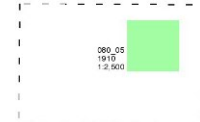
Lancashire And Furness

Published 1910

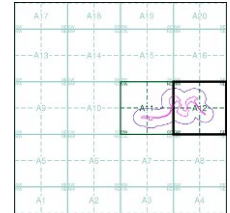
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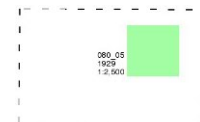
Lancashire And Furness

Published 1929

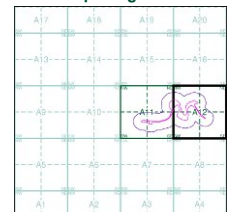
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Ordnance Survey Plan Published 1963

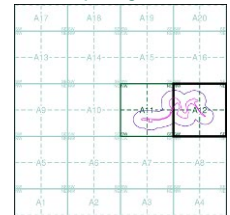
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Ordnance Survey Plan Published 1983

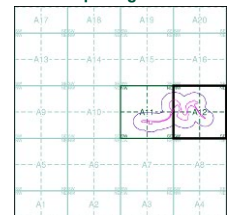
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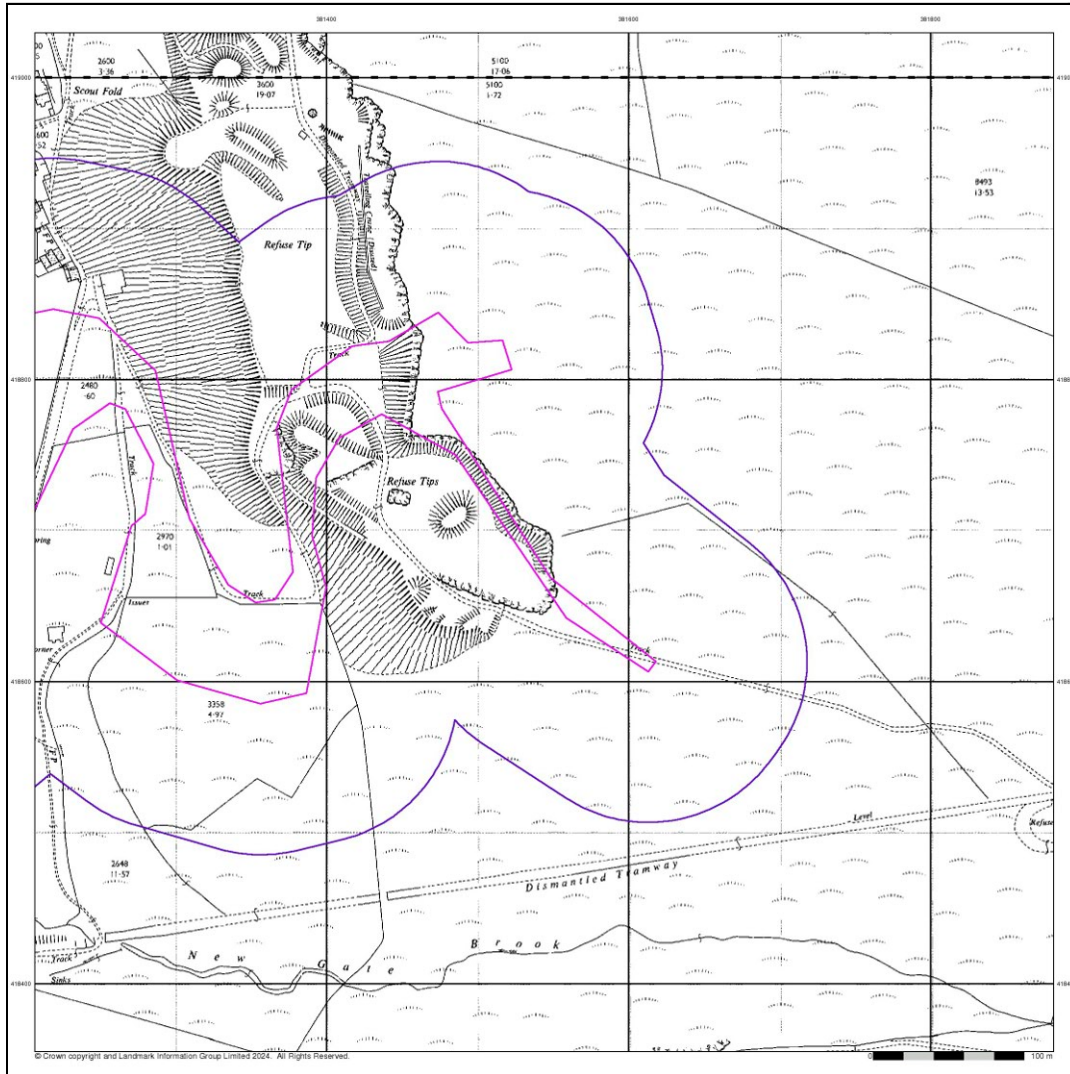
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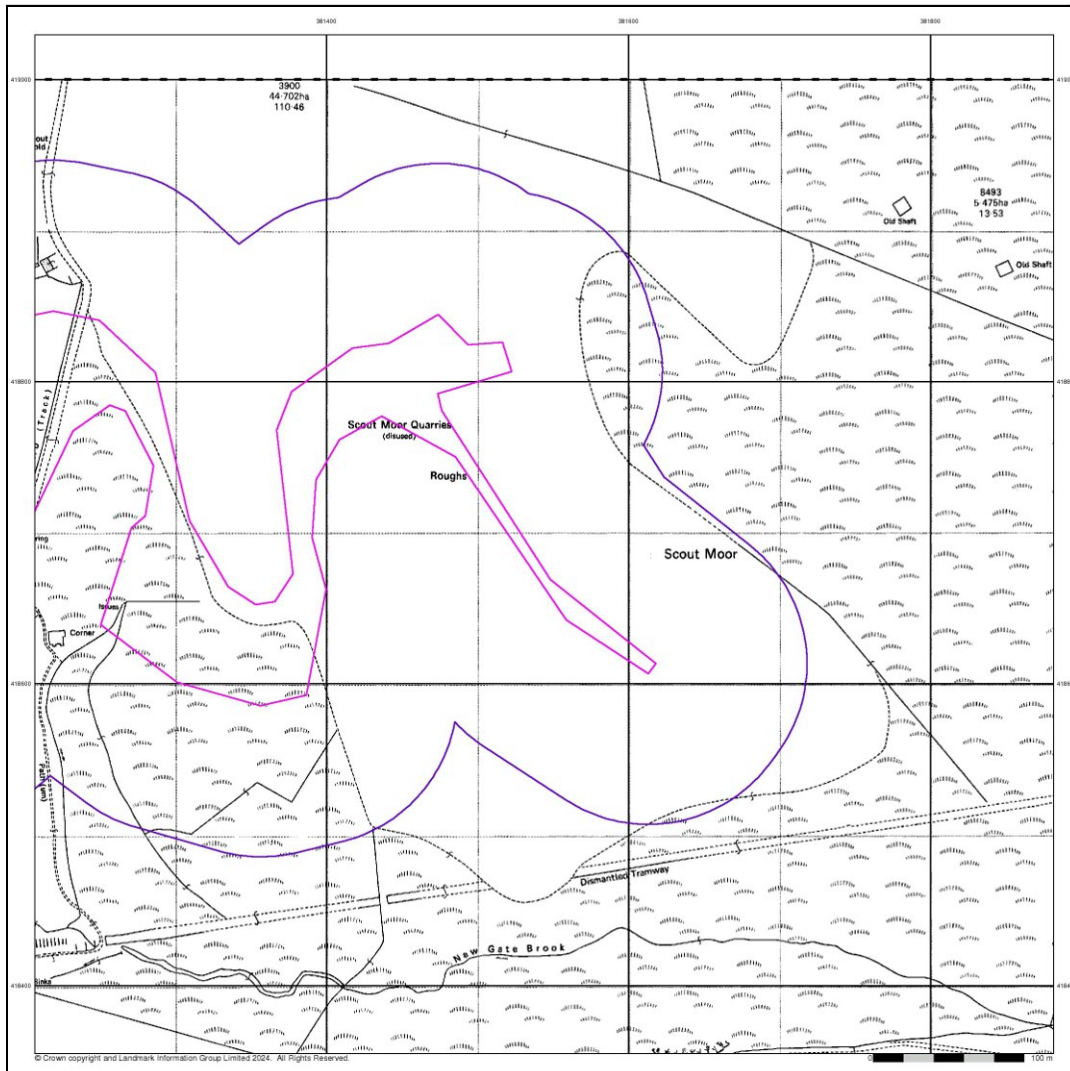
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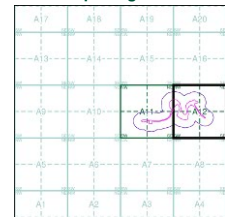
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the forerunners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A12



Order Details

Order Number: 360917725_1_1
Customer Ref: 10109692
National Grid Reference: 380950, 418660
Slice: A
Site Area (Ha): 4.19
Search Buffer (m): 100

Site Details

Site at 381207,418692

Landmark
INFORMATION GROUP

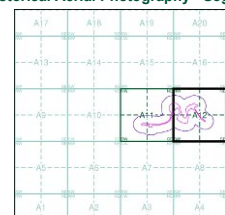
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.simscheck.co.uk

A Landmark Information Group Service v50.0 15-Oct-2024 Page 7 of 8

Historical Aerial Photography Published 2001

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain.

Historical Aerial Photography - Segment A12



Order Details

Order Number: 360917725_1_1
Customer Ref: 10109692
National Grid Reference: 380950, 418660
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Site Details

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Landmark
INFORMATION GROUP

Tel: 0844 844 9952
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Web: www.simscheck.co.uk

A Landmark Information Group Service v50.0 15-Oct-2024 Page 8 of 8

Site Screening Report

15 May 2026

Project: 109692: Scout Moor II Wind Farm,
Scout Moor II Wind Farm

Client: Cubico

Area: 1024.15 Ha

OSGB: 385418, 418665

Postcode:

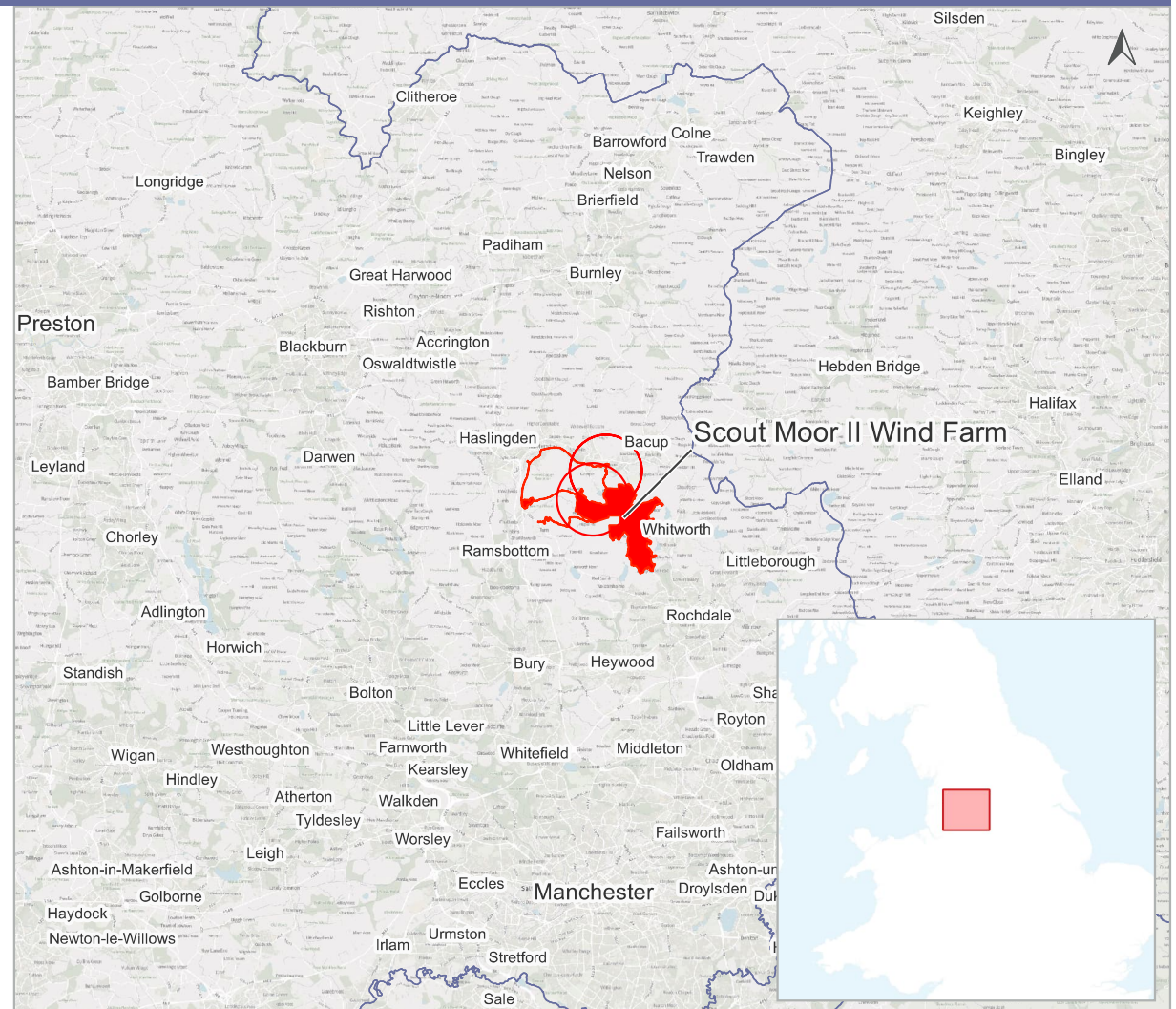
County

Lancashire

Local Authority

Rossendale Borough Council

Rochdale Metropolitan Borough Council



Site Screening Report Contents

Page	Title	Content
1	Contents page	Table of contents
2	Site location	Ordnance Survey mapping Google satellite imagery
3	Topography	Topography
4	Historic mapping	Historic mapping 1888 – 1913 Historic mapping 1937 – 1961
	Historic mapping (London only)	Historic mapping 1893
	London below ground	London Underground Zones of Influence Mapped Tunnels
5	Published geology: superficial deposits	British Geological Survey (BGS) 1:50,000 superficial deposits mapping
6	Published geology: bedrock	British Geological Survey (BGS) 1:50,000 bedrock and linear features mapping
7	BGS Borehole records	British Geological Survey (BGS) Borehole records
8	Radon potential Coal Authority and BGS non coal mining hazard	British Geological Survey (BGS) Borehole records and radon potential Coal Authority and BGS non coal mining hazard
9	Landfill sites and BGS artificial ground	Permitted and historic landfill sites and BGS mapped artificial ground
10	Controlled waters resources	Groundwater Source Protection Zones and Drinking Water Safeguard Zones
11	International or European statutory protected areas	A: Ramsar, Special Protection Areas (SPA) and Special Areas of Conservation (SAC) B: UNESCO World Heritage Sites and Biosphere Reserves
12	National statutory protected areas	A: Site of Special Scientific Interest (SSSI) B: Area of Outstanding Natural Beauty, Local Nature Reserves (LNR), National Nature Reserves (NNR), and National Parks
13	National statutory protected areas Non-statutory designations	C: Ancient Monuments and Listed Buildings Ancient Woodland, RSPB Reserves, Greenbelt, Registered Parks and Registered Battlefields
14	Air quality Terrestrial ecosystems	Air Quality Management Areas (AQMA), Groundwater Dependent Terrestrial Ecosystems (GWDTE)
15	Flood zones Risk of flooding from surface water	Flood zones and Statutory Main Rivers Surface water flood risk annual event probability
16	Flood defences	Flood storage areas and flood defence features

Local Authority

Rossendale Borough Council <https://www.rossendale.gov.uk/>

Rochdale Metropolitan Borough Council <http://www.rochdale.gov.uk/>

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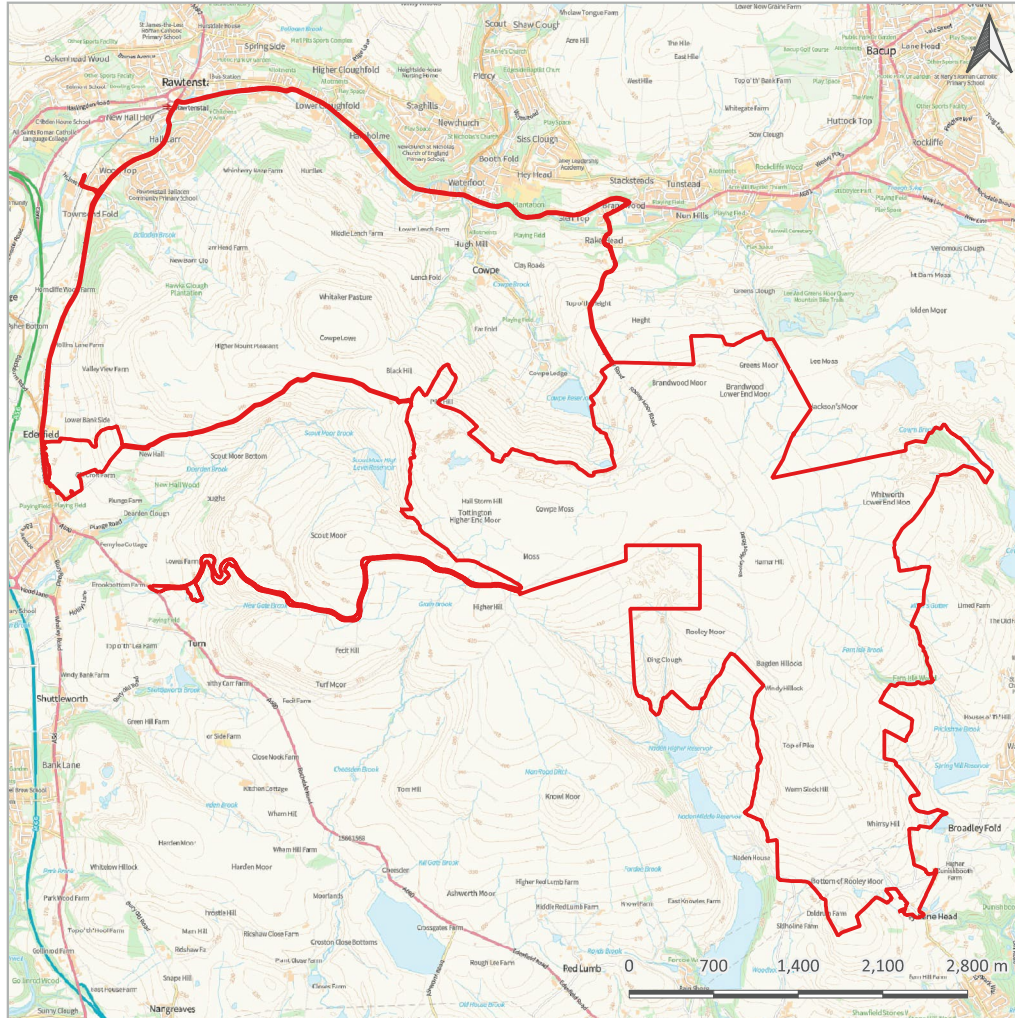
Reporting contains OS data © Crown copyright and database right (2026)

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Contains British Geological Survey materials © UKRI 2026

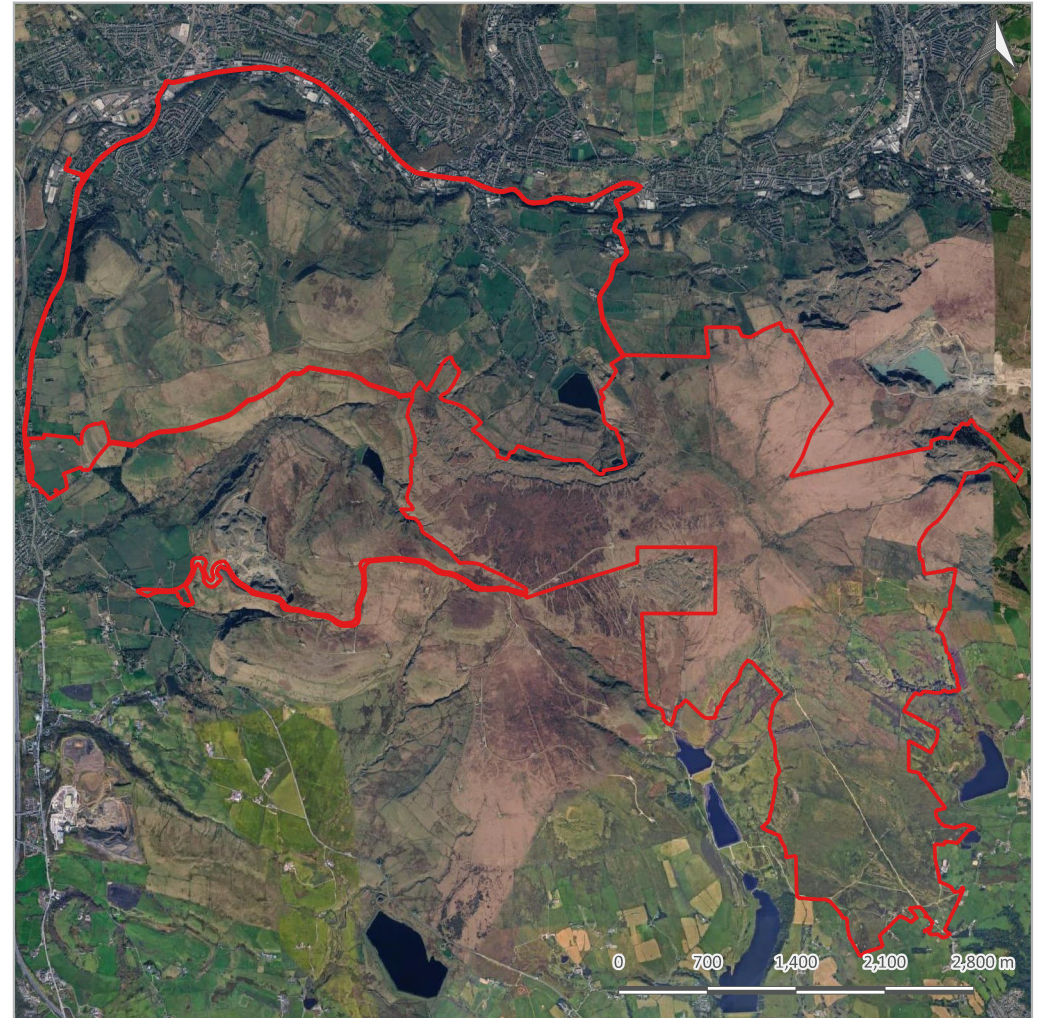
Online Resources Version

Site location plan



Contains OS data © Crown copyright and database right (2026)

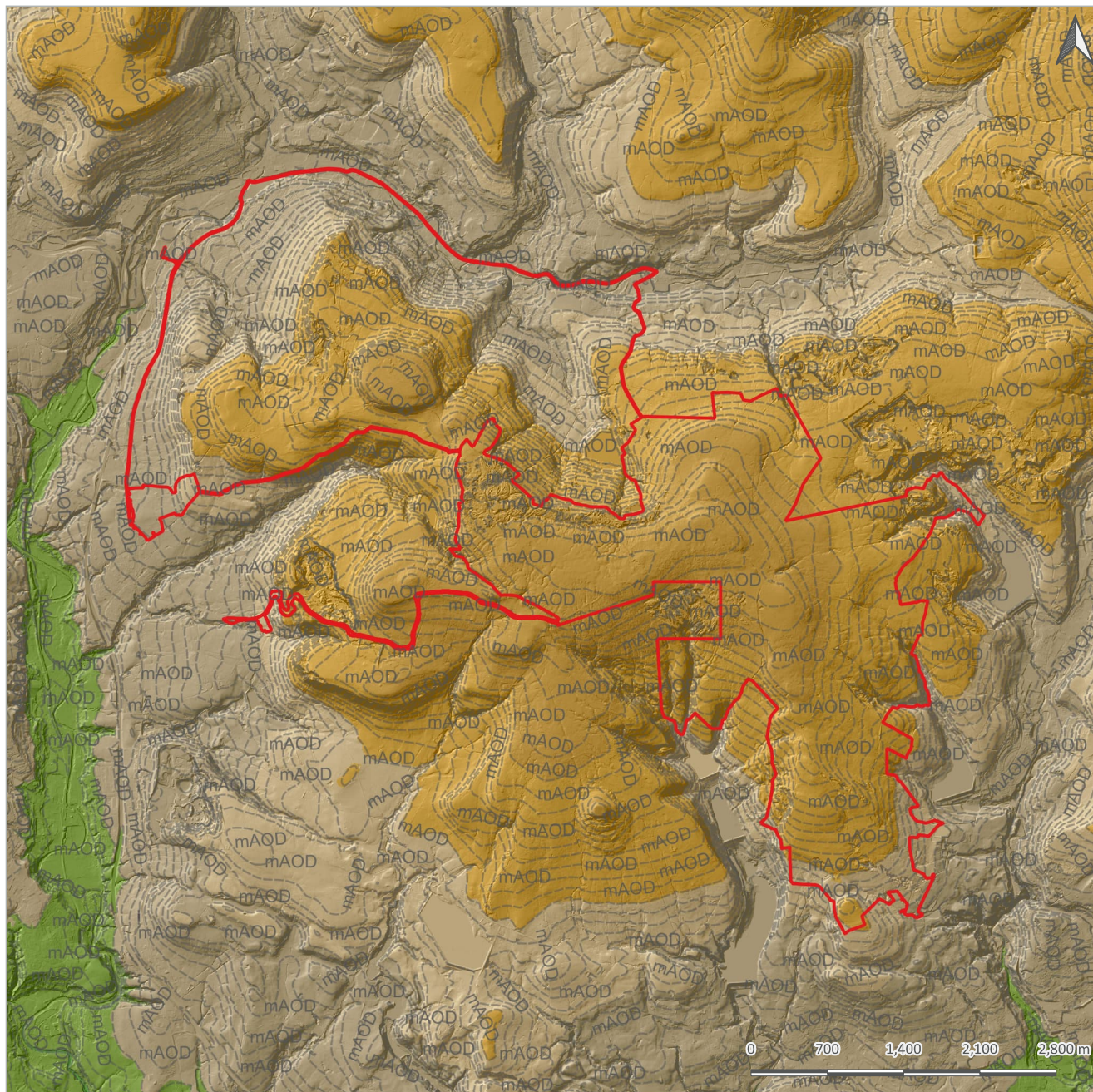
Aerial imagery



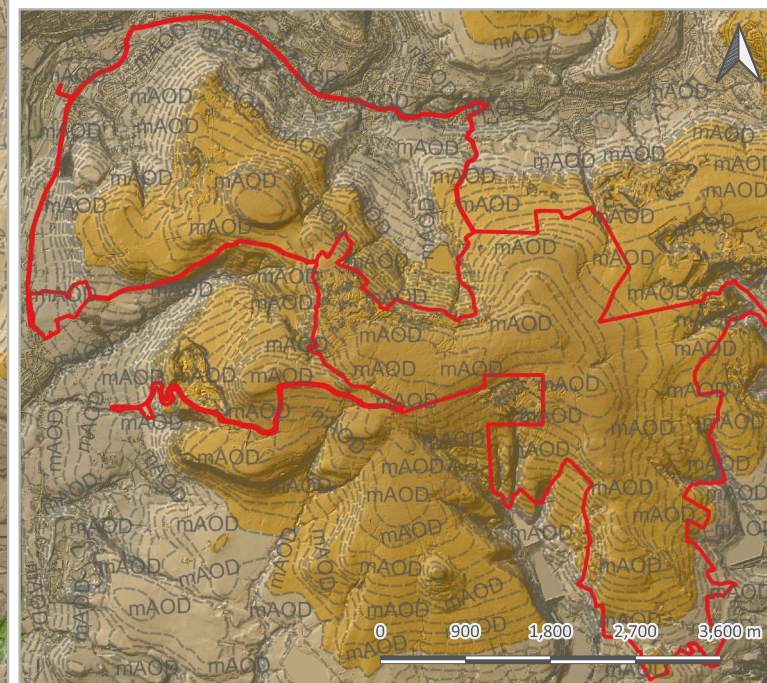
Imagery ©2026 Google

Google Earth
[Scout Moor II Wind Farm](#)

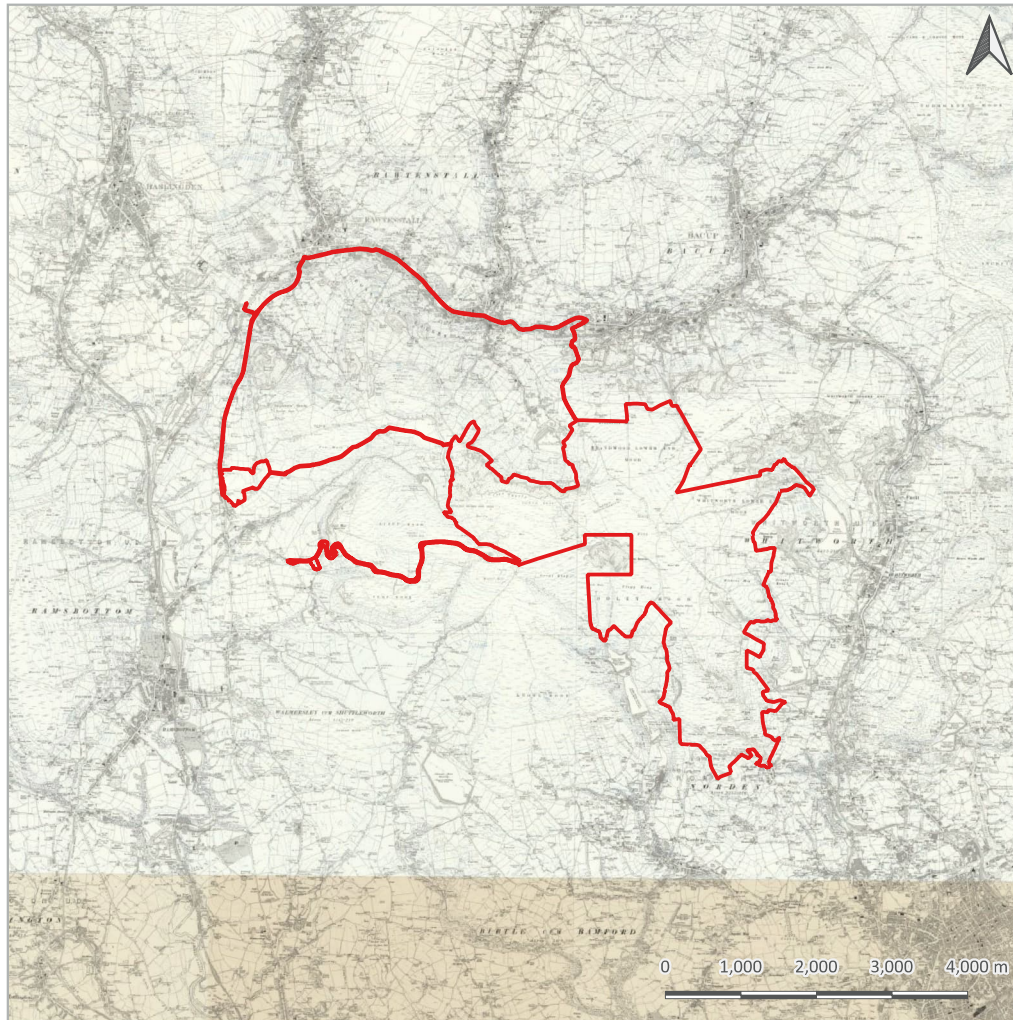
Topography: LiDAR Digital Terrain Mode (DTM) and Digital Surface Model (DSM)



DSM

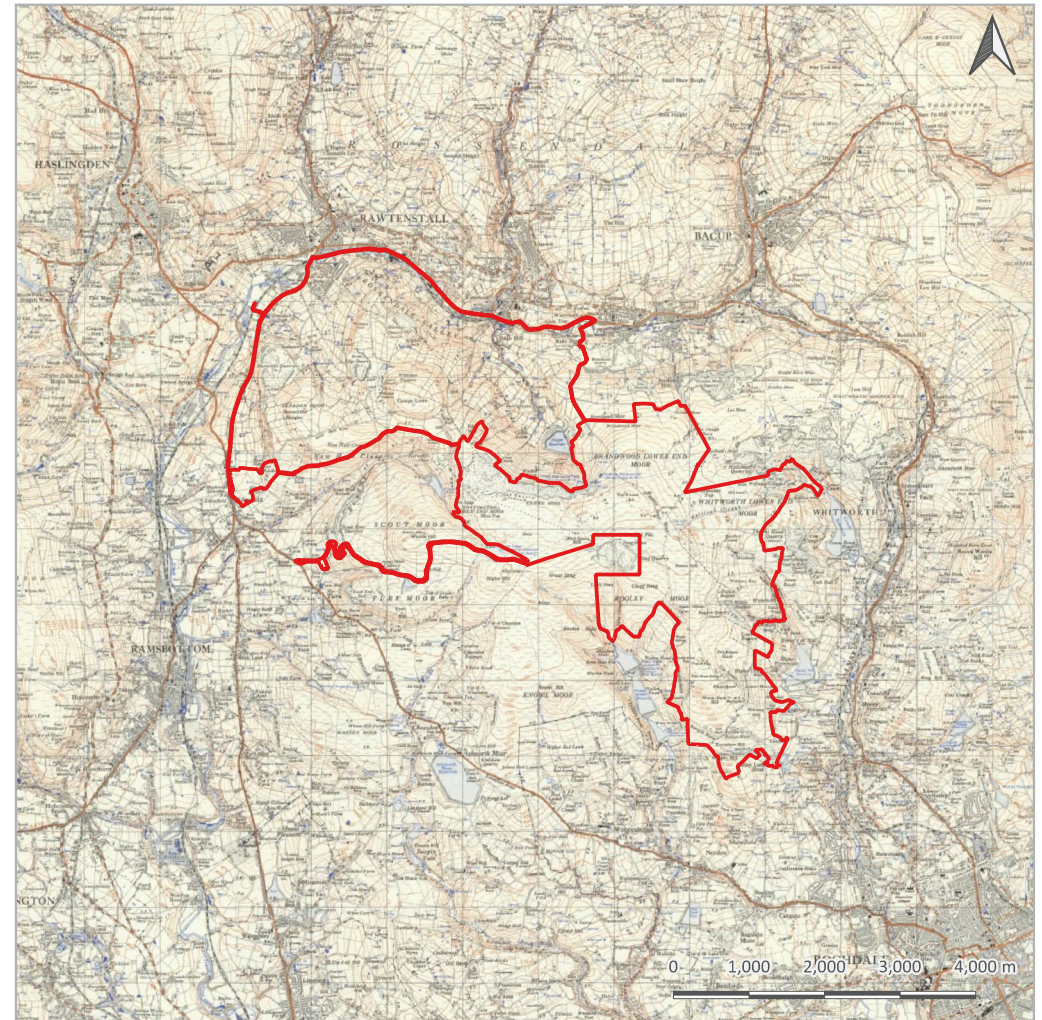


Historic mapping 1888 - 1913



Contains National Library of Scotland data provided by MapTiler©

Historic mapping 1937 - 1961

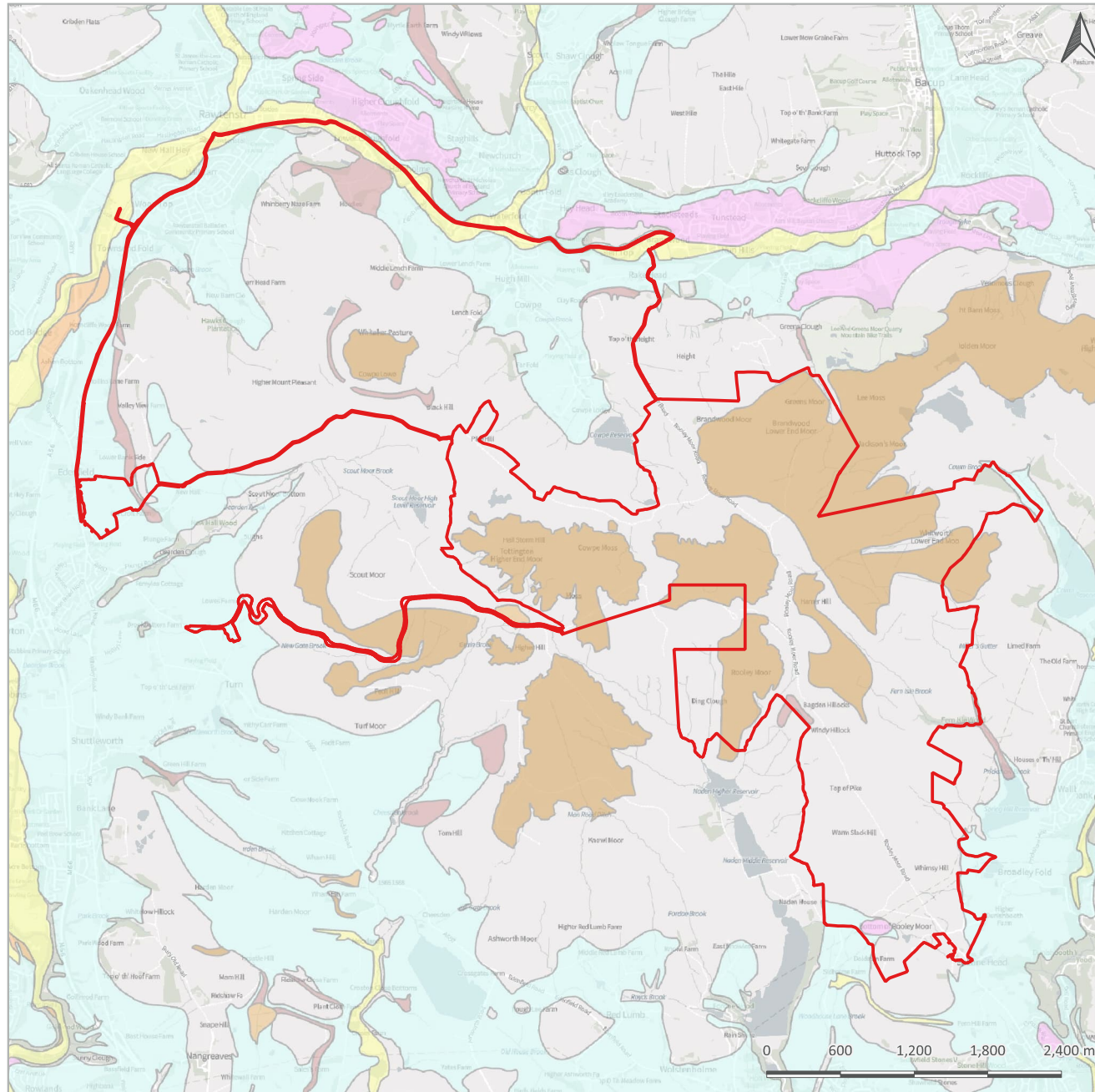


Contains National Library of Scotland data provided by MapTiler©

National Library of Scotland

[National Library of Scotland Map Finder - Scout Moor II Wind Farm](#)

British Geological Survey (BGS) published geology: superficial deposits



Superficial geology

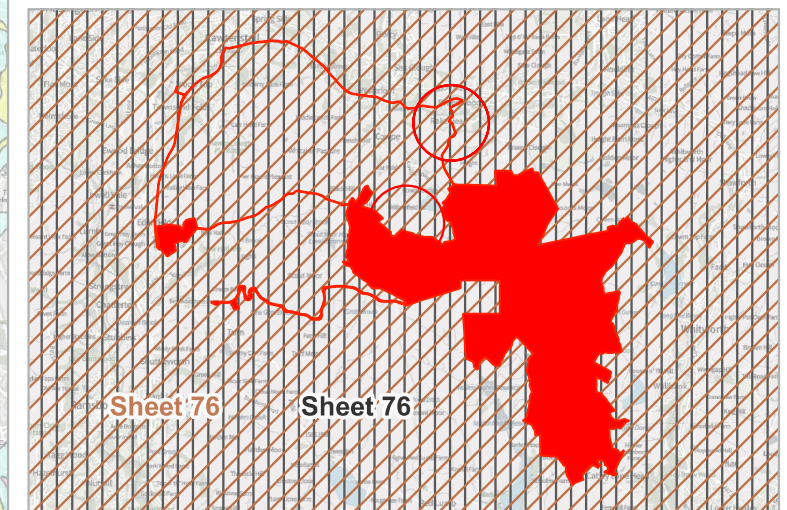
- ALV - Alluvium
- GFDUD - Glaciofluvial Deposits, Devensian
- HEAD - Head
- LDE - Lacustrine Deposits
- PEAT - Peat
- RTD1 - River Terrace Deposits, 1
- RTD2 - River Terrace Deposits, 2
- TILLD - Till, Devensian

Paper Maps

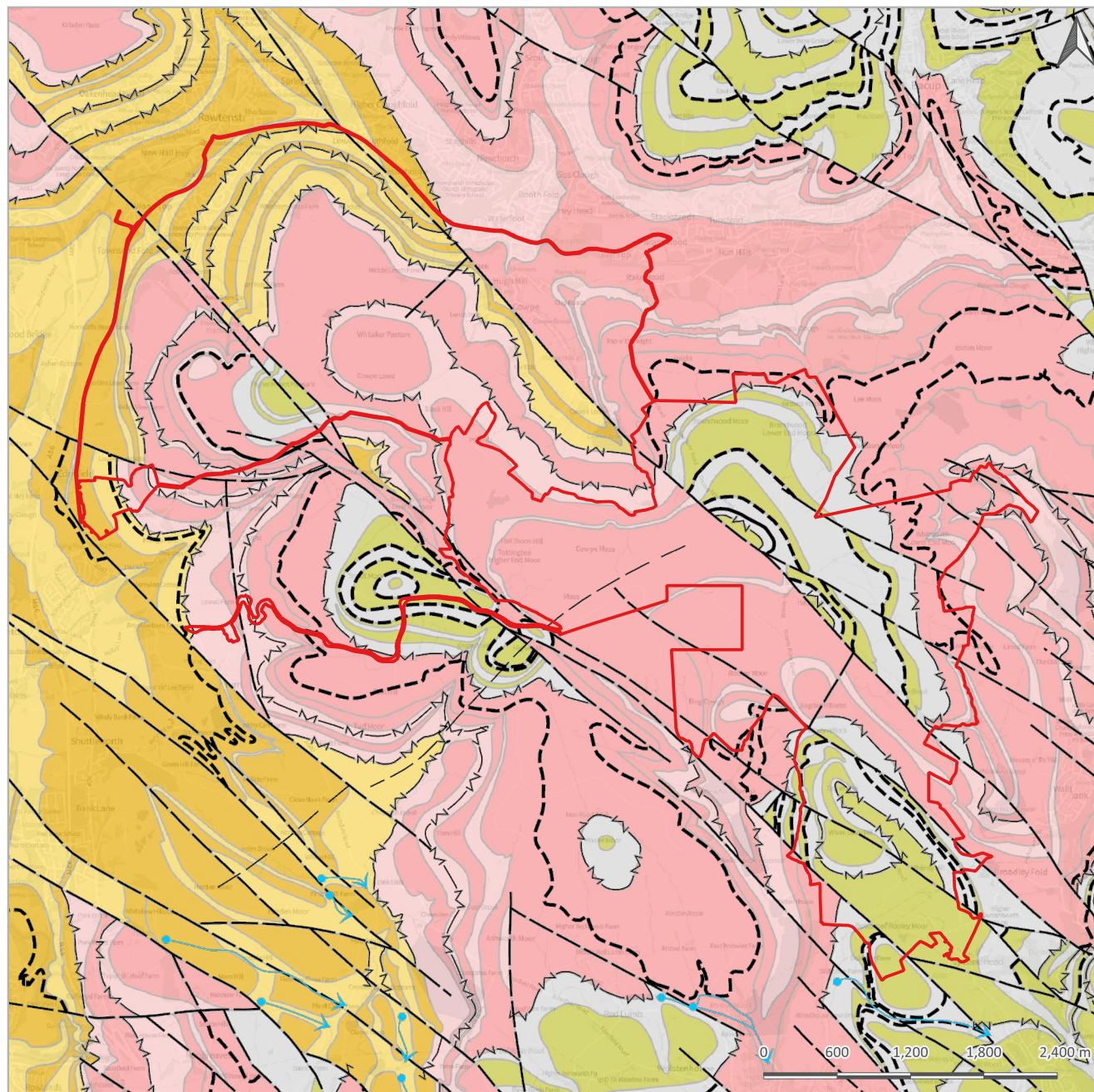
[Sheet 76, Rochdale - Bedrock](#)

[Sheet 76, Rochdale - Bedrock and Superficial](#)

Bedrock Superficial Bedrock & Superficial Quaternary



British Geological Survey (BGS) published geology: bedrock and linear features



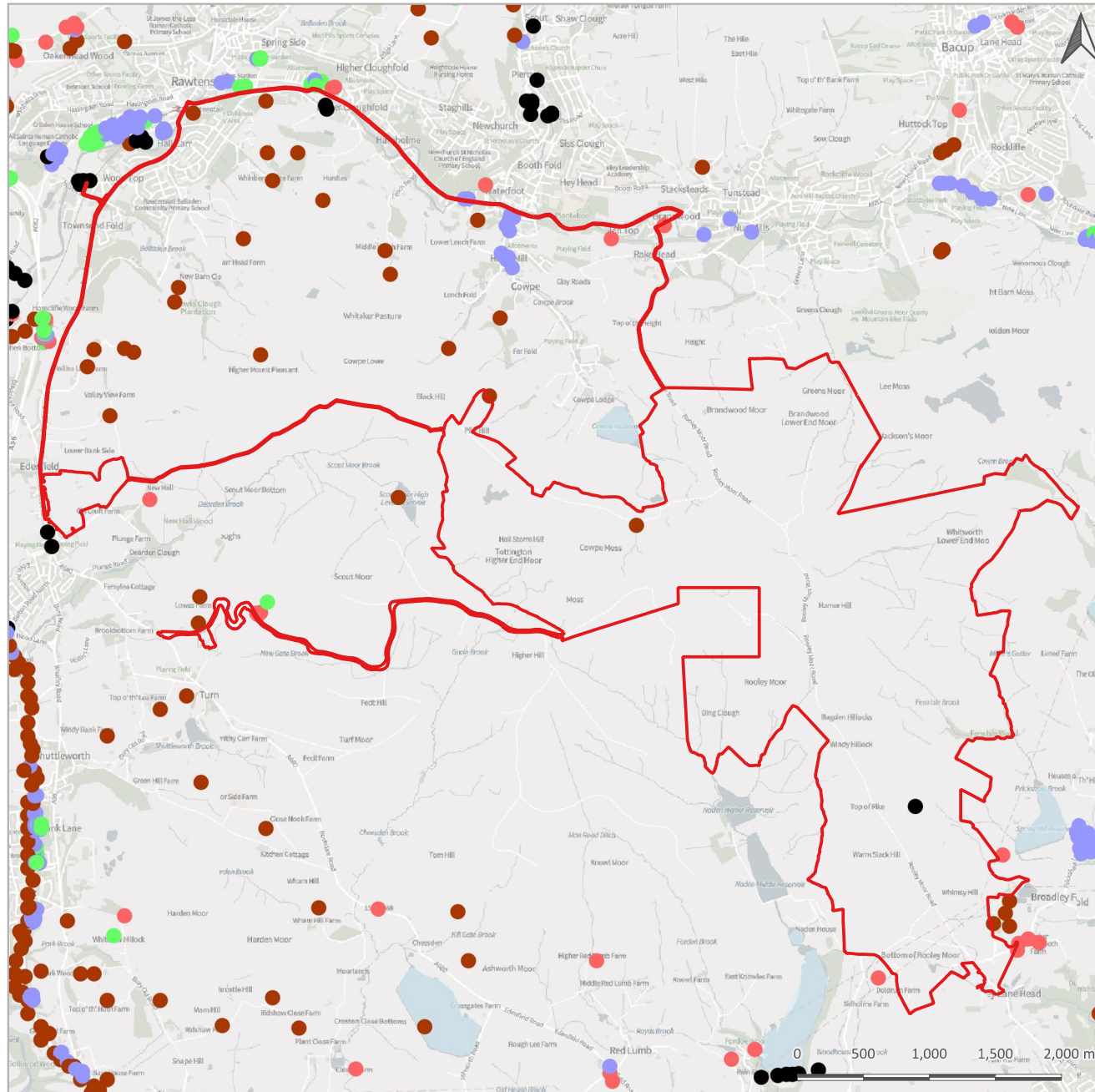
Linear Geological Features

- — — — — Faults and folds (observed, inferred)
- - - - - Mineral veins (observed, inferred)
- - - - - Coal seam (observed, inferred)
- M - M - Marine band
- - - - - Glacial features, Drumlin
- - - - - Buried channel centre

Bedrock geology

- DF - Darwen Flags
- GAS - Great Arc Sandstone
- GNR - Ganister Rock
- HER - Helpet Edge Rock
- OL - Old Lawrence Rock
- PLCM - Pennine Lower Coal Measures Formation
- PLCM - Pennine Lower Coal Measures Formation
- WH - Woodhead Hill Rock
- LH - Lower Haslingden Flags
- ROSSE - Rossendale Formation
- RR - Rough Rock
- UH - Upper Haslingden Flags
- BBS - Brooksbottoms Grit
- GSYG - Guiseley Grit
- HLBG - Holcombe Brook Grit
- HSG - Helmshore Grit
- MARSD - Marsden Formation

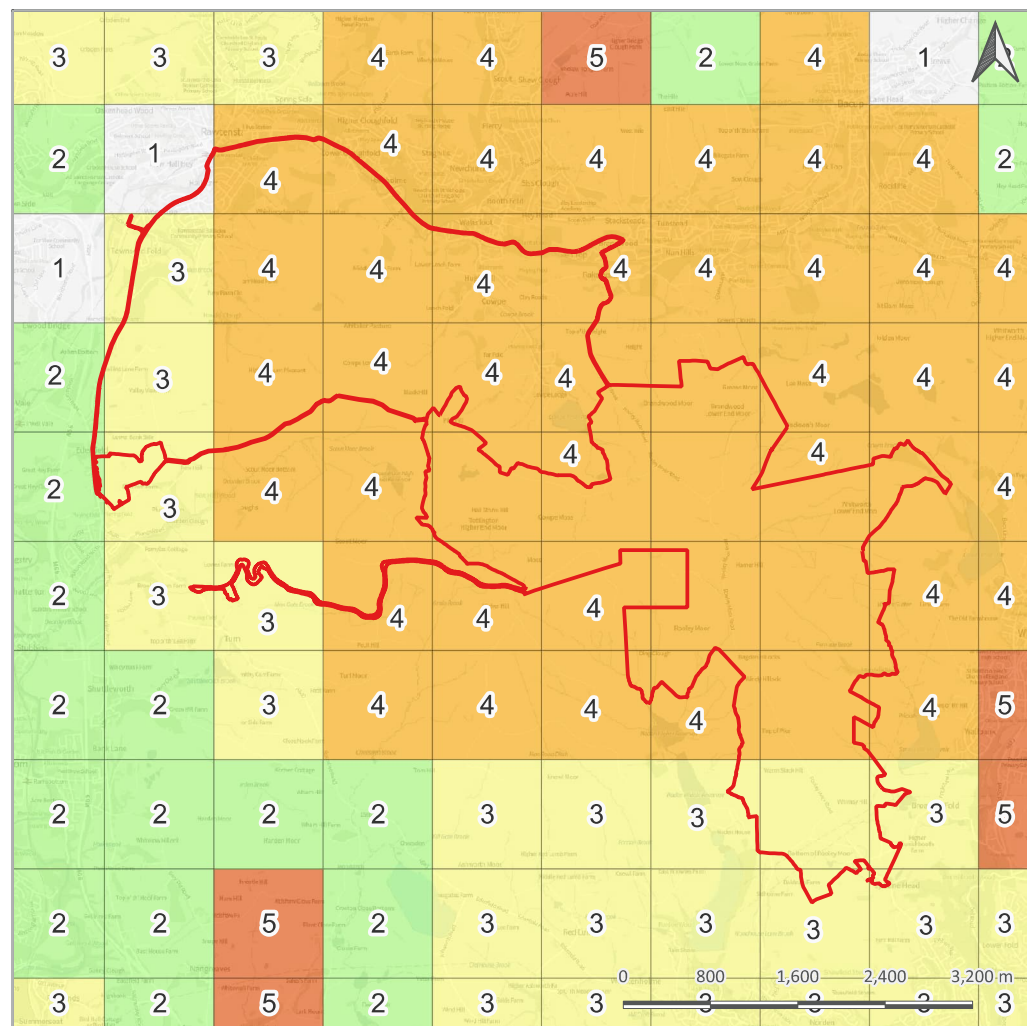
British Geological Survey (BGS) borehole records



Borehole records

- Depth 0 - 10m
- Depth 10 - 30m
- Depth 30m+
- Depth unknown
- Confidential

BGS radon potential



British Geological Survey (BGS) Radon

Homes above Action Level	Radon protection
1	< 1%
2	1-3%
3	3-5%
4	5-10%
5	10-30%
6	>30%
	No protection
	Basic protection
	Full protection

15 May 2026 (17:42) © Pell Frischmann 2026

Coal Authority areas and BGS non coal mining hazard



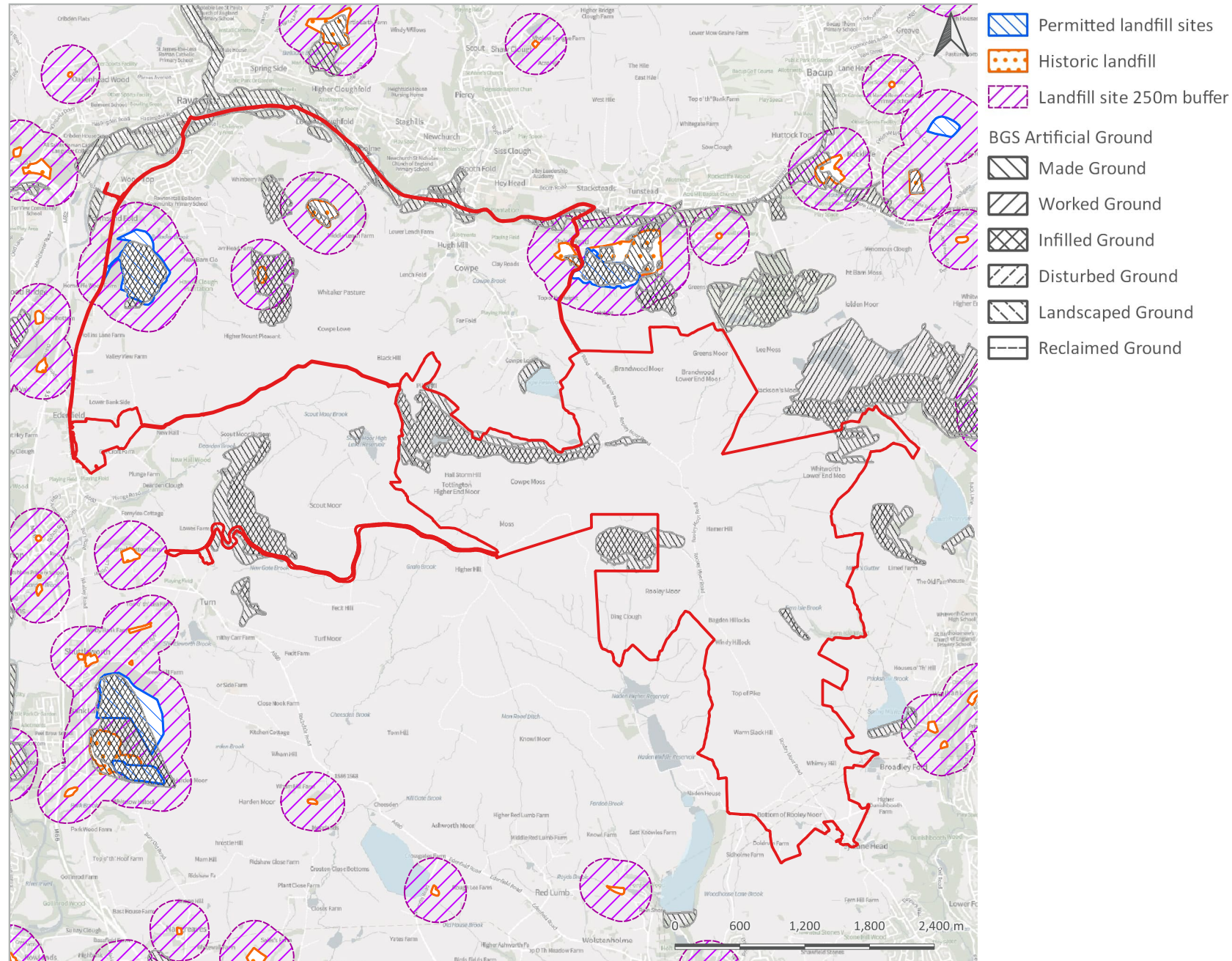
Coal Authority

- Coal Authority reporting area
- Coal Authority high development risk area

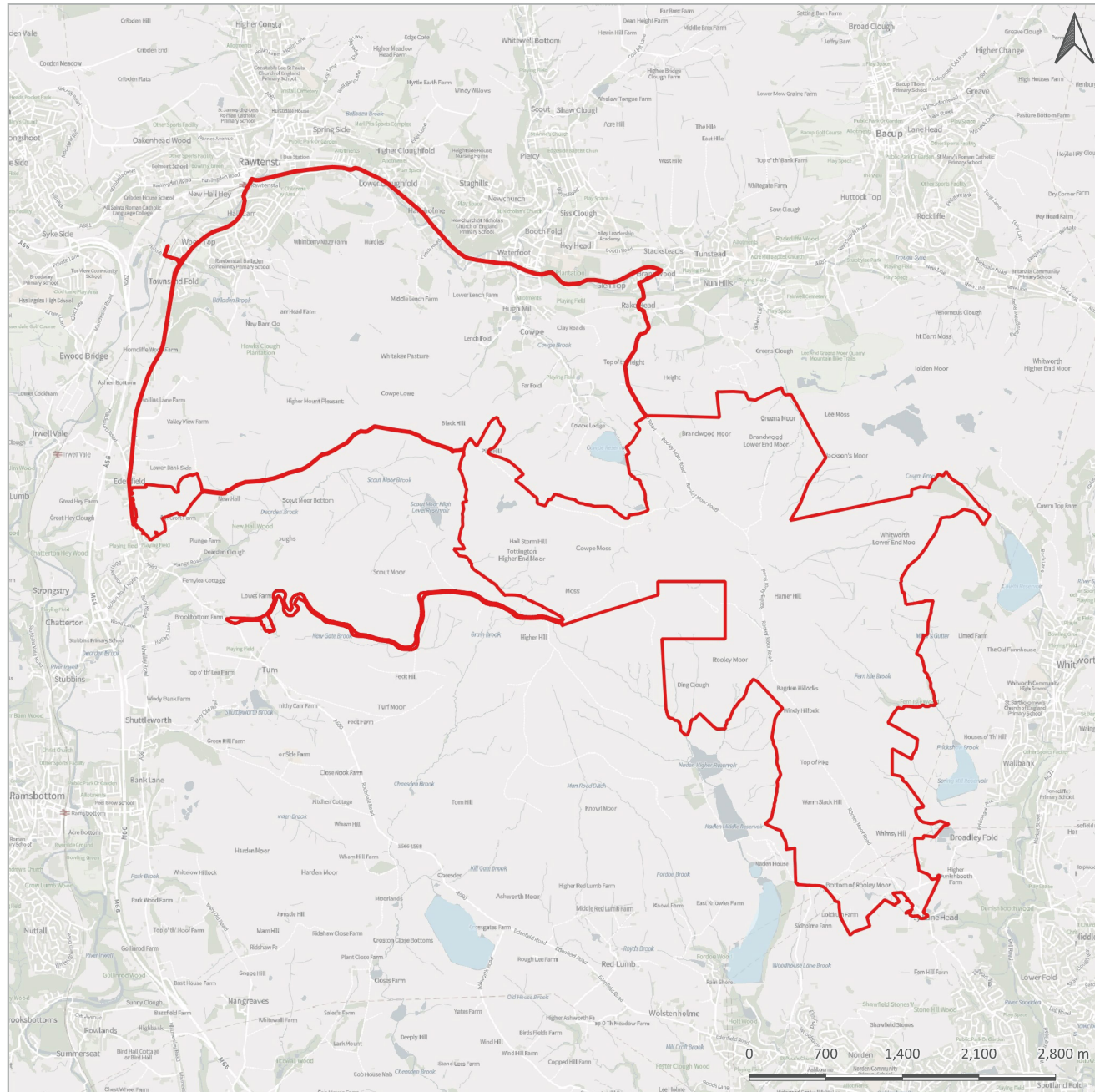
BGS mining hazard (not inc. coal)

- 0 NA No known record of mining activity
- 1 Low Localised small scale mining may have occurred in the area
- 2 Moderate Small scale underground mining may have occurred in the area
- 3 Significant Underground mining is known or considered likely to have occurred in the area

Historic and permitted landfill sites and BGS artificial ground



Controlled waters resources



Groundwater Source Protection Zones

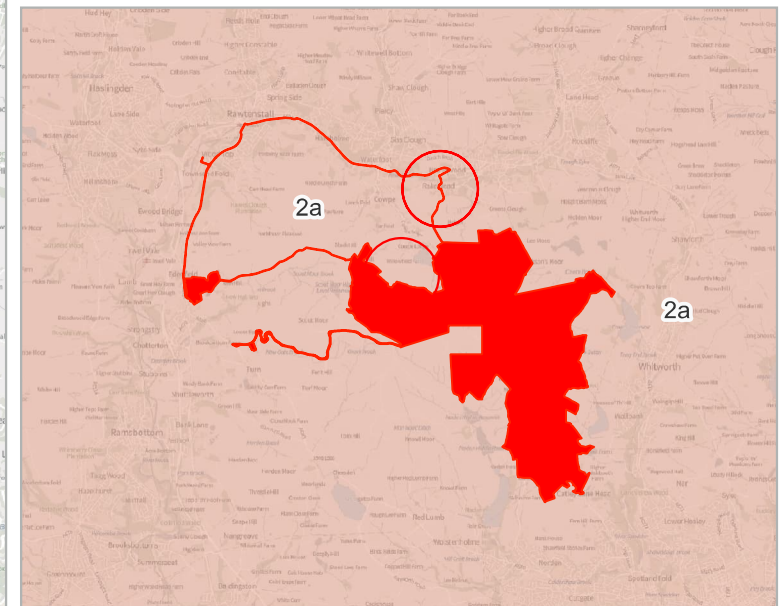
- Inner zone (zone 1)
- Outer zone (zone 2)
- Total catchment (zone 3)
- Inner zone - subsurface activity (zone 1c)
- Outer zone - subsurface activity (zone 2c)
- Total catchment - subsurface activity (zone 3c)
- Special interest (zone 4)

Drinking Water Safeguard Zones

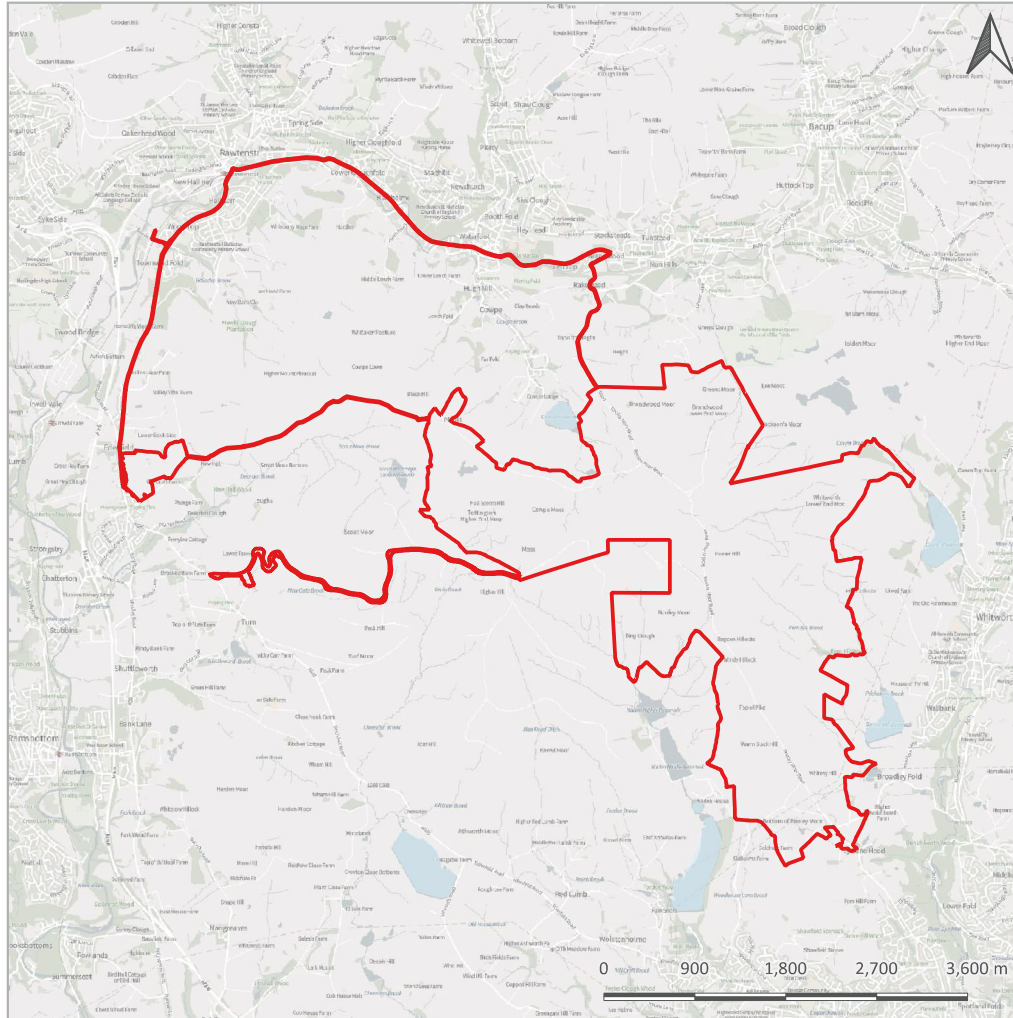
- Drinking Water Safeguard Zone (groundwater)

Bedrock aquifer designation

- P Principal
- 2u Secondary (undifferentiated)
- 2a Secondary A
- U Unproductive
- 2b Secondary B

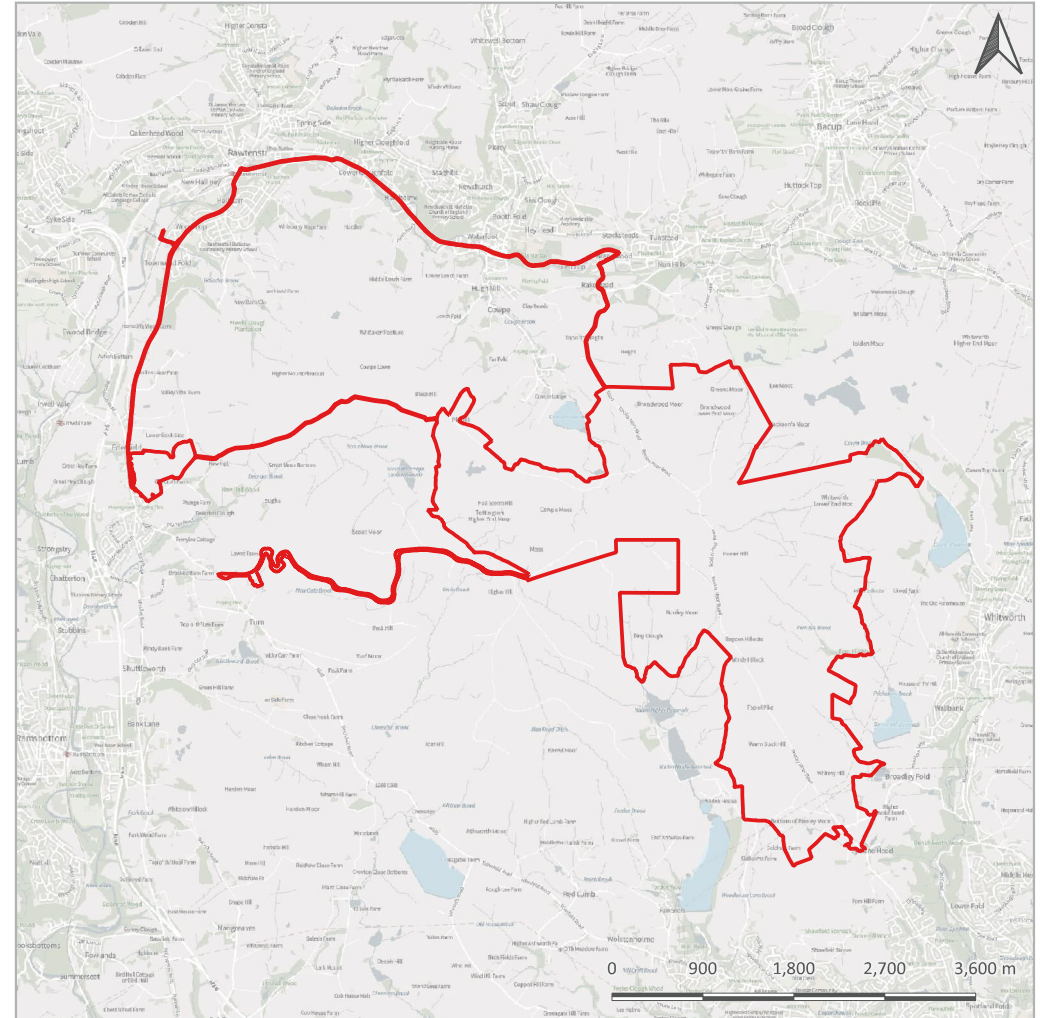


International or European statutory protected areas A



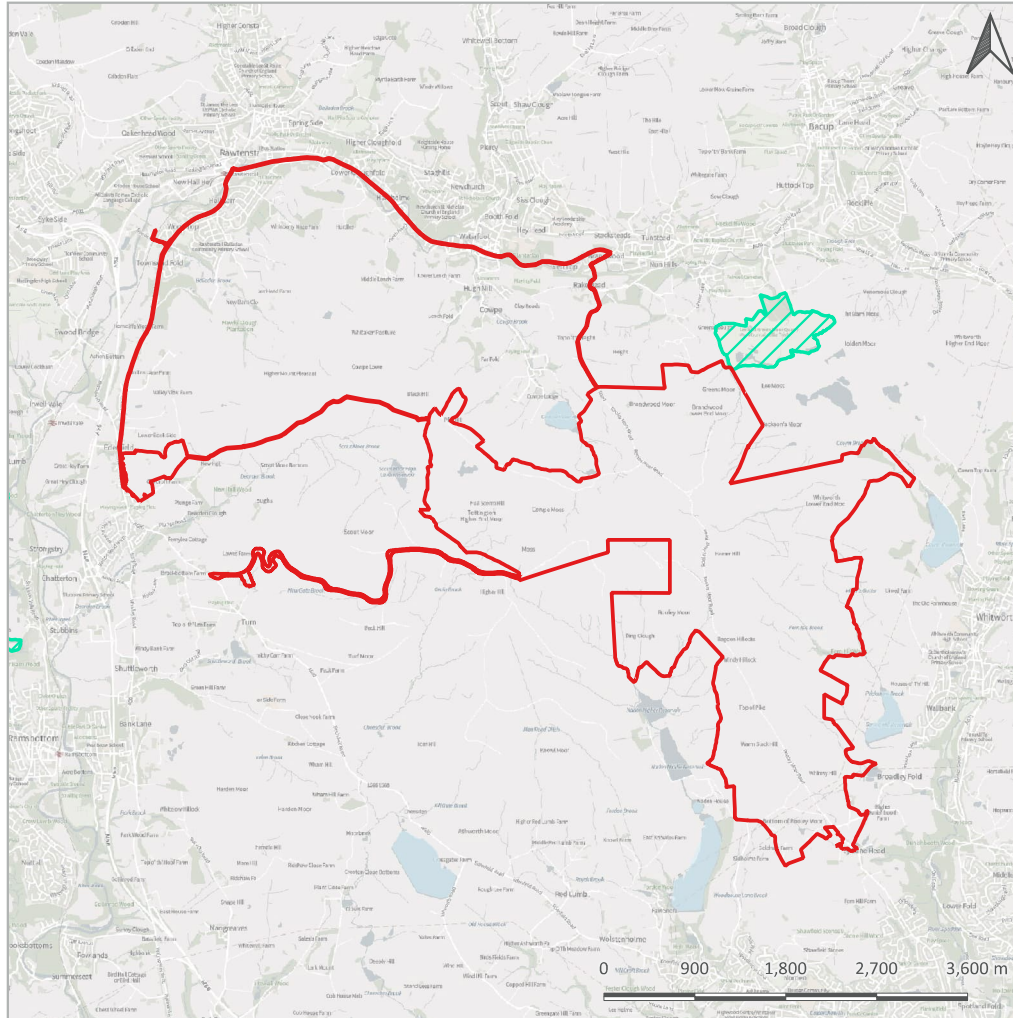
-  Special Protection Area
-  Special Area of Conservation
-  Ramsar site / Proposed Ramsar site
-  Possible Special Protection Area
-  Candidate Special Area of Conservation

International or European statutory protected areas B

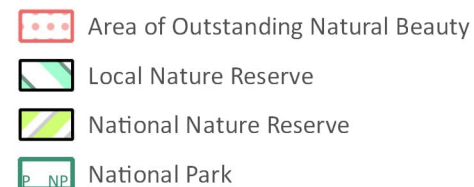
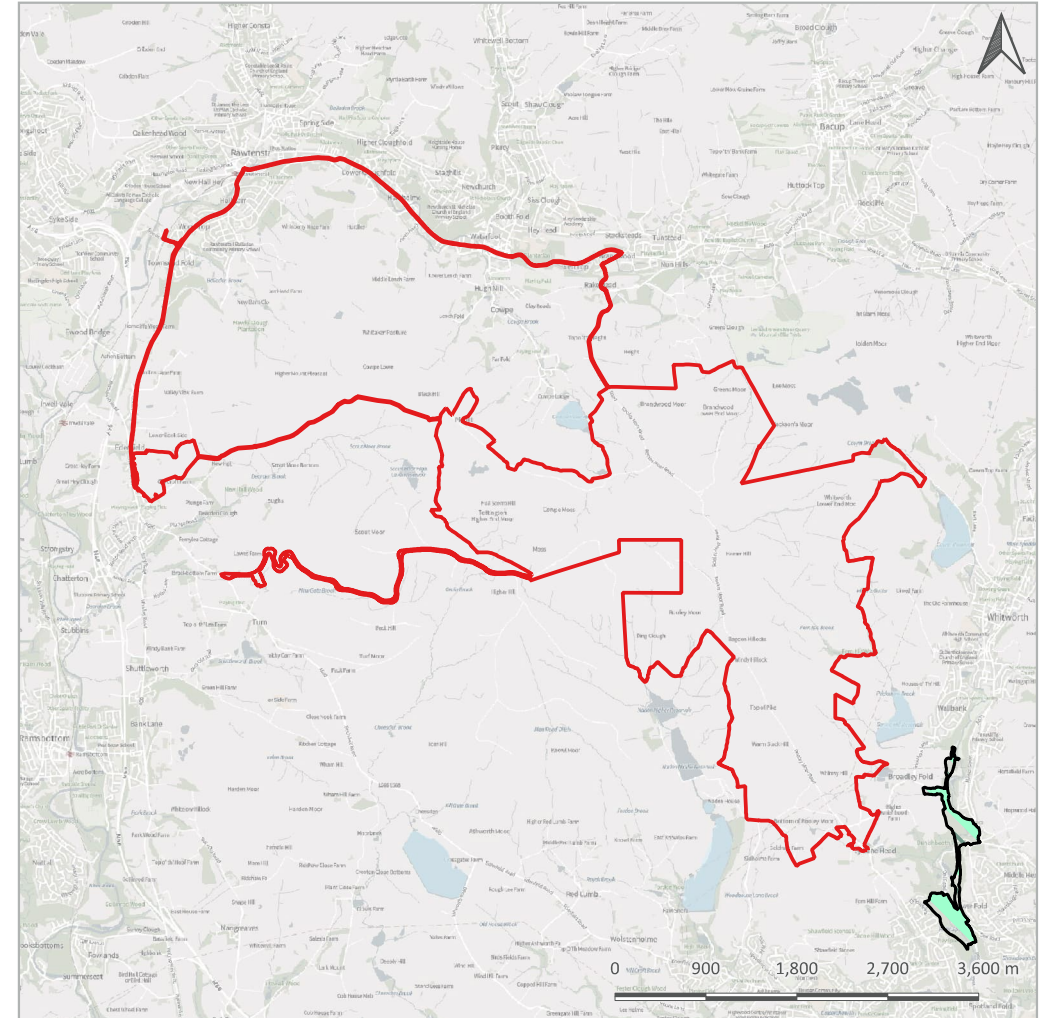


-  UNESCO World Heritage site - Core Area
-  UNESCO World Heritage site - Buffer Zone
-  UNESCO Biosphere Reserves

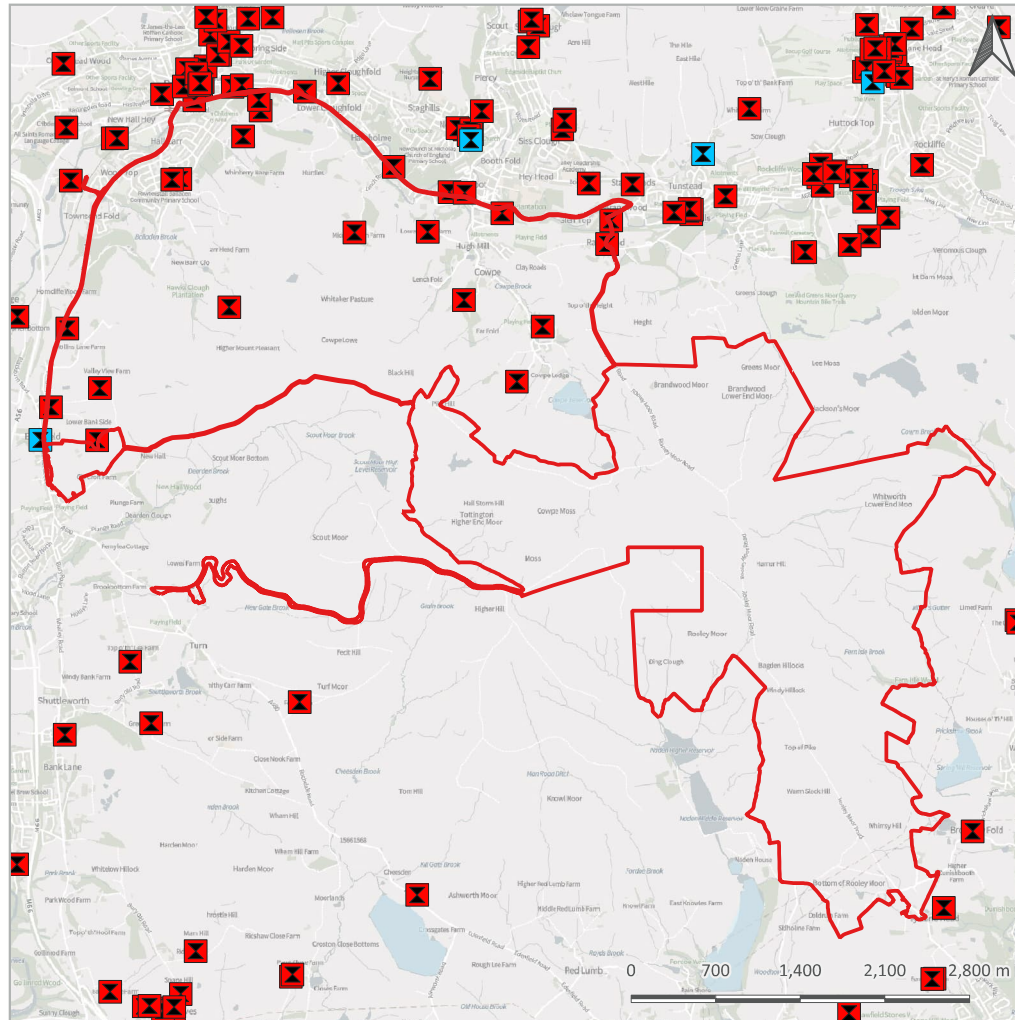
National statutory protected areas A



National statutory protected areas B



National statutory protected areas C



 Scheduled Ancient Monument

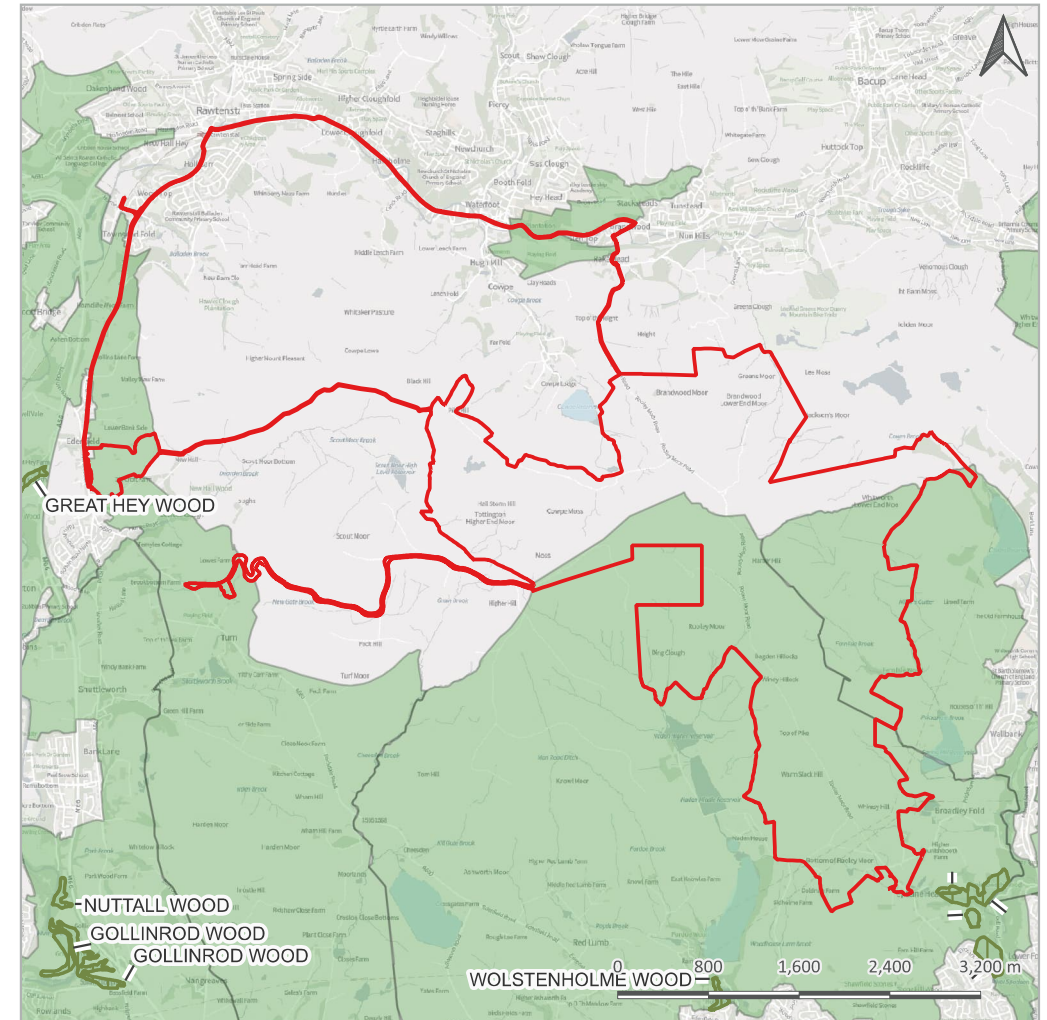
Listed Buildings

 Grade I (one) of exceptional interest

 Grade II (two) of special interest

 Grade II* (two star) particularly important

Non-statutory designations and protected areas - landscape and heritage



 Ancient and Semi-Natural Woodland

 Ancient Replanted Woodland

 Ancient Wood Pasture

 Registered Parks and Gardens

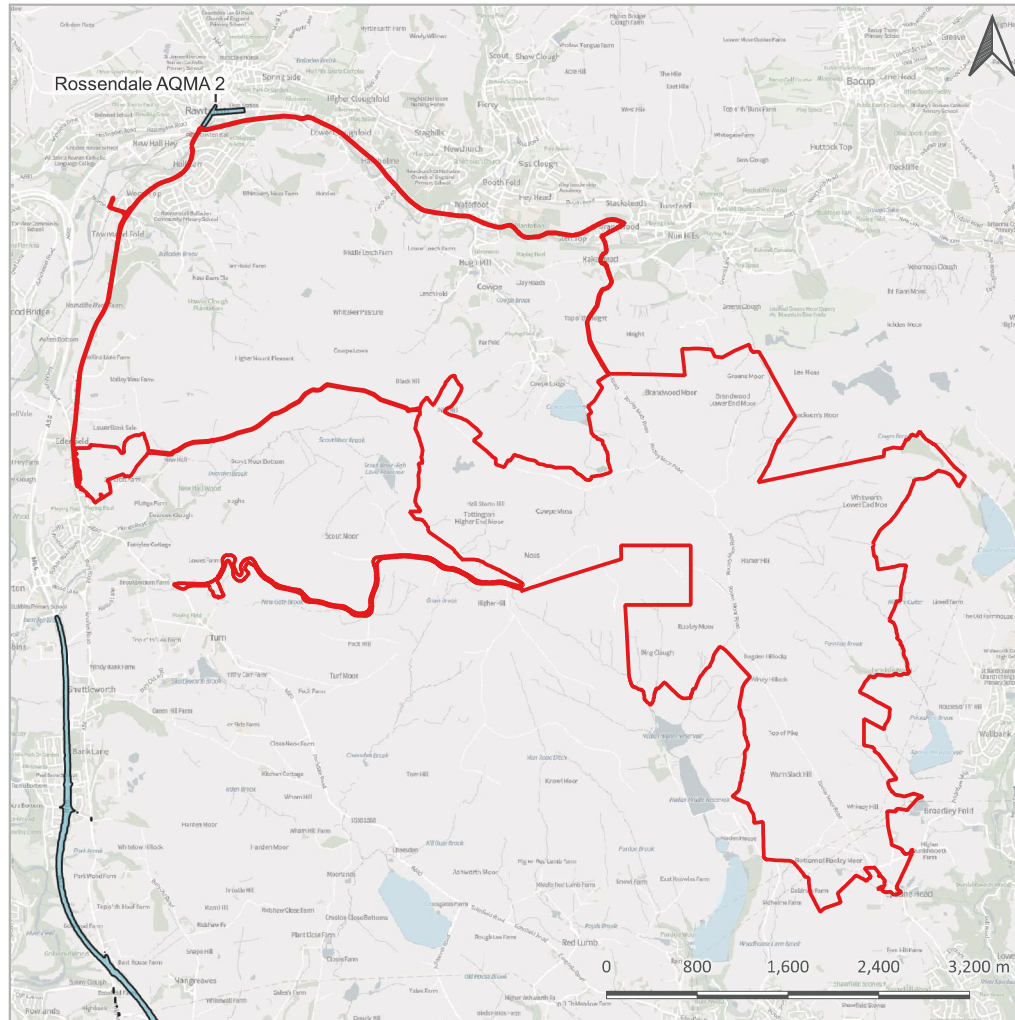
 Registered Battlefields

 RSPB Reserves

 Greenbelt

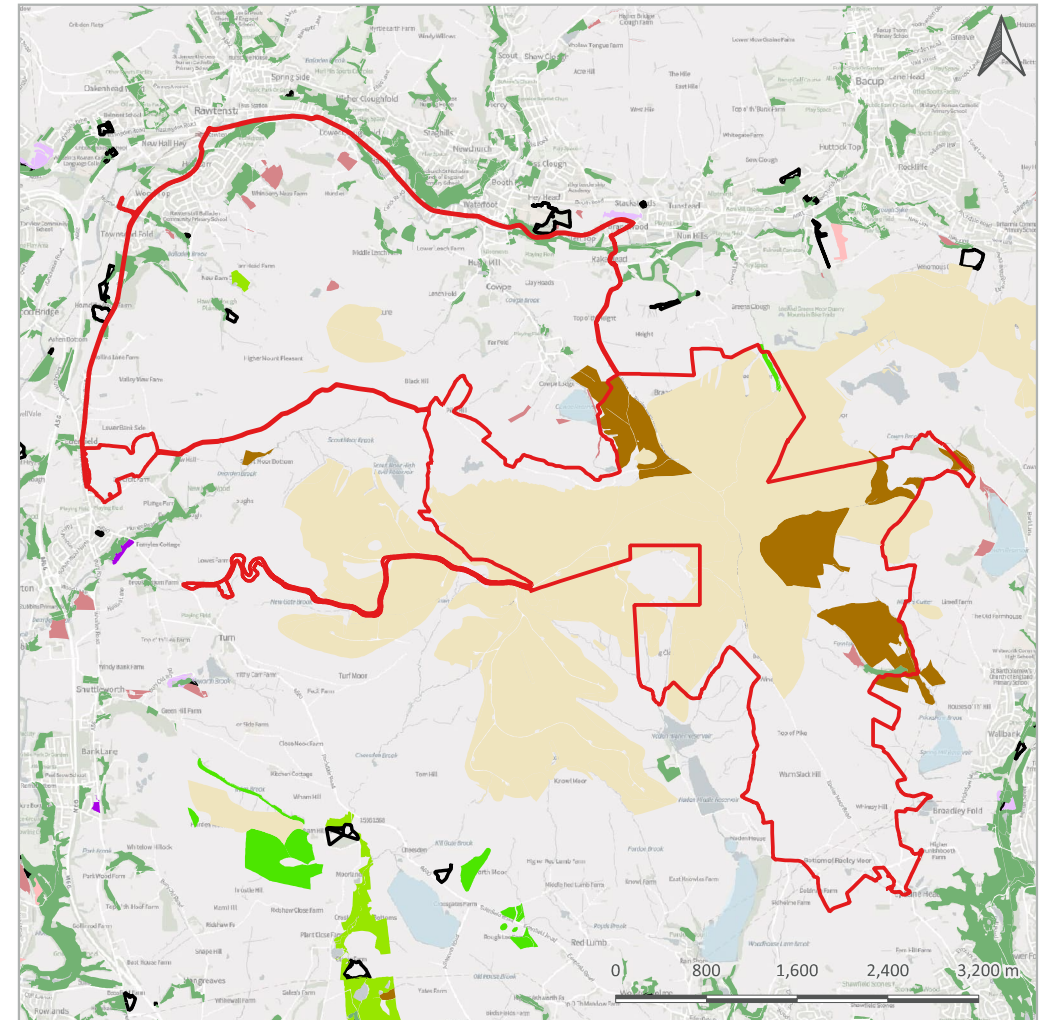
 Heritage Coast

Air Quality



 Air Quality Management Area (AQMA)

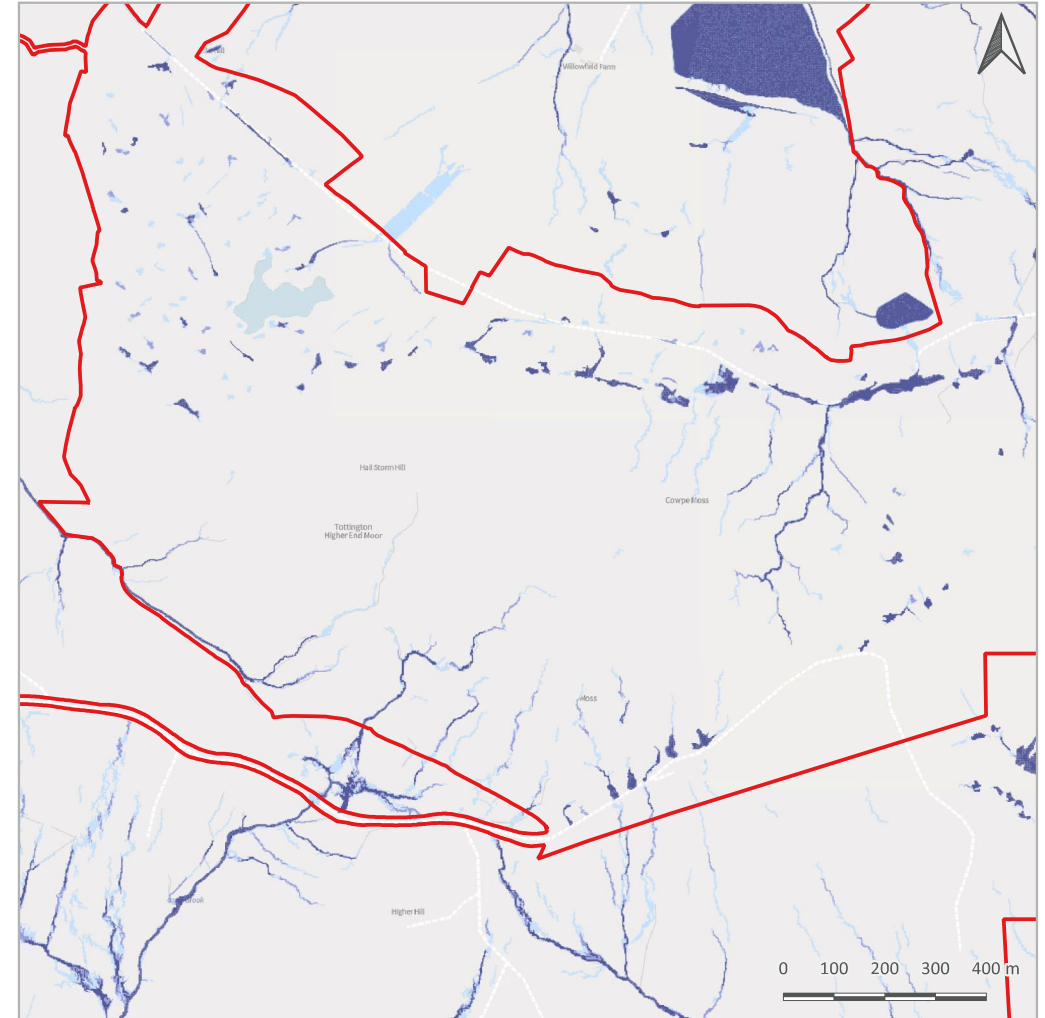
Terrestrial ecosystems and Priority Habitats



 Groundwater Dependant Terrestrial Ecosystems
 Blanket bog
 Deciduous woodland
 Grass moorland
 Lowland dry acid grassland
 Lowland fens
 Lowland heathland

Most frequent Priority Habitats only presented within legend

Risk of flooding from surface water



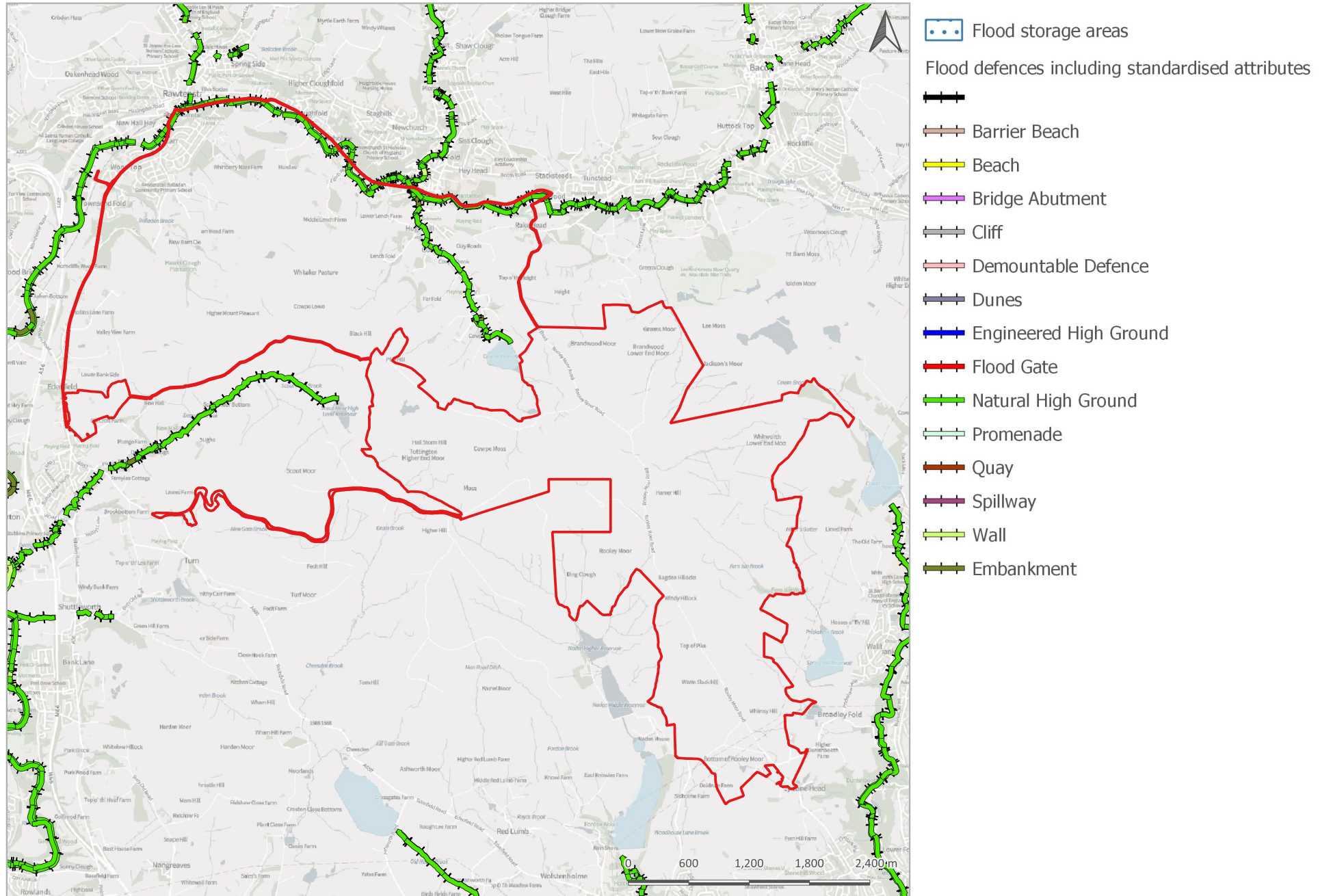
Surface water flood risk annual event probability

■ High risk - 1 in 30

Medium risk - 1 in 100

Low risk - 1 in 1000

Flood defences



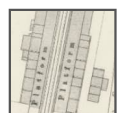
Map load validation Each mini-map loads the same theme as the report map but is located in an area known to contain data, to confirm correct load of layers.



Historic mapping 1888 - 1913



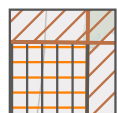
Historic mapping 1937 - 1961



Historic mapping 1893 (London only)



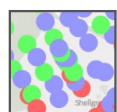
British Geological Survey (BGS) published geology: superficial deposits



British Geological Survey (BGS) Paper Maps



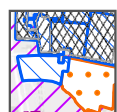
British Geological Survey (BGS) published geology: bedrock and linear features



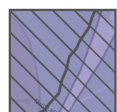
British Geological Survey (BGS) borehole records



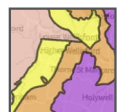
Coal Authority areas and BGS radon potential



Historic and permitted landfill sites and BGS artificial ground



Controlled waters resources



Bedrock aquifer designation



International or European statutory protected areas A



International or European statutory protected areas B



National statutory protected areas A



National statutory protected areas B



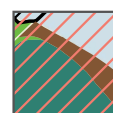
National statutory protected areas C



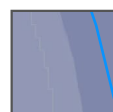
Non-statutory designations and protected areas - landscape and heritage



Air Quality



Terrestrial ecosystems and Priority Habitats



Flood Zones



Risk of flooding from surface water



Flood defences

Geology 1:50,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	MGR	Made Ground (Undivided)	Artificial Deposit	Not Supplied - Holocene
	WMGR	Infilled Ground	Artificial Deposit	Not Supplied - Holocene
	SLIP	Landslide Deposit	Unknown/Unclassified Entry	Not Supplied - Quaternary

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Not Supplied - Holocene
	TILLD	Till, Devensian	Diamicton	Not Supplied - Devensian
	GFDUD	Glaciofluvial Deposits, Devensian	Sand and Gravel	Not Supplied - Devensian
	PEAT	Peat	Peat	Not Supplied - Quaternary
	HEAD	Head	Diamicton	Not Supplied - Quaternary
	RTD2	River Terrace Deposits, 2	Sand and Gravel	Not Supplied - Quaternary
	RTD1	River Terrace Deposits, 1	Sand and Gravel	Not Supplied - Quaternary

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	PLCM	Pennine Lower Coal Measures Formation	Mudstone, Siltstone and Sandstone	Not Supplied - Westphalian
	PLCM	Pennine Lower Coal Measures Formation	Sandstone	Not Supplied - Westphalian
	WH	Woodhead Hill Rock	Sandstone	Not Supplied - Westphalian
	GNR	Ganister Rock	Sandstone	Not Supplied - Westphalian
	GAS	Great Arc Sandstone	Sandstone	Not Supplied - Westphalian
	ROSSE	Rosendale Formation	Mudstone and Siltstone	Not Supplied - Namurian
	UH	Upper Haslingden Flags	Sandstone	Not Supplied - Namurian
	LH	Lower Haslingden Flags	Sandstone	Not Supplied - Namurian

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	RR	Rough Rock	Sandstone	Not Supplied - Namurian
	MARSD	Marsden Formation	Mudstone and Siltstone	Not Supplied - Namurian
	BBS	Brooksbottoms Grit	Sandstone	Not Supplied - Namurian
	HLBG	Holcombe Brook Grit	Sandstone	Not Supplied - Namurian
	FLB	FLETCHER BANK GRIT	Sandstone	Not Supplied - Namurian
	HSG	Helmshore Grit	Sandstone	Not Supplied - Namurian
	GSYG	Guisseley Grit	Sandstone	Not Supplied - Namurian
		Faults		
		Rock Segments		

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Geology 1:50,000 Maps

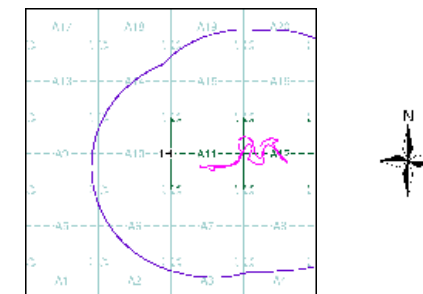
This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published paper maps.

The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page. Not all layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:50,000 Maps Coverage

Map ID:	1
Map Sheet No:	076
Map Name:	Rochdale
Map Date:	2008
Bedrock Geology:	Available
Superficial Geology:	Available
Artificial Geology:	Available
Faults:	Not Supplied
Landslip:	Available
Rock Segments:	Not Supplied

Geology 1:50,000 Maps - Slice A



Order Details:

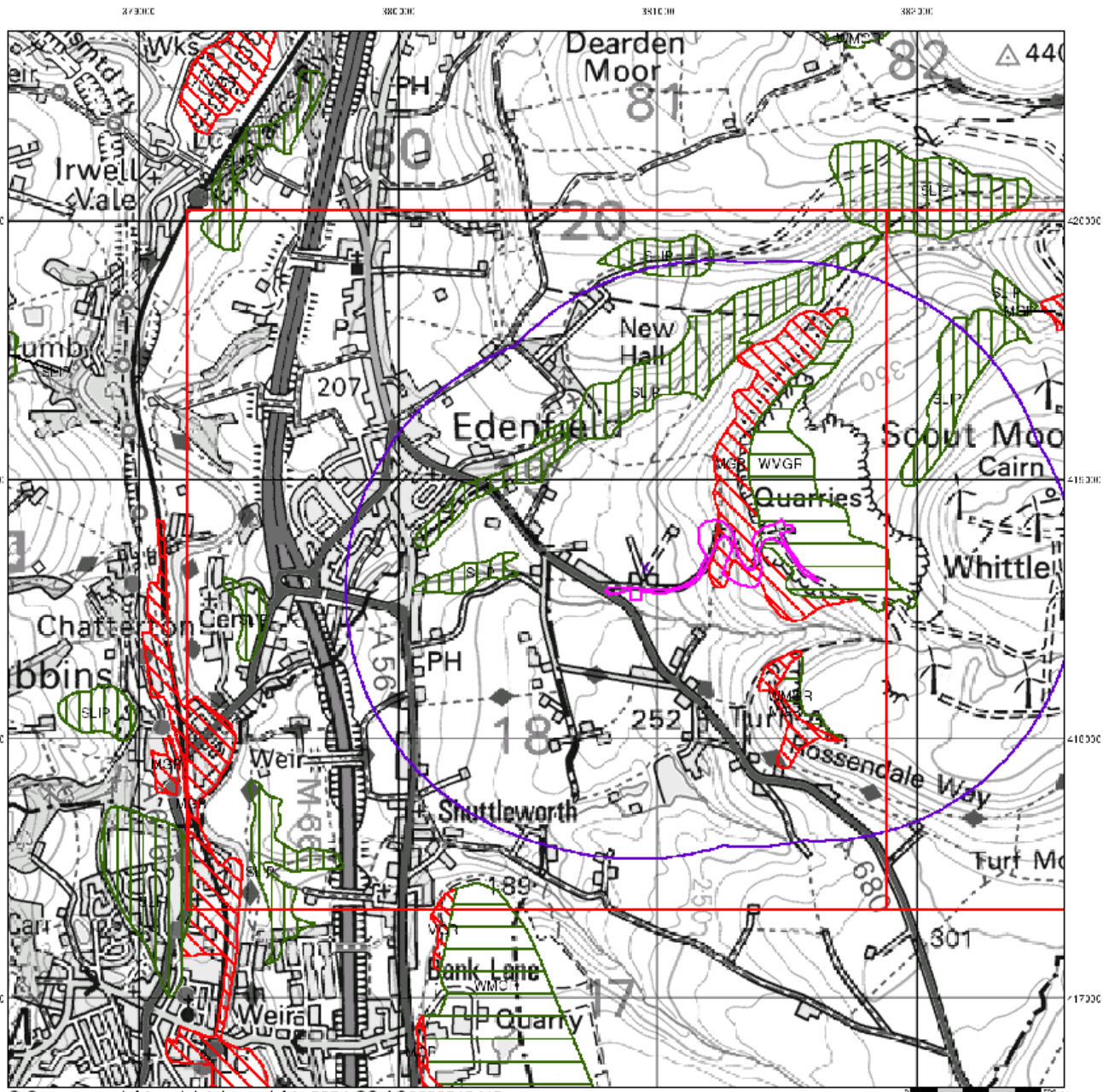
Order Number:	360917725_1_1
Customer Reference:	10109692
National Grid Reference:	380950, 418660
Slice:	A
Site Area (Ha):	4.19
Search Buffer (m):	1000

Site Details:

Site at 381207,418692

Landmark
IT FORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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Artificial Ground and Landslip

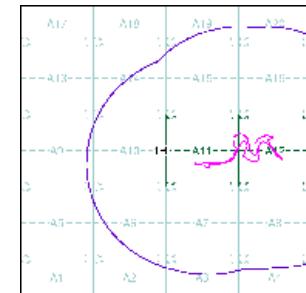
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



Order Details:

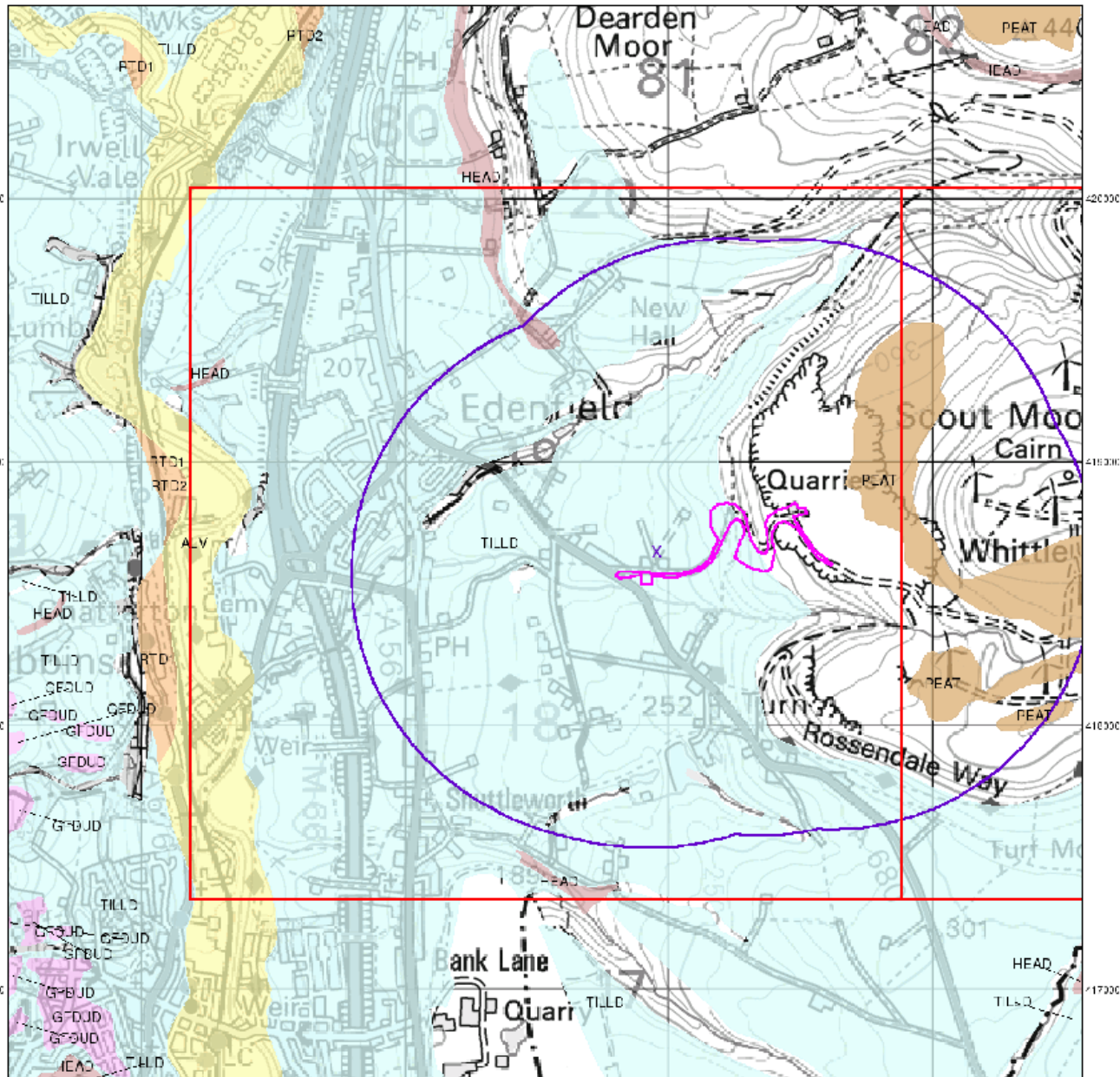
Order Number: 360917725_1_1
 Customer Reference: 10109692
 National Grid Reference: 380950, 418660
 Slice: A
 Site Area (Ha): 4.19
 Search Buffer (m): 1000

Site Details:

Site at 381207, 418692

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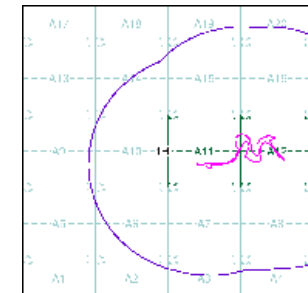
Superficial Geology

Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



Order Details:

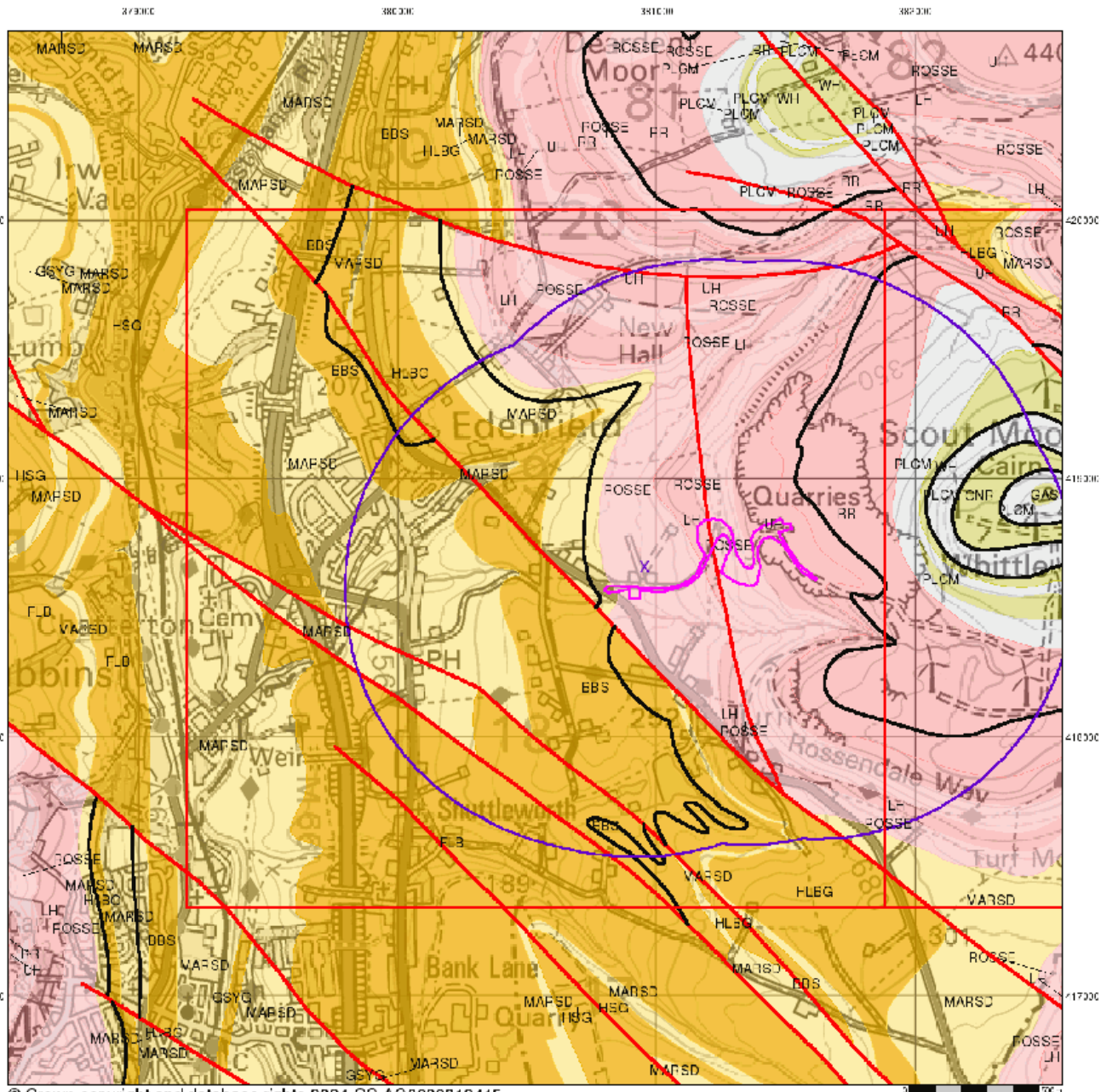
Order Number: 360917725_1_1
Customer Reference: 10109692
National Grid Reference: 380950, 418660
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Site Area (Ha): 4.19
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Site Details:

Site at 381207,418692

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Bedrock and Faults

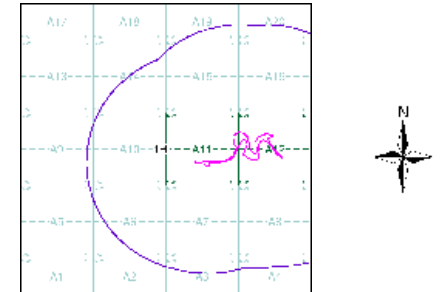
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults (e.g. normal, thrust), and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets, for example, coal seams are part of the bedrock sequence, most faults and mineral veins primarily affect the bedrock but cut across the strata and post date its deposition.

Bedrock and Faults Map - Slice A



Order Details:

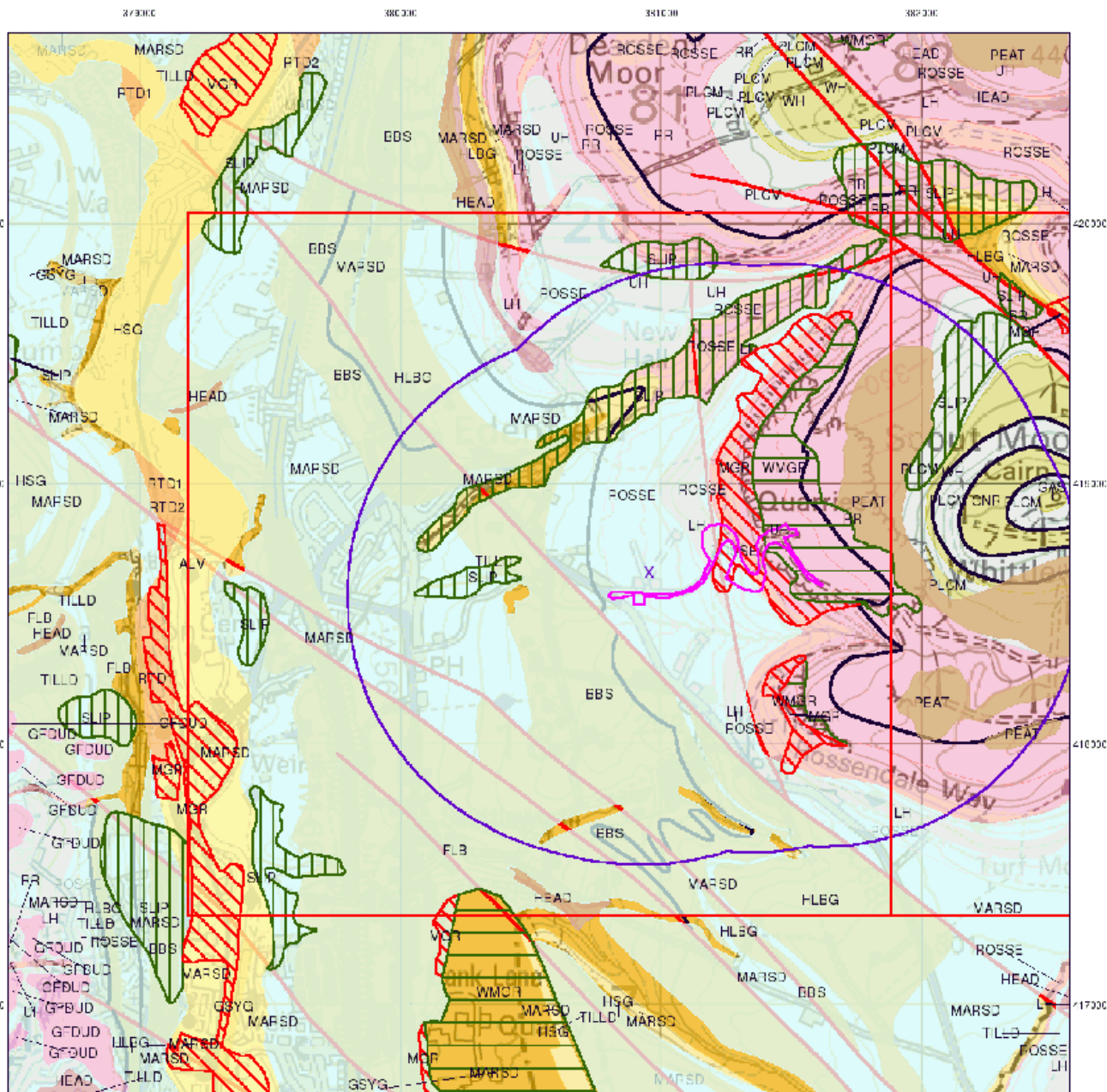
Order Number: 360917725_1_1
Customer Reference: 10109692
National Grid Reference: 380950, 418660
Slice: A
Site Area (Ha): 4.19
Search Buffer (m): 1000

Site Details:

Site at 381207,418692

Landmark
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Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

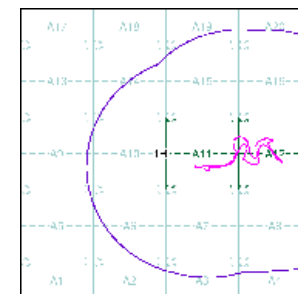
Additional Information

More information on 1:50,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey
Kingsley Dunham Centre
Keyworth
Nottingham
NG12 5GG
Telephone: 0115 936 3143
Fax: 0115 936 3276
email: enquiries@bgs.ac.uk
website: www.bgs.ac.uk

Combined Geology Map - Slice A



Order Details:

Order Number: 360917725_1_1
Customer Reference: 10109692
National Grid Reference: 380950, 418660
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Site Area (Ha): 4.19
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Geology 1:50,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	MGR	Made Ground (Undivided)	Artificial Deposit	Not Supplied - Holocene
	WMGR	Infilled Ground	Artificial Deposit	Not Supplied - Holocene
	SLIP	Landslide Deposit	Unknown/Unclassified Entry	Not Supplied - Quaternary

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	TILLD	Till, Devensian	Diamicton	Not Supplied - Devensian
	PEAT	Peat	Peat	Not Supplied - Quaternary
	LDE	Lacustrine Deposits	Clay	Not Supplied - Quaternary
	HEAD	Head	Diamicton	Not Supplied - Quaternary

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	PLCM	Pennine Lower Coal Measures Formation	Mudstone, Siltstone and Sandstone	Not Supplied - Westphalian
	PLCM	Pennine Lower Coal Measures Formation	Sandstone	Not Supplied - Westphalian
	WH	Woodhead Hill Rock	Sandstone	Not Supplied - Westphalian
	GNR	Ganister Rock	Sandstone	Not Supplied - Westphalian
	GAS	Great Arc Sandstone	Sandstone	Not Supplied - Westphalian
	HER	Helpet Edge Rock	Sandstone	Not Supplied - Westphalian
	ROSSE	Rosendale Formation	Mudstone and Siltstone	Not Supplied - Namurian
	UH	Upper Haslingden Flags	Sandstone	Not Supplied - Namurian
	LH	Lower Haslingden Flags	Sandstone	Not Supplied - Namurian
	RR	Rough Rock	Sandstone	Not Supplied - Namurian
	BBS	Brooksbottoms Grit	Sandstone	Not Supplied - Namurian

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	MARSD	Marsden Formation	Mudstone and Siltstone	Not Supplied - Namurian
	HLBG	Holcombe Brook Grit	Sandstone	Not Supplied - Namurian
	FLB	FLETCHER BANK GRIT	Sandstone	Not Supplied - Namurian
	HSG	Helmshore Grit	Sandstone	Not Supplied - Namurian
		Faults		
		Rock Segments		

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Geology 1:50,000 Maps

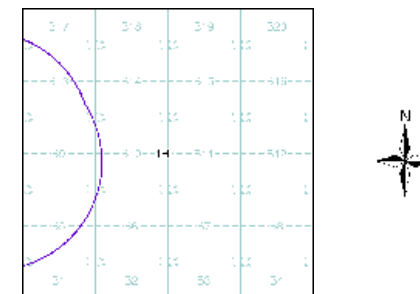
This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published paper maps.

The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page. Not all layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:50,000 Maps Coverage

Map ID:	1
Map Sheet No:	076
Map Name:	Rochdale
Map Date:	2008
Bedrock Geology:	Available
Superficial Geology:	Available
Artificial Geology:	Available
Faults:	Not Supplied
Landslip:	Available
Rock Segments:	Not Supplied

Geology 1:50,000 Maps - Slice B



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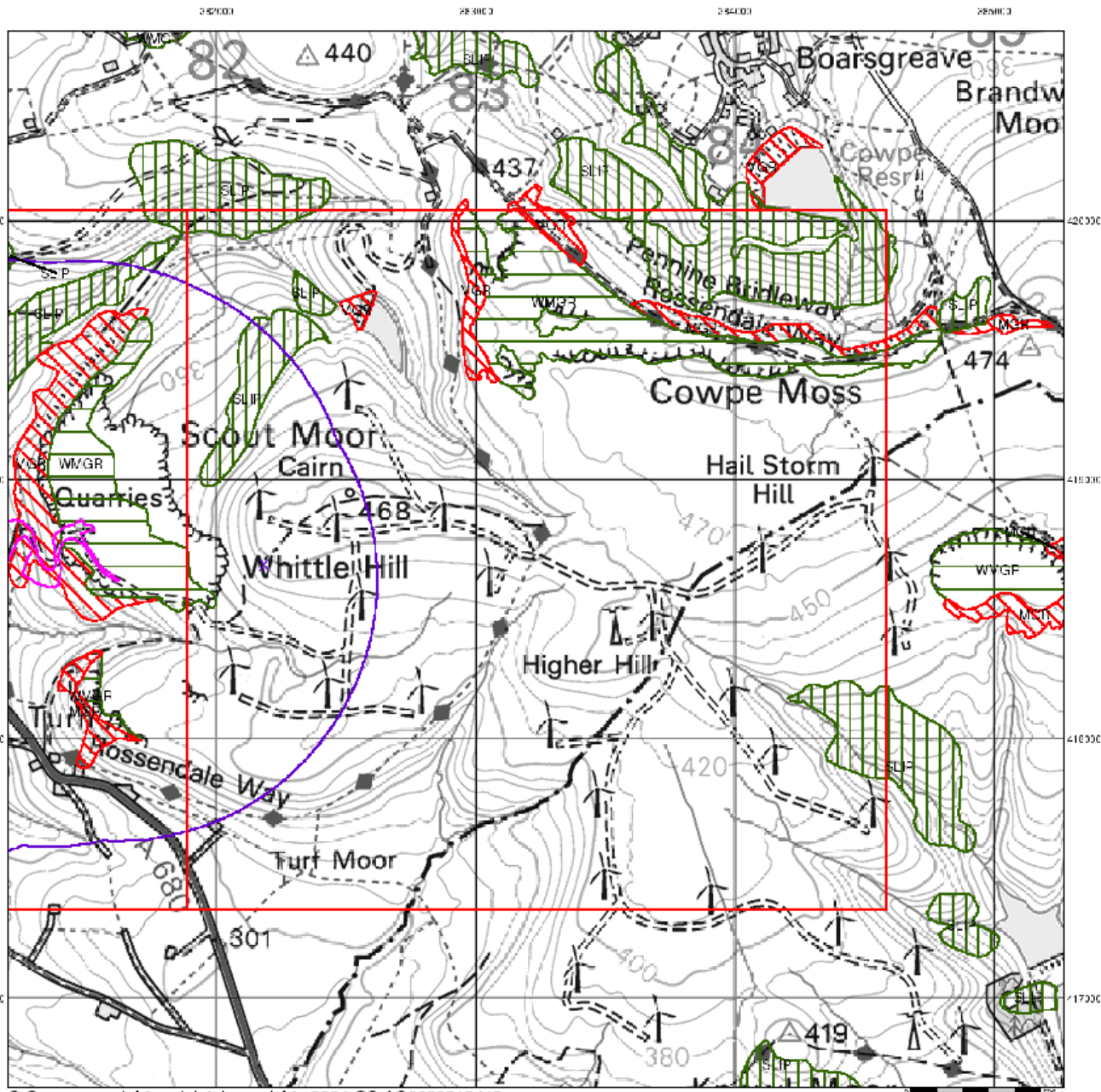
Order Number:	360917725_1_1
Customer Reference:	10109692
National Grid Reference:	382180, 418670
Slice:	B
Site Area (Ha):	4.19
Search Buffer (m):	1000

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Artificial Ground and Landslip

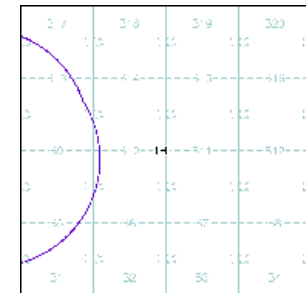
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice B



Order Details:

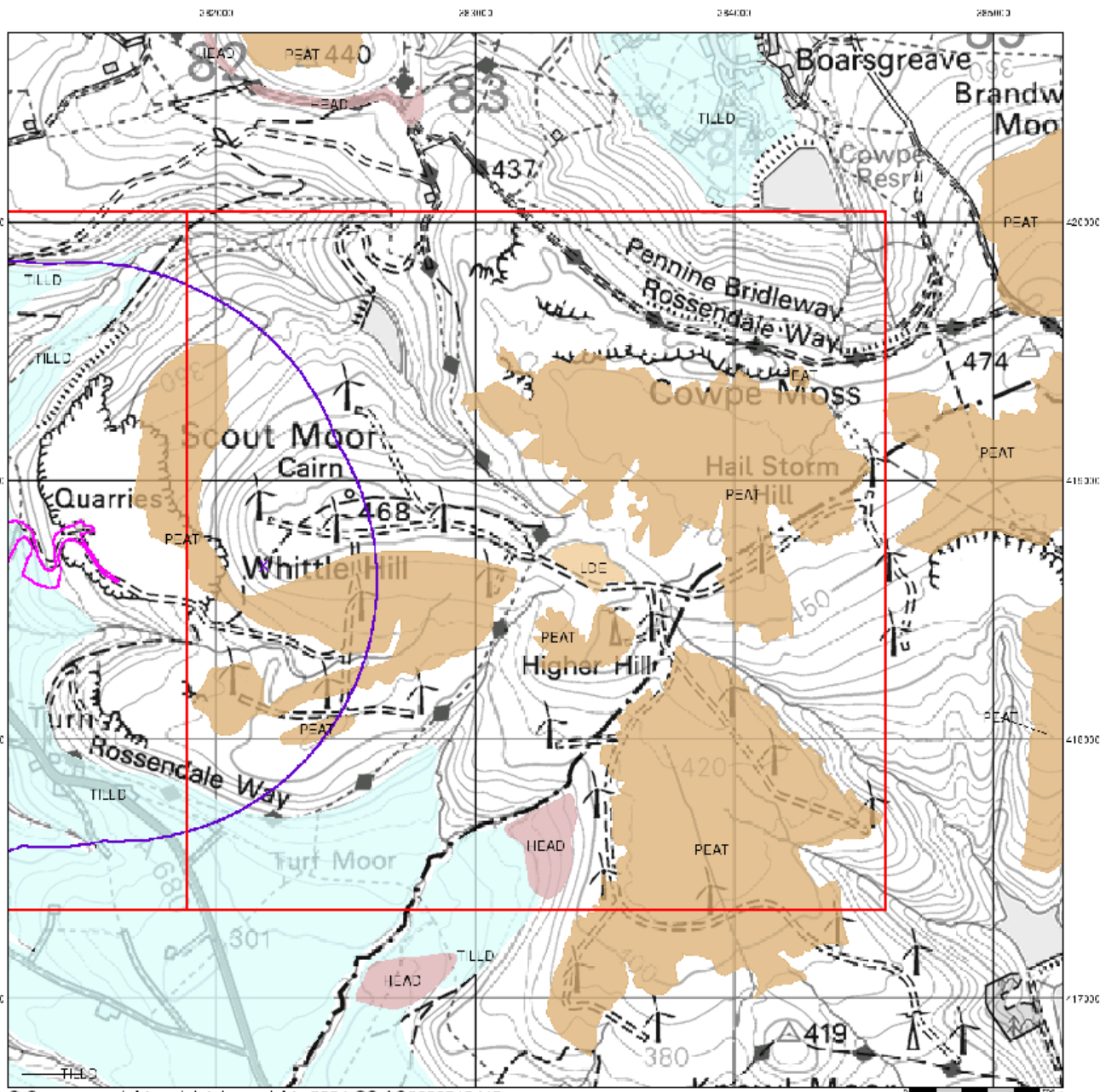
Order Number: 360917725_1_1
 Customer Reference: 10109692
 National Grid Reference: 382180, 418670
 Slice: B
 Site Area (Ha): 4.19
 Search Buffer (m): 1000

Site Details:

Site at 381207, 418692

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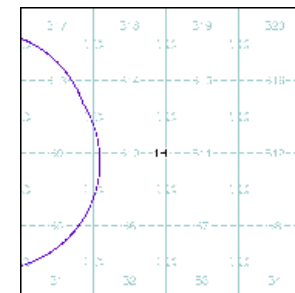
Superficial Geology

Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice B



Order Details:

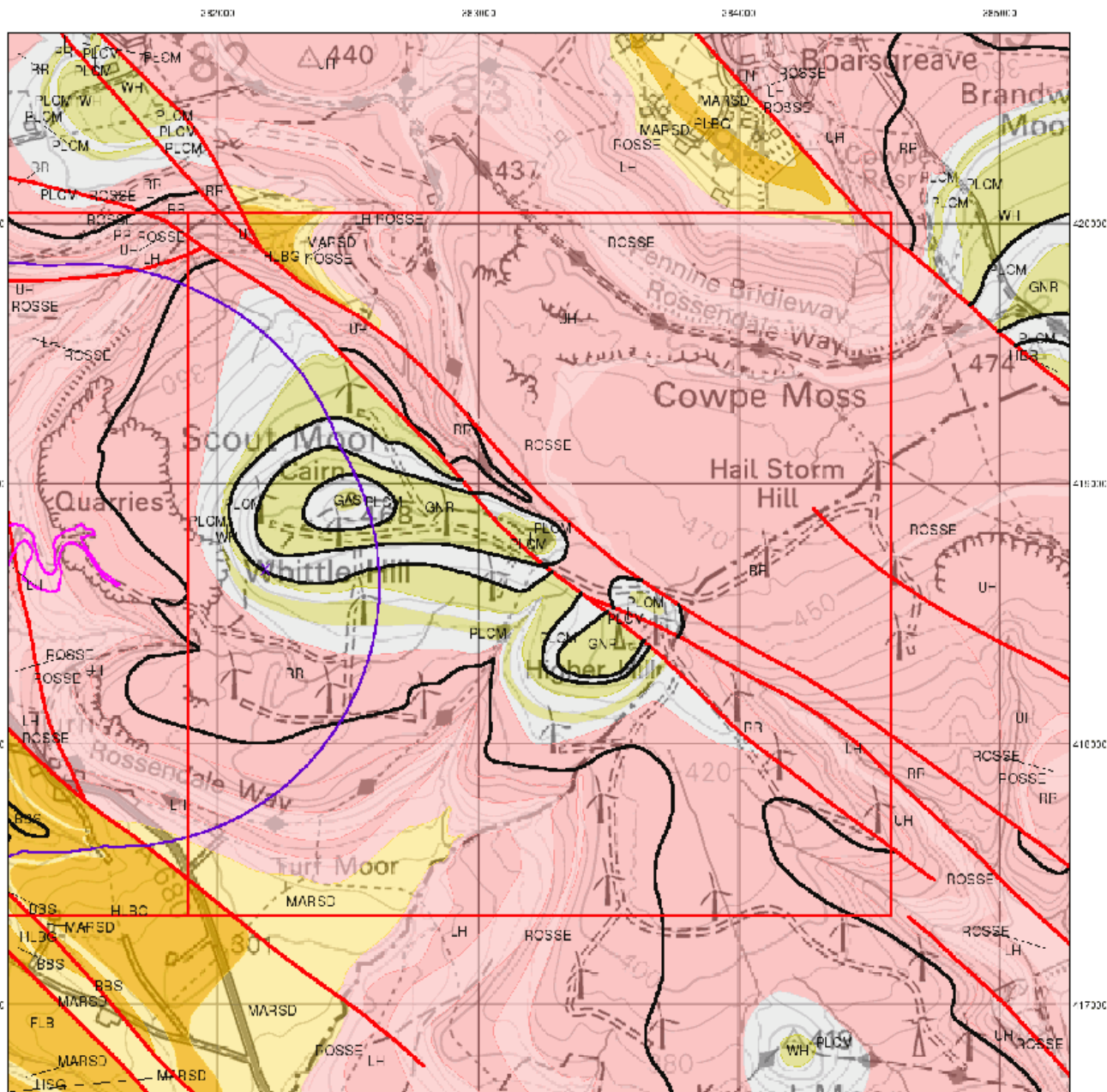
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Customer Reference: 10109692
National Grid Reference: 382180, 418670
Slice: B
Site Area (Ha): 4.19
Search Buffer (m): 1000

Site Details:

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Bedrock and Faults

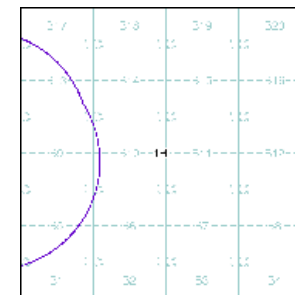
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The BGS Faults and Rock Segments dataset includes geological faults (e.g. normal, thrust), and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets, for example, coal seams are part of the bedrock sequence, most faults and mineral veins primarily affect the bedrock but cut across the strata and post date its deposition.

Bedrock and Faults Map - Slice B



Order Details:

Order Number: 360917725_1_1
Customer Reference: 10109692
National Grid Reference: 382180, 418670
Slice: B
Site Area (Ha): 4.19
Search Buffer (m): 1000

Site Details:

Site at 381207,418692

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Fax: 0844 844 9951
Web: www.envirocheck.co.uk

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

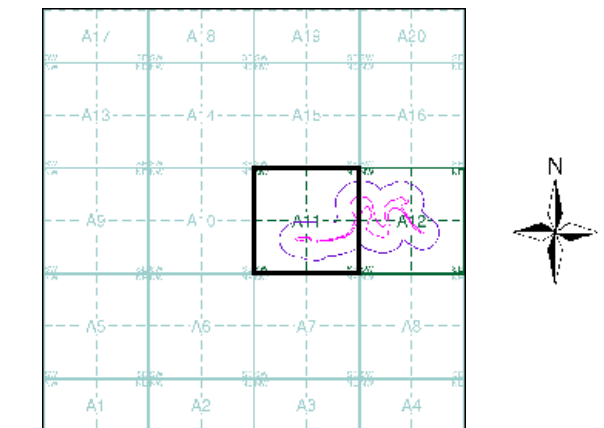
Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Geological

- BGS Recorded Mineral Site

Site Sensitivity Map - Segment A11

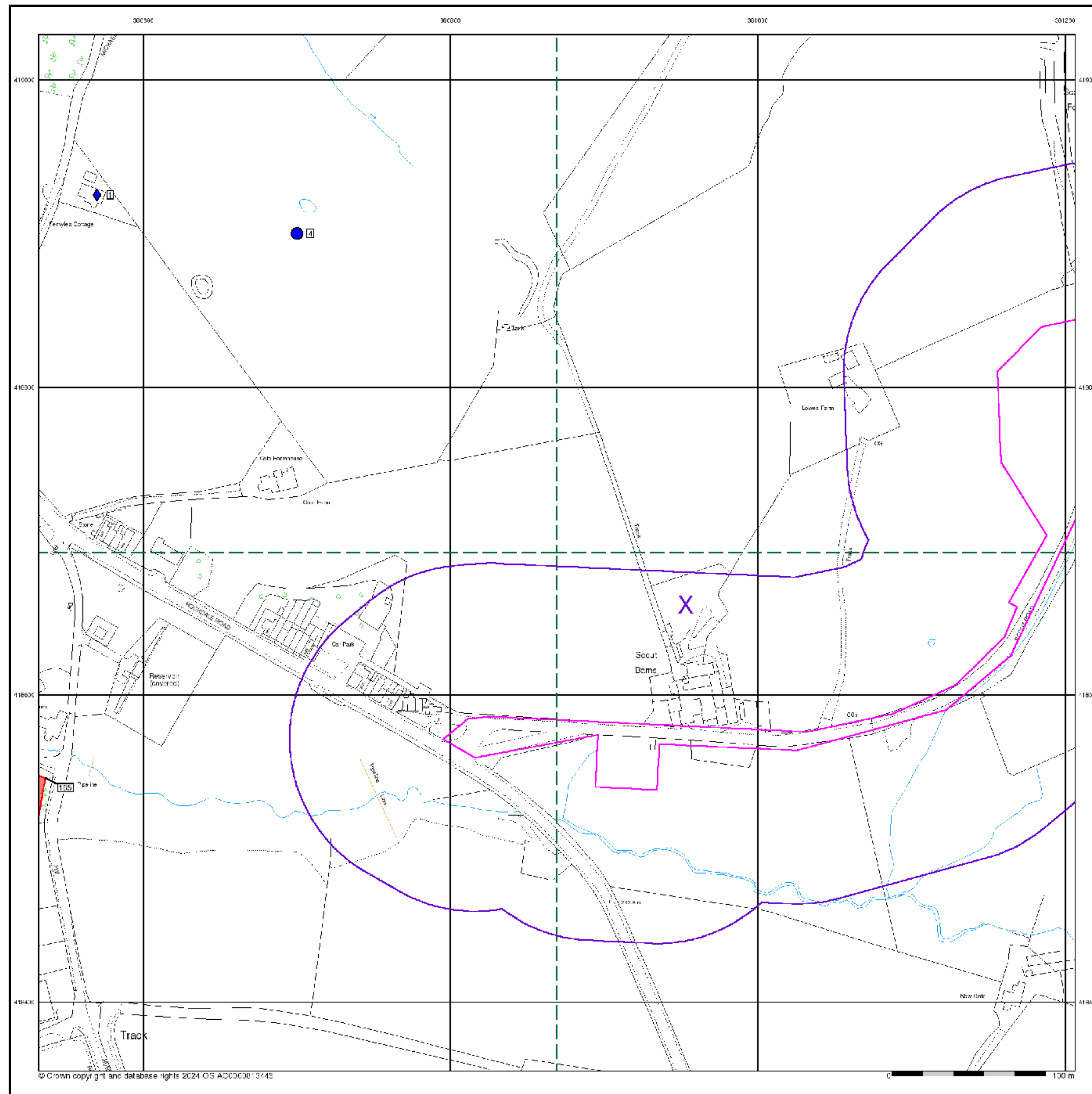


Order Details

Order Number: 360917725_1_1
 Customer Ref: 10109692
 National Grid Reference: 380950, 418660
 Slice: A
 Site Area (Ha): 4.19
 Plot Buffer (m): 100

Site Details

Site at 381207,418692



General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
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- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

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- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
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- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

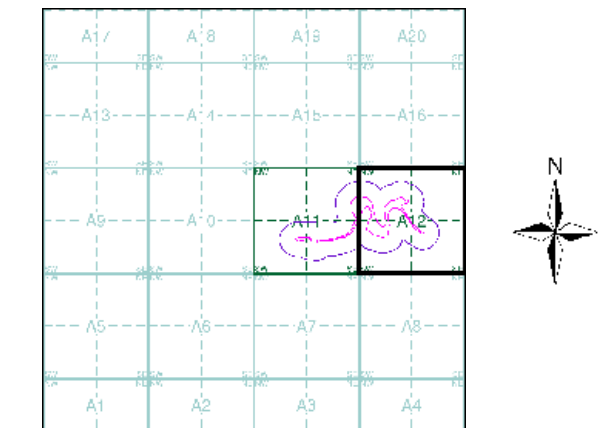
Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Geological

- BGS Recorded Mineral Site

Site Sensitivity Map - Segment A12

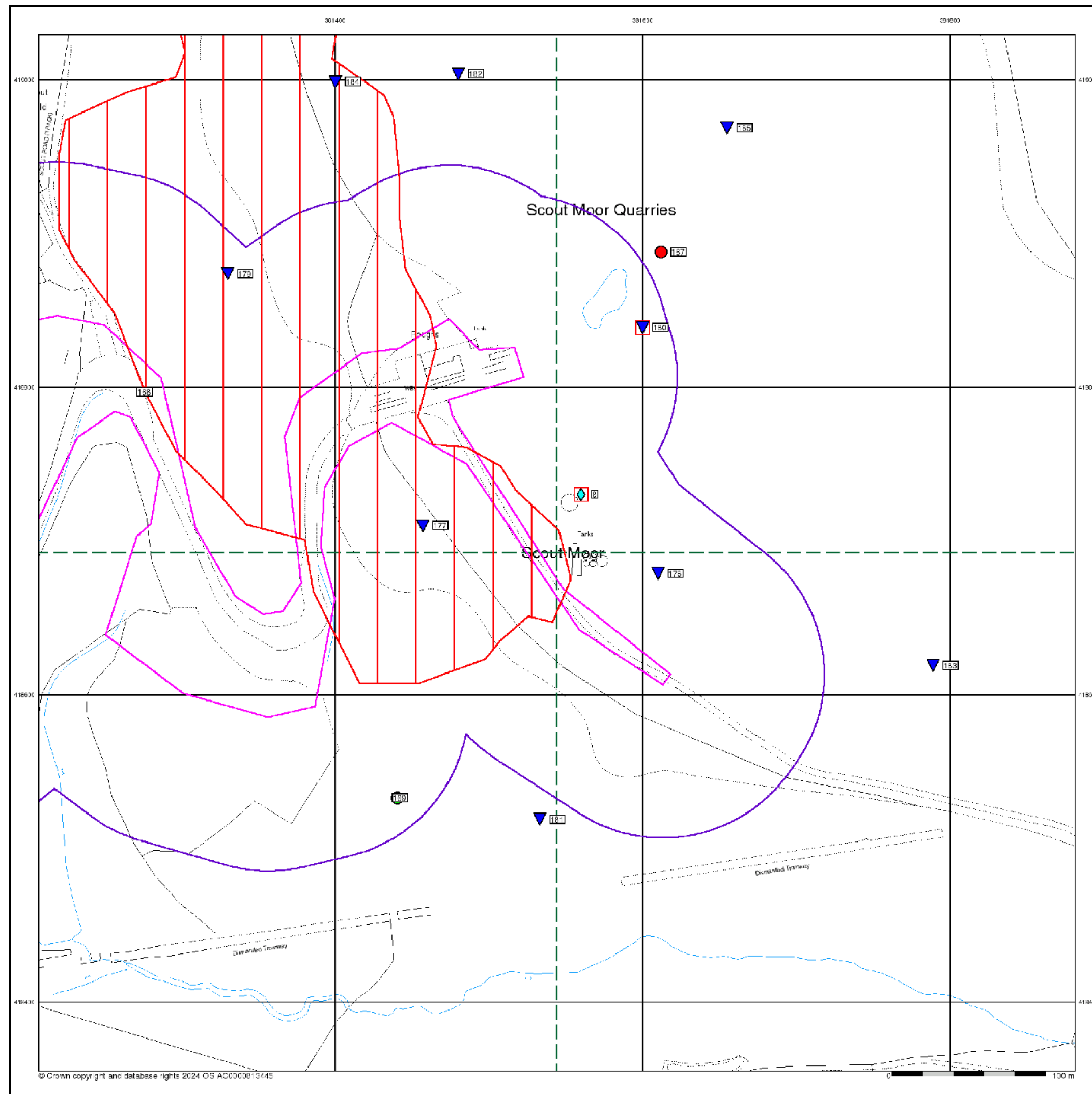


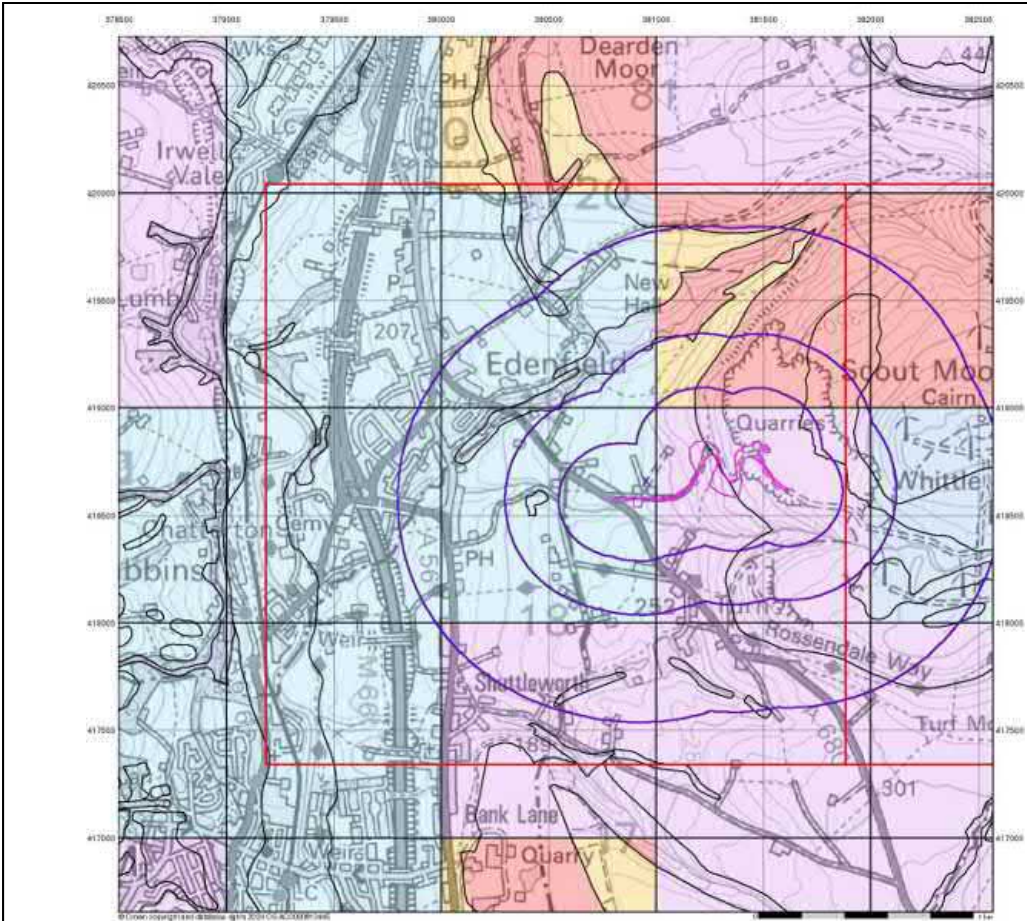
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Order Number: 360917725_1_1
 Customer Ref: 10109692
 National Grid Reference: 380950, 418660
 Slice: A
 Site Area (Ha): 4.19
 Plot Buffer (m): 100

Site Details

Site at 381207,418692



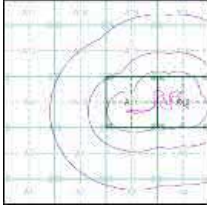


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Groundwater Vulnerability

- General**
- Specified Site
 - Specified Buffer(s)
 - Beating Reference Point
 - State
 - Map ID
- Agency and Hydrological**
- Bedrock Aquifers**
- High Vulnerability, Principal Aquifer
 - High Vulnerability, Secondary Aquifer
 - Medium Vulnerability, Principal Aquifer
 - Medium Vulnerability, Secondary Aquifer
 - Low Vulnerability, Principal Aquifer
 - Low Vulnerability, Secondary Aquifer
- Superficial Aquifers**
- High Vulnerability, Principal Aquifer
 - High Vulnerability, Secondary Aquifer
 - Medium Vulnerability, Principal Aquifer
 - Medium Vulnerability, Secondary Aquifer
 - Low Vulnerability, Principal Aquifer
 - Low Vulnerability, Secondary Aquifer
- Unproductive Aquifer
Solid Rock

Site Sensitivity Context Map - Slice A

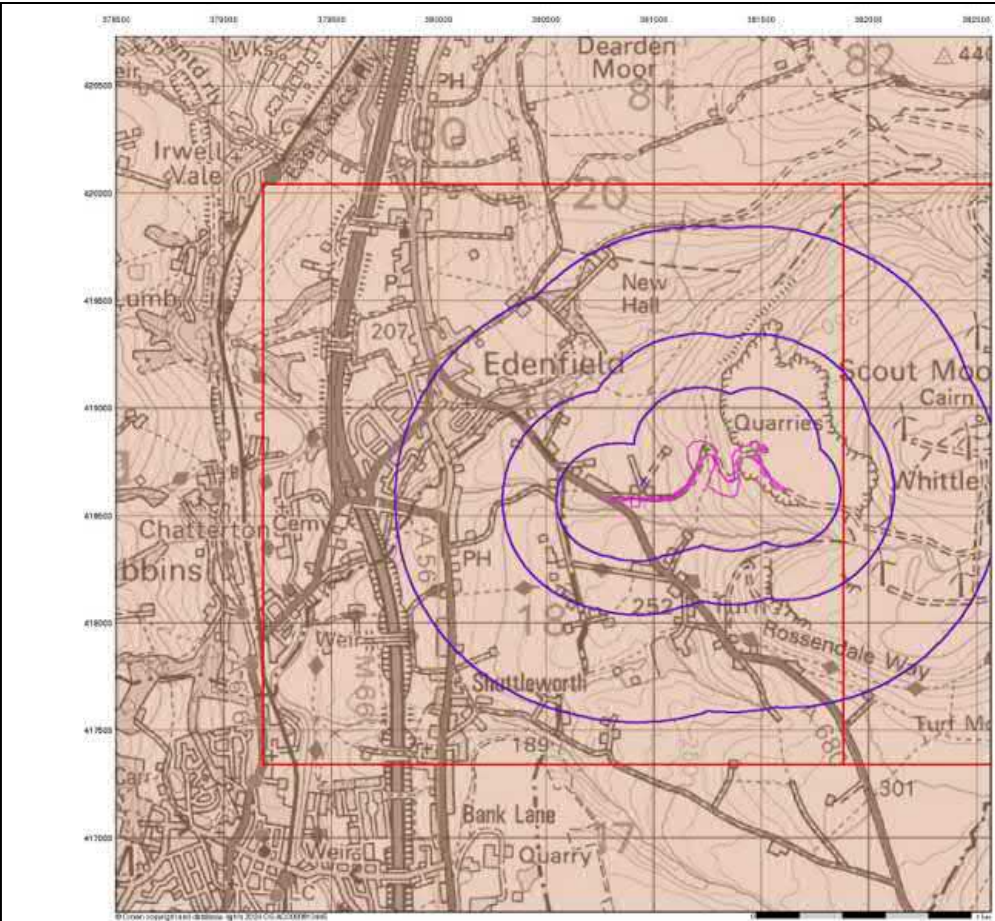


Order Details

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Customer Ref: 10100692
National Grid Reference: 380950, 418660
Slice: A
Site Area (Ha): 4.19
Search Buffer (m): 1000

Site Details

Site at 381207,418692

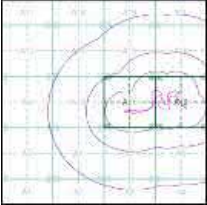


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Bedrock Aquifer Designation

- General**
- Specified Site
 - Specified Buffer(s)
 - Beating Reference Point
 - State
 - Map ID
- Agency and Hydrological**
- Geological Classes**
- Principal Aquifer
 - Secondary A Aquifer
 - Secondary B Aquifer
 - Secondary Undifferentiated
 - Unproductive Strata
 - Unknown
 - Unknown (Lakes and Landfill)

Site Sensitivity Context Map - Slice A

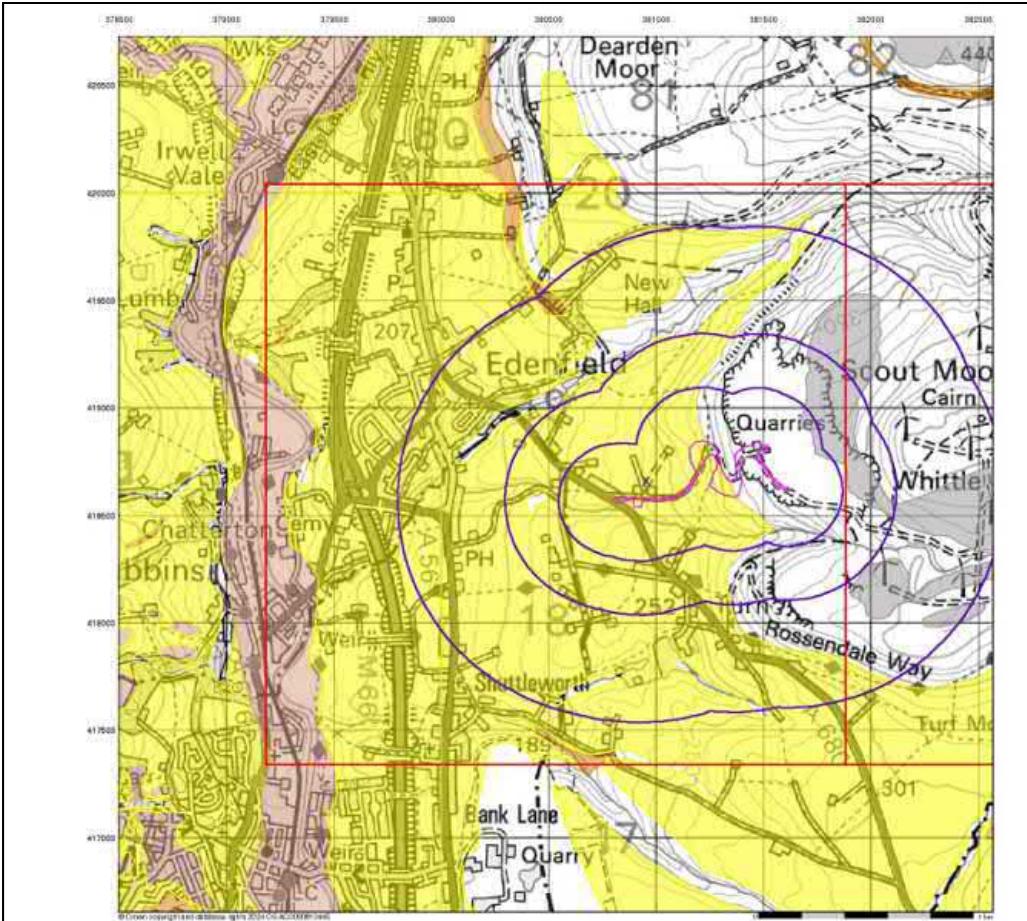


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Site Area (Ha): 4.19
Search Buffer (m): 1000

Site Details

Site at 381207,418692

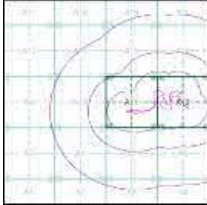


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Superficial Aquifer Designation

- General**
- Specified Site
 - Specified Buffer(s)
 - Beating Reference Point
 - State
 - Map ID
- Agency and Hydrological**
- Geological Classes**
- Principal Aquifer
 - Secondary A Aquifer
 - Secondary B Aquifer
 - Secondary Undifferentiated
 - Unproductive Strata
 - Unknown
 - Unknown (Lakes and Landfill)

Site Sensitivity Context Map - Slice A

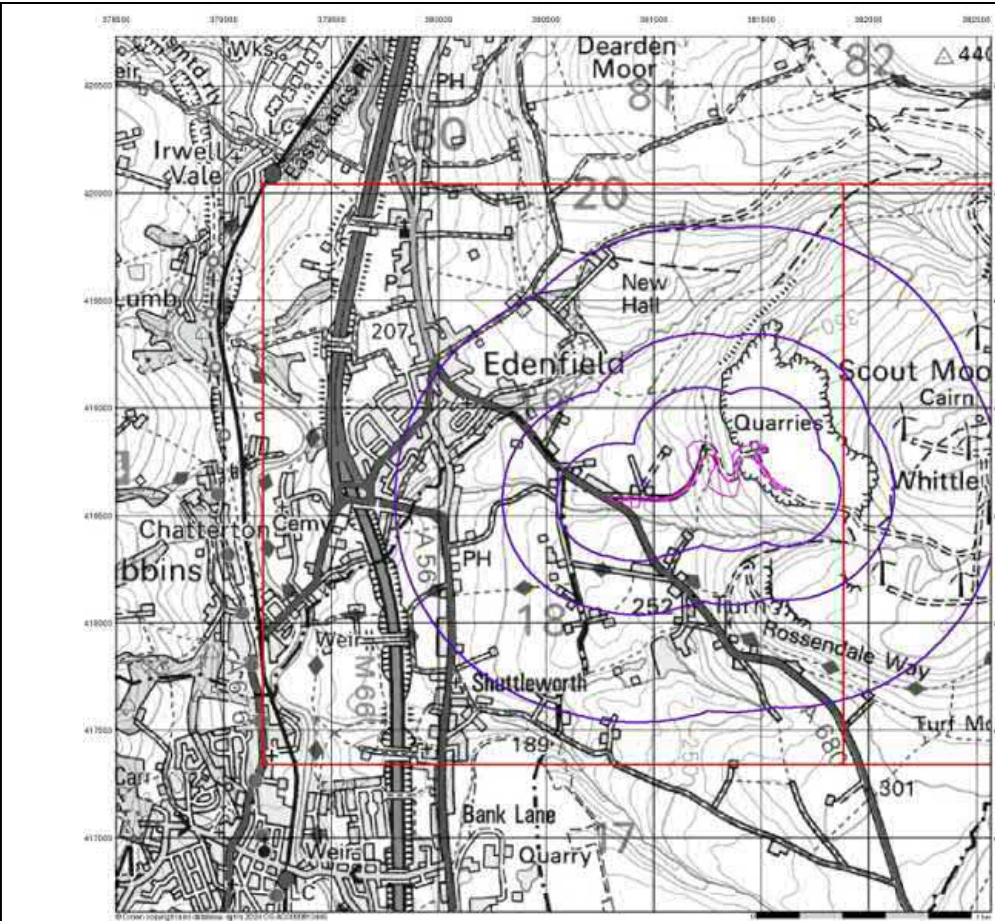


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National Grid Reference: 380950, 418660
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Site Area (Ha): 4.19
Search Buffer (m): 1000

Site Details

Site at 381207,418692

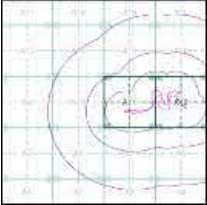


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Source Protection Zones

- General**
- Specified Site
 - Specified Buffer(s)
 - Beating Reference Point
 - State
 - Map ID
- Agency and Hydrological**
- Source Protection Zones**
- Inner zone (Zone 1)
 - Inner zone - subsurface activity only (Zone 1a)
 - Outer zone (Zone 2)
 - Outer zone - subsurface activity only (Zone 2a)
 - Total catchment (Zone 3)
 - Total catchment - subsurface activity only (Zone 3a)
 - Special interest (Zone 4)

Site Sensitivity Context Map - Slice A

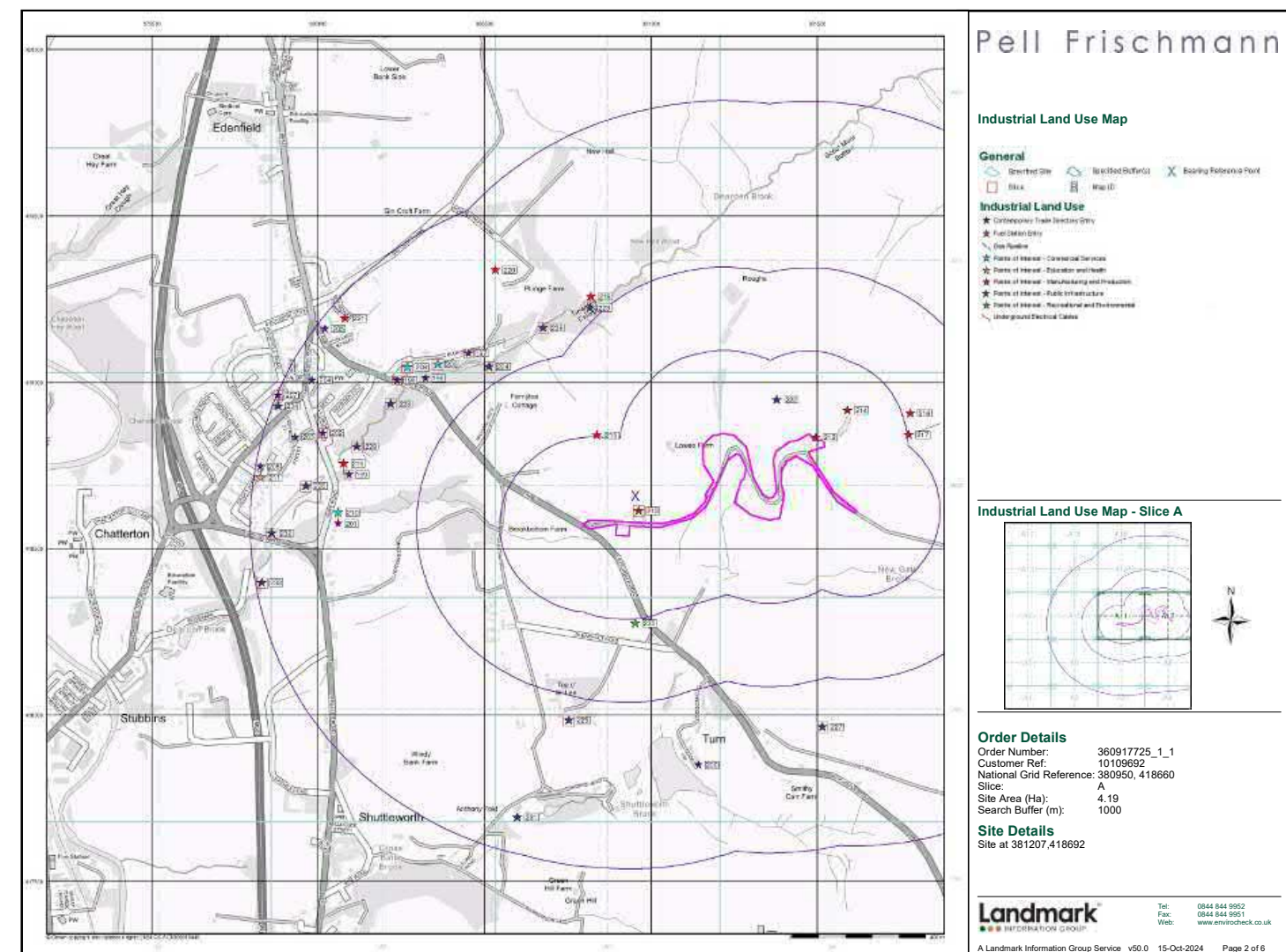
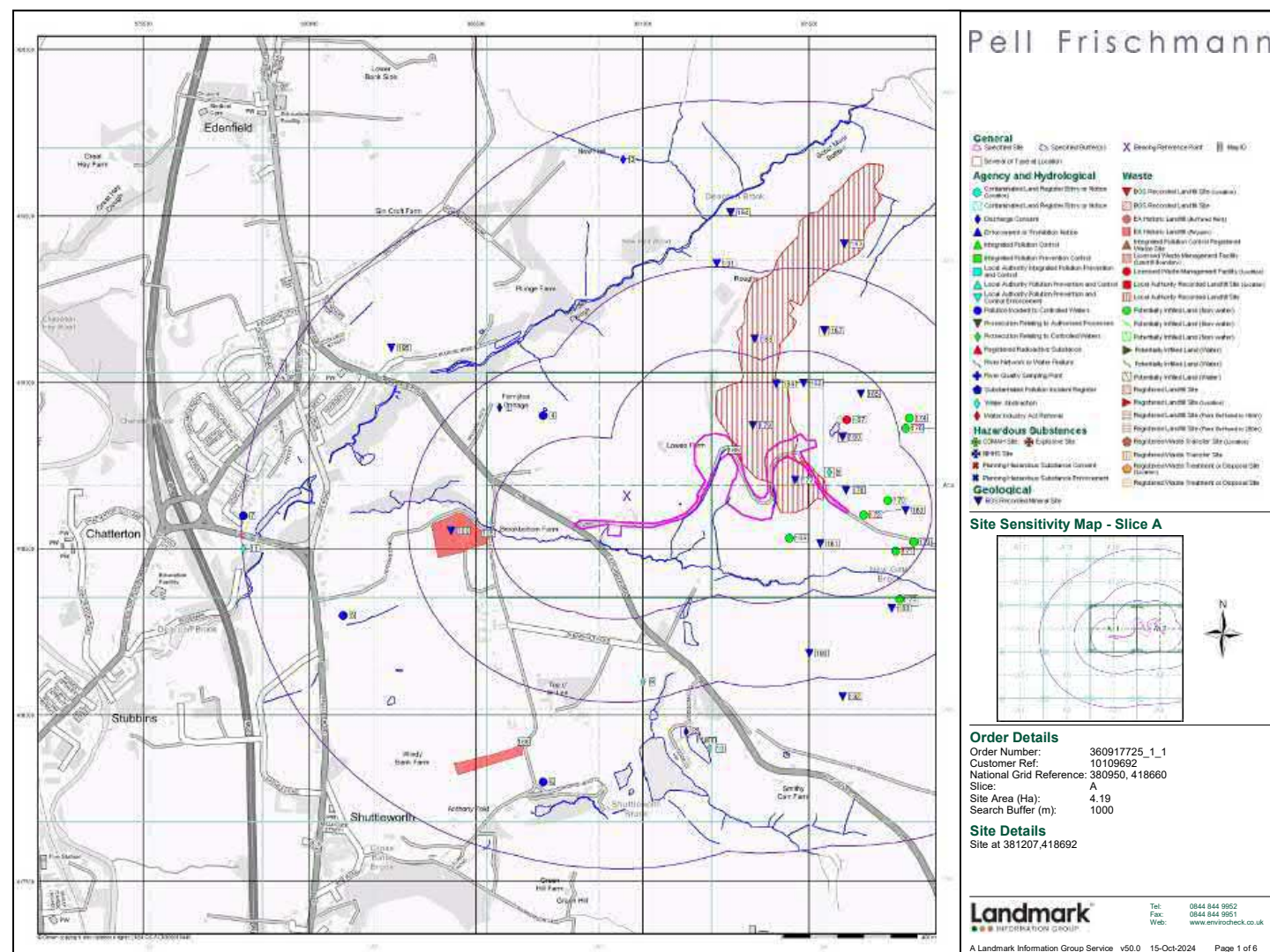
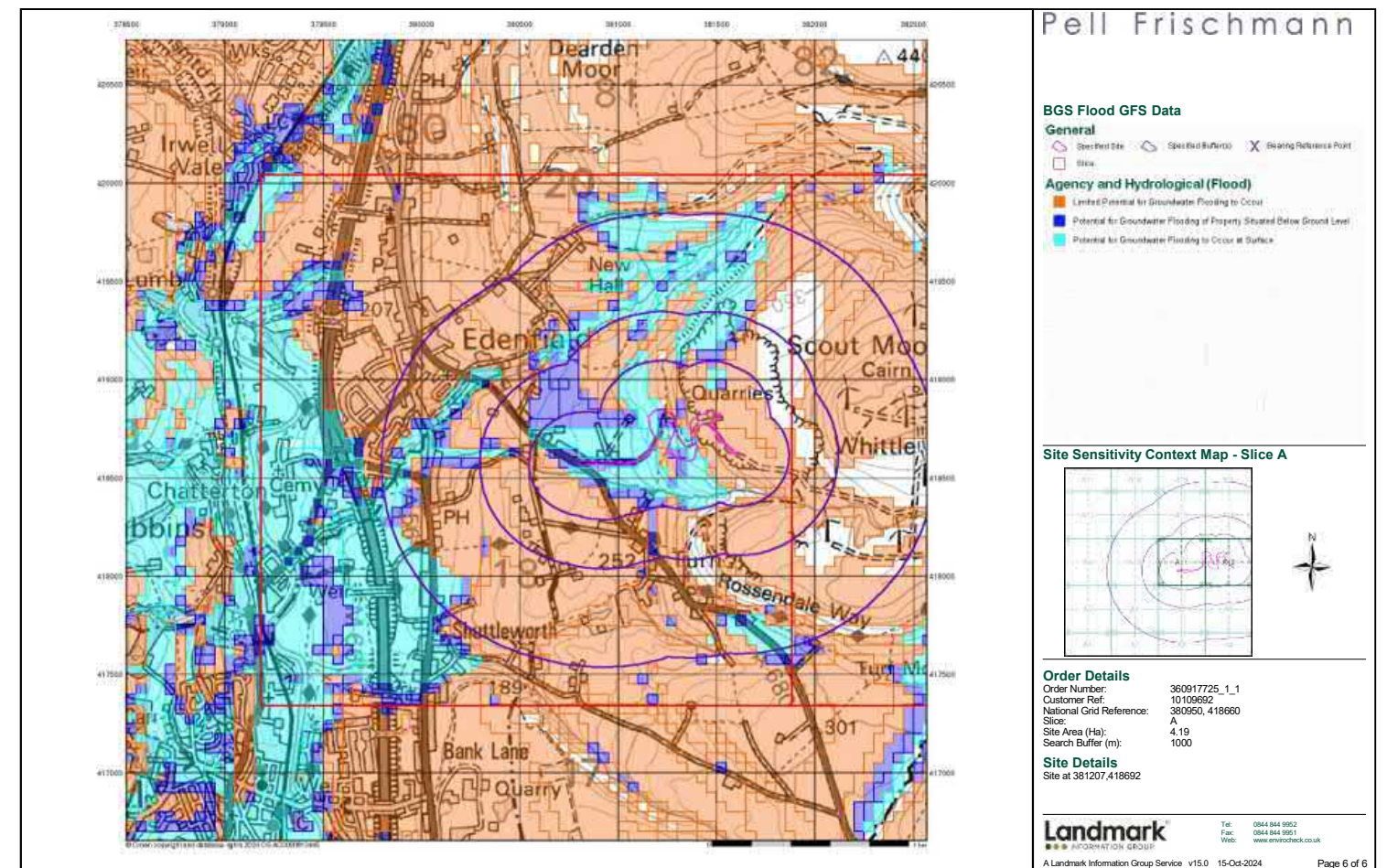
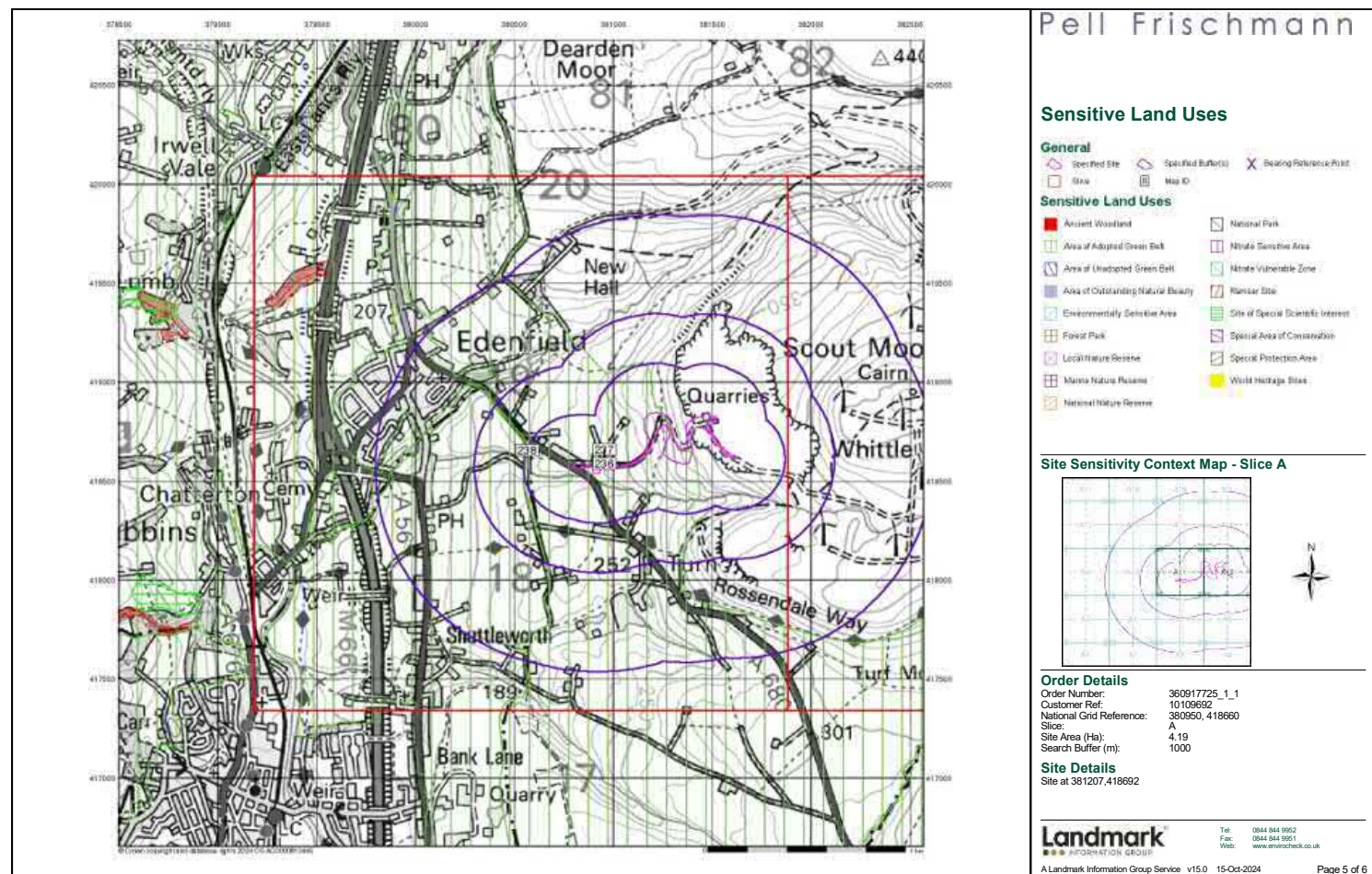


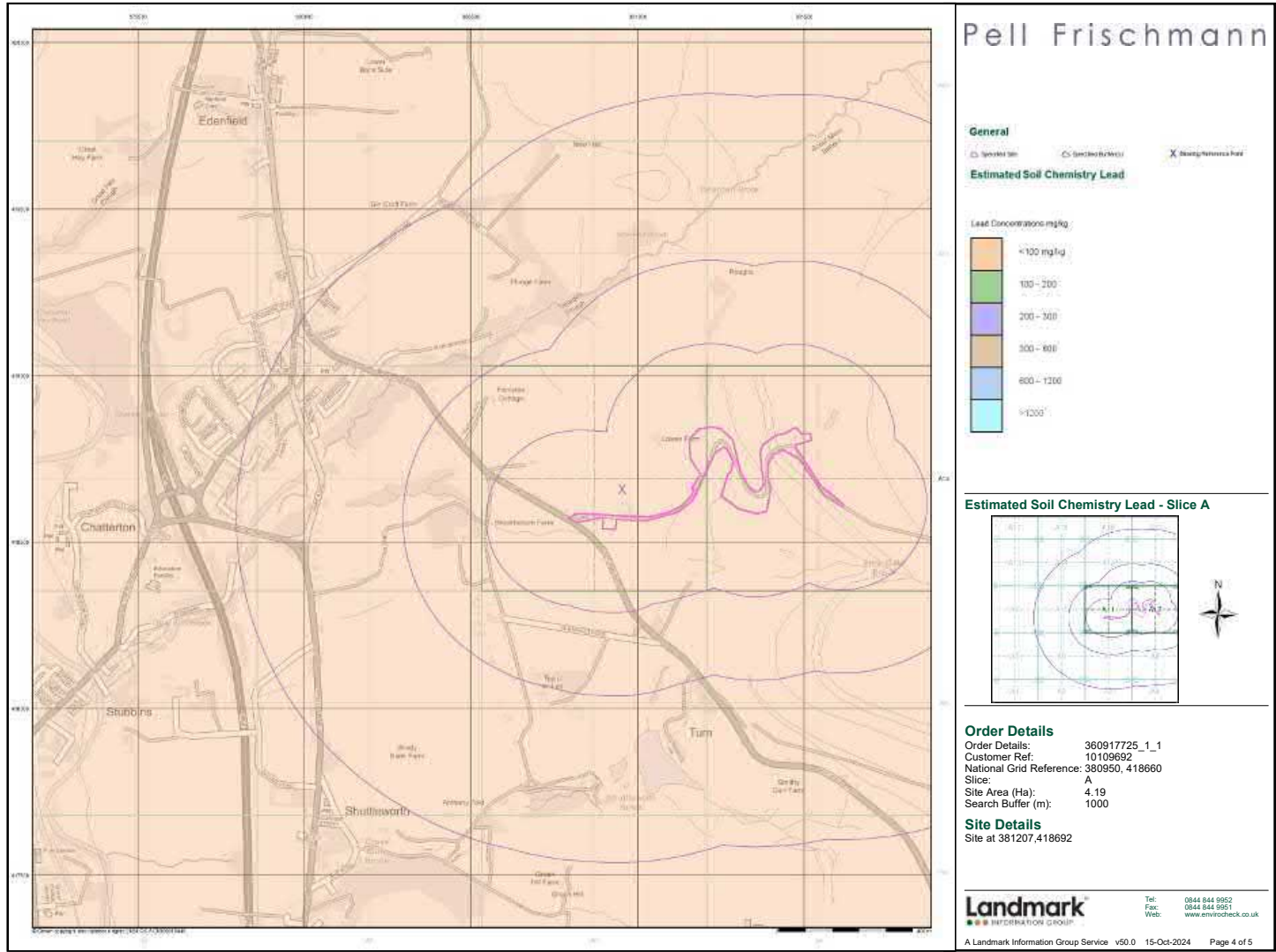
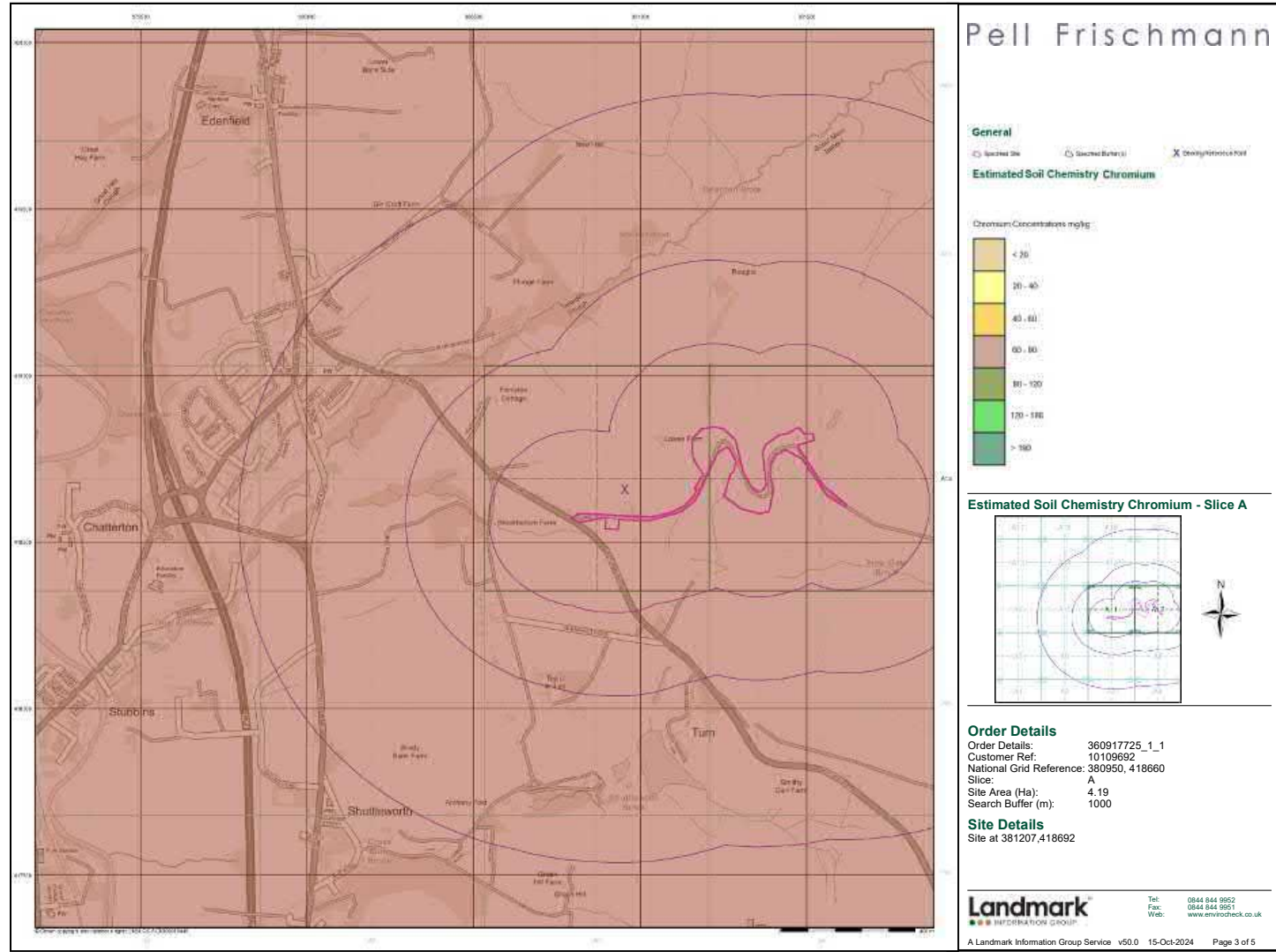
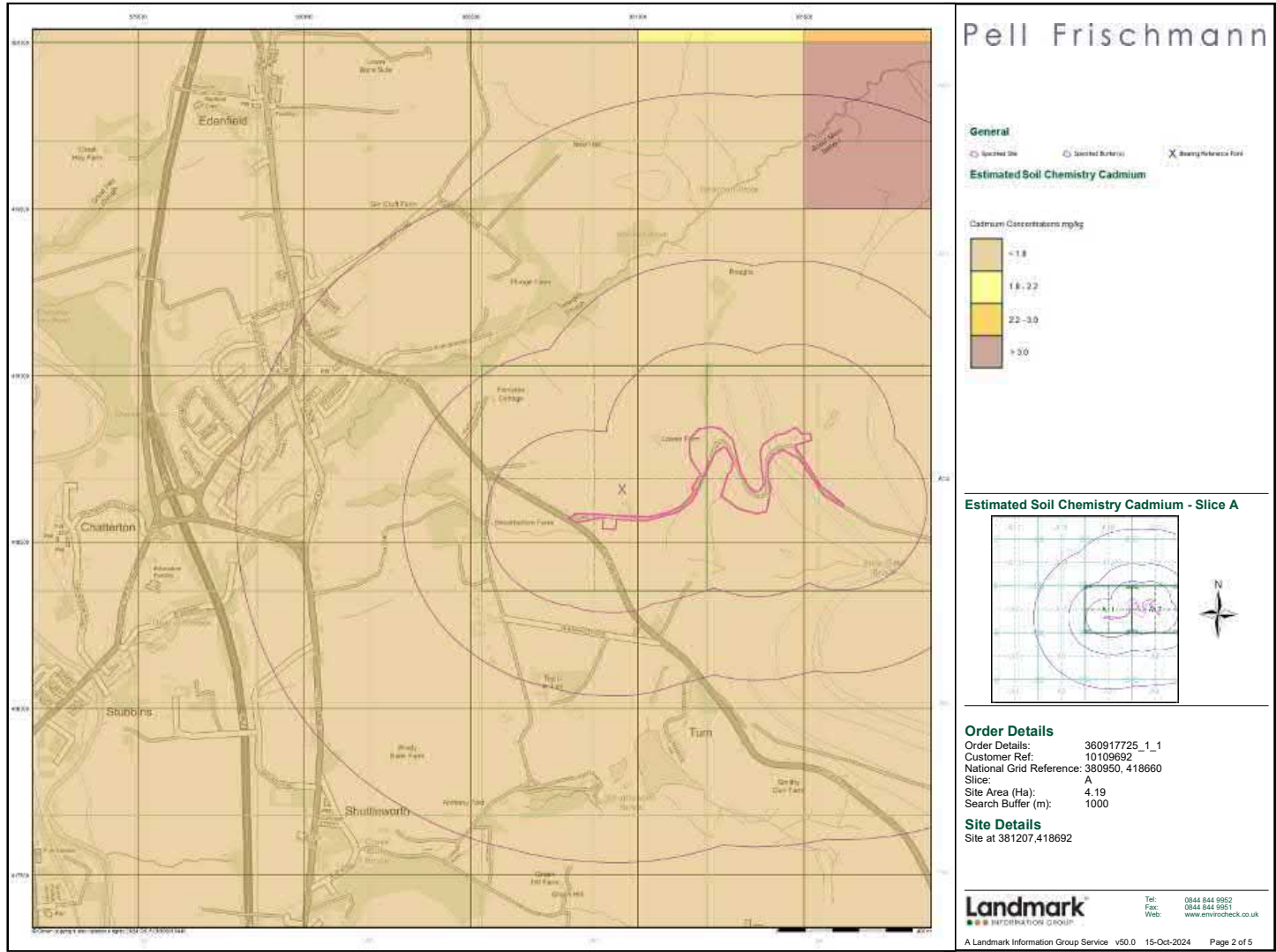
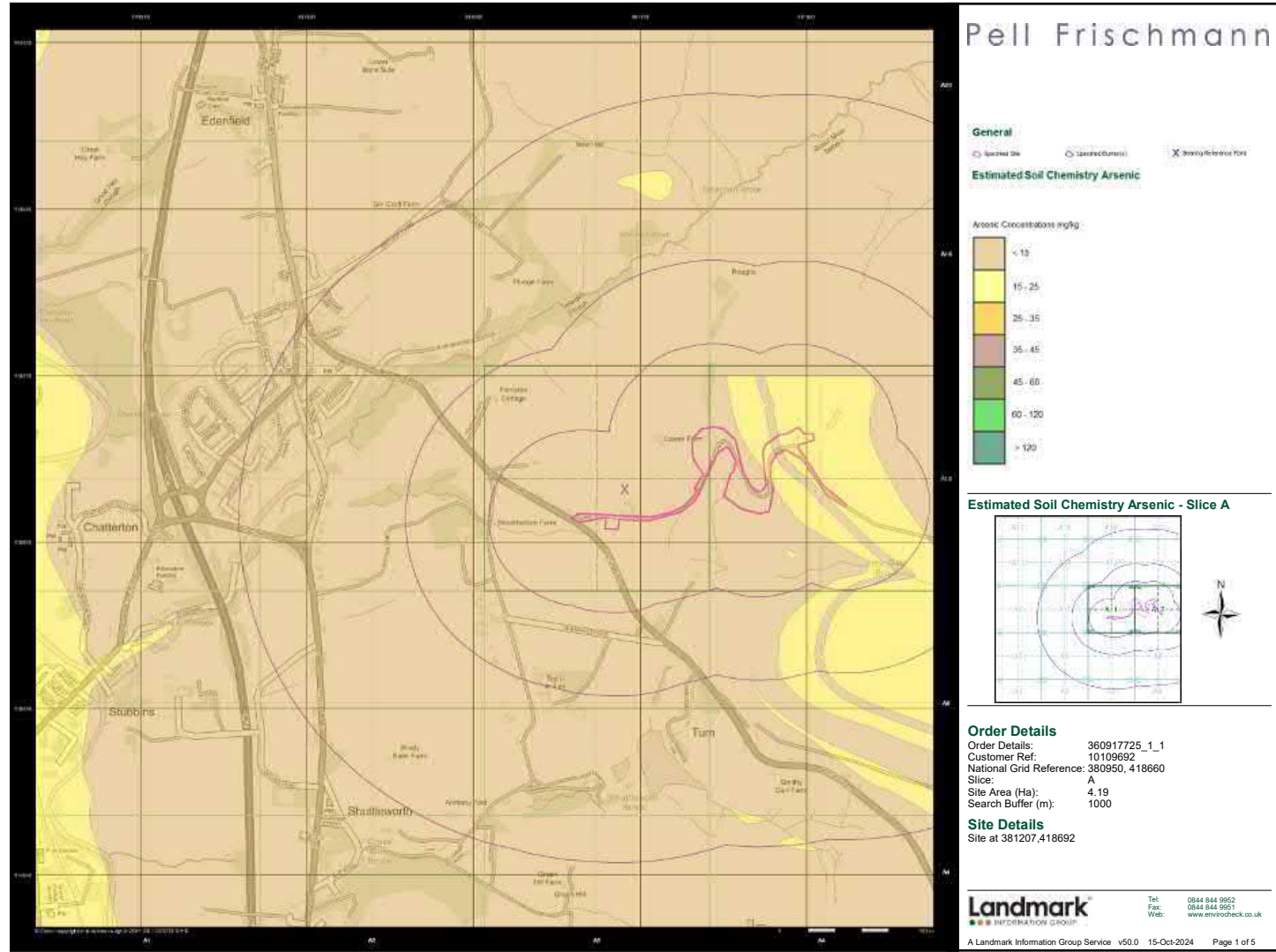
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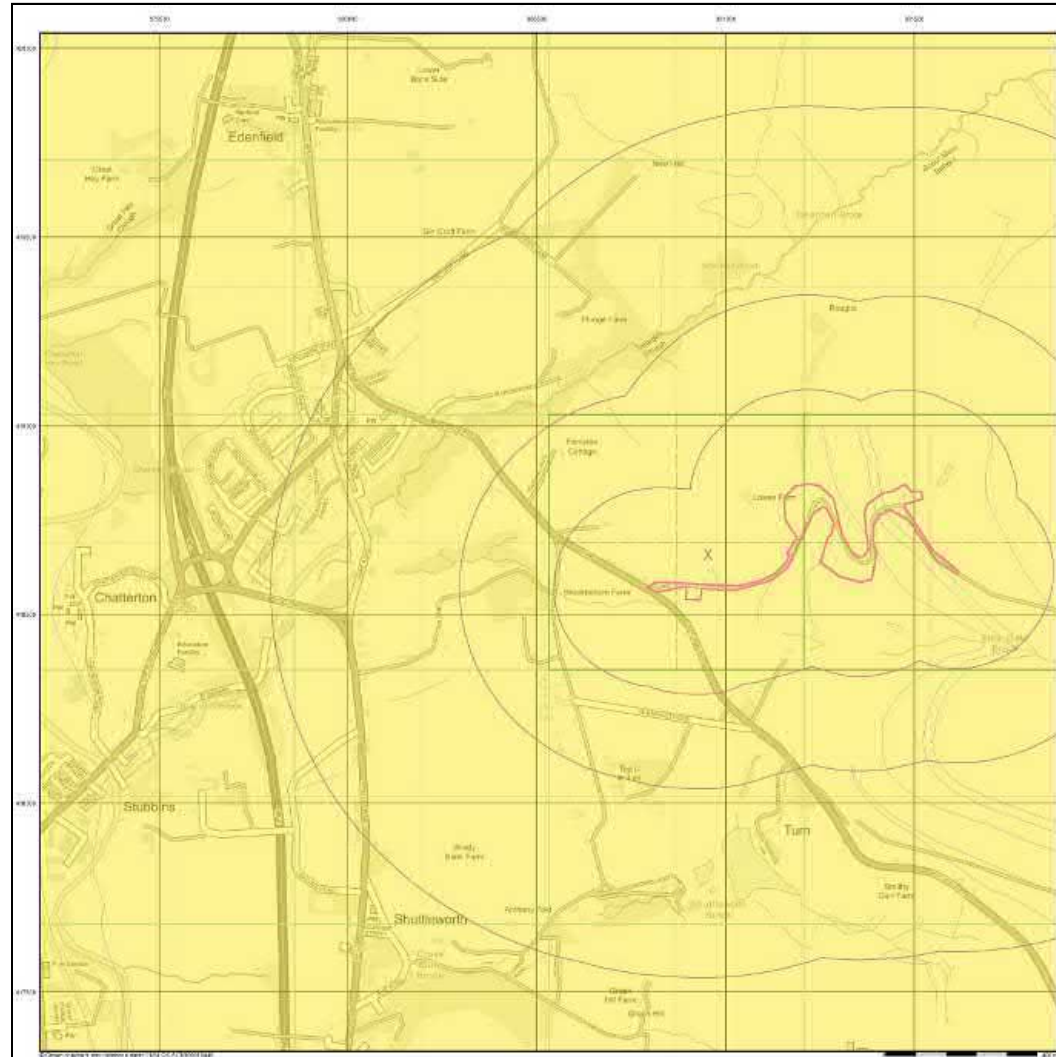
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Customer Ref: 10100692
National Grid Reference: 380950, 418660
Slice: A
Site Area (Ha): 4.19
Search Buffer (m): 1000

Site Details

Site at 381207,418692







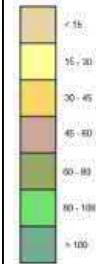
Pell Frischmann

General

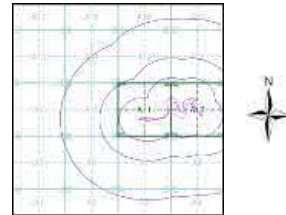
 Journal of Management Inquiry
 Sage Publications
 Crossmark

Estimated Soil Chemistry Nickel

Nickel Concentration (mg/kg)



Estimated Soil Chemistry Nickel - Slice A



Order Details

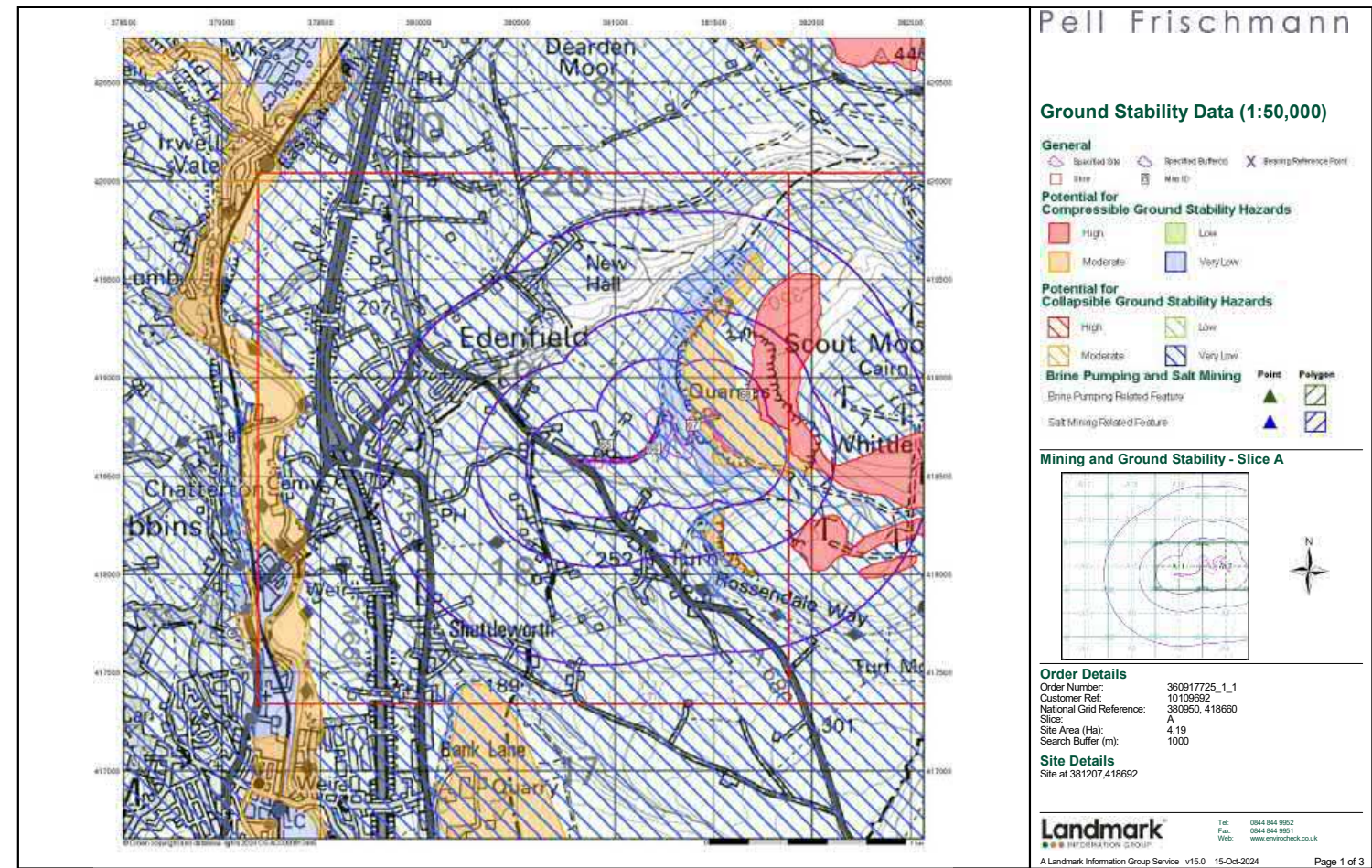
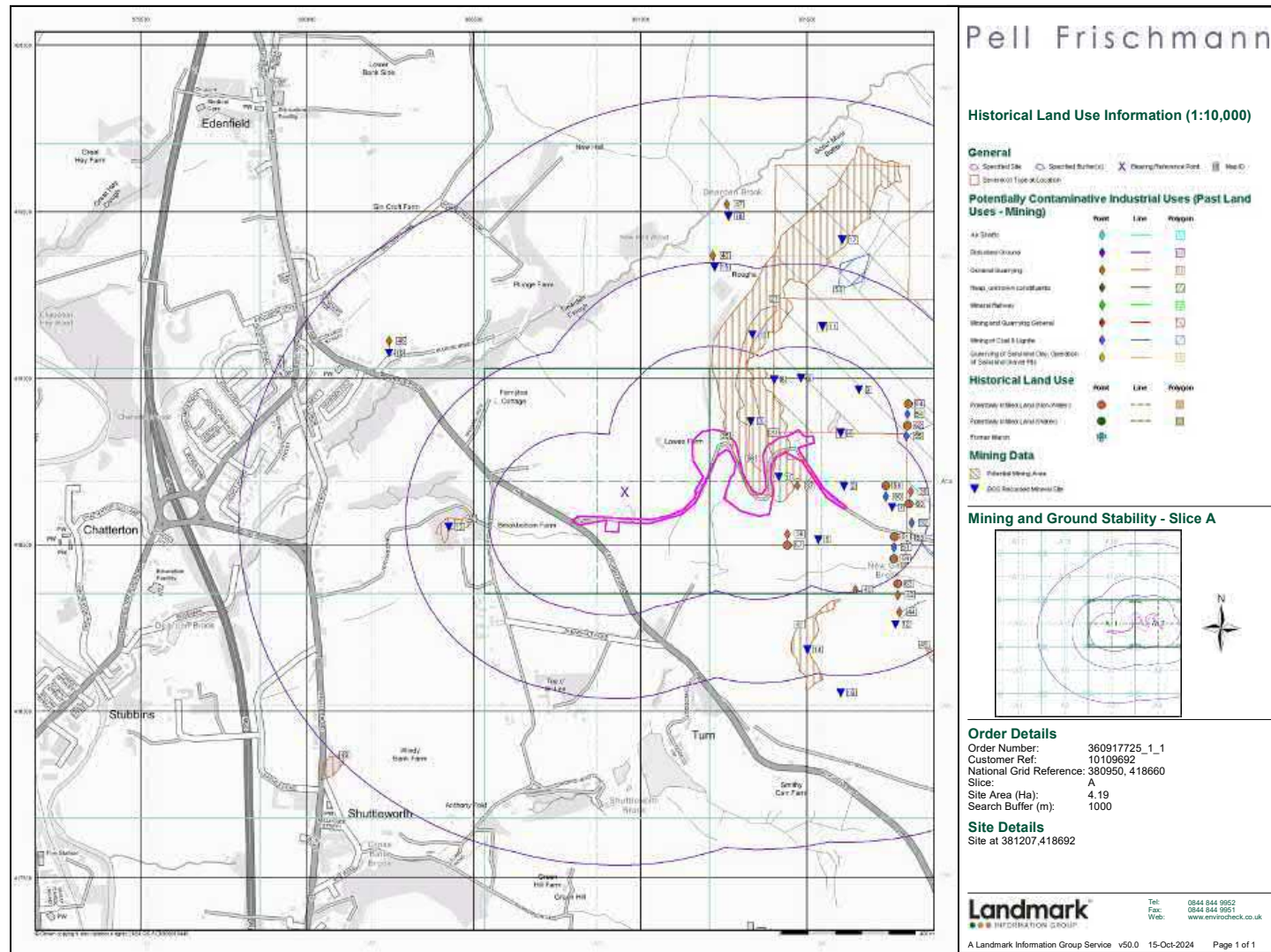
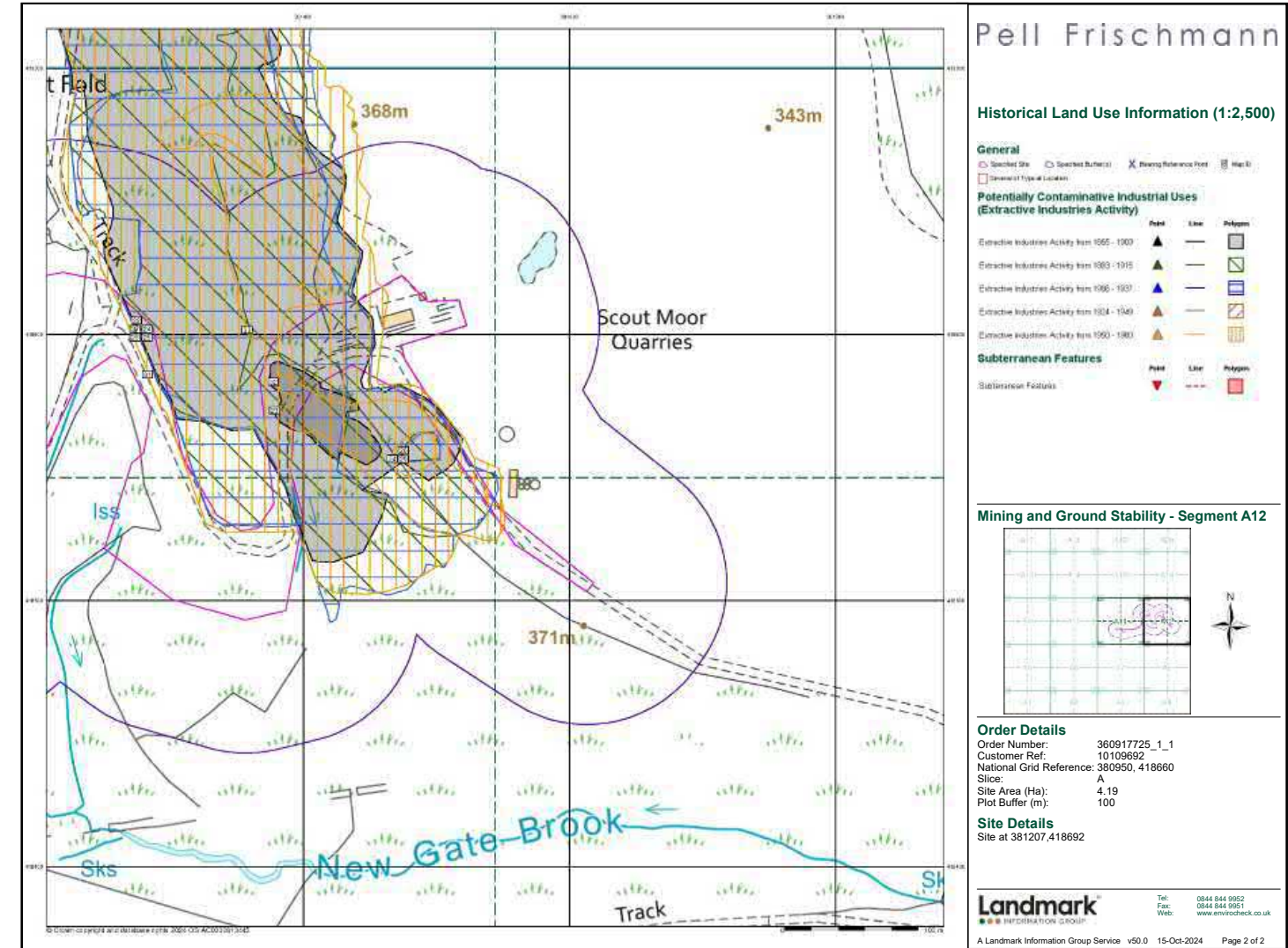
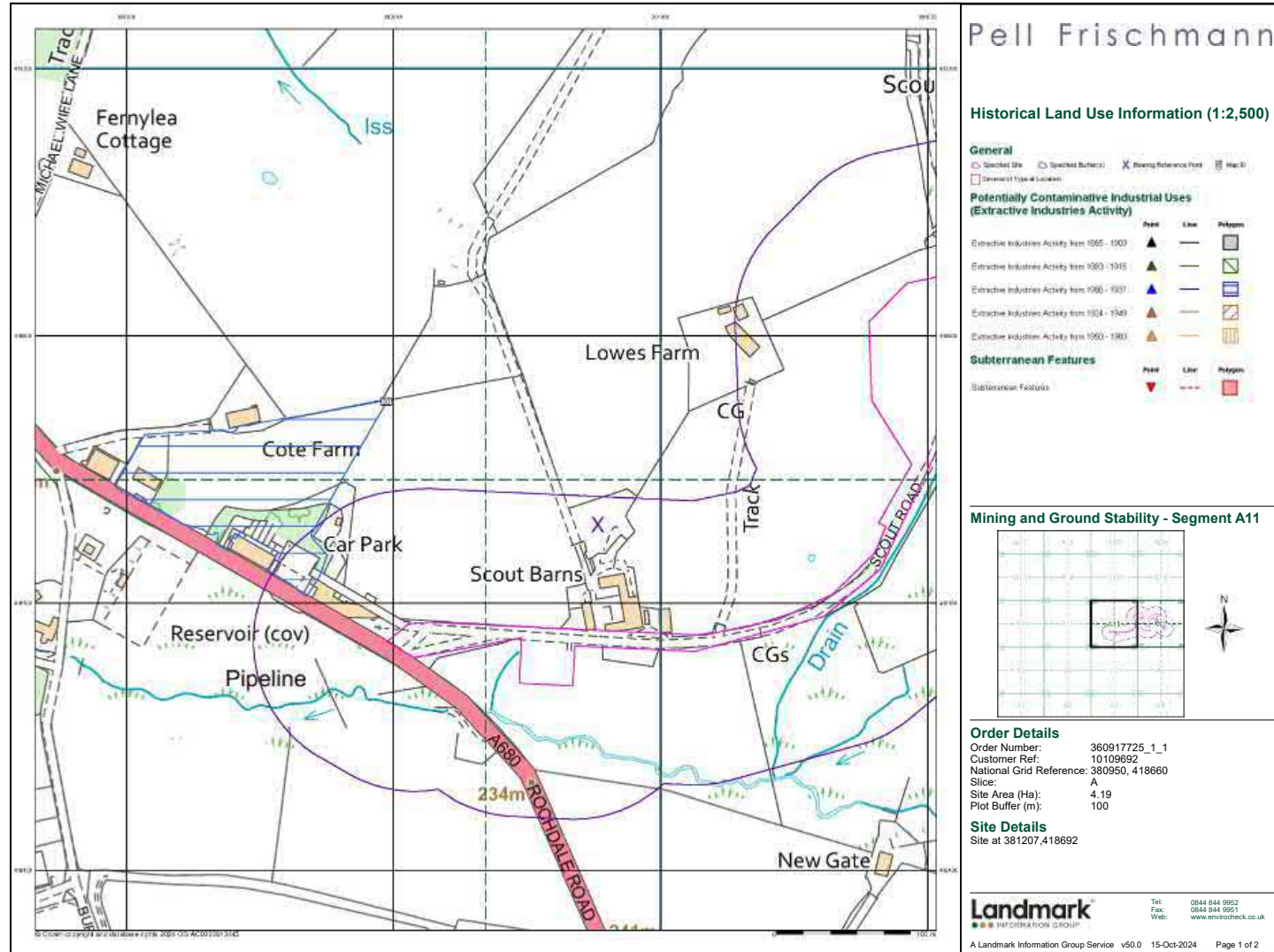
Order Details: 360917725_1_1
Customer Ref: 10109692
National Grid Reference: 380950, 418660
Slice: A
Site Area (Ha): 4.19
Search Buffer (m): 1000

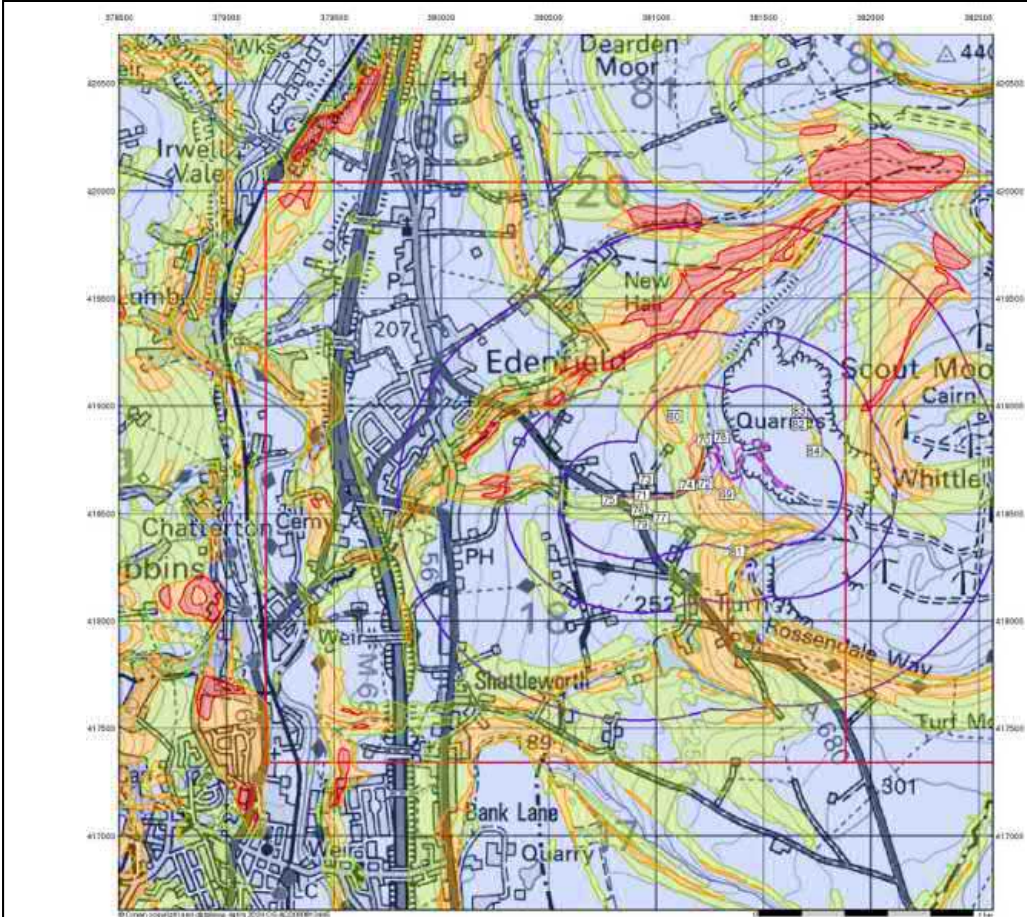
Site Details

Site at 381207,418692

Landmark
INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



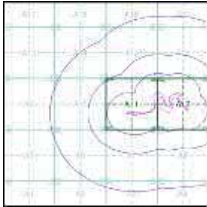


Pell Frischmann

Ground Stability Data (1:50,000)

- General**
- Specified Site
 - Specified Buffer(s)
 - Beating Reference Point
 - State
 - Map ID
- Potential for Landslide Ground Stability Hazards**
- High
 - Moderate
 - Low
 - Very Low
- Potential for Ground Dissolution Stability Hazards**
- High
 - Moderate
 - Low
 - Very Low

Mining and Ground Stability - Slice A

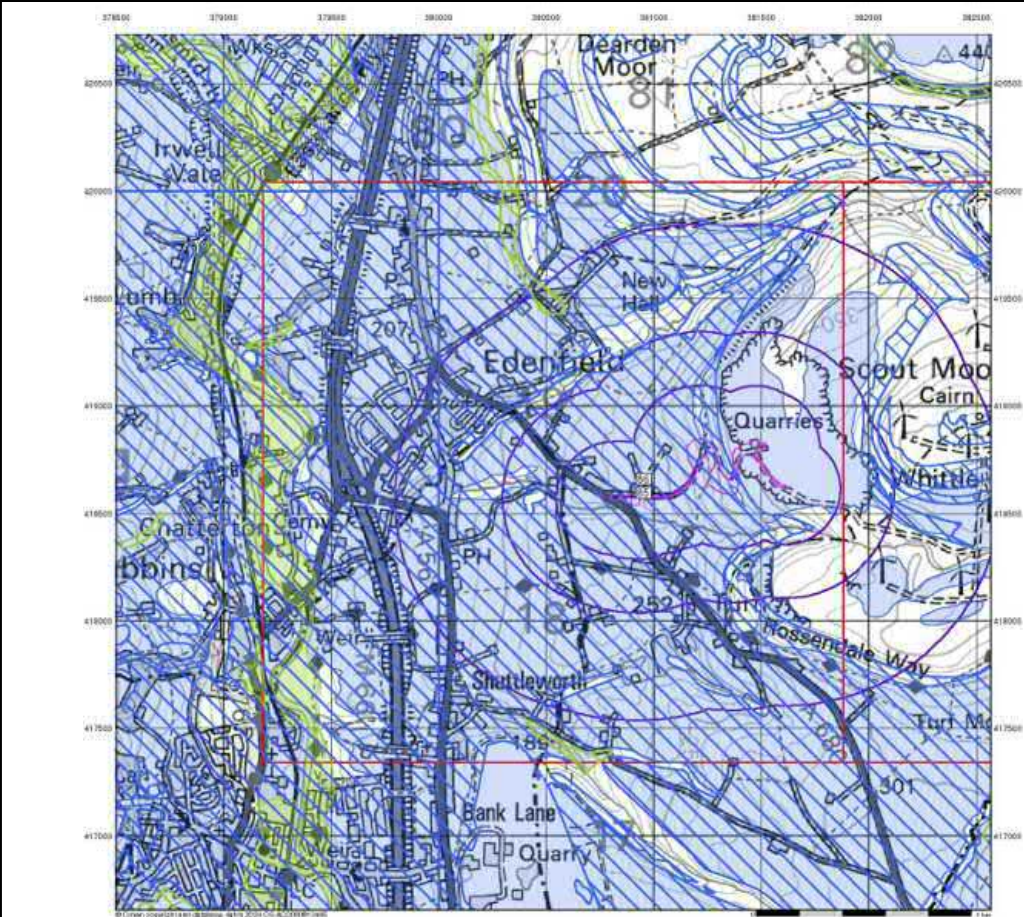


Order Details

Order Number: 360917725_1_1
Customer Ref: 10106692
National Grid Reference: A
Slice: A
Site Area (Ha): 4.19
Search Buffer (m): 1000

Site Details

Site at 381207,418692

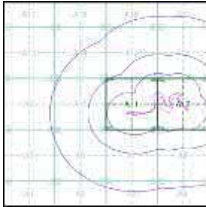


Pell Frischmann

Ground Stability Data (1:50,000)

- General**
- Specified Site
 - Specified Buffer(s)
 - Beating Reference Point
 - State
 - Map ID
- Potential for Running Sand Ground Stability Hazards**
- High
 - Moderate
 - Low
 - Very Low
- Potential for Shrinking or Swelling Clay Ground Stability Hazards**
- High
 - Moderate
 - Low
 - Very Low

Mining and Ground Stability - Slice A



Order Details

Order Number: 360917725_1_1
Customer Ref: 10106692
National Grid Reference: A
Slice: A
Site Area (Ha): 4.19
Search Buffer (m): 1000

Site Details

Site at 381207,418692

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Agency & Hydrological

[illegible]

Order Number: 360917725_1_1 Date: 15-Oct-2024 rpt_ec_data sheet v53.0 A Landmark Information Group Service Page 14 of 62

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Agency & Hydrological

[illegible]

Order Number: 360917725_i_1 Date: 15-Oct-2024 rpt_ec_datasheet v53.0 A Landmark Information Group Service Page 18 of 62

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Agency & Hydrological

[illegible]

Order Number: 360617725_1_1 Date: 15-Oct-2024 rpr_ec_datasheet v53.0 A Landmark Information Group Service Page 22 of 62

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Agency & Hydrological

ID	Description	System/ Performance Criteria	Estimated Duration From Site	Comment	Note
75	G0 Water Network Lines Watermain length: 100 ft Watermain material: 60 galvanized Watermain size: 8" Watermain depth: 3'-0" Watermain condition: Satisfactory	A190C (2)	675	X	10/20/20 #11367
76	G0 Water Network Lines Watermain length: 100 ft Watermain material: 60 galvanized Watermain size: 8" Watermain depth: 3'-0" Watermain condition: Satisfactory	A190C (2)	675	X	10/20/20 #11367
77	G0 Water Network Lines Watermain length: 100 ft Watermain material: 60 galvanized Watermain size: 8" Watermain depth: 3'-0" Watermain condition: Satisfactory	A190C (2)	675	X	10/20/20 #11367
78	G0 Water Network Lines Watermain length: 100 ft Watermain material: 60 galvanized Watermain size: 8" Watermain depth: 3'-0" Watermain condition: Satisfactory	A190C (2)	675	X	10/20/20 #11367
79	G0 Water Network Lines Watermain length: 100 ft Watermain material: 60 galvanized Watermain size: 8" Watermain depth: 3'-0" Watermain condition: Satisfactory	A190C (2)	675	X	10/20/20 #11367
80	G0 Water Network Lines Watermain length: 100 ft Watermain material: 60 galvanized Watermain size: 8" Watermain depth: 3'-0" Watermain condition: Satisfactory	A190C (2)	675	X	10/20/20 #11367
81	G0 Water Network Lines Watermain length: 100 ft Watermain material: 60 galvanized Watermain size: 8" Watermain depth: 3'-0" Watermain condition: Satisfactory	A190C (2)	675	X	10/20/20 #11367
82	G0 Water Network Lines Watermain length: 100 ft Watermain material: 60 galvanized Watermain size: 8" Watermain depth: 3'-0" Watermain condition: Satisfactory	A190C (2)	675	X	10/20/20 #11367
83	G0 Water Network Lines Watermain length: 100 ft Watermain material: 60 galvanized Watermain size: 8" Watermain depth: 3'-0" Watermain condition: Satisfactory	A190C (2)	675	X	10/20/20 #11367
84	G0 Water Network Lines Watermain length: 100 ft Watermain material: 60 galvanized Watermain size: 8" Watermain depth: 3'-0" Watermain condition: Satisfactory	A190C (2)	675	X	10/20/20 #11367
85	G0 Water Network Lines Watermain length: 100 ft Watermain material: 60 galvanized Watermain size: 8" Watermain depth: 3'-0" Watermain condition: Satisfactory	A190C (2)	675	X	10/20/20 #11367

Order Number: 360967725_1_1 Date: 15-Oct-2024 rpt_ec_datasheet v53.0 A Landmark Information Group Service Page 26 of 62

Teil 1: Fischmarkt

Agency & Hydrological

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Order Number: 360917725_1_1 Date: 15-Oct-2024 rpr_ec_datasheet v53.0 A Landmark Information Group Service Page 30 of 62

Reil | Feischmann

Agency & Hydrological

[illegible]

Order Number: 360917725_1_1 Date: 15-Oct-2024 rpe_ec_datasheet v53.0 A Landmark Information Group Service Page 34 of 62

Reil Frischmann

Geological

ID	Details	Chemical Substance Classification	Estimated Release From Site	Correct	NGR
405-163210	Soil Sampling Release Date: 06/04/2016 (See Also HSG)	A11200 (P)	0	1	101050 #16000
405-163210	Soil Sample Type: Bulk Sample Location: Bulk Sampling Station, National Geospatial Information Service Analysis: Bulk Chemical: Cadmium Concentration: <1.0 mg/kg Chromium: 60 - 100 mg/kg Lead Concentration: <100 mg/kg Nickel: <100 mg/kg Total: <100 mg/kg	A11200 (P)	0	1	101050 #16000
405-163210	Soil Sample Type: Bulk Sample Location: Bulk Sampling Station, National Geospatial Information Service Analysis: Bulk Chemical: Cadmium Concentration: <1.0 mg/kg Chromium: 60 - 100 mg/kg Lead Concentration: <100 mg/kg Nickel: <100 mg/kg Total: <100 mg/kg	A12000 (P)	0	1	101050 #16000
405-163210	Soil Sample Type: Bulk Sample Location: Bulk Sampling Station, National Geospatial Information Service Analysis: Bulk Chemical: Cadmium Concentration: <1.0 mg/kg Chromium: 60 - 100 mg/kg Lead Concentration: <100 mg/kg Nickel: <100 mg/kg Total: <100 mg/kg	A12000 (P)	0	1	101050 #16000
405-163210	Soil Sample Type: Bulk Sample Location: Bulk Sampling Station, National Geospatial Information Service Analysis: Bulk Chemical: Cadmium Concentration: <1.0 mg/kg Chromium: 60 - 100 mg/kg Lead Concentration: <100 mg/kg Nickel: <100 mg/kg Total: <100 mg/kg	A12000 (P)	110	1	101050 #16000
405-163210	Soil Sample Type: Bulk Sample Location: Bulk Sampling Station, National Geospatial Information Service Analysis: Bulk Chemical: Cadmium Concentration: <1.0 mg/kg Chromium: 60 - 100 mg/kg Lead Concentration: <100 mg/kg Nickel: <100 mg/kg Total: <100 mg/kg	A0900 (P)	600	1	101050 #16000
405-163210	Soil Sample Type: Bulk Sample Location: Bulk Sampling Station, National Geospatial Information Service Analysis: Bulk Chemical: Cadmium Concentration: <1.0 mg/kg Chromium: 60 - 100 mg/kg Lead Concentration: <100 mg/kg Nickel: <100 mg/kg Total: <100 mg/kg	A12000 (P)	600	1	101050 #16000

Order Number: 360917725_1_1 Date: 15-Oct-2024 rpx_ec_dMasheet v53.0 A Landmark Information Group Service Page 38 of 62

Reil Frischmann

Geological

ID	Details	Contains Sensitive Data?	Estimated Disk Size	Control	NGR
404	404 Recycled Mirror Site Location: London Description: Recycled, Randomized, Low-entropy Data: Randomized, Low-entropy Type: Recycled Metadata: None Operations: None Permissions: None Encryption: None Compression: None Predictability: None Predictability Summary: Recycled, randomizable in within 10s	A002 (2)	300	1	20 0000 410 000
405	405 Recycled Mirror Site Location: London Description: Recycled, Randomized, Low-entropy Data: Randomized, Low-entropy Type: Recycled Metadata: None Operations: None Permissions: None Encryption: None Compression: None Predictability: None Predictability Summary: Recycled, randomizable in within 10s	A1002 (7K)	372	1	20 0000 410 000
406	406 Recycled Mirror Site Location: London Description: Recycled, Randomized, Low-entropy Data: Randomized, Low-entropy Type: Recycled Metadata: None Operations: None Permissions: None Encryption: None Compression: None Predictability: None Predictability Summary: Recycled, randomizable in within 10s	A0000 (2)	419	1	20 0000 410 000
407	407 Recycled Mirror Site Location: London Description: Recycled, Randomized, Low-entropy Data: Randomized, Low-entropy Type: Recycled Metadata: None Operations: None Permissions: None Encryption: None Compression: None Predictability: None Predictability Summary: Recycled, randomizable in within 10s	A0000 (2)	474	1	20 0000 410 000
408	408 Recycled Mirror Site Location: London Description: Recycled, Randomized, Low-entropy Data: Randomized, Low-entropy Type: Recycled Metadata: None Operations: None Permissions: None Encryption: None Compression: None Predictability: None Predictability Summary: Recycled, randomizable in within 10s	A0000 (2)	507	1	20 0000 410 000
409	409 Recycled Mirror Site Location: London Description: Recycled, Randomized, Low-entropy Data: Randomized, Low-entropy Type: Recycled Metadata: None Operations: None Permissions: None Encryption: None Compression: None Predictability: None Predictability Summary: Recycled, randomizable in within 10s	A1002 (2)	380	1	20 0000 410 000

Order Number: 360917725 1 1 Date: 15-Oct-2024 rtr.ec.datasheet.v33.0 A Landmark Information Group Service Page 42 of 62

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Order Number: 360917725_1_1 Date: 15-Oct-2024 rpt_ec_datasheet v53.0 A Landmark Information Group Service Page 46 of 62

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Industrial Land Use						
Map ID	Details	Ordinance (City/Council/County/Department)	Estimated Land Use	Permitted	Control	NR
210	Points of Interest: Manufacturing and Production Name: None Location: None Class-Code: None Description: Industrial Facilities Problematic: Prohibited to be adjacent facilities or locations	A-2009 (S)	7	NO	NO	30/08/2018 4/10/21
211	Points of Interest: Manufacturing and Production Name: P & B 4-2 C-2 Location: Eastwood Road, Scarborough, Bk. B & OGS Class-Code: None Description: Industrial Facilities Problematic: Prohibited to be adjacent facilities or locations	A-1102 (S)	36	NO	NO	20/03/18
212	Points of Interest: Manufacturing and Production Name: None Location: None Class-Code: None Description: Industrial Facilities Problematic: Prohibited to be adjacent facilities or locations	A-1102 (S)	36	NO	NO	20/03/2018
213	Points of Interest: Manufacturing and Production Name: None Location: None Class-Code: None Description: Industrial Facilities Problematic: Prohibited to be adjacent facilities or locations	A-1102 (S)	116	NO	NO	20/03/2018 4/10/21
214	Points of Interest: Manufacturing and Production Name: None Location: None Class-Code: None Description: Industrial Facilities Problematic: Prohibited to be adjacent facilities or locations	A-1109 (S)	206	NO	20/03/2018	4/10/21
215	Points of Interest: Manufacturing and Production Name: None Location: None Class-Code: None Description: Industrial Facilities Problematic: Prohibited to be adjacent facilities or locations	A-2002 (S)	275	NO	NO	30/07/19 4/10/21
217	Points of Interest: Manufacturing and Production Name: None Location: None Class-Code: None Description: Industrial Facilities Problematic: Prohibited to be adjacent facilities or locations	A-2002 (S)	365	NO	NO	30/07/19 4/10/21
218	Points of Interest: Manufacturing and Production Name: None Location: None Class-Code: None Description: Industrial Facilities Problematic: Prohibited to be adjacent facilities or locations	A-1038 (S)	627	NO	NO	30/08/18
219	Points of Interest: Manufacturing and Production Name: None Location: None Class-Code: None Description: Industrial Facilities Problematic: Prohibited to be adjacent facilities or locations	A-1009 (S)	136	NO	NO	30/03/19 4/10/21
220	Points of Interest: Manufacturing and Production Name: None Location: None Class-Code: None Description: Industrial Facilities Problematic: Prohibited to be adjacent facilities or locations	A-1102 (S)	805	NO	NO	20/03/18 4/10/21
221	Points of Interest: Manufacturing and Production Name: None Location: None Class-Code: None Description: Industrial Facilities Problematic: Prohibited to be adjacent facilities or locations	A-1007 (S)	903	NO	NO	20/03/2018 4/10/21
222	Points of Interest: Public Infrastructure Name: None Location: None Class-Code: None Description: Public Infrastructure Problematic: Prohibited to be adjacent facilities or locations	A-2009 (S)	132	NO	NO	30/07/19 4/10/21

Order Number: 360917725_1_1 Date: 15-Oct-2024 rpr_ec_datasheet v53.0 A Landmark Information Group Service Page 50 of 62

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Map ID	Details	Consistent Reference (Compare Date/Version)	Estimated Difference From Site	Contact	NRG
258	Area of Adopted Green Belt Authority: Horsham Borough Council, Planning Department Date: none File Name: Project 103 File Size: 400 KB Approved: May 2013	A1102 (2)	0	93	10/001 A11013
257	Area of Adopted Green Belt Authority: Horsham Borough Council, Planning Department Date: none File Name: Project 103 File Size: 400 KB Approved: May 2013	A1102 (2)	0	92	10/001 A11013
256	Area of Adopted Green Belt Authority: Horsham Borough Council Date: none File Name: Best Interest Development Plan File Size: 400 KB Approved: 1998	A11004 (2)	822	7	10/001 A11017

Order Number: 360917725_1_1 Date: 15-Oct-2024 rpr_ec_datasheet v53.0 A Landmark Information Group Service Page 54 of 62

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[illegible]

Data Currency		
Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries		
Thames Tideway	September 2024	Quarterly
Fuel Station Entries		
Central Ltd - Gasnet	February 2024	Quarterly
Gas Pipelines		
National Grid	October 2021	Quarterly
Points of Interest - Commercial Services		
Avonix	September 2024	Quarterly
Points of Interest - Education and Health		
Avonix	September 2024	Quarterly
Points of Interest - Manufacturing and Production		
Avonix	September 2024	Quarterly
Points of Interest - Public Infrastructure		
Avonix	September 2024	Quarterly
Points of Interest - Recreational and Environmental		
Avonix	September 2024	Quarterly
Underground Electrical Cables		
National Grid	January 2024	

Data Currency		
Sensitive Land Use	Version	Update Cycle
Ancient Woodland		
Natural England	April 2024	Bi-Annually
Areas of Atypical Green Belt		
Bury Metropolitan Borough Council	July 2024	Quarterly
Rushcliffe Metropolitan Borough Council	July 2024	Quarterly
Rossendale Borough Council - Planning Department	July 2024	Quarterly
Areas of Outstanding Natural Beauty		
Bury Metropolitan Borough Council	July 2024	Quarterly
Rossendale Borough Council - Planning Department	July 2024	Quarterly
Areas of Outstanding Natural Beauty		
Natural England	May 2024	Bi-Annually
Environmentally Sensitive Areas		
Natural England	August 2023	
Forest Parks		
Planning Commission	May 2022	Not Applicable
Local Nature Reserves		
Natural England	August 2024	Bi-Annually
Nature Nature Reserves		
Natural England	August 2024	Bi-Annually
Nature Nature Reserves		
Natural England	August 2024	Bi-Annually
Nature Parks		
Natural England	September 2024	Bi-Annually
Nature Sensitive Areas		
Natural England	April 2022	Not Applicable
Nature Vulnerable Zones		
Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	April 2016	
Environment Agency - Head Office	April 2024	Bi-Annually
Rural Sites		
Natural England	August 2024	Bi-Annually
Sites of Special Scientific Interest		
Natural England	April 2024	Bi-Annually
Special Areas of Conservation		
Natural England	April 2024	Bi-Annually
Special Protection Areas		
Natural England	April 2024	Bi-Annually

Data Suppliers	
A selection of organisations who provide data within this report	
Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	
Centre for Ecology and Hydrology	
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Startec UK Ltd	

Useful Contacts		
Contact	Name and Address	Contact Details
1	British Geological Survey - Enquiry Service British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 959 2143 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	Environment Agency - National Customer Contact Centre (NCCC) 200 New Oak, Sandown Road, Bournemouth, Dorset, BH1 1BY	Telephone: 03000 506 506 Email: enquiries@environment-agency.gov.uk
3	Environment Agency - Head Office 80 Marsh, Waterville Drive, Acton West, Almondsbury Bristol, Avon, BS34 4JD	Telephone: 01454 234635 Fax: 01454 224635
4	Ordnance Survey Admiral Drive, Southampton, Hampshire, SO16 1AS	Telephone: 0300 00 00 00 Email: osdata@os.uk Website: www.ordnancesurvey.gov.uk
5	Rossendale Borough Council - Environmental Health Department Town Hall, Rossendale, Rossendale, Lancashire, BB4 7LZ	Telephone: 01782 217777 Fax: 01782 224652 Website: www.rossendale.gov.uk
6	Lancashire County Council - Waste Management Group Government Offices, Guild House, Cross Street, Preston, Lancashire, PR1 4BB	Website: www.lancashire.gov.uk
7	Bury Metropolitan Borough Council Craig House, Bank Street, Bury, Lancashire, BL9 5DN	Telephone: 0161 252 5555 Fax: 0161 755 5282 Website: www.bury.gov.uk
8	The Coal Authority - Property Searches 200 Litchfield Lane, Mansfield, Nottinghamshire, NG14 4RG	Telephone: 0345 352 5566 Fax: 0302 352 3727 Email: gravelsearch@coal.gov.uk Website: www.coalauthority.com
9	Startec UK Ltd Centurion Bridge House, Watnam Place, Reading, RG1 6RN	Telephone: 0116 850 0061 Email: info@startec.com Website: www.startec.com
10	Portix 2-4 Abbey Court, Eagle Way, Sootby, Enderby, Devon, EX2 7JF	Website: www.portix.co.uk
11	Natural England Cluney Hall, Spinkley Road, Worsley, W10 2NP	Telephone: 0300 060 3889 Fax: 01782 224652 Website: www.naturalengland.org.uk
12	Rossendale Borough Council - Planning Department Town Hall, Rossendale, Lancashire, BB4 7LZ	Telephone: 01782 217777 Fax: 01782 224652 Website: www.rossendale.gov.uk
13	Rushcliffe Metropolitan Borough Council 200 Box 15, Town Hall, Rushcliffe, Greater Manchester, OL16 1AB	Telephone: 01782 567679 Fax: 01782 284745 Website: www.rushcliffe.gov.uk
-	Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards Chilton, Didcot, Oxfordshire, OX11 0BQ	Telephone: 01235 530532 Fax: 01235 532891 Email: radon@phe.gov.uk Website: www.phe.gov.uk
-	Landmark Information Group Limited Imperial, Imperial Way, Reading, Berkshire, RG2 2TD	Telephone: 0344 844 8822 Fax: 0344 844 8821 Email: radon@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / Natural Resources Wales (ENR) have a charging policy in place for radon data.

Mining and Natural Cavities Data

[illegible]

Historical Land Use Information (1:10,000)

[illegible]

Historical Map List

The following mapping has been analyzed for Historical Land Use Information (7.2.500):		
1.10.500	Mapsheet	Published Date
Larchmont And Furness	050_25	1903
Larchmont And Furness	050_25	1903
Larchmont And Furness	050_25	1910
Larchmont And Furness	050_25	1910
Larchmont And Furness	050_25	1920
Larchmont And Furness	050_25	1920
Oakburn Survey Plan	020019	1903
Oakburn Survey Plan	020019	1903
Oakburn Survey Plan	020118	1903
Oakburn Survey Plan	020118	1903
Oakburn Survey Plan	020118	1903
Oakburn Survey Plan	020118	1903

The following mapping has been analyzed for Historical Land Use Information (11.0.500):		
1.10.500	Mapsheet	Published Date
Larchmont And Furness	070_09	1903
Larchmont And Furness	080_20	1901
Larchmont And Furness	070_10	1904
Larchmont And Furness	070_36	1904
Larchmont And Furness	090_20W	1904
Larchmont And Furness	090_20W	1904
Larchmont And Furness	070_36	1912
Larchmont And Furness	070_36	1912
Larchmont And Furness	090_20W	1912
Larchmont And Furness	090_20W	1912
Larchmont And Furness	070_36	1920
Larchmont And Furness	070_36	1920
Larchmont And Furness	090_20W	1920
Larchmont And Furness	090_20W	1920
Oakburn Survey Plan	021019	1903
Oakburn Survey Plan	821025	1905
Oakburn Survey Plan	821025	1905
Oakburn Survey Plan	020019	1903
Oakburn Survey Plan	020019	1903

Data Currency		
Mining and Cavities Data	Version	Update Cycle
3GS Recorded Mineral Sites	March 2024	Bi-Annually
British Geological Survey - National Geohazards Information Service		
Coal Mining Affected Areas	February 2023	Annual Rolling Update
The Coal Authority - Property Searches		
How Much Mining Cavities	December 2023	Bi-Annually
Rescue UK Ltd		
Mining Inactivity	June 1998	Not Applicable
Coal Aug & Patterns		
Natural Collapse	December 2023	Bi-Annually
Rescue UK Ltd		
Non Coal Mining Areas of Great Britain	May 2015	Not Applicable
British Geological Survey - National Geohazards Information Service		
Historical Land Use Information (1:2,500)	Version	Update Cycle
Subsidence Features	July 2022	Bi-Annually
Landmark Information Group Limited		
Ground Stability Data (1:50,000)	Version	Update Cycle
CBSCB Compensation Schemes		
Charities Bene Subsidence Compensation Board (CBSCB)	August 2011	
Charities Bene Subsidence Compensation Board (CBSCB)	November 2023	As notified
Potential for Collapsible Ground Stability Hazards	April 2022	As notified
British Geological Survey - National Geohazards Information Service		
Potential for Compressible Ground Stability Hazards		
British Geological Survey - National Geohazards Information Service	January 2019	As notified
Potential for Ground Obstructive Stability Hazards		
British Geological Survey - National Geohazards Information Service	January 2019	As notified
Potential for Landslide Ground Stability Hazards		
British Geological Survey - National Geohazards Information Service	January 2019	As notified
Potential for Rotting Band Ground Stability Hazards		
British Geological Survey - National Geohazards Information Service	January 2019	As notified
Potential for Swelling or Shrinking Clay Ground Stability Hazards		
British Geological Survey - National Geohazards Information Service	January 2019	As notified
Bene Subsidence Solution Area		
Johnson Davis & Bloomer	December 2020	

Data Suppliers	
A selection of organisations who provide data within this report	
Data Supplier	Data Supplier Logo
Ordnance Survey	
British Geological Survey	
The Coal Authority	
Ove Arup	
Stantec UK Ltd	
Wardell Armstrong	
Johnson Poole & Bloomer	

Contact	Name and Address	Contact Details
1	British Geological Survey - Enquiry Service British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 2143 Fax: 0115 936 3178 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	The Coal Authority - Property Searches 200 Lockfield Lane, Mansfield, Nottinghamshire, NG19 4RG	Telephone: 0800 752 0848 Fax: 01523 227 552 Email: groundinfo@coal.gov.uk Website: www.coalauthority.gov.uk
3	Stantec UK Ltd Cavenham Bridge House, Wateman Place, Reading, RG1 6BN	Telephone: 0118 832 0761 Email: josh.ward@stantec.com Website: www.stantec.com
4	Ove Arup & Partners Central Square, Park Street, Newcastle upon Tyne, Tyne and Wear, NE1 3PL	Telephone: 0191 261 6560 Fax: 0191 261 1979
5	Landmark Information Group Limited Inverburn, Inverard Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 544 8802 Fax: 0844 544 8803 Email: customerenquiries@landinfo.co.uk Website: www.landinfo.co.uk
-	Landmark Information Group Limited Inverburn, Inverard Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 544 8802 Fax: 0844 544 8803 Email: customerenquiries@landinfo.co.uk Website: www.landinfo.co.uk



DRILLING LOG

LOG NUMBER 9WB 0410

DRAGON DRILLING (WATER & ENERGY) LIMITED
GRAIG LELO INDUSTRIAL ESTATE
CORWEN
LL21 9SD
TEL: 01824 707777

SITE: Knacks Lane, Rochdale JOB REFERENCE: 1727 SITE BH NUMBER: 1 BGS No: SN18/356 GRID REF: SD87281618 DATE: 11/01/18

OPERATION	SIZE (MM)	FROM DEPTH (M)	TO DEPTH (M)	TOTAL
Set up				1
Symmetrix Drilling (Sacrificial Symmetrix)	198	G. L	42.5	42.5
Open Hole Drilling	152	42.5	120	77.5
Mud Drilling				
CFA Drilling				
Airlift				1

DEPTH (M)	DESCRIPTION	MATERIAL & DEPTH (M)
G.L - 3	Building waste	
3.0 - 7.0	Brown stony clay	
7.0 - 9.0	Blue stony clay	Solid casing size - 113mm
9.0 - 12.0	Blue clay with mudstone	
12.0 - 31.0	Mudstone	Bentonite type - Granules
31.0 - 32.5	Coal seam	
32.5 - 38.0	Void	Slotted casing size - 113mm
38.0 - 40.0	Grey sandstone	
40.0 - 102.0	Mudstone shale with clay bands	Gravel pack size - 6mm
102.0 - 120.0	Fine grey sandstone	
	Water strike depths - 4m and 107m	Glass media Size - N/A

PREDICTED DEPTH (M)	ACTUAL DEPTH (M)	WATER STRIKES (MBGL)	LITRES PER MINUTE	SLOTTED CASING (M)	PLAIN CASING (M)	END CAP	GRAVEL/GLASS PACK (MBGL)	BENTONITE (MBGL)
120	120	4 and 107	110	87	33	Yes	120 - 10	10 - G. L

DRILLING FOR: Domestic Water supply

NAME: Jordan McVey (LEAD DRILLER)



NGR. C 8716 1689 ? La 80 SE. 7 9 71
For Survey use only
N. _____
76/71
Licence No. _____

RECORD OF WELL (SHAFT OR BORE)

At Spring Hill Reservoir.
Town or Village Whitworth.
County Tames.
Six-inch quarter sheet 80 S.E./E.
For Rochdale Corporation.
State whether owner, tenant, builder, contractor, consultant, etc.:—
Address (if different from above) _____
Level of ground surface above sea-level (O.D.) 835 ft.
If well-top is not at ground level, state how far .. {above: _____ ft. below: _____ ft.
SHAFT _____ ft.; diameter _____ ft.; Full details of headings (dimensions and directions) _____
BORE 836 1/2 ft.; diameter of bore: at top 24 ins.; at bottom 13 3/4 ins.
Full details of permanent lining tubes (position, length, diameter, plain, slotted etc.) _____
Bore is 24" diam to 611, then 13 3/4"
Water struck at depths of _____ ft. below well-top.
TEST CONDITIONS { Rest level of water _____ ft. above well-top. Suction at _____ ft. Yield on _____ hours' test pumping at _____ galls. per _____ with depression to _____ ft. below well-top.
Recovery to rest-level in _____ mins. Capacity of pump _____ g.p.h. Date of measurements _____
NORMAL CONDITIONS { DESCRIPTION OF PERMANENT PUMPING EQUIPMENT:
Make and/or type _____ Motive power _____
Capacity _____ gallons per hour. Suction at _____ ft.
Amount pumped _____ galls. per day. Estimated consumption _____ galls. per week.
Well made by A.C. Potter Date of well 1914.
Information from Mr Morris Deputy Engineer.
ADDITIONAL NOTES
ANALYSIS (please attach copy if available)
Mr Morris is trying to locate precise site of bore. At present worked for on Tames 80 SE/E.
LOG OF STRATA OVERLEAF.
GEOLOGICAL SURVEY AND MUSEUM, SOUTH KENSINGTON, LONDON, S.W.7.
Section 6. Date Received 26.4.56 1" O.S. Map No. 76 Site marked on 1" Map (use symbol on 6" Map)

(For Survey use only) GEOLOGICAL CLASSIFICATION	NATURE OF STRATA If measurements start below ground surface, state how far ..	THICKNESS		DEPTH		T	D	
		Feet ..	Inches ..	Feet ..	Inches ..	Meters		
LHF	Soft sandy clay & sandstone	6	0	6	0	1.83	1.83	
	Hard shale	2	0	8	0	0.61	2.44	
	Soft shale	3	0	11	0	0.91	3.35	
	Brownish gray shale	39	-	50	0	11.89	15.24	
	Hard gray shale	6	-	56	0	1.83	17.07	
	Brownish gray shale & bands of grit	13	-	69	0	3.96	21.03	
	Hard gray shale	2	-	71	0	0.61	21.64	
	Flag rock	9	6	80	6	2.90	24.54	
	Broken thin bedded sandstone	3	6	84	0	1.06	25.60	
	Thin bedded sandstone (unconformable)	28	6	113	6	9.00	34.60	
	Thin bedded sandstone (broken)	8	6	123	0	2.59	37.19	
	Thin bedded sandstone	12	6	134	6	3.81	41.00	
	Gray shale	8	-	142	6	2.43	43.43	
	Thin bedded sandstone	8	6	151	0	2.60	46.03	
	Blue sandy shale (very broken)	5	6	156	6	1.67	47.70	
	Blue sandy shale (broken)	71	-	227	6	21.64	69.34	
	Gray sandy shale (broken)	9	-	236	6	2.75	72.09	
	Gray sandy shale	82	6	319	0	15.14	97.23	
	C. Camacho MB? RAC	Black shale	11	6	330	6	3.51	100.74
	Holcomb Brown Coal RAC	Gray sandy shale	38	6	369	0	11.73	112.47
Coal		2	-	371	0	0.61	113.08	
Holcomb Brown Coal RAC	Gray sandy shale	72	-	443	0	21.95	135.03	
	Black shale	10	6	453	6	3.20	138.23	
	Gray sandy shale	150	6	604	0	45.87	184.10	
	Millstone grit with thin bands of shale.	96	-	700	0	29.26	213.36	
	Gray sandy shale	30	-	730	0	9.14	222.50	
	Hard gray shale	106	6	836	6	32.47	254.97	





RECORD OF WELL (SHAFT OR BORE)

At *Spring Hill Reservoir*

Town or Village *Whitesand*

County *Leam.*

For *Rochdale Corporation*

Address (if different from above)

Level of ground surface
above sea-level (O.D.) *855* ft.

SHAFT ft. diameter ft.

Six-inch quarter sheet *80 S.E./E.*

State whether owner, tenant, builder,
contractor, consultant, etc.

If well-top is not at ground { above:
level, state how far .. below; .. ft.

Full details of headings (dimensions and directions)

BORE *836* ft.; diameter of bore: at top *21* ins.; at bottom *13 1/2* ins.

Full details of permanent lining tubes (position, length, diameter, plain, slotted etc.)

Bore is 21" diam to 611, then 13 1/2"

Water struck at depths of .. ft. below well-top.

Test level of water ft. above well-top. Suction at .. ft. Yield on .. hours' test

pumping at galls. per with depression to .. ft. below well-top.

Recovery to test-level in mins. Capacity of pump .. g.p.h. Date of measurements

DESCRIPTION OF PERMANENT PUMPING EQUIPMENT:

Make and or type .. Motive power ..

Capacity .. gallons per hour. Suction at .. ft.

Amount pumped .. galls. per day. Estimated consumption .. galls. per week.

Well made by *A.C. Potter* Date of well *1914*

Information from *Mr. Thomas Deputy Engineer*

ADDITIONAL NOTES

ANALYSIS (please attach copy if available)

*Water from this well is used for domestic purposes and is of good quality and is not
to be used for anything else.*

LOG OF STRATA OVERLEAF

ALL STRATA AND MURKIN
ON KILN'S TON
SPIN S.W. 7

Section 8

Date
(received)

1" O.S. Map Site marked (use scale of
No. on 1" Map on 1" Map

26.4.56

76

SD81/7 76/71

For Survey use only
GEOLOGICAL
CLASSIFICATION

NATURE OF STRATA

If measurements start below
ground surface, state how far

THICKNESS

DEPTH

Feet Inches

Feet Inches

Soft sandy clay & sandstone

6 0

Hard shale

8 0

Soft shale

11 0

Brownish grey shale

50 0

Hard grey shale

56 0

Brownish grey shale & bands of grit

69 0

Hard grey shale

71 0

Flag rock

80 6

Broken thin bedded sandstone

84 0

Thin bedded sandstone (unconformable)

113 6

Thin bedded sandstone (broken)

122 0

Thin bedded sandstone

134 6

Grey shale

142 6

Thin bedded sandstone

151 0

Blue sandy shale (very broken)

158 6

Blue sandy shale (broken)

227 6

Grey sandy shale (broken)

236 6

Grey sandy shale

319 0

Black shale

330 6

Grey sandy shale

369 0

Coal

371 0

Grey sandy shale

443 0

Black shale

453 6

Grey sandy shale

604 0

Millstone grit with thin bands
of shale.

700 0

Grey sandy shale

730 0

Hard grey shale.

836 6



SD 81 NW / 9

SD 81 NW.



READY MIXED CONCRETE (UNITED KINGDOM) LIMITED

Long Lane
Attenborough Nottingham
NG9 6BL

Telephone 0602-221221

RJH/BC

22nd July, 1975

Mrs L. C. Jones
Institute of Geological Sciences
Ring Road
Halton
LEEDS
LS15 8TQ

CONFIDENTIAL

Dear Mrs Jones,

BOREHOLES, SCOUT MOOR

Thank you for your recent letter requesting information on the above boreholes.

For a number of reasons we never completed this drilling programme. In fact only one hole was commenced and this was stopped prematurely at approximately 23.00m. The core from this borehole was logged, but not in great detail owing to our lack of interest in the site at that time for commercial reasons.

The approximate position of this hole was at SD 8161 1881, the surface altitude is unknown. Briefly I recorded :

2.0m to 3.65m	Sandstone, probably Upper Rough Rock
3.65m to 4.55m	Core lost but coal traces, presumed to be the Sandrock Mine coal horizon.
4.55m to 5.70m	Core lost.
5.70 to 20.44m	Sandstone, probably Lower Rough Rock
20.44 to 22.76m	Sandstone, probably Haslingden Flags.

I am sorry the above is not very detailed, if you have any specific questions I may be able to help if you will let me know.

Yours sincerely,

R. J. HAWKINS
Senior Geologist



Mr. W.B. Evans, Leeds.

READY MIXED CONCRETE (UNITED KINGDOM) LIMITED

~~RMC House High Street
Feltham Middlesex
TW13 4HA~~

Nottingham 253542/3

THE DEDDINGTON CEMENT CO. LTD.
Cables Readymix Hounslow

Please reply to our office at :

Long Lane
Attenborough
Nottingham NG9 6BL

Commercial
in Confidence

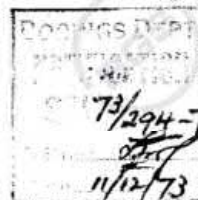
RJH/BC

6th December, 1973

The Director
Institute of Geological Sciences
Exhibition Road
South Kensington
LONDON SW7 2DE

Dear Sir,

BOREHOLE NOTIFICATION



Under the requirements of the Mining Industry Act 1926 I am writing to inform you that my company is at present engaged in a drilling programme which is likely to involve holes in excess of 30m (100 feet).

It is hoped that a total of four holes will be completed on Scout Moor, near Edenfield and 8 km north of Bury. The purpose of these holes is to prove the thickness of the Rough Rock and Haslingden Flags. A copy of part of the O.S. 1" Sheet No. 95 showing the approximate area of drilling is enclosed.

The holes will, at least in part, be cored and the cores which will be logged by myself are to be retained at our offices in Nottingham. As our interest lies in the suitability of these rocks as a potential source of aggregate material it is intended to subject these cores to laboratory tests as soon as possible.

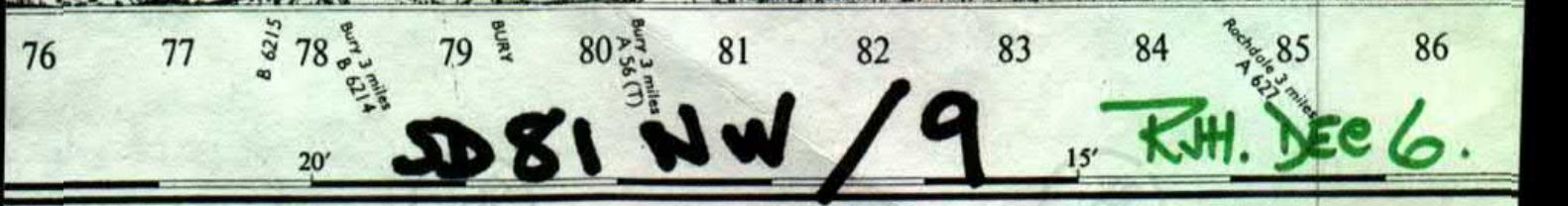
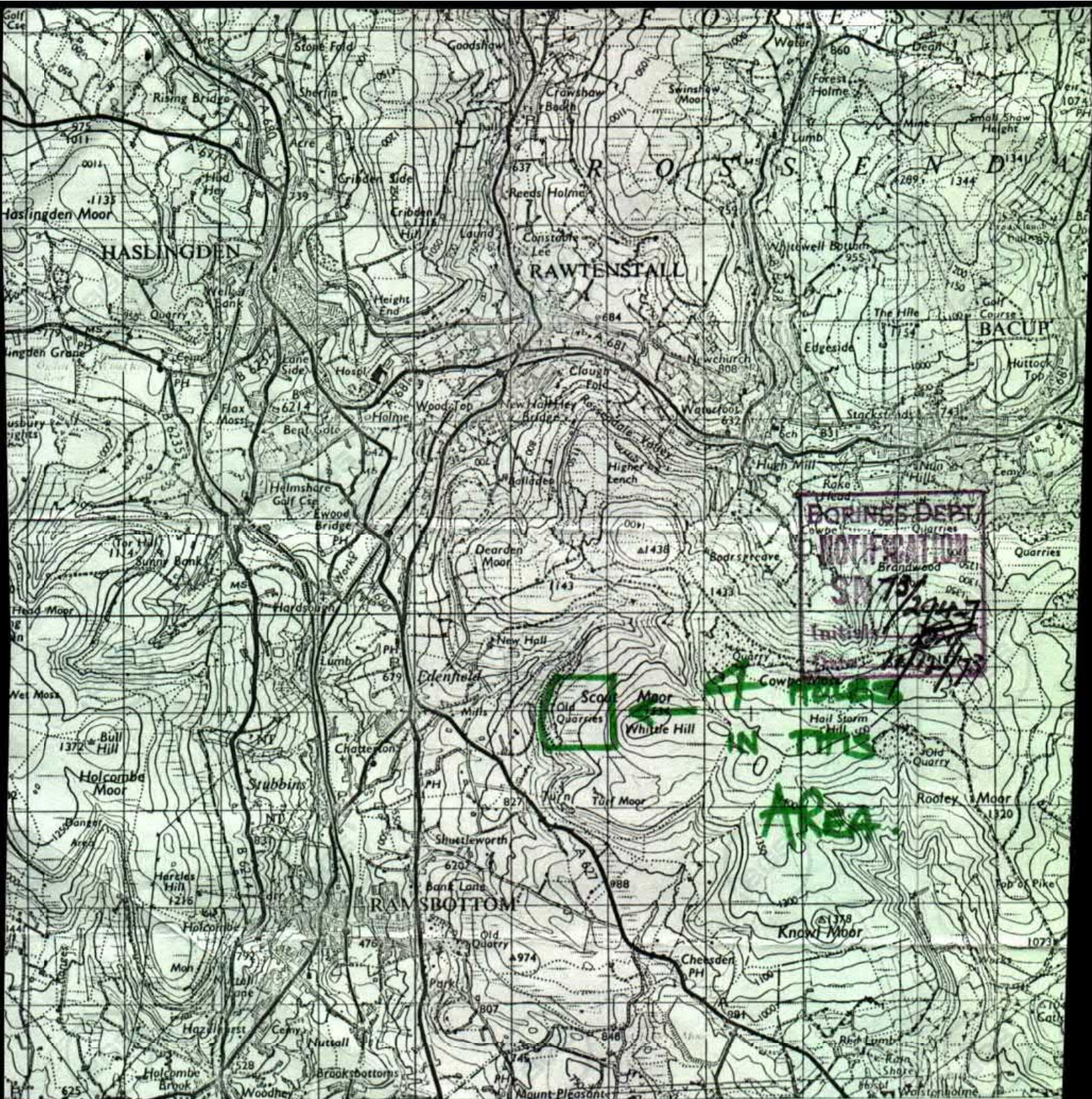
If there is a possibility that you will require access to the cores would you please inform me as soon as possible so that arrangements can be made.

May I take this opportunity of asking you to treat this information, and any further information which you may receive from us on this subject as confidential.

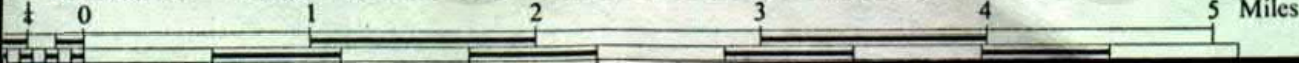
Yours faithfully,

Yours & Ours

R. J. HAWKINS
Aggregate Land Search Department



Scale: One Inch to One Statute Mile = $\frac{1}{63360}$



EJR SD 819 185

SD81/43

SD81NW/9

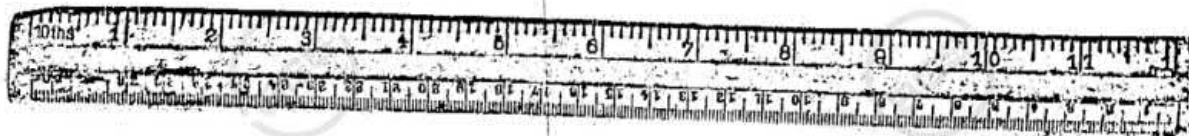
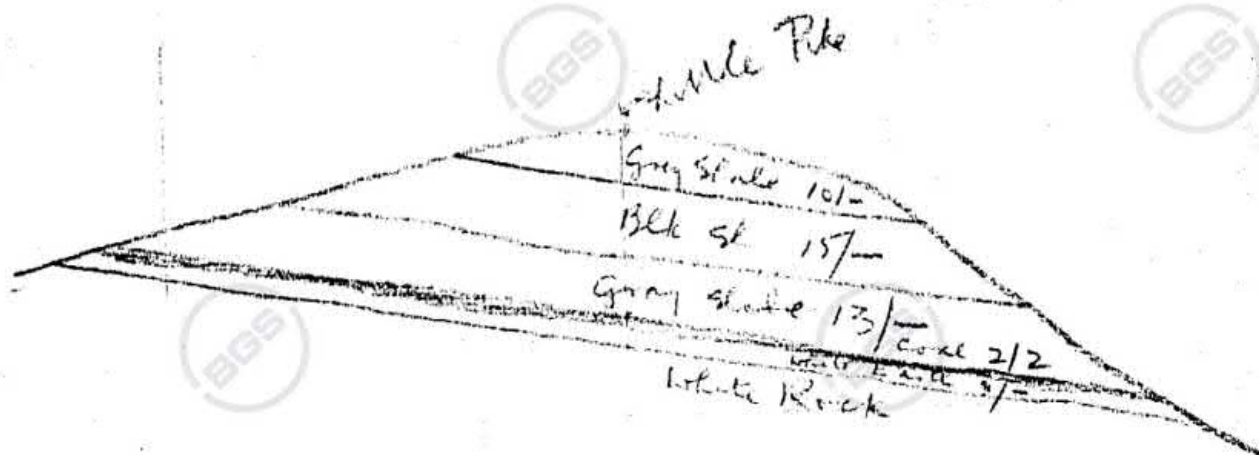
Lancs 80NW

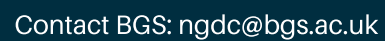
2

IN MINE SCOUT MOOR COLLIERY Lancs

EXPOS Lawrence Bucknall

6 Whittle Hill - to NW
3/4 mile or Sand Rock





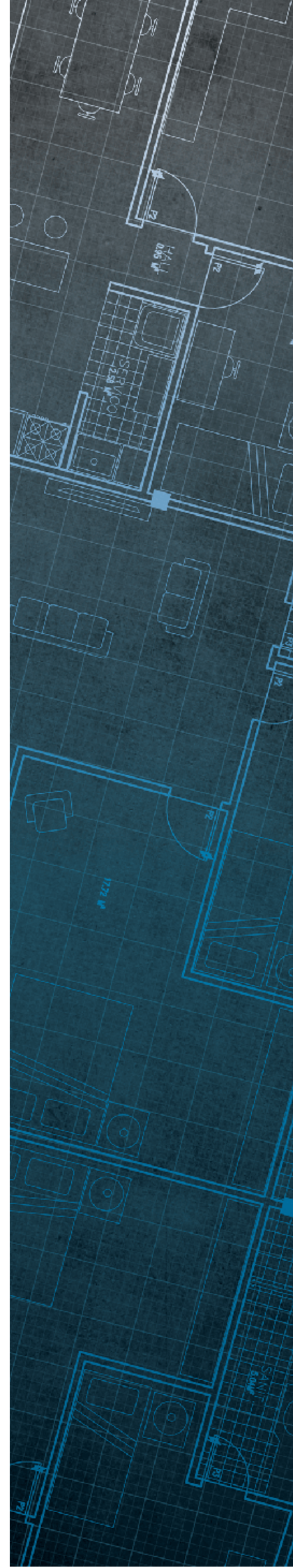


The Coal
Authority

Consultants Coal Mining Report

01137 Assessment

Date of enquiry:	14 October 2024
Date enquiry received:	14 October 2024
Issue date:	14 October 2024
Our reference:	71009810321002
Your reference:	01137 Assessment



Consultants

Coal Mining Report

This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

NLIS Hub

Enquiry address

01137 Assessment

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

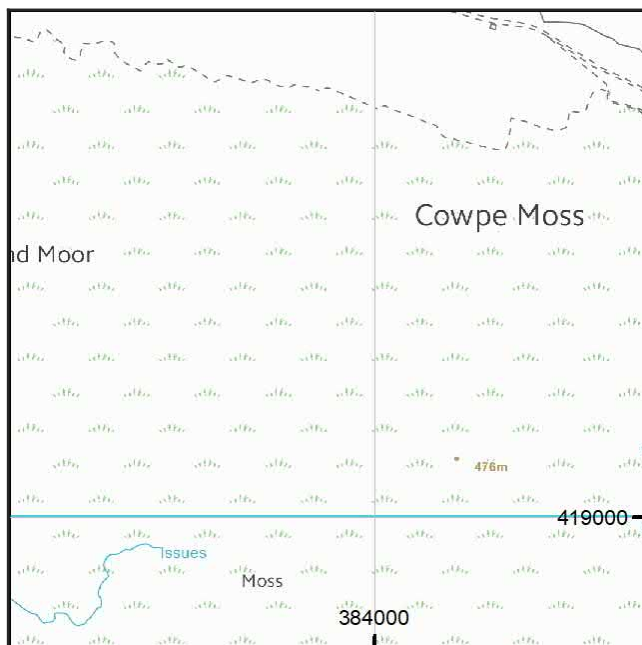
www.groundstability.com

 @coalauthority

 /company/the-coal-authority

 /thecoalauthority

 /thecoalauthority



Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	SAND ROCK	Coal	3W6L	0	Beneath Property	2.0	East	40	1883
unnamed	LOWER MOUNTAIN	Coal	3W5Y	2	Beneath Property	11.0	South-West	70	1900
unnamed	SAND ROCK	Coal	3VR9	4	Beneath Property	8.0	South	140	1900
unnamed	SAND ROCK	Coal	3W6K	6	Beneath Property	2.0	East	40	1883
unnamed	SAND ROCK	Coal	3W61	10	Beneath Property	0.0	East	50	1886
unnamed	SAND ROCK	Coal	XXXX	12	Beneath Property	2.0	East	40	1883
unnamed	LOWER MOUNTAIN	Coal	3W5X	13	Beneath Property	11.0	South-West	70	1900
unnamed	SAND ROCK	Coal	3W68	14	Beneath Property	0.0	East	50	1850
unnamed	SAND ROCK	Coal	3W62	21	Beneath Property	3.0	North	50	1850
unnamed	SAND ROCK	Coal	3VQ7	22	Beneath Property	8.0	South	140	1900
unnamed	LOWER MOUNTAIN	Coal	3W5U	27	Beneath Property	9.3	South-West	70	1890
unnamed	LOWER MOUNTAIN	Coal	3W5V	28	Beneath Property	9.3	South	70	1890
unnamed	SAND ROCK	Coal	3W60	30	Beneath Property	0.0	East	50	1886
unnamed	SAND ROCK	Coal	3W6M	32	Beneath Property	2.5	South-West	50	1915
unnamed	LOWER MOUNTAIN	Coal	3VPK	33	Beneath Property	7.0	South	50	1953
unnamed	SAND ROCK	Coal	3W63	38	Beneath Property	5.0	South	40	1944
unnamed	SAND ROCK	Coal	3VR8	39	Beneath Property	8.0	South	140	1900
unnamed	LOWER MOUNTAIN	Coal	3VPJ	42	Beneath Property	7.0	South	50	1953
unnamed	SAND ROCK	Coal	3W6D	49	Beneath Property	4.0	North	50	1940
unnamed	SAND ROCK	Coal	3W64	79	Beneath Property	5.0	South	40	1944

Probable unrecorded shallow workings

Yes.

Spine roadways at shallow depth

Distance to spine roadway (m)	Direction to spine roadway
Within	N/A
Within	N/A

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	381418-004	381749 418494		Coal	
Shaft	381418-005	381797 418512		Coal	
Adit	381418-006	381920 418525		Coal	
Adit	381418-007	381953 418544	The entrance to this adit has been filled to an unknown specification at some time in the past	Coal	
Shaft	381418-008	381983 418402		Coal	
Shaft	381418-009	381821 418503		Coal	
Shaft	382418-003	382306 418419		Coal	
Shaft	382418-004	382487 418452	This shaft was inspected in 1975 and was found to be open. Following an inspection in 2002 a galvanised grill was placed over the shaft by JMC acting on behalf of the Coal Authority.	Coal	
Shaft	382418-006	382281 418320		Coal	
Shaft	382418-007	382391 418234		Coal	
Shaft	382418-018	382523 418859		Coal	
Shaft	382418-019	382296 418302		Coal	
Shaft	382418-032	382410 418232		Coal	
Shaft	383418-003	383244 418752		Coal	
Adit	384418-001	384634 418891		Coal	
Adit	384418-002	384601 418896		Coal	
Adit	384418-003	384596 418928		Coal	
Shaft	384419-001	384596 419141		Coal	
Shaft	384419-002	384551 419090		Coal	
Shaft	384419-003	384604 419199		Coal	
Adit	384419-004	384525 419284		Coal	
Adit	384419-005	384619 419911		Coal	
Adit	384419-006	384631 419900		Coal	
Adit	384419-007	384989 419784		Coal	

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	384419-008	384984 419572		Coal	
Adit	384419-009	384965 419549		Coal	
Adit	384419-010	384848 419439		Coal	
Adit	384419-011	384644 419328		Coal	
Adit	384419-012	384642 419311		Coal	
Adit	384419-013	384620 419317		Coal	
Shaft	384419-014	384888 419427		Coal	
Shaft	384420-003	384720 420356		Coal	
Shaft	384420-004	384761 420330		Coal	
Shaft	384420-005	384748 420289		Coal	
Shaft	384420-006	384701 420164		Coal	
Adit	384420-007	384639 420398		Coal	
Adit	384421-003	384522 421308		Flagrock	
Adit	384421-004	384516 421081		Flagrock	
Shaft	384421-005	384568 421165		Flagrock	
Adit	385416-002	385922 416982		Coal	
Adit	385416-003	385811 416928		Coal	
Adit	385416-004	385860 416914		Coal	
Adit	385416-005	385930 416864		Coal	
Shaft	385417-001	385931 417043		Coal	
Shaft	385417-002	385909 417008		Coal	
Shaft	385418-001	385802 418924		Coal	
Shaft	385418-002	385977 418777		Coal	
Adit	385419-001	385072 419681		Coal	
Adit	385419-002	385067 419625		Coal	
Shaft	385419-003	385365 419546		Coal	
Shaft	385419-004	385581 419453		Coal	

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	385419-005	385517 419353		Coal	
Shaft	385419-006	385629 419266	Post and rail stock fence as per SD009 installed around mine entry and Coal Authority signage attached in January 2024	Coal	
Shaft	385419-007	385540 419238		Coal	
Adit	385420-001	385554 420695	This mine entrance was treated in August 2001 by Wardell Armstrongs acting on behalf of the Coal Authority. The adit was blocked with stone and the open end of the tunnel was broken in. The length of collapsed tunnel was then filled to surface level with stone and recovered soils were backfilled over to reinstate.	Coal	
Adit	385420-002	385585 420700	This mine entrance was treated in August 2001 by Wardell Armstrongs acting on behalf of the Coal Authority. The adit entrance was sealed with large stone. Large stone was also used to infill the exposed tunnel/culvert outbye to allow continued drainage of water. Recovered soils were then backfilled over to reinstate.	Coal	
Adit	385420-003	385777 420641		Coal	
Adit	385420-004	385841 420611		Coal	
Adit	385420-005	385844 420585		Coal	
Adit	385420-006	385838 420585		Coal	
Adit	385420-007	385985 420337		Coal	
Adit	385420-008	385988 420289		Coal	
Shaft	386415-001	386721 415997	This shaft was covered with a concrete raft in 1962 and marked with a concrete pyramid in 1968.	Coal	
Adit	386415-004	386604 415943	In February 1998 a small collapse some 0.8m in diameter was reported close to the entrance of this adit. The hole was infilled with locally available material and fenced due to the proximity of an adjacent footpath. These works were carried out by IMC consultants on behalf of The Coal Authority.	Coal	
Adit	386415-005	386631 415920		Coal	
Adit	386415-006	386630 415913		Coal	
Adit	386415-007	386647 415920		Coal	
Adit	386415-008	386660 415900		Coal	
Shaft	386415-009	386510 415777		Coal	

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	386416-001	386433 416947		Coal	
Shaft	386416-002	386446 416304		Coal	
Adit	386416-003	386977 416716		Coal	
Shaft	386416-004	386931 416673		Coal	
Shaft	386416-005	386926 416655	This shaft was capped by the NCB in 1978.	Coal	
Shaft	386416-006	386879 416595	This shaft was capped by the NCB in 1978.	Coal	
Shaft	386416-007	386807 416086		Coal	
Shaft	386416-008	386764 416050		Coal	
Adit	386417-001	386559 417099		Coal	
Adit	386417-002	386669 417012		Coal	
Shaft	386418-001	386275 418753		Coal	
Shaft	386418-002	386265 418631		Coal	
Shaft	386418-003	386257 418568		Coal	
Shaft	386418-004	386290 418399		Coal	
Adit	386418-005	386417 418464		Coal	
Adit	386418-006	386470 418380		Coal	
Adit	386419-006	386699 419610		Coal	
Shaft	386419-007	386693 419525		Coal	
Adit	386419-008	386751 419490		Coal	
Adit	386419-009	386676 419306		Coal	
Adit	386420-001	386051 420311	Adit has been fenced using stock proof fencing that has been stretched over the entrance and staked into place and a hole placed in it for any animals that may be using the adit.	Coal	
Shaft	386420-002	386002 420245		Coal	
Shaft	386420-003	386199 420223		Coal	
Adit	386420-009	386051 420435		Coal	
Shaft	387416-001	387037 416673		Coal	
Shaft	387416-002	387127 416409		Coal	

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	387416-003	387094 416138	This shaft was capped in 1978 by the NCB	Coal	
Adit	387418-001	387039 418206		Coal	
Adit	387418-002	387042 418194		Coal	
Adit	387418-003	387051 418191		Coal	
Adit	387418-004	387004 418274		Coal	
Shaft	387419-001	387142 419746		Coal	

Abandoned mine plan catalogue numbers

The following abandoned mine plan catalogue numbers intersect with some, or all, of the enquiry boundary:

NW1466	OM15310	NW127
5454	13818	4212
16872	211	PO0

Our records show we have more plans than those shown above which could affect the enquiry boundary.

Please contact us on 0345 762 6848 to determine the exact abandoned mine plans you require based on your needs.

Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
BASSEY	Coal	Yes	Within	N/A	112
BASSEY	Coal	Yes	Within	N/A	136
BASSEY	Coal	Yes	Within	N/A	145
BASSEY	Coal	Yes	Within	N/A	186
BASSEY	Coal	Yes	19.6	South	187
BASSEY	Coal	Yes	Within	N/A	197
BASSEY	Coal	Yes	Within	N/A	201
BASSEY	Coal	Yes	Within	N/A	202
BASSEY	Coal	Yes	Within	N/A	210
BASSEY	Coal	No	Within	N/A	217
BASSEY	Coal	Yes	Within	N/A	229
BASSEY	Coal	Yes	Within	N/A	238
BASSEY	Coal	Yes	Within	N/A	264
BASSEY	Coal	Yes	Within	N/A	271
BASSEY	Coal	Yes	Within	N/A	278
BASSEY	Coal	Yes	5.7	South-West	283
BASSEY	Coal	Yes	Within	N/A	292
BASSEY	Coal	Yes	Within	N/A	295
BASSEY	Coal	Yes	Within	N/A	310
BASSEY	Coal	Yes	Within	N/A	318
BASSEY	Coal	Yes	Within	N/A	332
BROOKS BOTTOMS	Coal	Yes	Within	N/A	306
CANNEL	Coal	Yes	Within	N/A	22
LOWER FOOT	Coal	Yes	0.4	West	17
LOWER FOOT	Coal	Yes	Within	N/A	137
LOWER FOOT	Coal	Yes	Within	N/A	176

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
LOWER FOOT	Coal	Yes	Within	N/A	181
LOWER FOOT	Coal	Yes	Within	N/A	208
LOWER FOOT	Coal	Yes	Within	N/A	209
LOWER FOOT	Coal	Yes	Within	N/A	209
LOWER FOOT	Coal	Yes	Within	N/A	216
LOWER FOOT	Coal	Yes	Within	N/A	226
LOWER FOOT	Coal	Yes	Within	N/A	248
LOWER FOOT	Coal	Yes	Within	N/A	254
LOWER FOOT	Coal	Yes	Within	N/A	273
LOWER FOOT	Coal	Yes	Within	N/A	276
LOWER FOOT	Coal	Yes	Within	N/A	286
LOWER FOOT	Coal	Yes	Within	N/A	304
LOWER FOOT	Coal	Yes	Within	N/A	304
LOWER FOOT	Coal	Yes	Within	N/A	309
LOWER FOOT	Coal	Yes	Within	N/A	315
LOWER FOOT	Coal	Yes	Within	N/A	317
LOWER FOOT	Coal	Yes	Within	N/A	330
LOWER FOOT	Coal	Yes	Within	N/A	354
LOWER HOLCOMBE BROOK	Coal	Yes	Within	N/A	311
LOWER MOUNTAIN	Coal	Yes	Within	N/A	13
LOWER MOUNTAIN	Coal	Yes	Within	N/A	141
LOWER MOUNTAIN	Coal	Yes	Within	N/A	178
LOWER MOUNTAIN	Coal	Yes	Within	N/A	206
LOWER MOUNTAIN	Coal	Yes	Within	N/A	208
LOWER MOUNTAIN	Coal	Yes	Within	N/A	210
LOWER MOUNTAIN	Coal	Yes	Within	N/A	222
LOWER MOUNTAIN	Coal	Yes	Within	N/A	226

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
LOWER MOUNTAIN	Coal	Yes	Within	N/A	231
LOWER MOUNTAIN	Coal	Yes	Within	N/A	284
LOWER MOUNTAIN	Coal	Yes	Within	N/A	284
LOWER MOUNTAIN	Coal	Yes	Within	N/A	298
LOWER MOUNTAIN	Coal	Yes	Within	N/A	310
LOWER MOUNTAIN	Coal	Yes	Within	N/A	312
LOWER MOUNTAIN	Coal	Yes	Within	N/A	319
LOWER MOUNTAIN	Coal	Yes	Within	N/A	319
LOWER MOUNTAIN	Coal	Yes	Within	N/A	328
LOWER MOUNTAIN	Coal	Yes	Within	N/A	328
SAND ROCK	Coal	Yes	Within	N/A	5
SAND ROCK	Coal	Yes	Within	N/A	8
SAND ROCK	Coal	Yes	Within	N/A	12
SAND ROCK	Coal	Yes	Within	N/A	20
SAND ROCK	Coal	Yes	Within	N/A	60
SAND ROCK	Coal	Yes	Within	N/A	66
SAND ROCK	Coal	Yes	Within	N/A	75
SAND ROCK	Coal	Yes	Within	N/A	80
SAND ROCK	Coal	Yes	Within	N/A	114
SAND ROCK	Coal	Yes	Within	N/A	126
SAND ROCK	Coal	Yes	Within	N/A	152
SAND ROCK	Coal	Yes	Within	N/A	167
SAND ROCK	Coal	Yes	Within	N/A	192
SAND ROCK	Coal	No	Within	N/A	195
SAND ROCK	Coal	Yes	Within	N/A	196
SAND ROCK	Coal	Yes	6.0	West	198
SAND ROCK	Coal	No	Within	N/A	200

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
SAND ROCK	Coal	Yes	Within	N/A	223
SAND ROCK	Coal	Yes	Within	N/A	226
SAND ROCK	Coal	Yes	Within	N/A	228
SAND ROCK	Coal	Yes	Within	N/A	238
SAND ROCK	Coal	Yes	Within	N/A	243
SAND ROCK	Coal	Yes	Within	N/A	244
SAND ROCK	Coal	Yes	Within	N/A	247
SAND ROCK	Coal	Yes	Within	N/A	247
SAND ROCK	Coal	Yes	Within	N/A	247
SAND ROCK	Coal	Yes	48.6	South	277
SAND ROCK	Coal	Yes	Within	N/A	278
SAND ROCK	Coal	Yes	Within	N/A	279
SAND ROCK	Coal	Yes	Within	N/A	283
SAND ROCK	Coal	Yes	Within	N/A	286
SAND ROCK	Coal	Yes	Within	N/A	288
SAND ROCK	Coal	Yes	Within	N/A	305
SAND ROCK	Coal	Yes	Within	N/A	317
SAND ROCK	Coal	Yes	Within	N/A	320
SAND ROCK	Coal	Yes	29.2	East	322
SAND ROCK	Coal	Yes	12.4	East	340
SIX INCH	Coal	Yes	Within	N/A	17
SIX INCH	Coal	Yes	Within	N/A	60
SIX INCH	Coal	Yes	Within	N/A	181
SIX INCH	Coal	Yes	Within	N/A	183
SIX INCH	Coal	No	Within	N/A	200
SIX INCH	Coal	Yes	Within	N/A	207
SIX INCH	Coal	No	Within	N/A	260

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
SIX INCH	Coal	No	Within	N/A	261
SIX INCH	Coal	Yes	Within	N/A	285
SIX INCH	Coal	Yes	Within	N/A	308
SIX INCH	Coal	Yes	Within	N/A	315
SIX INCH	Coal	Yes	Within	N/A	341
UPPER FOOT	Coal	Yes	Within	N/A	139
UPPER FOOT	Coal	Yes	Within	N/A	139
UPPER FOOT	Coal	Yes	Within	N/A	152
UPPER FOOT	Coal	Yes	Within	N/A	153
UPPER FOOT	Coal	Yes	Within	N/A	153
UPPER FOOT	Coal	Yes	Within	N/A	197
UPPER FOOT	Coal	Yes	Within	N/A	199
UPPER FOOT	Coal	Yes	Within	N/A	284
UPPER FOOT	Coal	Yes	Within	N/A	304
UPPER FOOT	Coal	Yes	Within	N/A	318
UPPER FOOT	Coal	Yes	Within	N/A	319

Geological faults, fissures and breaklines

Please refer to the 'Summary of findings' map (on separate sheet) for details of any geological faults, fissures or breaklines either within or intersecting the enquiry boundary.

Faults under or close to the property recorded.

Opencast mines

Please refer to the "Summary of findings" map (on separate sheet) for details of any opencast areas within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations

Distance to site investigation (m)	Direction
Within	N/A

See Section 4 for further information.

Remediated sites

Distance to site remediation (m)	Direction
27.8	North-East
Within	N/A
Within	N/A
20.8	West
Within	N/A

See Section 4 for further information.

Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

Withdrawal of support notices

The property is in an area where notices to withdraw support were given in 1948, 1951 and 1952.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Section 4 – Further information

The following potential risks have been identified and as part of your risk assessment should be investigated further.

Future development

If development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply specialist engineering practice required for former mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or coal mines without first obtaining the permission of the Coal Authority.

MINE GAS: Please note, if there are no recorded instances of mine gas within 500m of the enquiry boundary, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed. In these instances, the Coal Authority recommends that a more detailed Gas Risk Assessment is undertaken by a competent assessor.

Development advice

The site is within an area of historical coal mining activity. Should you require advice and/or support on understanding the mining legacy, its risks to your development or what next steps you need to take, please contact us.

Site investigations

The site is within an area of previous interest. It is close to where the Coal Authority has received information relating to past site investigations.

The site requires further investigation and may influence how you approach your risk assessment.

Remediated sites

The site is within an area of previous interest. It is close to where the Coal Authority has investigated and where necessary remediated mine entries and/or shallow coal mine workings following specific reported hazards.

The site requires further investigation and may influence your risk assessment. We recommend that you order the Coal Authority **Surface Hazards Incident Report**, which will include more information about the hazard.

For further information on specific site or ground investigations in relation to any issues raised in Section 4, please call us on 0345 762 6848 or email us at groundstability@coal.gov.uk.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk**.

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

Opencast mines

Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips

Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations

Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites

Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence

Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas

Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

Mine water treatment schemes

Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining

Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing

Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders

Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices

Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

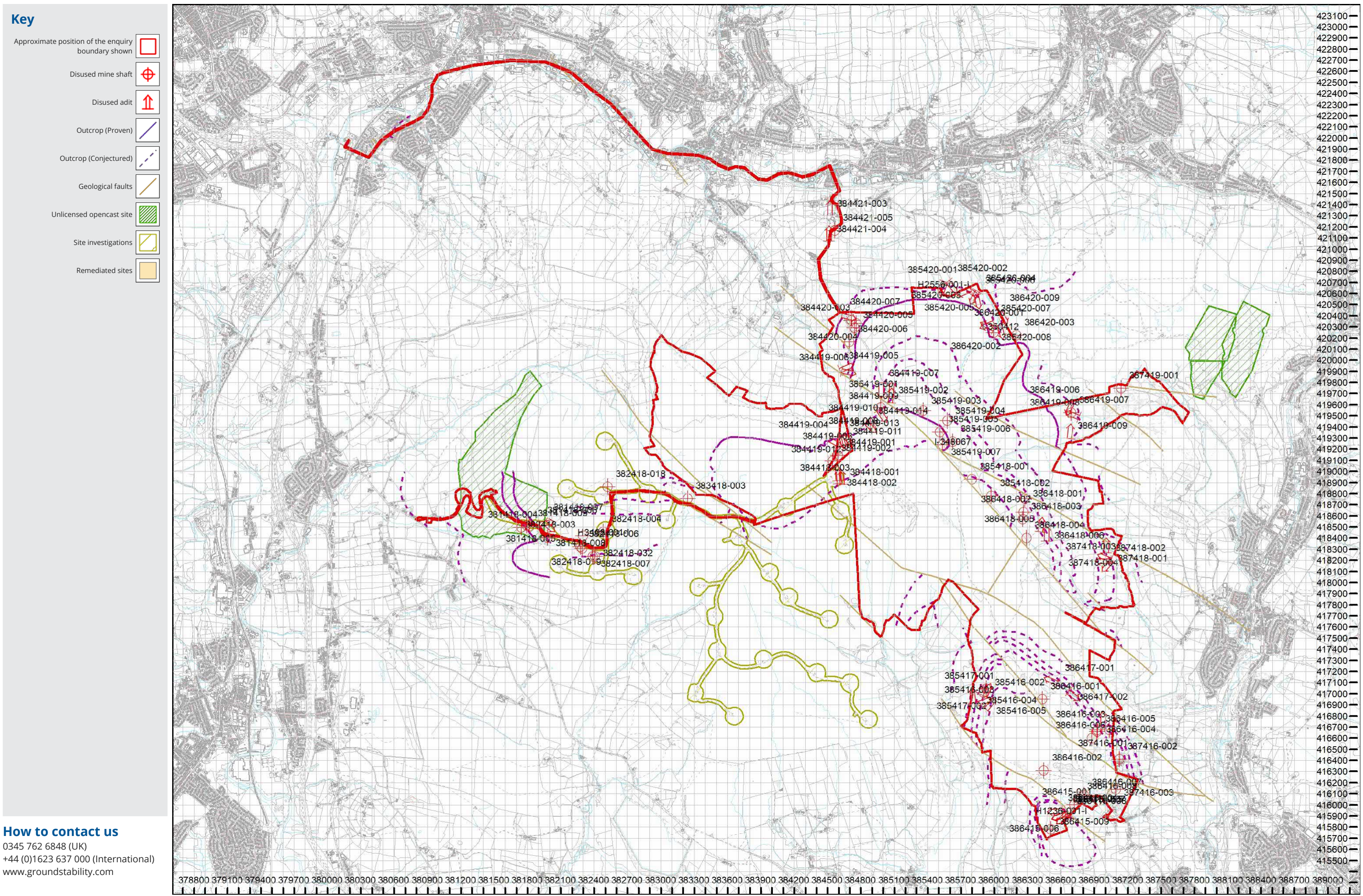
Withdrawal of support notices

Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land

Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

The map highlights any specific surface or subsurface features within or near to the boundary of the site.



UNEXPLODED BOMB RISK MAP



SITE LOCATION

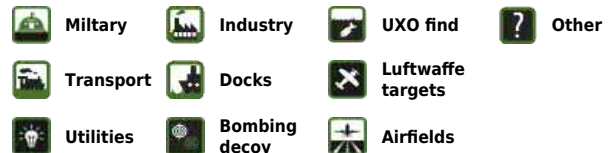
Map Centre: 386709,419683



This map principally indicates a hazard from Unexploded Bombs (UXB) due to WWII bombardment. Other sources of Unexploded Ordnance (UXO) may be present. It should be noted that this map does not represent UXO risk and should not be reported as such when reproduced.

LEGEND

- **High:** Areas indicated as having a bombing density of 50 bombs per 1000acre or higher.
- **Moderate:** Areas indicated as having a bombing density of 15 to 49 bombs per 1000acre.
- **Low:** Areas indicated as having 15 bombs per 1000acre or less.



How to use your Unexploded Bomb (UXB) risk map?

This map indicates the potential for UXBs to be present because of World War Two (WWII) bombing. It can be incorporated into a technical report, such as a Phase 1 Desk Study, or similar document as an indication of the potential for UXO encounter on a Site. Other sources of UXO may also be indicated, although note that these are not comprehensive and more detailed research is required to confirm their presence.

What if my Site is in a moderate or high density area?

We typically recommend that a detailed UXO desk study and risk assessment is undertaken for sites in an area with a moderate or high bombing density. Additionally, if your site is in close proximity to a strategic target, military establishment, airfield or bombing decoy, then [additional detailed research](#) is recommended.

If my site is in a low risk area, do I need to do anything?

If both the map and other research confirm that there is a low potential for UXO to be present on your site, then, subject to your own comfort and risk tolerance, works can proceed with no special precautions.

If you are unsure whether other sources of UXO may be present, you can request one of our [pre-desk study assessments \(PDSA\)](#) by emailing a site boundary and location to pdsa@zetica.com.

You should never plan site work or undertake a risk assessment using these maps alone. More detail is required, to include an assessment of the likelihood of a source of UXO hazard from other military activity not reflected on these maps.

If I have any questions, who do I contact?

tel: +44 (0) 1993 886682 email: uxo@zetica.com web: www.zeticauxo.com

The information in this UXB risk map is derived from a range of sources and should be used with the [accompanying notes on our website](#).

Zetica cannot guarantee the accuracy or completeness of the information or data used and cannot accept any liability for any use of the maps. These maps can be used as part of a technical report or similar publication, subject to acknowledgement. The copyright remains with Zetica Ltd.

PA020793 — SCOUT MOOR

DOCUMENT DETAILS

Site name:	Scout Moor		
Reference:	PA020793	Client:	Pell Frischmann
Date:	8 th November 2024	Contact:	Samara Hyde

RECOMMENDATION

A detailed desk study is recommended to assess, and potentially zone, the Unexploded Ordnance (UXO) hazard level on the Site.

SUMMARY OF FINDINGS

Military Activity	During WWII, military training including the use of Armoured Fighting Vehicles (AFVs) occurred on the Site. During WWII, 1No. British trainer aircraft and 1No. American fighter aircraft crashed on the Site.
WWI Bombing	Potential targets within approximately 5km of the Site: ▪ Transport infrastructure and public utilities. ▪ Munitions factories and engineering and metal works. ▪ Military establishments and training areas. No readily available records have been found indicating that the Site was bombed.
WWII Bombing	The Site was located in Rawenstall Municipal Borough (MB), Heywood MB, Bacup MB, and Ramsbottom Urban District (UD), Whitworth Urban District, Rochdale County Borough (CB). Rawenstall MB officially recorded 10No. High Explosive (HE) bombs, with a density of 1.0 bombs per 405 hectares (ha). Heywood MB officially recorded 4No. HE bombs, with a density of 0.5 bombs per 405ha. Bacup MB officially recorded 2No. HE bombs, with a density of 0.3 bombs per 405ha. Ramsbottom UD officially recorded 2No. HE bombs, with a density of 0.2 bombs per 405ha. Whitworth UD officially recorded 7No. HE bombs, with a density of 1.6 bombs per 405 hectares. Rochdale CB officially recorded 4No. HE bombs, with a density of 0.4 bombs per 405ha. Potential targets within approximately 5km of the Site: ▪ Transport infrastructure and public utilities. ▪ Munitions factories, aircraft manufacturing, and engineering and metal works. ▪ Military establishments and training areas. ▪ Anti-Aircraft (AA) and anti-invasion defences. No readily available records have been found indicating that the Site was significantly bombed.

Bombing Decoys	None identified within 5km of the Site.
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FURTHER INFORMATION

These findings are based on a cursory review of readily available records; caution is advised if you plan to action work based on this PDSA.

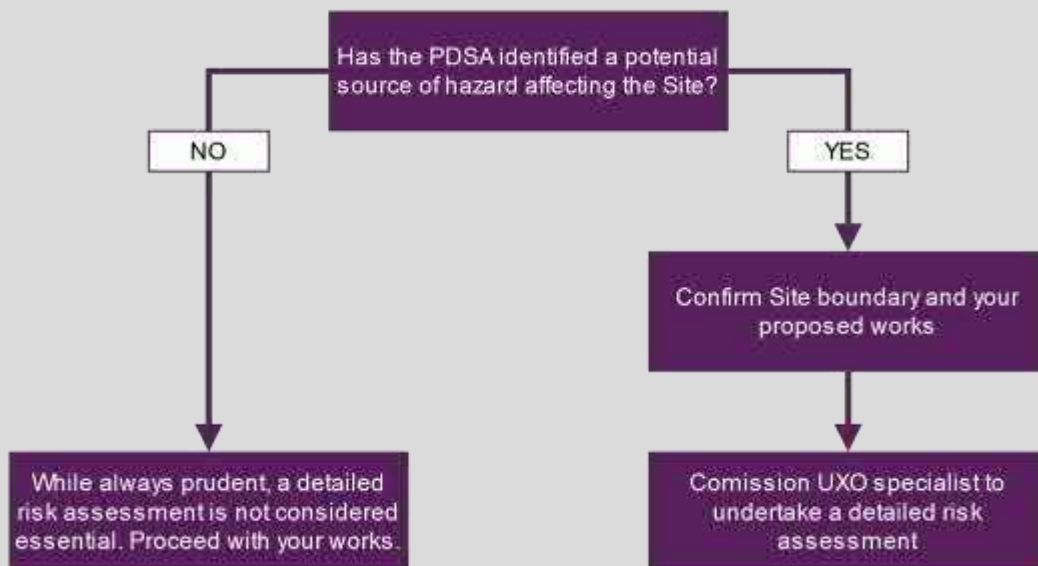
Where a potentially significant UXO hazard source has been identified on the Site, no further research has been undertaken. A detailed UXO desk study and risk assessment may identify other potential UXO hazard sources on the Site.

Visit www.zeticauxo.com to learn more about Zetica's detailed UXO desk studies and other UXO services. Click [here](#) for more information about the most common UXO hazard sources in the UK.

If you have any further queries, please don't hesitate to contact us at uxo@zetica.com or 01993 886 682.

NEXT STEPS

Follow the steps below to determine the appropriate course of action:



Potential UXO hazard identified? If the PDSA has identified a potential source of UXO hazard affecting your site, then a detailed UXO risk assessment is recommended.

No obvious source of UXO hazard? If the PDSA has not identified any obvious source of potential UXO, works can proceed.

It is good practice to raise awareness of the background UXO risk in the UK as part of a standard site induction. This will ensure that appropriate action is taken in the unlikely event that UXO is discovered.

Don't skip a stage: If you skip the detailed risk assessment stage, you could end up undertaking unnecessary work (e.g. trying to detect a UXO hazard that has already been removed).

Similarly, a detailed risk assessment might find that the UXO hazard is worse than expected and has a greater potential to cause harm, requiring a different mitigation approach than would otherwise be undertaken.

County:	Lancashire	Site Name:	Lee Quarry
District:	Rossendale		
Status:	Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act, 1981, as amended.		
Local Planning Authority:	Rossendale District Council		
National Grid Reference:	SD 867209	Area:	49.18 (ha) (ac)
Ordnance Survey Sheet 1:50 000	103	1:10 000	SD 82 SE
Date Notified (Under 1949 Act):	–	Date of Last Revision:	–
Date Notified (Under 1981 Act):	6 February 1997	Date of Last Revision:	–

Other Information:

1. This is a new site.
2. This is a Geological Conservation Review site.

Description and Reasons for Notification:

This site consists of a large disused quarry on the south side of the Rossendale Valley, just south of Bacup.

Lee Quarry shows one of the best available exposures in the Upper Carboniferous Haslingden Flags Formation, a unique development within the Millstone Grit of central England, probably of Yeadonian age. The formation consists mainly of fine-grained sandstones, siltstones and shales. Sedimentary structures including large-scale cross-bedding, ripple lamination and a variety of bed forms are visible in the sandstones. Through the overall form of the sedimentary units and their internal sedimentary structures, this formation has been interpreted as having been deposited in a 'Mississippi type' birdfoot delta. Such deltas are otherwise unknown in the Upper Carboniferous of Britain. Also of great importance are the suite of trace fossils described from the area. These include the escape shafts and resting traces of bivalves *Pelecypodichnus*, sinuous worm trails *Cochlichnus*, and limulid (i.e. King Crab) walking traces *Kouphichnus* and resting traces *Limnalicubichnus*. This assemblage indicates shallow non-marine conditions, possibly with periodic intervals of emergence.

The combination of rich trace-fossil assemblages and good sedimentary features marks Lee Quarry as being of great importance to studies of late Carboniferous environments and palaeogeography.

Mr James Dalglish
Rossendale Borough Council
Development Control
Futures Park
BACUP
Lancashire
OL13 0BB

Our ref: NO/2025/116992/01-L01
Your ref: 2025/0267
Date: 22 September 2025

Dear Mr Dalglish

CONSTRUCTION AND OPERATION OF 17 WIND TURBINES WITH A MAXIMUM HEIGHT TO THE TIP OF THE BLADE OF 180 METRES (ABOVE ORDNANCE DATUM), TOGETHER WITH ASSOCIATED ANCILLARY INFRASTRUCTURE COMPRISING CRANE PADS AND HARDSTANDINGS; NEW ACCESS TRACKS; IMPROVEMENT AND WIDENING WORKS TO SCOUT ROAD; ONSITE SUBSTATION; UNDERGROUND ELECTRICAL INFRASTRUCTURE AND CABLING; FENCING AND BOUNDARY TREATMENTS; EXTERNAL LIGHTING; DRAINAGE INFRASTRUCTURE; HABITAT AND MOORLAND RESTORATION WORKS; PUBLIC RIGHT OF WAY WORKS; LANDSCAPING; TEMPORARY CONSTRUCTION COMPOUND AND STAGING AREA; UNDERGROUND ELECTRICAL GRID CONNECTION TO THE ROSSENDALE BULK SUPPLY POINT; AND ASSOCIATED ENGINEERING WORKS; ALONGSIDE THE RETENTION OF AND IMPROVEMENTS TO EXISTING ACCESS TRACKS ASSOCIATED WITH THE EXISTING SCOUT MOOR WIND FARM.

SCOUT MOOR WIND FARM, GINCROFT LANE, EDENFIELD, BURY, LANCASHIRE

Thank you for consulting us on the above application, which we received on 4 September 2025.

We have reviewed the submitted information that is relevant to our remit and set out our position and comments below.

Environment Agency position

We have no objection in principle to the proposal, subject to condition in relation to land contamination. Our detailed comments are as follows:-

Land Contamination

Environment Agency
Lutra House Walton Summit, Bamber Bridge, Preston, PR5 8BX.
Customer services line: 03708 506 506
www.gov.uk/environment-agency
Cont/d..

The current or previous use(s) of the development site suggest that the land may be affected by contamination. Land contamination can harm human health, soils, ecosystems, property, drinking waters supplies, groundwater and surface water.

Land contamination is a material planning consideration. The planning decision should ensure that the site is suitable for its proposed use, considering any risks from contamination and any proposed land remediation. The planning application should therefore be supported by adequate site investigation information, prepared by a competent person. After remediation is carried out, as a minimum, the land should not be capable of being determined as contaminated land under [Part IIA of the Environmental Protection Act 1990](#). This approach is supported by paragraph 196 of the National Planning Policy Framework.

The current or previous use(s) of the site may present an unacceptable risk of contamination that could be mobilised during site works and construction, potentially leading to pollution of controlled waters. Controlled waters are particularly sensitive in this location because the proposed development site is located upon a secondary aquifer A.

The proposed development will be acceptable, if a planning condition is included requiring the submission and validation of a detailed land contamination management strategy for unsuspected contamination during the enabling, construction and/or development works. By cleaning up land contamination, it will be helping to protect and improve the groundwater quality that supports existing drinking water supply, future supply of drinking water and other environmental uses.

Without this condition we would object to the proposal in line with paragraph 187 of the National Planning Policy Framework because it cannot be guaranteed that the development will contribute to and enhance the natural and local environment by remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate or will not be put at unacceptable risk from, or be adversely affected by, unacceptable levels of water pollution.

Condition

If, during development, contamination not previously identified is found to be present at the site then no further development (unless otherwise agreed in writing with the local planning authority) shall be carried out until further investigation and a remediation strategy detailing how this contamination will be dealt with has been submitted to, and approved in writing by, the local planning authority. The remediation strategy shall be implemented as approved.

Reason

To ensure that the development does not contribute to, and is not put at unacceptable risk from or adversely affected by, unacceptable levels of water pollution from previously unidentified contamination sources at the development site. This is in line with paragraphs 187 and 196 of the National Planning Policy Framework.

Informative

Where a site is affected by contamination responsibility for securing a safe development rests with the developer and/or landowner. Developers should:

- Follow the risk management framework provided in [Land contamination: Risk](#)

- [management](#), when dealing with land affected by contamination
- Consider using the [National Quality Mark Scheme for Land Contamination Management](#) which involves the use of competent persons to ensure that land contamination risks are appropriately managed
- Refer to the [contaminated land](#) pages on gov.uk for more information

Biodiversity

We have no objection in principle to the construction of a new 17 turbine wind farm on Scout Moor, based on infrastructure layout SK02/P1 and a proposed design that is based around large scale habitat restoration and enhancement, water quality improvement, carbon sequestration and green energy generation (Planning, Design & Access Statement prepared by Turley and dated 15 July 2025).

The applicant has stated a commitment to deliver net environmental enhancement to large areas of ecologically important upland moorland habitat, which are also the source of many tributaries of the River Irwell and Roch waterbodies. This will be achieved through the implementation of detailed Moorland Restoration and Management (MRMP), Peatland Management Plan (PMP) and Habitat Management and Monitoring Plan (HMMP) across the Scout Moor site.

The large scale scheme will adopt environmental best practice measures, including actively avoiding important deep peat areas (see Figure 14.9 - Estimated Peat Depth), where there will predominantly be 50m development standoffs between new construction areas and upland watercourses. The scheme will also adopt hydrologically and ecologically sensitive construction techniques, such as floating road solutions (see Drawing No. SK14, Rev.2). Where depths of peat are greater than 0.5m, these areas will be protected to maintain natural hydrological and geomorphological characteristics of this upland moorland location.

The applicant has outlined a commitment to fully resource the MRMP (Atmos Consulting, June 2025, Rev.05) and PMP (Fluid Environmental Consulting, June 2025) over the 40-year lifespan of the project. This includes restoring identified degraded upland peatlands on 10 to 1 ratio for the approximate 20 plus hectares of peatland impacted by construction. The scheme will restore 346 hectares of blanket bog (118Ha in controlled restoration areas and 228Ha in community/common land restoration areas) to no less than moderate condition. All restoration works in these ecologically sensitive habitats will be undertaken by a specialist peatland restoration contractor.

The applicant has stated that the outline PMP and the proposed peatland restoration areas (see Figure 9.8 Peatland Restoration Proposals; referenced: TL02e/8706/HY/055a) will be further developed and informed by further detailed survey and specialist peat restoration contractor. There will be full reuse and retention of disturbed peat on site. The PMP will be a live document that will be informed, updated and amended where deemed necessary, by routine monitoring highlighted in the MRMP (see Table 14) & HMMP (see Section 4.8).

The HMMP (Atmos Consulting, May 2025, Ver.03) commits to delivering:

- A minimum 10.18% enhancement of habitats,
- Improvement of 2.84km of upland watercourses,
- A total site-wide enhancement of at least 10.62%.

Regarding riparian planting, the Environment Agency recommends that, in addition to native tree and shrub planting (HMMP, 4.5.3), enhancements should aim to create a more mixed mosaic of heathland, which is currently relatively rare habitat at the Scout Moor site, in conjunction with species rich acid grassland. This will provide a more diverse and varied vegetation structure, provide better opportunity to stabilise any exposed or bare peat areas and reduce siltation risk/peat runoff to adjoining watercourses and should be monitored using quantitative measures outlined in Section 4.8.3 to ensure woodland species do not dominate or outcompete ericaceous species.

The Environment Agency would welcome further detail on the restoration techniques outlined in the MRMP, PMP and HMMP, particularly:

- Measures to maintain natural hydrological processes during construction and operation
- Identification and removal of any existing artificial drainage exacerbating peat loss and sedimentation issues in connecting waterbodies,
- Detailed solutions and locations of any erosional gully blocking with the aim to rewet the blanket bog,
- Appropriate revegetation and stabilisation of bare peat areas

We also support the applicant's approach outlined in the Environmental Management Plan (Cubico, June 2025) for the adoption of Construction Environmental Management Plan (CEMP) that ensures sensitive construction techniques will be adopted to protect and, where feasible, improve the natural hydrological and hydro geological features of moorland (see Environmental Statement, Chapter 14.88). This will be fully adhered to during construction phase and overseen by an Ecological Clerk of Works (ECOW) and include:

- Micro-siting of new turbines, trackways, substation and temporary construction compound
- Adopting environmentally sensitive design solutions that retain natural hydrological and geomorphological processes, and ecological connectivity for the four identified track crossing locations (see Drawing No: SK15; Rev. 2)
- Adoption of new multifunctional SUDs solution as part of scheme surface water drainage for all new wind farm hard infrastructure i.e., turbine hard standings and new trackways
- Optimal track and drainage design (see Drawing No: SK14; Rev 2)

Environmental permit – Flood risk activities - advice to applicant

The Environmental Permitting (England and Wales) Regulations 2016 require a permit or exemption to be obtained for any of the following activities:

- erecting any temporary or permanent structure in, over or under a main river, such as a culvert, outfall, weir, dam, pipe crossing, erosion protection, scaffolding or bridge
- altering, repairing or maintaining any temporary or permanent structure in, over or under a main river, where the work could affect the flow of water in the river or affect any drainage work
- building or altering any permanent or temporary structure designed to contain or divert flood waters from a main river
- dredging, raising or removing any material from a main river, including when you are intending to improve flow in the river or use the materials removed
- diverting or impounding the flow of water or changing the level of water in a main

river

- quarrying or excavation within 16 metres of any main river, flood defence (including a remote defence) or culvert
- any activity within 8 metres of the bank of a main river, or 16 metres if it is a tidal main river
- any activity within 8 metres of any flood defence structure or culvert on a main river, or 16 metres on a tidal river
- any activity within 16 metres of a sea defence structure
- activities carried out on the floodplain of a main river, more than 8 metres from the river bank, culvert or flood defence structure (or 16 metres if it is a tidal main river), if you do not have planning permission (you do not need permission to build agricultural hay stacks, straw stacks or manure clamps in these places)

For further guidance please visit [Flood risk activities: environmental permits - GOV.UK](#) or contact our National Customer Contact Centre on 03708 506 506 (Monday to Friday, 8am to 6pm) or by emailing enquiries@environment-agency.gov.uk.

The applicant should not assume that a permit will automatically be forthcoming once planning permission has been granted, and we advise them to consult with us at the earliest opportunity.

Yours sincerely

Mrs Dana Binns
Sustainable Places Planning Advisor

E-mail clplanning@environment-agency.gov.uk

Dear Planning,

Thank you for consulting me on this application.

I refer to the following contaminated land related documents as listed on your website:

- 2025_0267-109692-PEF-ZZ-XX-RP-GG-6001_P03_-_PRELIMINARY_RISK_ASSESSMENT-500266
- 2025_0267-109692-PEF-ZZ-XX-RP-GT-6001_P01_-_MINING_RISK_ASSESSMENT-500277
- Environmental Statement (various documents)

Appendix 2.2. of the Environmental Statement lists statutory consultee responses. My previous comments in relation to the EIA scoping report are addressed as follows:

“A Phase 1 Risk Assessment has been prepared and is submitted with the Applications, which considers all sources of contamination. Further intrusive investigations will be undertaken and any remedial mitigation strategies will be prepared as set out in Volume 3: Environmental Management Plan.

A separate Coal Mining Risk Assessment has been prepared and submitted as part of the Applications.”

With regards to the Coal Mining Risk Assessment report, mine gas is specifically mentioned but only in relation to recorded incidents or known issues. The Coal Authority highlight this doesn't mean an absence of mine gas:

“Please note, if there are no recorded instances of mine gas within 500m of the enquiry boundary, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed. In these instances, the Coal Authority recommends that a more detailed Gas Risk Assessment is undertaken by a competent assessor.”

The PRA report recommends several measures which are mostly summarised in Table 3-3. These include:

- Geotechnical investigations should establish the presence/absence of made ground. Soils should be subject to geochemical analysis (inc. asbestos) to assess potential risks to site preparation and construction workers
- Specialist mining investigations will be required which will also cover ground gas / mine gas
- Where landfill materials are potentially present, site investigations will establish ground conditions in the area of the track widening / road widening. Sampling will be undertaken accordingly
- Radon protection measures for the substation if/as required

- No specific groundwater investigation is proposed but the report acknowledges the assessment should be kept open to review if unexpected conditions are encountered requiring further assessment

Although the report advises that risks to end-users of the site are low (and it therefore recommends no further action in that regard) the geochemical analysis already proposed should cover potential risks in the event contamination is found at levels which may be an issue for end users. The LPA is advised the proposed analysis suite isn't set out in the PRA report however the attached communication from the environmental consultancy (Pell Frishmann) confirms their standard geochemical suite comprises the following main determinants:

- Speciated PAH
- TPH CWG
- BTEX
- heavy metals
- asbestos screen
- pH

The applicant is reminded of my previous comments which advised future end-users of the site could include members of the public (including trespass) crops and livestock. All these receptors may need to be considered accordingly.

For future reference the PRA report also advises the following:

- "The only building that is proposed as part of this scheme is the substation building (it is noted that substation building tend to be well ventilated by their nature/function)."
- "Further investigation and assessment will be required with respect to the existing mine entries and shallow underground mine workings onsite. A geotechnical ground investigation and mining investigation will be required within the scheme footprint (including access tracks/roads, each wind turbine location and areas of significant earthworks) it would be prudent to undertake geochemical analysis of any Made Ground encountered to provide geochemical data that the contractor can reference to inform their risk assessment and method statements. It is essential, that the design team read the Coal Authority report in full as specific recommendations or requirements are noted."
- There are no landfills within 250m of the site other than the temporary works (Scout Moor Quarries)
- Made ground is a potential risk. Risks to future operators or the wind farm are thought to be low as work activities are unlikely to involve contact with the ground and that the scheme will not significantly alter the ground. Risks to construction and maintenance workers will be managed by Health and Safety precautions.
- Unexploded ordnance is a potential risk and the PRA recommends a detailed desk study is undertaken to cover that (see section 2.12)

(Please note the environmental consultant has also advised in the attached that the UXO desk study (either PDSA or full UXO desk study) is recommended prior to undertaking intrusive site works and therefore does not form part of the PRA deliverables. The PRA will only provide a general overview of risk from review of Zetica online risk mapping and will recommend further works should they be required.)

The consultant and applicant are reminded that in my previous comments I advised that peat and alluvium are low-level sources of ground gas. They should as a minimum be considered

contributory sources where other gas sources are potentially present, for example, mine gas and landfill gas.

The contaminated land conditions listed below should secure the above recommendations.

1. Contaminated Land

Notwithstanding any information submitted with the application, no development shall take place until an investigation and risk assessment has been submitted to and approved in writing by the Local Planning Authority. The submitted report shall include:

- i) Where potential risks are identified by the Preliminary Risk Assessment, a Phase 2 Site Investigation report shall also be submitted to and approved in writing by the Local Planning Authority prior to commencement of development. The investigation shall address the nature, degree and distribution of land contamination on site and shall include an identification and assessment of the risk to receptors focusing primarily on risks to human health, groundwater and the wider environment; and
- ii) Should unacceptable risks be identified the applicant shall also submit and agree with the Local Planning Authority in writing a contaminated land remediation strategy (including verification plan) prior to commencement of development. The development shall thereafter be carried out in full accordance with the duly approved remediation strategy or such varied remediation strategy as may be agreed in writing with the Local Planning Authority.

2. Contaminated Land (verification)

Pursuant to condition ^IN; and prior to first use or occupation a verification report, which validates that all remedial works undertaken on site were completed in accordance with those agreed with the Local Planning Authority, shall be submitted to and approved in writing by the Local Planning Authority.

Informative:

- During the period of construction, should contamination be found on site that has not been previously identified, no further works shall be undertaken in the affected area. Prior to further works being carried out in the affected area, the contamination shall be reported to the Local Planning Authority within a maximum of 5 days from the discovery, a further contaminated land assessment shall be carried out, appropriate mitigation identified and agreed in writing by the Local Planning Authority. The development shall be undertaken in accordance with the agreed mitigation scheme.
- The applicant is advised that they have a duty to adhere to the regulations of Part 2A of the Environmental Protection Act 1990, the National Planning Policy Framework and the current Building Control Regulations with regards to contaminated land. The responsibility to ensure the safe development of land affected by contamination rests primarily with the developer.

The applicant is advised they will need to clarify any required Radon protection measures with Building Control (the substation is specifically mentioned). The applicant will also need to clear geotechnical matters with Building Control.

Please note these comments only relate to contaminated land, additional comments may be expected from other environmental consultees.

Kind Regards

Martin

Martin Plant | Senior Environmental Health Officer | Environmental Protection | Place Directorate
Salford City Council, Civic Centre, Chorley Road, Swinton, Salford. M27 5AW