



Littleborough Family Hub Desk-Based Coal Mining Risk Assessment

**Job Number
LKC261170**

**Report Date
9th March 2026**

**Client
Rochdale Borough Council**



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Ground Investigation | Land Remediation | Project Management



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Report Title	Desk Based Coal Mining Risk Assessment
Job Number	LKC261170
Client	Rochdale Borough Council

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It should be noted this report pertains solely to potential ground stability issues relating to potential shallow mining within the proposed planning boundary only.

TABLE OF CONTENTS

1.	Introduction	1
2.	Review of Information	2
2.1.	Information Sources.....	2
2.2.	Geological Mapping	2
2.3.	Mining Remediation Authority Consultants Coal Mining Report	4
2.4.	Mining Remediation Authority Interactive Mapping	6
2.5.	Combustible Coal Seams.....	7
2.6.	Previous Investigations	7
2.7.	Historical BGS Logs.....	8
2.8.	Historical Mapping	8
3.	Coal Mining Risk Assessment	9
4.	Conclusions and Recommendations	10
4.1.	Summary	10
4.2.	Recommendations	10
4.3.	Conclusions and Safe Development.....	10

FIGURES

Figure 1 – Site Location and Boundary Plan

Figure 2 – Proposed Development Plan

APPENDICES

Appendix A – Geological Mapping

Appendix B – Mining Remediation Authority Consultants Report

Appendix C – References

1. Introduction

LK Consult Ltd (LKC) has been commissioned to carry out a Desk Based Coal Mining Risk Assessment (CMRA) for Littleborough Family Hub.

A Coal Mining Risk Assessment Report is required for a planning application within a designated 'Coal Mining Development High Risk Area'. 'Coal Mining Development High Risk Areas' are areas, based upon Mining Remediation Authority records, where the potential land instability and other safety risks associated with former coal mining activities are likely to be greatest. They include, for example, areas of known or suspected shallow coal mining, recorded mine entries and areas of former surface mining.

This assessment is based upon guidance provided by the Mining Remediation Authority¹ and comprises a review of available desk-based information.

The scope of this Coal Mining Risk Assessment (as per Mining Remediation Authority guidance) is to:

- Present a desk-based review of all available information on the coal mining issues which are relevant to the application site.
- Use the above information to identify and assess the risks to the proposed development from coal mining legacy, including the cumulative impact of issues.
- Set out appropriate mitigation measures to address the coal mining legacy issues affecting the site, including any necessary remedial works and/or demonstrate how coal mining issues have influenced the proposed development.
- Demonstrate to the Local Planning Authority that the application site is, or can be made, safe and stable to meet the requirements of national planning policy regarding development on unstable land.

A summary of the site details is presented in Table 1-1. Figure 1 indicates the site location and boundary plan. Figure 2 indicates the proposed development.

Location	Littleborough Community Primary School, to the east of Calderbrooke Road, Littleborough, Rochdale. Centred at National Grid Reference 393580E, 417020N.
Area	Approx. 100m ² .
Topography	Approximately 156 metres above ordnance datum (AOD). Site is approximately level.
Current Site Use	Land associated with Littleborough Community Primary School.
Proposed Development	Small extension to existing building for a staircase.

Table 1-1: Summary of site details.

2. Review of Information

2.1. Information Sources

LKC have obtained and reviewed information from the following sources, which is summarised in Section 2:

- Review of Published BGS Geological Mapping including:
 - Lancashire Sheet 81SW, Published 1924 and 1925 Scale 1:10,560.
 - Sheet 76 Rochdale Solid, Published 1971, Scale 1:50,000.
 - Sheet 76 Rochdale Bedrock, Published 2008, Scale 1:50,000.
 - Digital Geology, dated 2007, Scale 1:10,000 (Appendix A).
- Geology of the Rochdale district, a brief explanation of the geological map Sheet 76 Rochdale.
- Mining Remediation Authority Consultants Coal Mining Report (Appendix B).
- Mining Remediation Authority Interactive Map Viewer².
- Mining Remediation Authority List of Combustible Coal Seams³.
- Historical BGS boreholes within the site vicinity⁴.
- Desk-Based Coal Mining Risk Assessment (CMRA) undertaken by Wardell Armstrong (Ref: GM11360/FINALv1, dated April 2021).
- Phase 2 Ground Investigation undertaken by Curtins Consulting Ltd (078128-CUR-00-XX-RP-GE-002 V03, dated July 2021).

2.2. Geological Mapping

2.2.1. Artificial

No BGS recorded artificial deposits are recorded on site.

2.2.2. Superficial

The superficial geology is mapped as Devensian Till (Diamicton).

2.2.3. Bedrock

The bedrock is mapped as the Rough Rock Formation (Sandstone).

No dip data is available on site. Mapping suggests that strata in the surrounding area mainly dips towards the south-west/south-east between 5-10°, however there is significant faulting in the area and the data may not be reflective of onsite ground conditions.

Discrepancies have been noted across the mapping editions reviewed in relation to fault and coal seam positions.

A fault runs immediately adjacent to the north-east of the site, orientated north-west to south-east, with a downthrow to the south-west on 1:50,000 scale mapping dated 2008 and on 1:10,000 scale digital mapping. Mining Remediation Authority data maps this seam on site, across the south-western corner of site.

On 1:50,000 scale mapping dated 2008 and 1:10,000 scale 2007 digital mapping, a coal seam is shown to subcrop (at rockhead) approximately 100m to the south. This coal seam is labelled to be the Six-Inch coal and is anticipated to dip away from the development assuming a dip towards the south.

The Lower Foot coal seam is mapped approximately 70m to the south-east. This is mapped on 1:10,560 scale sheet mapping dated 1925 as the 'Little Mine'. It is not expected to dip below the site assuming a dip towards the south.

LKC has also been provided with a desk-based CMRA (ref: GM11360/FINALv1) for the wider school site, which encompasses the LKC study site. A Consultants Report was obtained for this report (date 2021). The 2021 data differs to the 2026 data provided to LKC as the summary of findings map shows several

outcrops in the immediate vicinity of the LKC study area (see Plate 2-4). An outcrop is shown approximately 25m to the north-east of site, on the downthrown side of the fault adjacent to the north-east. On the 2026 report, this is not shown. The seam is not mapped on 1:50,000 scale sheet mapping or 1:10,000 scale digital geology, but it is mapped on 1:10,560 scale sheet mapping dated 1925 and labelled as the Lower Mountain Mine. The seam is shown to terminate at the eastern side of the fault and is therefore unlikely to dip below the site if present.

Both Mining Remediation Authority data and 1:10,560 scale mapping dated 1925 show several outcrops to the north-east of site. The Bullion, Inch and Upper Mountain mines are shown between approximately 100-200m to the north-east of site, which are not mapped on 1:50,000 scale sheet mapping and 1:10,000 scale digital mapping. These coal seams may not be present given the updated data on recent mapping and plans; however, if present they are expected to terminate at the fault and not extend below the site.

Extracts from geological mapping (Sheet 76 1:50,000 scale dated 2008, Sheet 81SW 1:10,560 scale dated 1925, digital 1:10,000 scale dated 2007) are shown on Plate 2-1. These show the differences in geological mapping between 1975 and 2010 mapping.

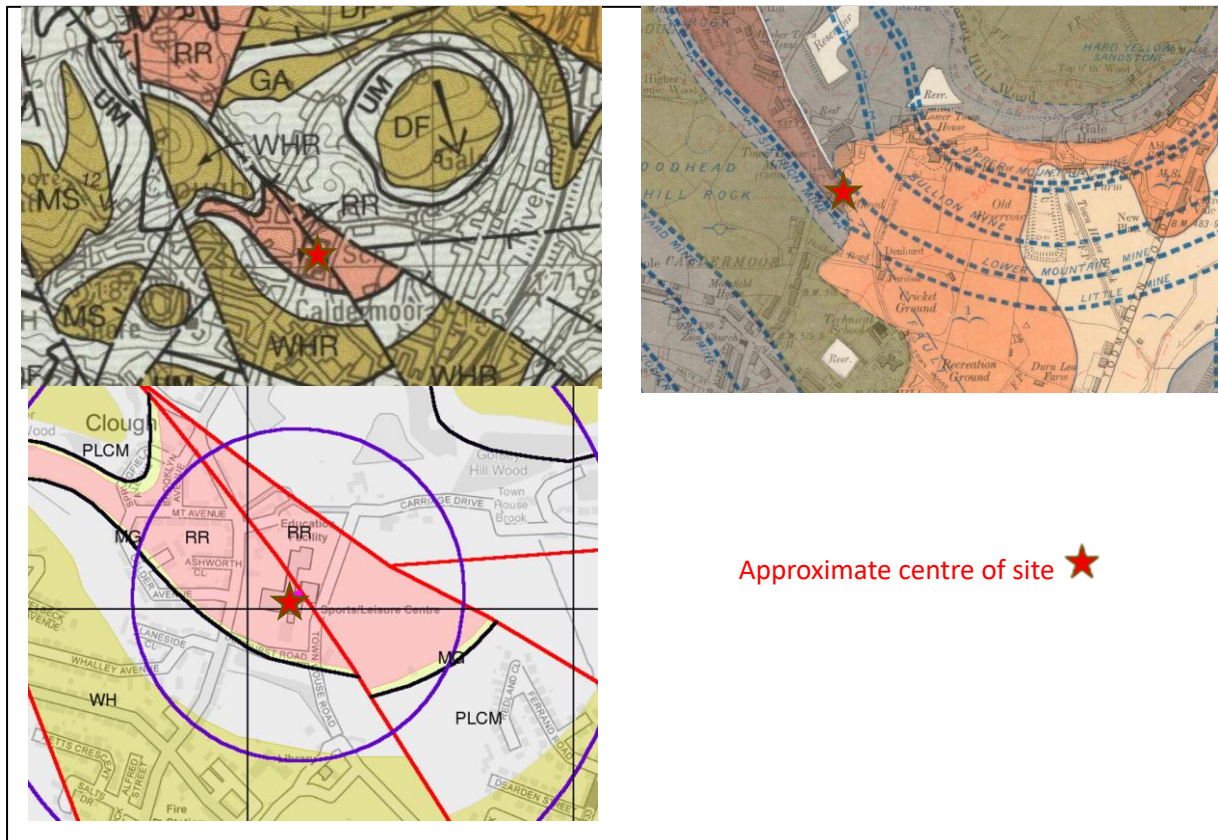


Plate 2-1: Extracts from geological mapping. Top left: 2008 1:50,000 sheet mapping, top right: 1925 1:10,560 sheet mapping (left) and bottom left: 2007 1:10,000 digital mapping. Not to scale.

Plate 2-2 shows an extract of the generalized vertical section from Sheet 76 showing the section of strata expected on and below the site.



Plate 2-2: Extract of the generalized vertical section from Sheet 76 (dated 2008). Not to scale.

The Rough Rock subcrops on site, therefore based on the vertical section, it is possible that the Sand Rock coal is present below site. However, it is not persistent across the area on the vertical section and may not be present. Given the faulting on or close to the site boundary, possible depth of the seam below site if present is unknown. The Six Inch coal is mapped to the south of site and is likely dipping away from site.

The memoir for Sheet 76 suggests that the Sand Rock coal is between 0.0-0.7m thickness and was crop, mine and open cast worked. The Six Inch Coal is between 0.0-0.3m thick was crop and opencast worked.

2.3. Mining Remediation Authority Consultants Coal Mining Report

The consultants coal mining report is summarised in Table 2-1.

Mining Activity and Geology	
Past underground mining	No past mining recorded.
Probable unrecorded shallow workings	Yes.
Spine roadways at shallow depth	No spine roadway recorded at shallow depth.
Mine entries (within 100m)	None recorded within 100m of the enquiry boundary.
Abandoned mine plan catalogue numbers	16820.
Outcrops	Yes: see Plate 2-3.
Geological faults, fissures and breaklines	1no. fault under or close to site.
Opencast mines	None recorded within 500m of the enquiry boundary.
Mining Remediation Authority managed tips	None recorded within 500m of the enquiry boundary.
Investigative or Remedial Activity	
Site investigations	None recorded within 50m of the enquiry boundary.
Remediated sites	None recorded within 50m of the enquiry boundary.
Coal mining subsidence	Not received a damage notice or claim for the subject property, or any property within 50m, since 1994. No current Stop Notice delaying remedial works or repairs to property. Not aware of any request made to carry out preventative works before coal is worked.
Mine gas	None recorded within 500m of the enquiry boundary.
Mine water treatment schemes	None recorded within 500m of the enquiry boundary.

Table 2-1: Summary of Mining Remediation Authority Consultants Coal Mining Report.

Licensing and Future Mining Activity	
Future underground mining	None recorded.
Coal mining licensing	None recorded within 200m of the enquiry boundary.
Court Orders	None recorded.
Section 46 notices	No notices have been given, stating that the land is at risk of subsidence.
Withdrawal of support notices	Not in an area where a notice to withdraw support has been given or where a notice has been given cancelling the entitlement to withdraw support.
Payments to owners of former copyhold land	Not in an area where a relevant notice has been published.
Further Information	
The following further information is provided: Future Development. Mine Gas.	

Table 2-2 (continued): Summary of Mining Remediation Authority Consultants Coal Mining Report.

Probable unrecorded shallow workings are defined as *'areas where the Mining Remediation Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30m deep)'*.

Plate 2-3 shows the coal outcrops. This is defined by the Mining Remediation Authority as *'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 Mining Remediation Authority) or intersects with a defined 50m buffer on the coal (dip) side of the outcrop. An indication of whether the Mining Remediation Authority believes the seam to be of sufficient thickness and /or quality to have been worked will also be included.'*

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
LOWER FOOT	Coal	Yes	68.6	South-East	121

Plate 2-3: Extract from Mining Remediation Authority Report showing outcrops.

Plate 2-4 shows an extract of the plan provided with the Mining Remediation Authority Consultants Coal Mining Report from 2026 compared to the plan provided in the 2021 report obtained for the wider site boundary encompassing the LKC study site. This shows the difference in fault position and outcrops within the vicinity of site.

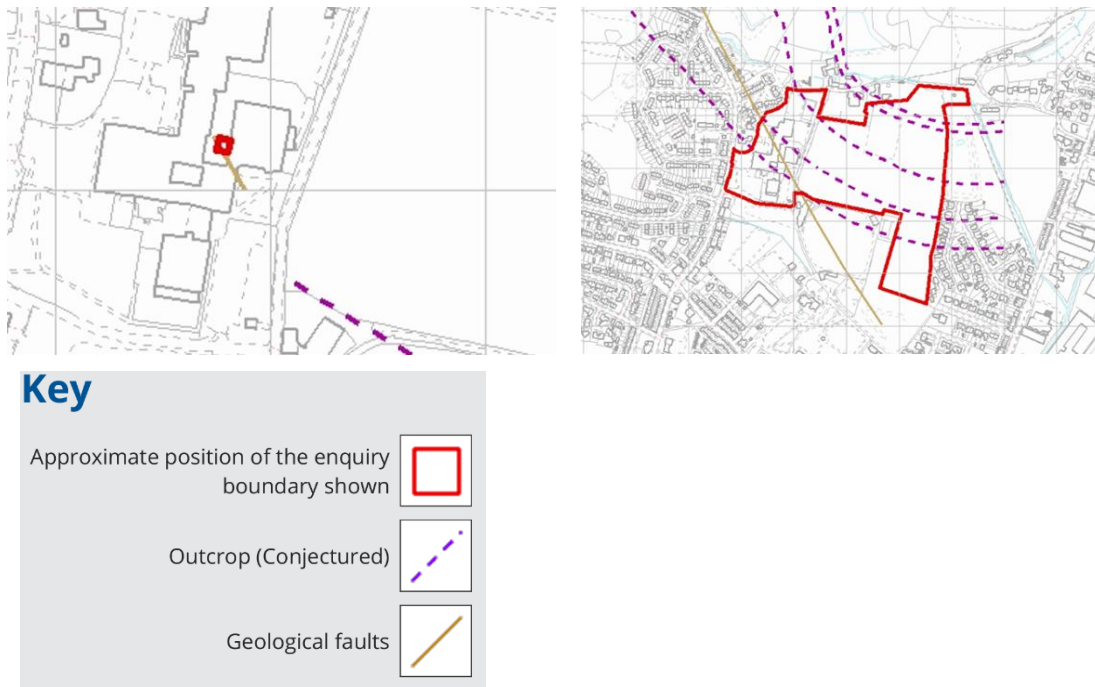


Plate 2-4: Extracts from Mining Remediation Authority Consultants Coal Mining Report Top left: dated 2026. Top right: dated 2021 – Summary of Findings.

2.4. Mining Remediation Authority Interactive Mapping

Plate 2-5 shows the development high risk areas.

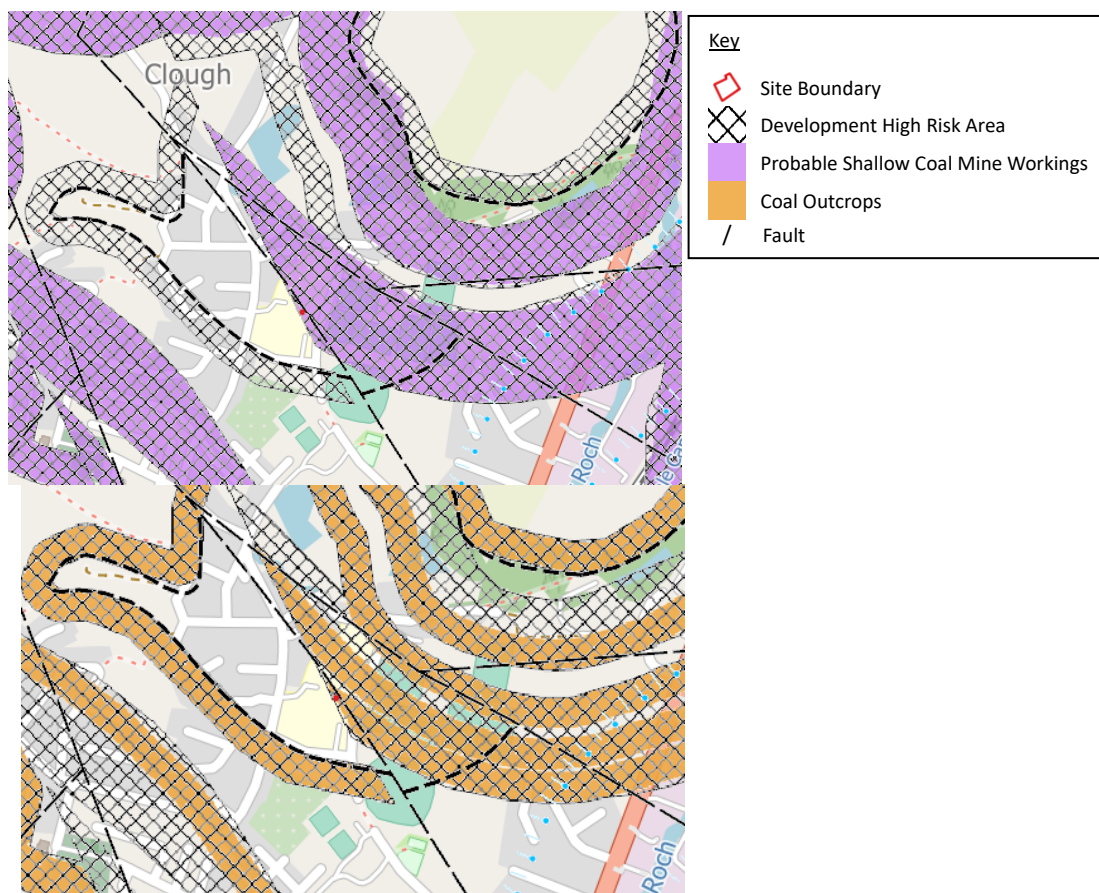


Plate 2-5: Development High Risk Area (top – probable workings, bottom outcrops)

The site is within a Development High Risk Area (DHRA), with the following features identified:

- Past Shallow Coal Mine Workings.
- Outcrops.

Following review of geological mapping, it is possible that the DHRAs are inaccurate or based on older 1:10,560 scale mapping. It would be expected that the DHRA would terminate at the fault to the north-east of site, however it overlaps and appears rotated in relation to the line of the fault likely due to a slight difference in the location of the fault.

The DHRA associated with outcrops does not follow the mapped positions of coal seams on the BGS 1:50,000 scale mapping or 1:10,000 scale mapping, which have been published more recently than the 1:10,560 scale maps. In addition, the data provided on outcrop positions in the most recently provided Consultants Report from the Mining Remediation Authority does not match the DHRA and has changed since the report obtained in 2021 in the previous investigation.

Assuming that the DHRA relating to possible workings and outcrops should terminate at the fault and the DHRA have not been updated, the LKC study site may be outside of a DHRA.

2.5. Combustible Coal Seams

Some coal seams have been known to suffer from occurrences of spontaneous combustion and are consequently regarded as at 'high risk' of succumbing to spontaneous combustion when being entered, worked, or disturbed. The Mining Remediation Authority have produced a list of seams for different areas of the UK.

None of the coal seams listed are expected at shallow depth below the site. However, if roof coal has been left, this could also pose a risk.

2.6. Previous Investigations

A Phase 2 Ground Investigation was undertaken by Curtins Consulting Ltd in April 2021 across the wider site area for the whole primary school, encompassing the LKC study area.

The investigation comprised:

- 10no. window sample boreholes to maximum 5.45mbgl.
- 4no. machine excavated trial pits including 1no. infiltration test to maximum 2.95mbgl.
- 2no. rotary boreholes to maximum 30.00mbgl.

Ground conditions are summarised in Table 2.2.

Stratum	Depth to Top of Strata (mbgl)	Thickness (metres)		Description
		Min	Max	
Topsoil	0.00	0.06	0.30	Dark grey / blackish brown sandy gravelly clay with frequent rootlets.
Made Ground	0.00-0.03	0.15	1.45	Dark grey sandy or silty gravelly clay with brick and limestone. Brown very sandy slightly clayey gravel with low cobbles content, glass, concrete, brick, rebar, metal and plastic. Light yellow brown sandy gravel with cobbles.
Superficial	0.40-1.55	0.20	4.35	<u>Cohesive</u> – Soft to very stiff brown and yellow mottled sandy gravelly clay. <u>Granular</u> – Medium dense to very dense brown and yellow brown gravelly clayey sand / clayey sandy gravel.
Residual Soils	0.35-2.90	0.15	0.80	Very weak yellowish brown and grey fine to medium grained SANDSTONE. Recovered as fine to coarse sand.
Bedrock	0.90-2.90	0.05	28.85	Interbedded very weak to medium strong yellow grey fine-grained SANDSTONE with extremely weak grey MUDSTONE.

Table 2-2: Summary of ground conditions.

The bedrock was encountered between depths of 0.90-2.90mbgl (R101 and TP104), or 151.64 157.38m AOD (WS104 and TP101). Due to the variations in rockhead elevations across the site, it was considered likely that a fault is present aligned generally north-south through the existing children's centre.

No loss of flush or any coal-bearing bedrock deposits were recording within the rotary open hole borehole R102 to 30mbgl. It was therefore considered that shallow coal mine workings did not present a risk to the proposed new school building to be located in the southern area of the site.

6no. rounds of gas monitoring were undertaken, and no elevated methane or carbon dioxide concentrations were identified. The site was classified as Characteristic Situation 1, and no gas protection measures were considered to be required.

LKC has not been provided with this report, but the report by Curtin's Consulting Ltd states that a previous investigation was carried out by Wardell Armstrong in 2020 and that no evidence of coal or workings were identified in the logs.

2.7. Historical BGS Logs

No boreholes are available in the vicinity of site which show depth to bedrock or any coal.

2.8. Historical Mapping

Available historical mapping has not identified any significant coal mining features within influencing distance.

3. Coal Mining Risk Assessment

Table 3-1 below summarises the potential risks associated with coal mining legacy for the proposed development site.

Coal Mining Issue	Potential Risk	Risk Assessment
Underground coal mining (recorded at shallow depths)	X	No recorded workings below the site. No further assessment required.
Underground coal mining (probable at shallow depths)	?	Probable underground shallow workings recorded by the Mining Remediation Authority. Based on mapping, it is possible that the Sand Rock coal is present below the site and depth is unknown given the faulting either on site or immediately adjacent to site. It is possible that the DHRA relating to probable shallow workings is inaccurate given the positions of the faulting and coal seams on more recent BGS mapping and on 2026 Mining Remediation Authority data in the Consultants Report. LKC consider it unlikely that even if the Sand Rock coal is present at shallow depth below the proposed development, the proximity of the fault would make it unlikely for workings to be viable. In addition, site investigation to the south of the proposed development did not record any evidence coal or workings, and assuming a dip towards the south, if a shallow seam was present below the proposed development, it would likely be present within the investigation locations to the south. Given the limited nature of the development (new staircase) and small site area, a significant increase in loadings is not anticipated and unlikely to pose a significant stability risk. Precautionary remedial measures such as a reinforced raft foundation should be implemented, subject to Mining Remediation Authority approval.
Mine entries (shafts / adits)	?	No recorded mine entries within influencing distance of the site. However, there is also a risk of unrecorded mine entries as the site is within a coal mining area. No specific investigation work is advised. However, a watching brief should be undertaken during any intrusive investigation work and groundworks to check for any signs of unrecorded mine entries.
Coal mining geology (geological faults, fissures and breaklines)	?	Fault present below the site on Mining Remediation Authority data but shown to be offsite on BGS mapping. If faulting present, feature could contribute to surface subsidence damage because of underground coal mining. Precautionary remedial measures to include reinforced raft foundation. Subject to Mining Remediation Authority approval.
Record of past mine gas emissions	?	Not recorded on Mining Remediation Authority data. Shallow workings not expected, however deeper workings cannot be ruled out. Faulting may be present on site. Mine gas could migrate to the site surface and accumulate in confined spaces posing a risk to site users and buildings, however gas monitoring on the wider site area did not identify elevated gas concentrations. Precautionary gas protection measures required.
Recorded coal mining surface hazard	X	No recorded coal mining surface hazard.
Surface mining (opencast workings)	X	No recorded surface mining (opencast workings).

Table 3-1: Potential Coal Mining Risks.

Notes:

✓ = Risk identified, X = No risk identified, ? = Possible risk identified.

4. Conclusions and Recommendations

4.1. Summary

Based upon the available information, LKC have identified potential shallow coal mining risks which are summarised in Table 4-1.

Coal Mining Issue	Potential Risk
Underground coal mining (recorded at shallow depths)	X
Underground coal mining (probable at shallow depths)	?
Mine entries (shafts / adits)	?
Coal mining geology (fissures)	?
Record of past mine gas emissions	?
Recorded coal mining surface hazard	X
Surface mining (opencast workings)	X

Table 4-1: Summary of coal mining potential risks.

4.2. Recommendations

Considering the available information and guidance given in CIRIA C758⁵, LKC does not consider that intrusive investigation work is necessary in relation to the development but does recommend the following precautionary remedial measures.

- Reinforced raft should be included in the foundation designs.
- Gas protection measures (Characteristic Situation 2) should be installed and linked to the existing building.

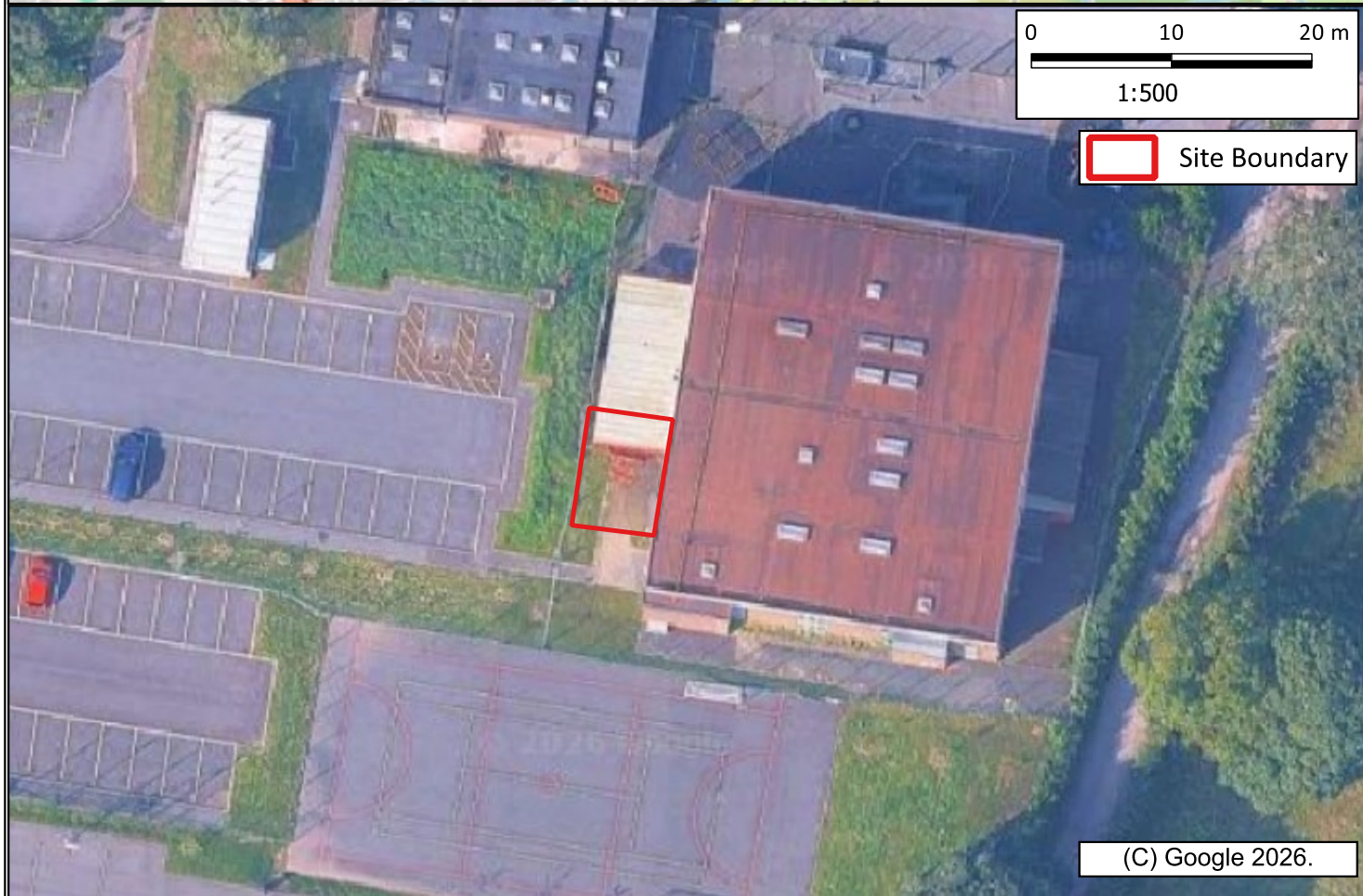
The above measures will be subject to approval from the Mining Remediation Authority.

4.3. Conclusions and Safe Development

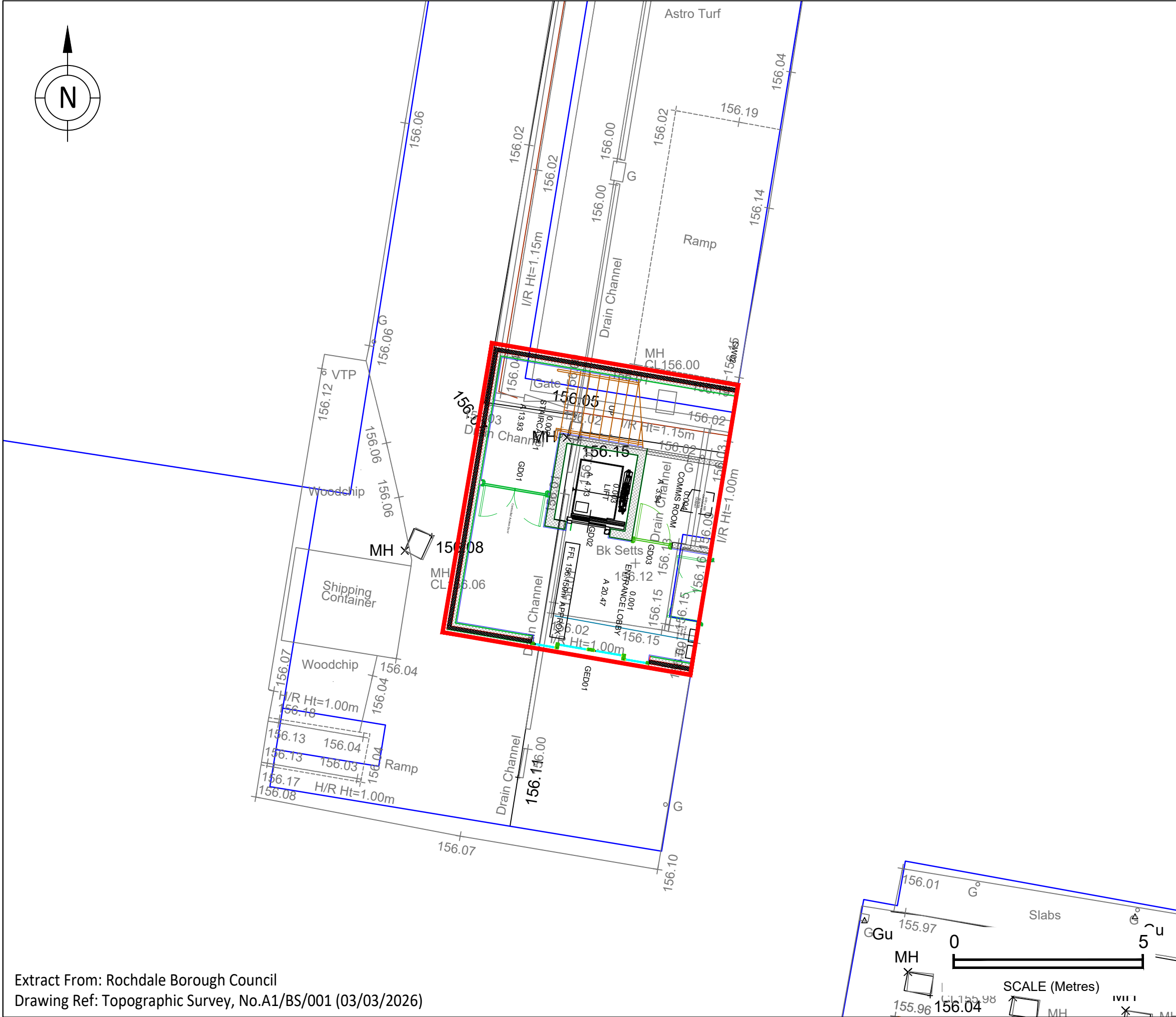
Precautionary recommendations have been made to ensure the safe development with respect to legacy coal mining. This should be agreed with the Mining Remediation Authority.

LKC consider the study site should be capable of being made safe and stable to meet the requirements of national planning policy with regard to development on unstable land.

Figures



Client: Rochdale Borough Council				Title: Site Location & Boundary Plan			
Site: Littleborough Family Hub				Scale (see scale bar): 1:25,000 & 1:500 @ A4		Figure: 1	Revision:
No.: LKC261170	Drawn By: HM	Checked By: CC	Drawn: March 2026				



KEY

Site Boundary

REFERENCE

- TOP OF SLOPE
- BOTTOM OF SLOPE
- WALL
- EDGE OF FOOTPATH
- ROAD CHANNEL
- RAILINGS
- EDGE OF CONCRETE
- SECURITY FENCE
- BARRIER
- EDGE OF VEGETATION
- TREE CANOPY
- GATE
- TELEGRAPH POLE
- MANHOLE
- ROAD GULLEY
- TELECOM COVER
- LAMP POST
- STOP VALVE
- SPOT LEVELS

NOTE
SITE SURVEYED BY GPS (OSTN15) & LEVELS SHOWN ARE IN METRES AOD.

Sampling Locations and features annotated by LK Consult Ltd are approximate and are based upon observed measurements unless otherwise stated. Do not scale from this drawing and work from marked dimensions only. All dimensions and features should be confirmed on site by the Contractor. Where this drawing includes information provided to LK Consult Ltd by others, LK Consult Ltd gives no warranty, representation or assurance as to the accuracy of such information.

Client:
Rochdale Borough Council

Site:
Littleborough Family Hub

Title:
Proposed Development

Job No.: LKC261170	Scale (See Scale Bar): 1:100 @ A3	Figure: 2	Revision:
Drawn By: AC	Checked By: CC	Drawn: Mar 2026	

Appendix A – Geological Mapping

Geology 1:10,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	MGR	Made Ground (Undivided)	Artificial Deposit	Holocene - Holocene
	WMGR	Infilled Ground	Artificial Deposit	Holocene - Holocene
	WGR	Worked Ground (Undivided)	Void	Holocene - Holocene
	SLIP	Landslide Deposit	Unknown/Unclassified Entry	Quaternary - Quaternary

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	Rock			

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Flandrian - Pleistocene
	TILLD	Till, Devensian	Diamicton	Devensian - Ipswichian
	ALF	Alluvial Fan Deposits	Sand and Gravel	Quaternary - Ryazanian
	HEAD	Head	Diamicton	Quaternary - Ryazanian
	PEAT	Peat	Peat [Unlithified Deposits Coding Scheme]	Quaternary - Ryazanian

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	Langsettian - Langsettian
	WH	Woodhead Hill Rock	Sandstone	Langsettian - Langsettian
	DF	Darwen Flags	Sandstone	Langsettian - Langsettian
	MLRS	Milnrow Sandstone	Sandstone	Langsettian - Langsettian
	HER	Helpet Edge Rock	Sandstone	Langsettian - Langsettian
	GAS	Great Arc Sandstone	Sandstone	Langsettian - Langsettian
	GNR	Ganister Rock	Sandstone	Langsettian - Langsettian
	LOFO	LOWER FOOT ROCK	Sandstone	Westphalian - Westphalian
	RR	Rough Rock	Sandstone	Yeadonian - Yeadonian
	RF	Rough Rock Flags	Sandstone	Yeadonian - Yeadonian
	HDW	Huddersfield White Rock	Sandstone	Marsdenian - Marsdenian
	MG	Millstone Grit Group [See also Migr]	Mudstone and Siltstone	Namurian - Namurian
	Fault			



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Geology 1:10,000 Maps

This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:10,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around a site. This mapping may be more up to date than previously published paper maps.

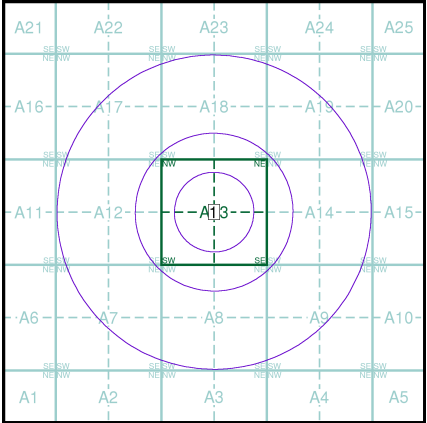
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page.

Please Note: Not all of the layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:10,000 Maps Coverage

Map ID:	1
Map Name:	SD91NW
Map Date:	2007
Bedrock Geology:	Available
Superficial Geology:	Available
Artificial Geology:	Available
Faults:	Available
Landslip:	Available
Rock Segments:	Available

Geology 1:10,000 Maps - Slice A

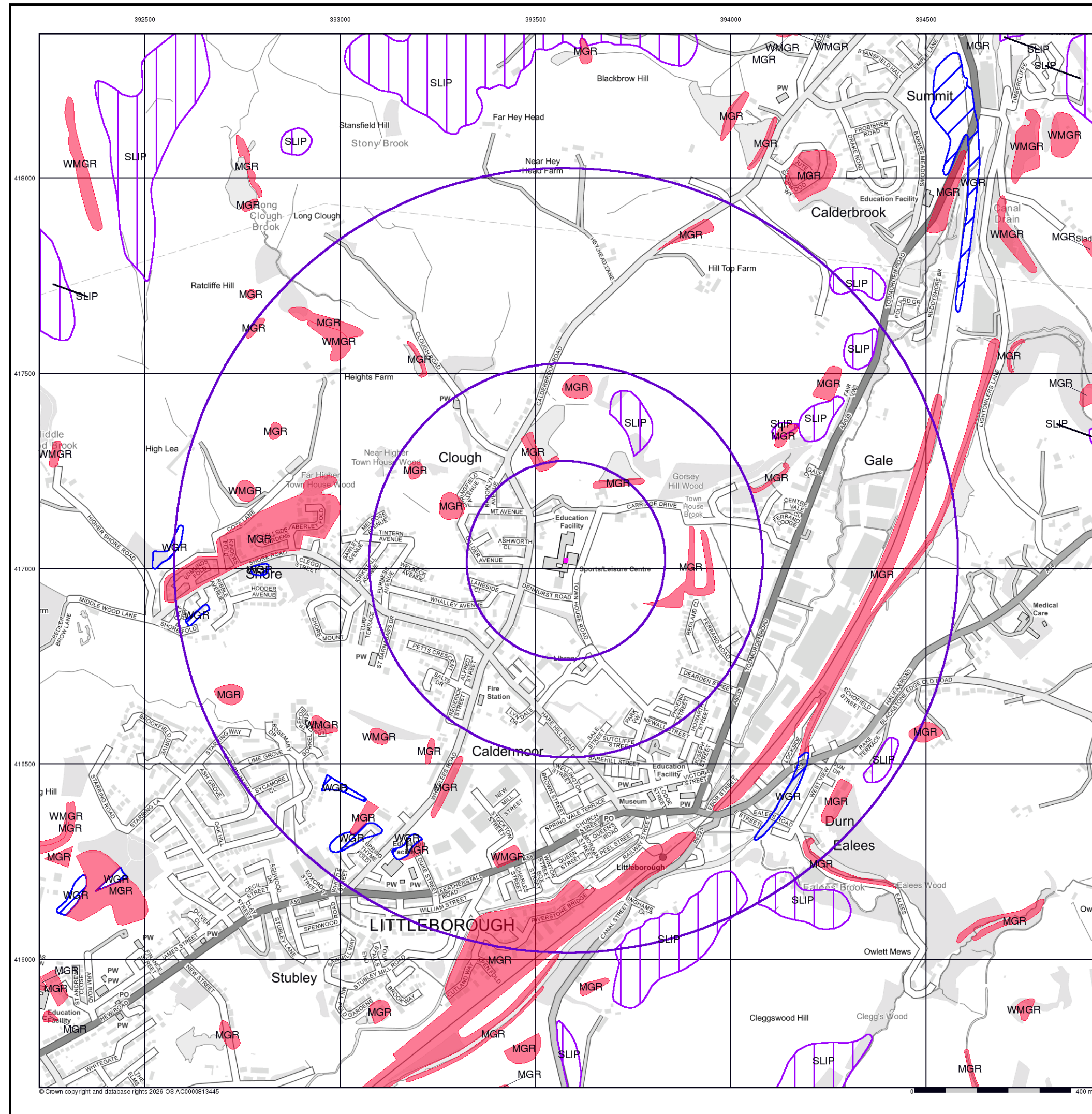


Order Details

Order Number:	397157624_1_1
Customer Ref:	LKC261187
National Grid Reference:	393580, 417020
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Littleborough Family Hub, LKC261187



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Artificial Ground and Landslip

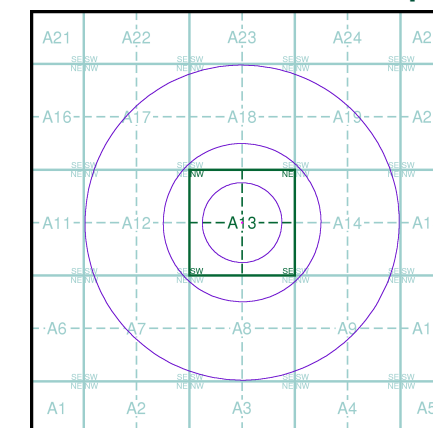
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions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

Artificial Ground and Landslip Map - Slice A



Order Details

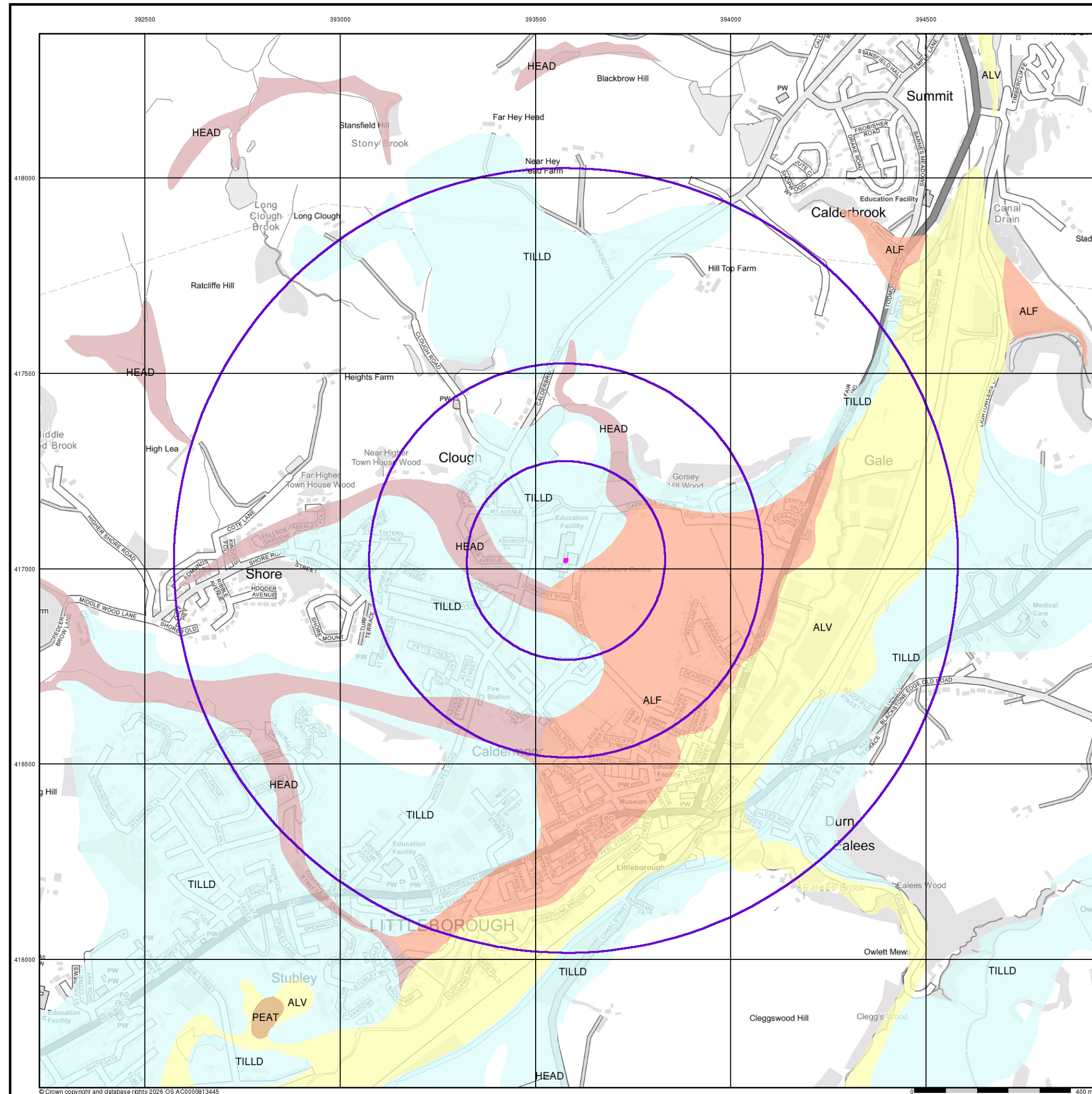
Order Number: 397157624_1_1
Customer Ref: LKC261187
National Grid Reference: 393580, 417020
Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 1000

Site Details

Littleborough Family Hub, LKC261187

Landmark
INFORMATION GROUP

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



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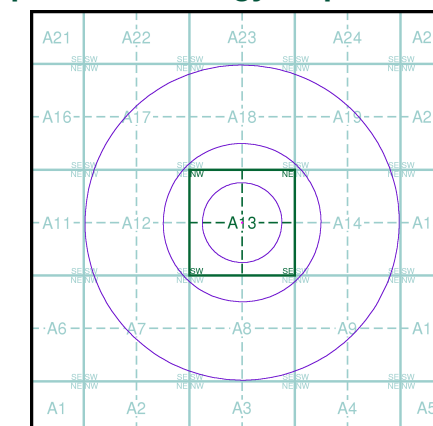
Superficial Geology

BGS 1:10,000 Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, 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

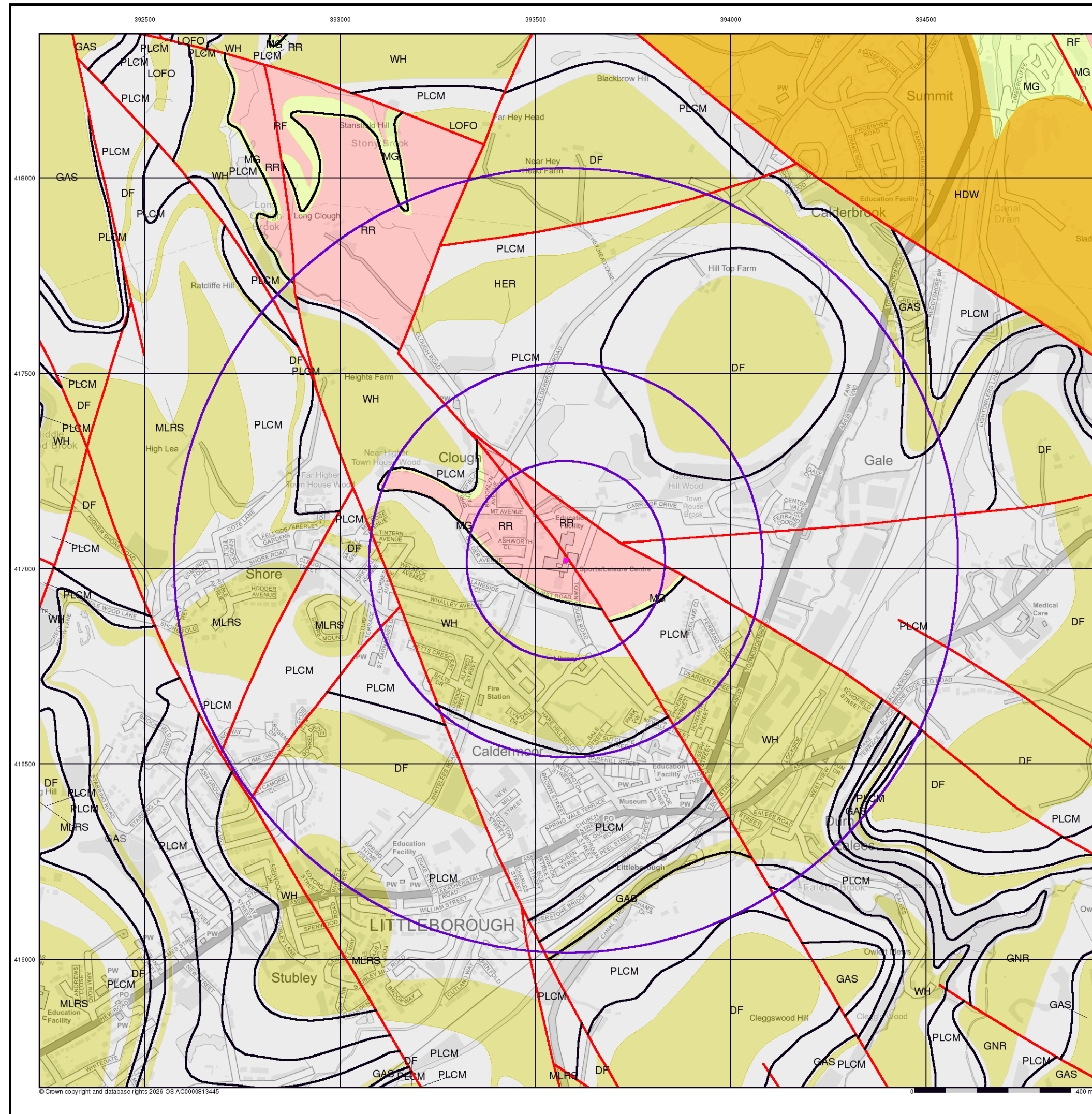
Order Number: 397157624_1_1
Customer Ref: LKC261187
National Grid Reference: 393580, 417020
Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 1000

Site Details

Littleborough Family Hub, LKC261187

Landmark
INFORMATION GROUP

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Bedrock and Faults

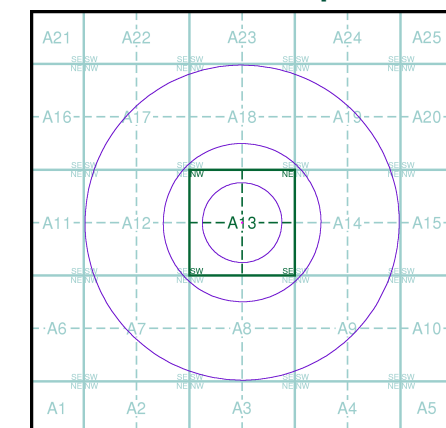
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

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 and thin beds mapped as lines such as coal seams and mineral veins. These are not restricted by age and could relate to features of any of the 1:10,000 geology datasets.

Bedrock and Faults Map - Slice A



Order Details

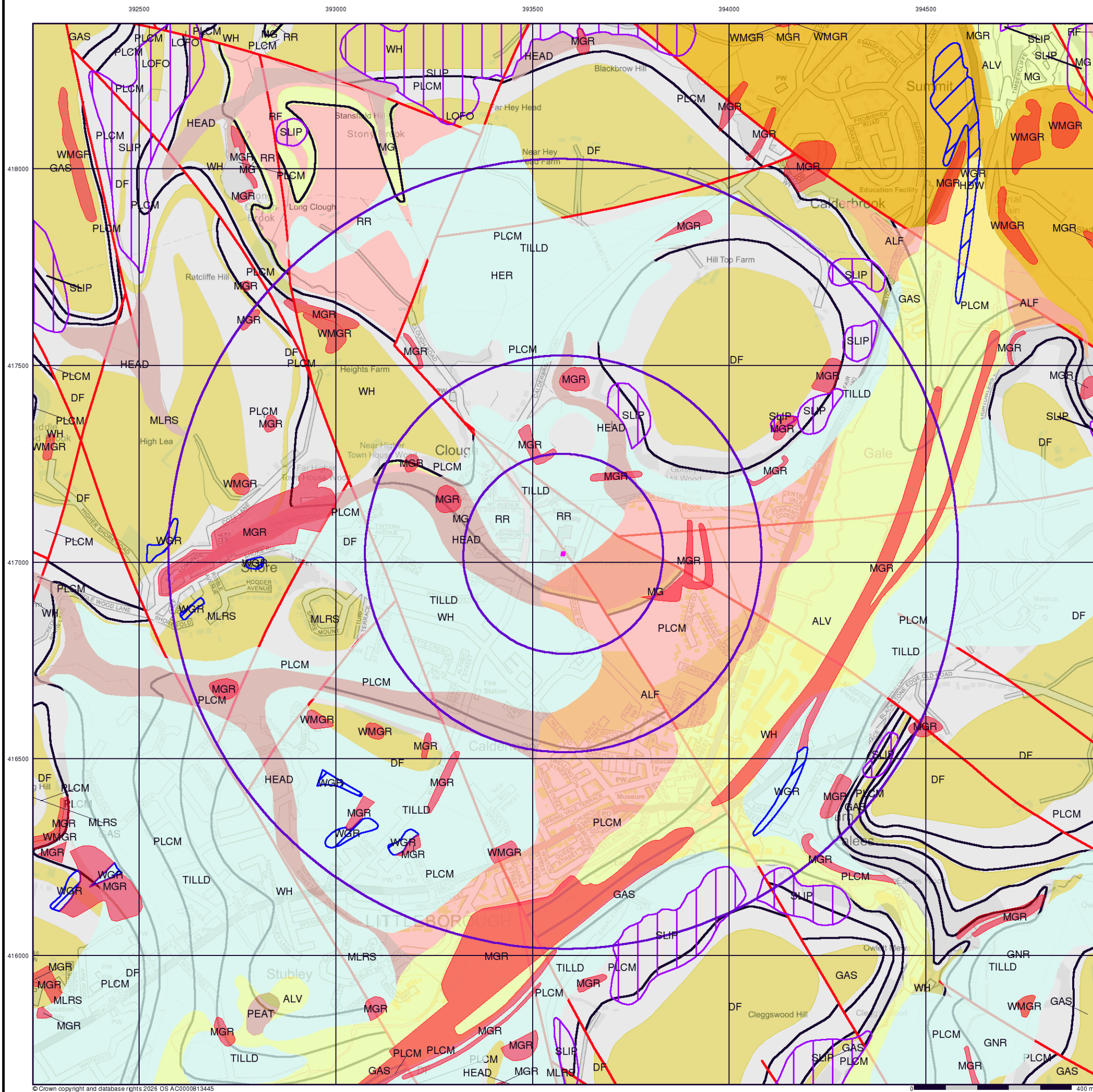
Order Number: 397157624_1_1
Customer Ref: LKC261187
National Grid Reference: 393580, 417020
Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 1000

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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.

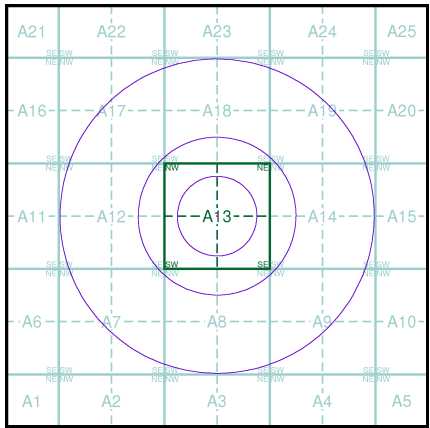
Additional Information

More information on 1:10,000 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: 397157624_1_1
Customer Ref: LKC261187
National Grid Reference: 393580, 417020
Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 1000

Site Details

Littleborough Family Hub, LKC261187

Landmark
INFORMATION GROUP

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Appendix B – Mining Remediation Authority Consultants Report



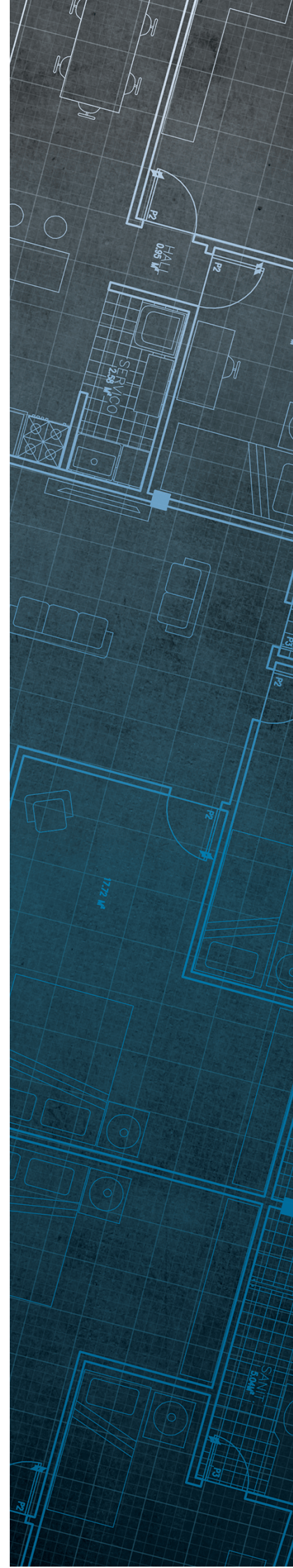
The Coal
Authority

Consultants Coal Mining Report

Littleborough Family Hub
Lkc261187
Greater Manchester

Date of enquiry: 4 March 2026
Date enquiry received: 4 March 2026
Issue date: 4 March 2026

Our reference: 51003556456001
Your reference: 397157624_2



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

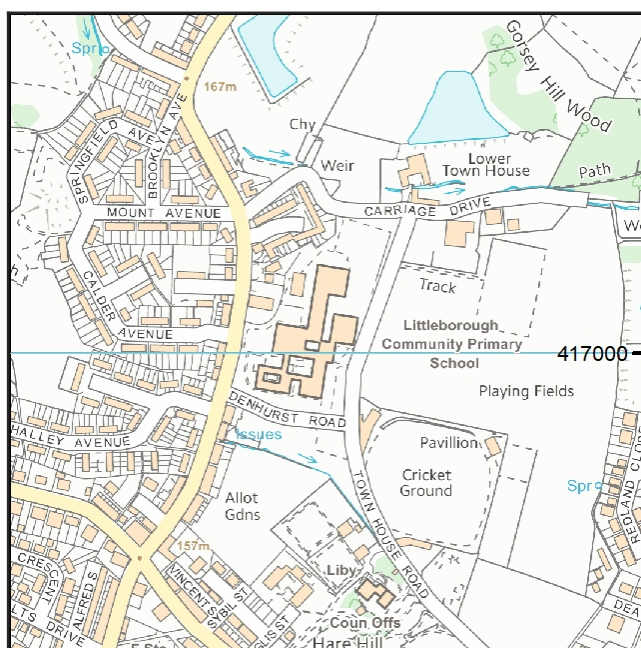
Littleborough Family Hub
Lkc261187
Greater Manchester

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NG18 4RG

reports@miningremediation.gov.uk



Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

No past mining recorded.

Probable unrecorded shallow workings

Yes.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

None recorded within 100 metres of the enquiry boundary.

Abandoned mine plan catalogue numbers

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

16820		
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For assistance in identifying the specific abandoned mine plans relevant to your requirements, **please contact us at InformationManagers@MiningRemediation.gov.uk**.

Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
LOWER FOOT	Coal	Yes	68.6	South-East	121

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.

Fault under or close to the property recorded.

Opencast mines

None recorded 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

None recorded within 50 metres of the enquiry boundary.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

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 not in an area where a notice to withdraw support has been given.

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

Based on the responses in this report, no further information has been highlighted.

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.

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 **email us at reports@miningremediation.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.

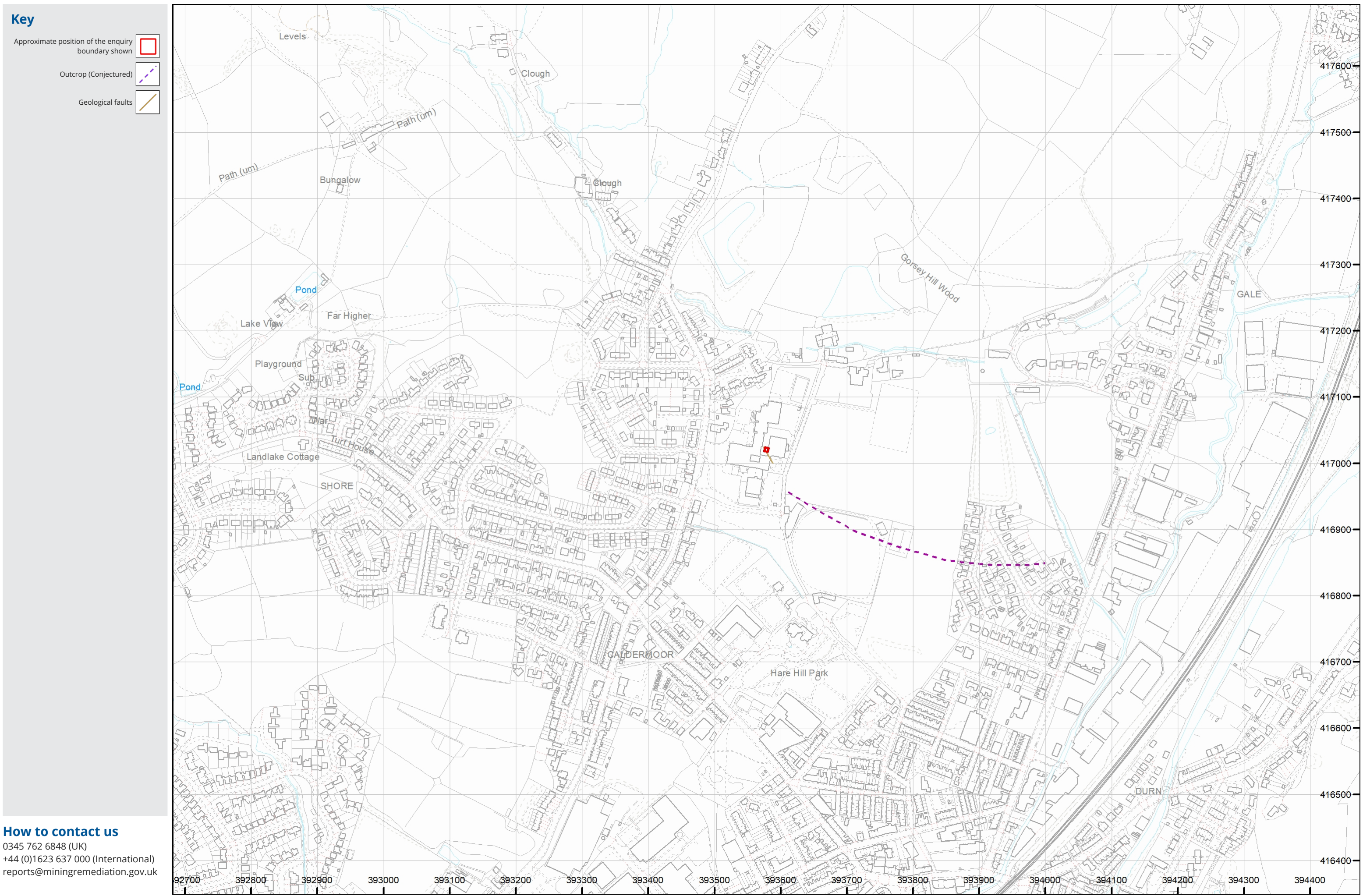
Withdrawal of support notices

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.



Appendix C - References

¹ The Mining Remediation Authority, 2017, "Risk based approach to development management. Guidance for developers.", Version 4.

² The Mining Remediation Authority, 2023, Interactive Map Viewer, <https://mapapps2.bgs.ac.uk/coalauthority/home.html>.

³ The Mining Remediation Authority, March 2015, "Coal seams with a history of spontaneous combustion", <https://www.gov.uk/government/publications/coal-seams-with-a-history-of-spontaneous-combustion>.

⁴ British Geological Society, GeoIndex Onshore, <https://mapapps2.bgs.ac.uk/geoindex/home.html>.

⁵ CIRIA, September 2019, "Abandoned Mine Workings Manual", C758D.

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