

Coal Mining Risk Assessment – Proposed Residential Development, Cowm Top, Castleton.**Sources of information:**

Coal Authority Mining Report Ref 51002204201001

Wardell Armstrong LLP archive records

British Geological Survey publicly available borehole records

Published British Geological Survey geological mapping – 1:50,000 scale Sheet 85 (Manchester)

Coal Authority Datasets available under the Open Government Licence v3.0.

Issue	Hazard	Site Affected (Yes/No) (Detail – where appropriate)	Consequences (where appropriate)	Recommended Mitigation Measures (where appropriate)
1. Are there any recorded coal mine entries within the site or within 20m of the site boundary?	- Catastrophic collapse of mine entry leading to ground instability or voids at the ground surface. - Settlement of the ground surface above/adjacent to the mine entry. - Generation of crown holes at the ground surface. - Mines gas emissions.	No: There are no mine entries recorded within 20m of the site.	N/A	N/A
2. Is the proposed development in the likely zone of influence of past deep underground mining?	- Ground subsidence. - Ground instability.	No: The site is not recorded to be underlain by deep underground mining.	N/A	N/A
3. Is the proposed development in the likely zone of influence of any present or future underground mine workings?	- Ground subsidence. - Ground instability, loss of ground, generation of crown holes.	Active Mining: There are no active underground mines in the locality. Future Mining: Reserves are available but are unlikely to be worked in the foreseeable future.	N/A	N/A
4. Is the proposed development within the likely zone of influence of recorded underground workings at shallow depth (depths of less than 30m).	- Ground subsidence. - Ground instability, loss of ground, generation of crown holes.	No: The CA report that the site is not underlain by recorded mine workings at shallow depth (<30m) beneath the site.	N/A	N/A

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Issue	Hazard	Site Affected (Yes/No) (Detail – where appropriate)	Consequences (where appropriate)	Recommended Mitigation Measures (where appropriate)
		The potential remains for unrecorded workings to be present beneath the site (see section 5).		
5. Is there a possibility of unrecorded shallow mine workings and/or mine entries?	- Ground subsidence. - Ground instability, loss of ground, generation of crown holes. - Catastrophic collapse of mine entry leading to ground instability or voids at the ground surface. - Settlement of the ground surface above/adjacent to the mine entry. - Mine gas emissions.	Yes: Unrecorded shallow mine workings and mine entries may exist on or within influencing distance of the site. A review of published geological mapping and available Coal Authority data shows that the Arley coal seam is inferred to subcrop within the south western corner of the site and is suspected to dip at shallow angle to the south west of its outcrop location. There is the possibility of shallow mine workings within the Arley coal seam at influencing depths beneath the site. BGS borehole records in the area indicate the thickness of the Arley coal seam may be up to c1.9m. There is also the potential for unrecorded mine entries to be present on or within influencing distance of the site.	Ground subsidence associated with past shallow underground mining and mine entries can result in severe localised ground instability and damage to the built environment, harm to human health, injury or death of site users, site employees, maintenance operatives or construction workers using the site.	Shallow mine workings: Mitigation measures, including the investigation and stabilisation of the proposed new build footprint (by drilling and pressure grouting) as necessary, is recommended to facilitate secure development of the south western part of the site. Any coal discovered during development of the site should not be left exposed for long periods in order to minimise risks of spontaneous combustion. Where coal is disturbed and removed during the course of development, agreement should be reached with the Coal Authority (ideally in advance). In the event that coal is encountered within foundation excavations, it is recommended that it be excavated and removed, or appropriate structural precautions taken to avoid direct contact between the coal and structural concrete. Mine Entries: The potential exists for unrecorded mine entries to be located beneath the site, and construction work should proceed cautiously, recognising that unstable mine entries could be present. Should any anomalous ground conditions be encountered during the course of development works then specialist advice should be sought regarding further investigation and remedial works.

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Issue	Hazard	Site Affected (Yes/No) (Detail – where appropriate)	Consequences (where appropriate)	Recommended Mitigation Measures (where appropriate)
6. Is there a record of mine gas emissions within the site boundary?	Mixtures of noxious of explosive gases reaching the ground surface via superficial deposits, faulted/broken strata or poorly filled mine entries and entering structures, confined spaces etc, when an explosive or asphyxiating hazard may be generated.	No: The CA has no record of any gas emissions requiring action within the site.	N/A	N/A
7. Is the proposed development in an area for which the Coal Authority is determining or has granted a licence to remove coal by underground methods?	- Ground subsidence. - Ground instability.	No	N/A	N/A
8. Are there known faults or other lines of weakness (e.g. fissures) due to mining at the site?	- Ground subsidence. - Mixtures of noxious of explosive gases reaching the ground surface via faulted/broken strata and entering buildings, structures, confined spaces etc, when an explosive or asphyxiating hazard may be generated. - Stepped rockhead profiles where there has been subsidence across faults, impacting settlement of proposed structures.	No: Inspection of published BGS Geological Mapping shows that there is no faulting intersecting the strata at the site but that geological faulting is conjectured to be present beyond the site boundary to the south west and to the north east. Whilst not anticipated to intersect the site, these faults may result in areas of disturbed strata, including minor faulting, that may encroach beneath the site. The Coal Authority also do not have any record of line of weakness at the site.	N/A	N/A

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Issue	Hazard	Site Affected (Yes/No) (Detail – where appropriate)	Consequences (where appropriate)	Recommended Mitigation Measures (where appropriate)
9. Has the site been subject to remedial works by, or on behalf of, the Coal Authority under its surface hazard call out procedures?	Indication of past and potential future subsidence issues on site.	No.	N/A	N/A
10. Is the proposed development within the boundary of a surface mining/opencast site from which minerals have been removed by surface mining/opencast methods?	Potential of a ground gas source and/or migration pathway. Potential settlement problems.	No.	N/A	N/A
11. Is the proposed development within 200m of a surface mining/opencast site from which minerals are being removed?	Development constraints associated with environment/noise/dust	No.	N/A	N/A

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Assessment of Cumulative Impact of Mining Issues:

This risk assessment has identified the principal risks to the proposed development to be the potential presence of coal at extremely shallow depth, and the potential for unrecorded shallow mine workings and unrecorded mine entries.

A potential shallow mining setting has been identified within the part of the site.

The CA report the presence of recorded shallow coal beneath the site, named as the Arley coal seam. A review of published geological mapping shows that the Arley coal seam subcrops within the south western extent of the site and it is possible that this may be present at very shallow depths beneath the site. The strata is indicated to dip at a shallow angle in a south westerly direction and may result in coal being within influencing depth of the surface between the outcrop position of the Arley seam and the south western site boundary. It is possible that this seam may have been worked at some point in the past.

In order to confirm the shallow coal geology beneath the site, it is recommended that a scheme of intrusive investigation is undertaken. This may be incorporated in to a larger site investigation, undertaken to obtain routine contaminated land and geotechnical data for design purposes. Where a potential mine horizon is identified, stabilisation by drilling and pressure grouting of proposed built footprint (including estate roads) is likely to be necessary in order to facilitate secure development of the site.

Construction work at the site should proceed with caution in consideration of the potential for coal seams and differing geological conditions to be present at a shallow depth beneath the development area. The potential also exists for unrecorded mine entries to be located at the site, and construction works should proceed cautiously, recognising that unstable mine entries could be present. Further guidance should be sought in the event of encountering coal at shallow depth (within the foundation excavations) or possible presence of an unrecorded mine entry is identified. If encountered in excavations, coal should not be left exposed for prolonged periods, in order to minimise risks of spontaneous combustion.

Prior to carrying out any works which may intersect, disturb or enter any coal seams, coal mine workings or mine entries (within the ownership of the Coal Authority), the written permission of the Coal Authority shall be obtained (<https://www.gov.uk/get-a-permit-to-deal-with-a-coal-mine-on-your-property>).

Prepared by

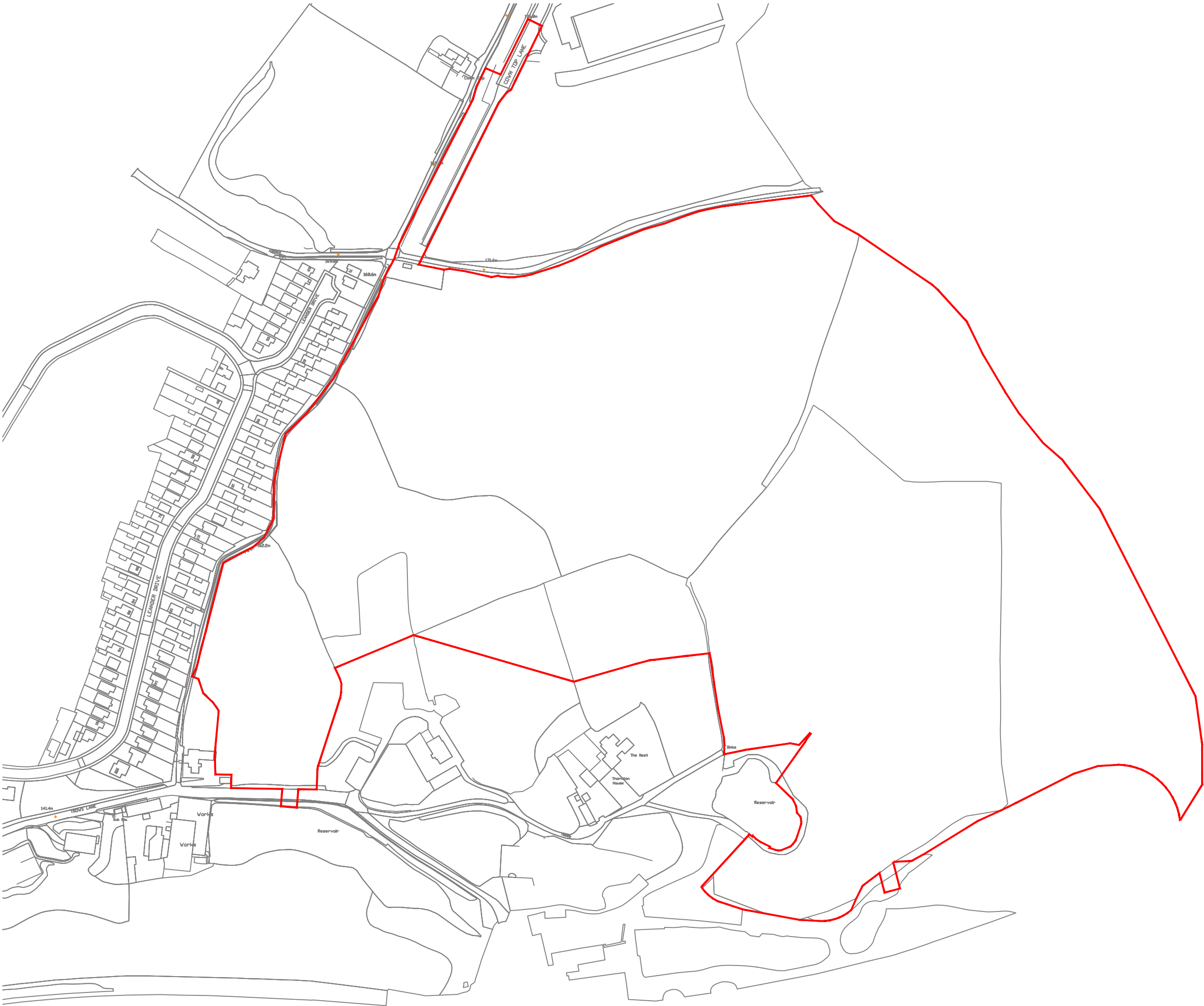


A Clarke, Environmental Technician

Approved by



C Smith, Technical Director



Job			
CRIPPLEGATE LANE ROCHDALE			
Title			
RED EDGE PLAN			
Design By	Date	Drawing Number	Rev
JSM	28.08.20	TROWS/P00	-
Drawn By	Scale @ A3		
JR	1:2500		

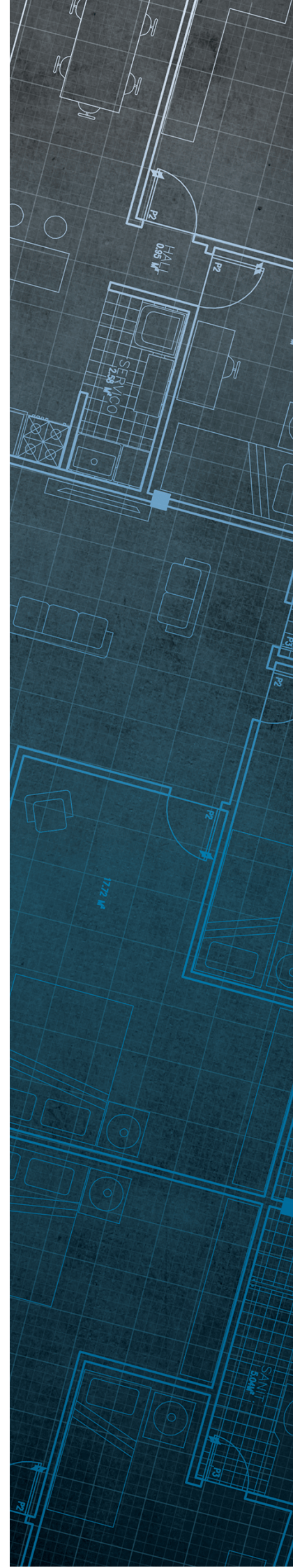


The Coal
Authority

Consultants Coal Mining Report

Land At Trows Farm Rochdale
Lancashire
OL11 2UE

Date of enquiry:	17 December 2019
Date enquiry received:	17 December 2019
Issue date:	17 December 2019
Our reference:	51002204201001
Your reference:	ST17862



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

Wardell Armstrong LLP

Enquiry address

Land At Trows Farm Rochdale
Lancashire
OL11 2UE

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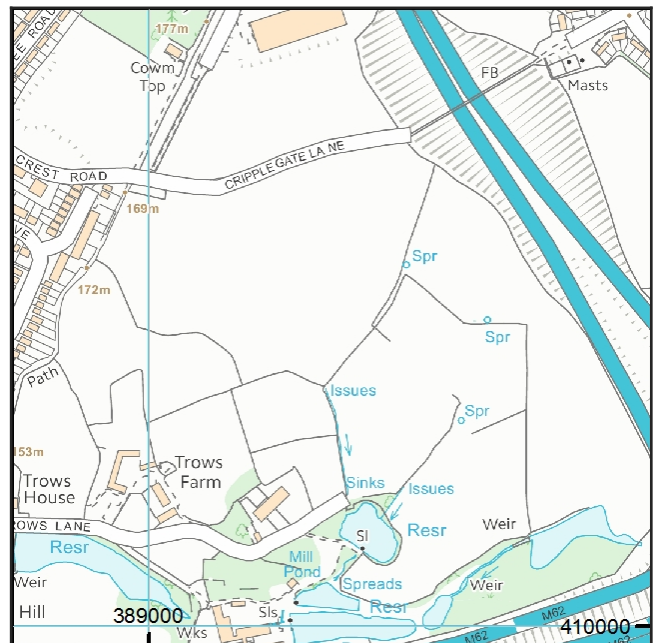
www.groundstability.com

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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

None.

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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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
ARLEY	Coal	Yes	Within	N/A	319

Geological faults, fissures and breaklines

No faults, fissures or breaklines 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.

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.

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.

Key

Approximate position of the enquiry boundary shown 

Outcrop (Conjectured) 

How to contact us
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www.groundstability.com

