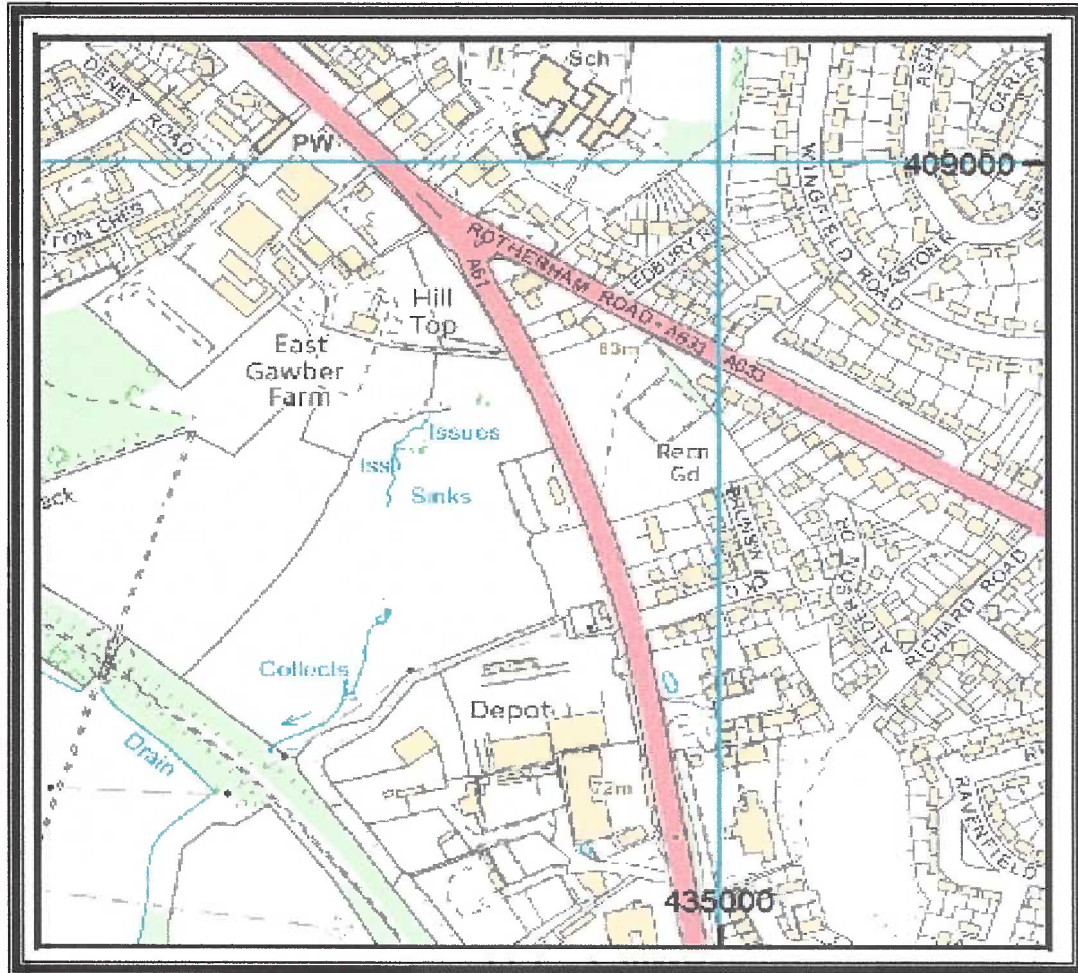


Report No: C275

Date: May 2018

COAL MINING RISK ASSESSMENT
For land off
WAKEFIELD ROAD, BARNESLEY,
S71 1NT



Prepared for
Roy Needham Cars Ltd

Prepared by
G&M Consulting Ltd, The Chestnuts, Brackenhill Road, East Lound, Haxey,
Doncaster, DN9 2LR





REPORT NUMBER:	C275	REPORT STATUS:	Final
REPORT TYPE:	Coal Mining Risk Assessment		
REPORT DATE:	May 2018		
SITE:	Land off Wakefield Road, Barnsley, S71 1NT		
PREPARED FOR:	Roy Needham Cars Ltd		
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Introduction

G & M Consulting Ltd (G&M) was instructed by Cape Site Services Ltd, to carry out a coal mining risk assessment for land off Wakefield Road, Barnsley, South Yorkshire S71 1NT. It is understood that a planning application has been submitted to develop the site for new offices and workshop for Roy Needham Cars Ltd.

The site location and its boundaries is shown below.

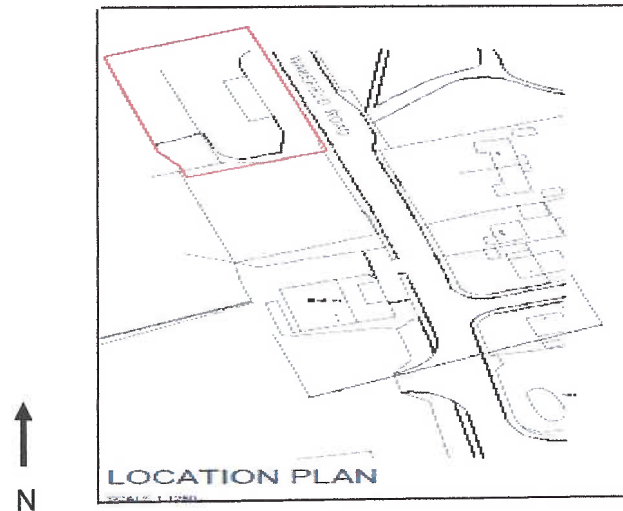


Figure 1

The proposed development comprises a new office and workshop, see below;

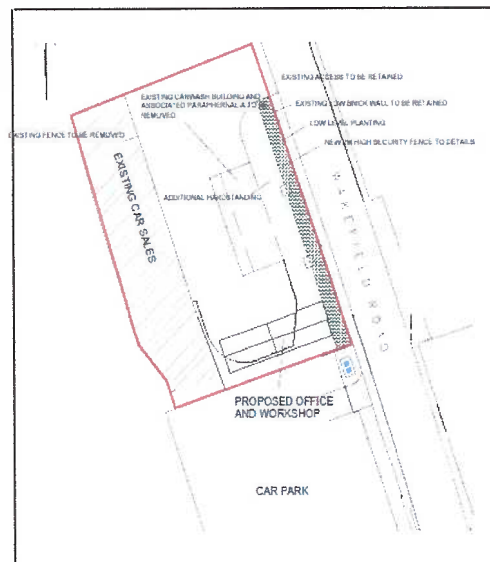


Figure 2

Scope of the Coal Mining Risk Assessment

This coal mining risk assessment is compiled in accordance with the guidance given in the Coal Authority publication *Risk Based Approach to Development Management Guidance for Developers Version 3 2014*.

This publication sets out the scope for a CMRA as follows:

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

Site Location and Description

The site is located off Wakefield Road, approximately 2.5km north of Barnsley town centre; the National Grid Reference for the site is SE 348 087.

The site is a roughly rectangular shaped piece of land, approximately 0.2 Ha in size, with the long axis running north-west to south-east. The site is flat lying plot, however the adjoining ground to the west falls away, to the west into the Dearne valley, by between 5 to 10 m.

The site is predominantly tarmac surfaced, with an area of car sales in the western portion of the site and a brick and metal clad building in the central portion of the site, which is currently an automatic car wash.

The area of the proposed development is at the southern edge of the site.

Sources of Information

In compiling the CMRA information has been obtain from various sources:

- Historical Ordnance Survey Maps;
- Geological maps
 - 1:10,000 Scale Sheet SE30NW
 - 1:50,000 Scale Sheet 87 Barnsley (2008)
- Geological Memoir for Sheet 87 Barnsley
- Coal Authority Non Residential Mining Report
- Coal Authority interactive Viewer <http://mapapps2.bgs.ac.uk/coalauthority/home.html>
- General Internet Search

Historical Development

Historical Ordnance Survey plans examined (1854 to 1993) for the area show the site to have been fields/undeveloped land until sometime before 1894, when a number of unlabelled buildings are shown to occupy the majority of the site. These buildings are no longer shown on the map dated 1959. By 1973, when an unlabelled building, in the

approximate location of the existing car wash is shown. The map dated 1993 labels the site as a 'garage'.

The map dated 1894 shows Primrose Main Colliery approximately 180 m to the south, including an air shaft. The map also shows East Gawber Hall Colliery approximately 300 m north west of the site

Both of these collieries are no longer shown on the map dated 1931. However, a drift (colliery) is now shown approximately 170 to the south east. The drift is not shown on the map of 1955

Published Geology

The geological maps for the area, sheet 87 - 1:50,000 scale (2008) and sheet SE30NW - 1:10,000, show the site to be underlain by strata of the Pennine Middle Coal Measures Formation which comprise interbedded mudstone, siltstone and sandstone with coal seams, ironstone and seatearth beds and marine bands.

No superficial deposits are shown to be present on site.

The Two Foot Coal is shown to outcrop in the north eastern part of the site. The outcrop generally trends from north-west to south-east. No dips are shown in the immediate vicinity of the site; the nearest dip and dip direction, approximately 800 m to the west of this outcrop and is shown as 6° to the north-east, therefore this seam will underlay the north eastern part of the site at shallow depth. The stratigraphical column for the 1:10,000 map shows the Two Foot Coal to vary across the area between 0.56 m and 0.63 m thick. The 1:50,000 map, which covers a larger area, indicates the seam thickness as between 0.1 m and 2.1 m.

According to the geological memoir the Two Foot Coal *'though nowhere important it is of greatest worth in the north of the area, where it is occasionally worked'*.

From the stratigraphical column of the 1:10,000 scale geological map it can be seen that the next named seam that underlies the Two Foot Coal is the Abdy (Winter) Coal. This seam is recorded to be up to 1.42 m thick. The stratigraphic column shows an intervening thickness of 16 m between the two seams, and the Abdy Coal is therefore likely to underlay the site at a similar depth. However it is noted that the geological memoir records a wider range of intervening thicknesses, see below. The Abdy Coal is shown to crop, approximately 100 m to the west of the site.

According to the geological memoir the Abdy Coal *'is a seam from 2' (0.6m) to 2'6" (0.76m) thick, which has been worked in places mainly from crop or shallow shafts'*

Lying between the two seams is a named sandstone unit, referred to as the Abdy Rock. The memoir notes that *'the Two Foot Coal is some 30ft (9.1m) to 80ft (24.3m) above the Abdy Coal, the variation due to the thickness of the intervening Abdy Rock'*.

The next coal in the sequence, below the Abdy Coal is the Top Beamshaw, which is shown at a depth of approximately 12 m below, and is therefore likely to lie at approximately 28 m beneath the site. The 1:10,000 scale map records this seam as between 1.21 to 1.84 m, however, the 1:50,000 scale map records the seam as up to 2.9 m in thickness.

An area of *made ground* is identified on the 1:10,000 map as occupying a large portion of the site and described on the map as *'mainly embankments, quarry and colliery spoil'*. Made ground identified further west on the map is recorded as *'colliery waste'* which is probably associated with the former East Gawber Hall colliery, shown on the historical maps.

South of the site a fault is shown trending north west – south east, this off sets the outcrop of the Two Foot Coal.

The 1:10,000 scale map shows three adits south of the site, one appears associated with the outcrop of the Two Foot Coal, south of the fault, and two associated with the outcrop of the Abdy Coal

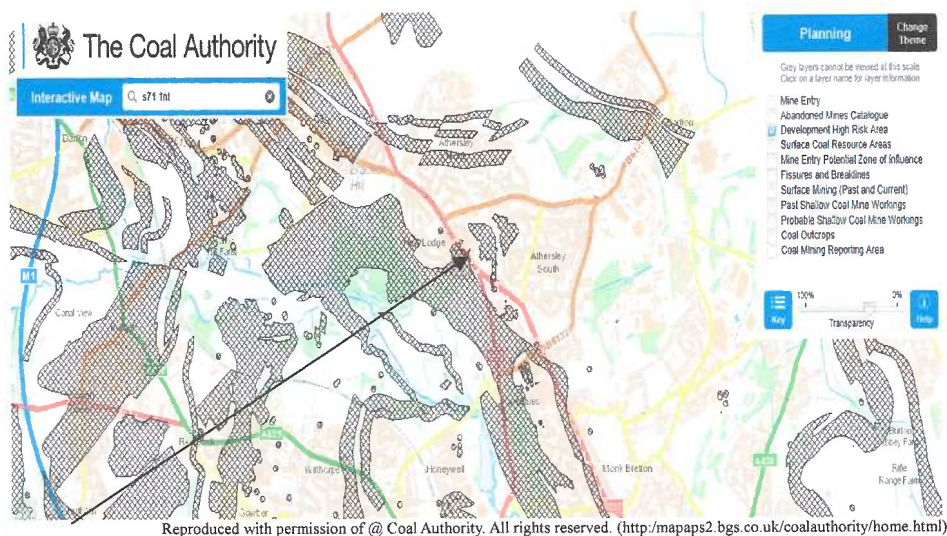
Mining

A Mining Report was obtained from the Coal Authority (CA) by G&M, a copy of which is included in Appendix A of this assessment.

The CA report shows the following information:

- *Mine records show three seams of coal at 146m to 237m depth, last worked in 1950. These seam are indicated as;*
 1. *Barnsley Coal – seam thickness 282cm, last worked 1868*
 2. *Top Haigh Moor – seam thickness 84cm, last worked 1928*
 3. *Lidgett Coal – seam thickness 81cm, last worked 1950*
- *The CA identify that there are probable unrecorded shallow workings.*
- *The Two Foot coal is shown to crop within the site.*
- *The property is not within a surface area that could be affected by present underground mining.*
- *The CA report shows an adit and a shaft south of, and within 100 m of the site. No mine entries are shown on the site.*
- *No notices have been given, under Section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.*
- *There is no current Stop Notice delaying the start of remedial works or repairs to the property.*
- *The property is not shown within the boundary of an opencast site.*
- *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.*

An inspection of the CA interactive viewer shows that the site lies in a "development high risk area", see below;



The Site
Figure 3

Risk Assessment

The potential risks associated with coal mining legacy of the site are summarised in the following table.

Table 1 Risk Assessment

Coal Mining Issue	Yes	No	Risk
Underground coal mining (recorded at depths >30m)	X		Low – CA report indicates three seams worked beneath the site at depths of between 146 and 237m
Underground coal mining (recorded at shallow depths <30m)		X	Low – See above
Underground coal mining (probable at shallow depths <30m)	X		High - Two Foot Coal shown to outcrop in the north eastern portion of the site. Underlain by the Abdy (approx. 16m) and Top Beamshaw (approx. 28m)
Mine entries (shafts and adits within 20m)		X	
Coal mining geology (fissures)		X	
Record of past mine gas emissions		X	
Recorded coal mining surface hazard		X	
Surface mining (opencast workings)		X	

Conclusions and Recommendations

The site appears to be directly underlain by the bedrock of Pennine Middle Coal Measures age. The Two Foot Coal seam is shown to outcrop in the north eastern portion of the site, and dips beneath the north eastern area of the site. The stratigraphical column for the 1:10,000 geological map shows the seam to vary in thickness across the area, between 0.56 m to 0.63 m.

According to the geological memoir the Two Foot *‘though nowhere important it is of greatest worth in the north of the area, where it is occasionally worked’*, therefore the possibility of shallow workings within this seam beneath the north eastern portion of the site cannot be discounted at this stage.

The proposed location of the office and workshop at the southern end of the site probably lies off the outcrop of the Two Foot Coal.

The site is shown to be underlain by recorded coal workings at 146 m to 237 m beneath the site and last worked in 1950. However, any ground movement associated with these workings should have stopped.

Based on a review of the stratigraphical column for the 1:10,000 geological map the Abdy (Winter) Coal is shown to lie approximately 16 m below the Two Foot Coal, and the seam is recorded up to 1.42 m thick. The general rule of thumb for assessing the risk from shallow coal mining is the presence of rock cover over the seam equal to or greater than 10 x the seam thickness. It is considered likely that there will be insufficient bedrock cover if any workings are present within this seam, and that the risk from such workings is considered as high.

The next coal in the sequence, below the Abdy Coal is the Top Beamshaw, which is shown at a depth of approximately 12 m below the Abdy Coal, and is therefore likely to lie at approximately 28 m beneath the site. The 1:10,000 scale map records this seam as between 1.21 to 1.84 m, however the 1:50,000 scale map records the seam as up to 2.9 m in thickness.

Based on the above findings it is recommended that an intrusive investigation is carried out and comprises the following;

- A minimum of four open-hole boreholes, drilled to 30 m, to determine the location of the outcrop of the Two Foot Coal and assess the likely presence of workings within the shallow underlying Two Foot, Abdy (Winter) and Top Beamshaw seams.

Prior to carrying out any work on site, a permit should be obtained from the Coal Authority for the investigation.

The findings of this current report should be submitted to the Coal Authority, prior to undertaking any development work on site, for their consideration.

Mitigation Measures

Subject to the findings of the intrusive investigation work, if any shallow workings are located then they would need to be potentially infilled by drilling and grouting or possibly by taking foundations below, particularly if local workings are encountered in the Two Foot Coal. Although it is noted that this seam is unlikely to affect the location of the proposed workshop and office. The possible presence of mines gas should also be considered.



ATTACHMENT A



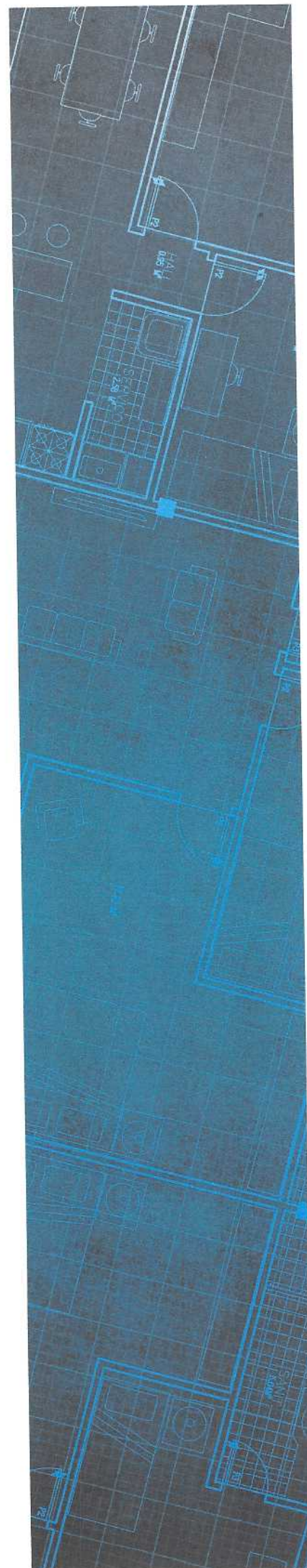
The Coal
Authority

Consultants Coal Mining Report

Arc Clean Car Centre
Wakefield Road
Smithies
Barnsley
S71 1NT

Date of enquiry:	11 May 2018
Date enquiry received:	11 May 2018
Issue date:	11 May 2018

Our reference:	51001838501001
Your reference:	C275



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

Graeme Swinbourne

Enquiry address

Arc Clean Car Centre
Wakefield Road
Smithies
Barnsley
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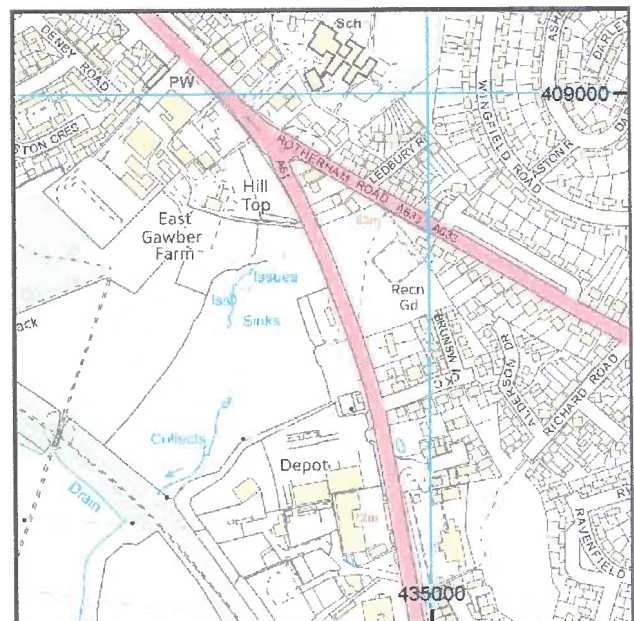
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Approximate position of property



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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	KENT THICK	Coal	637O	98	East	1.4	North-East	66	1908
unnamed	BARNSLEY	Coal	637Q	146	Beneath Property	2.9	North-East	282	1868
unnamed	TOP HAIGH MOOR	Coal	637U	206	Beneath Property	2.0	North-East	84	1928
unnamed	TOP HAIGH MOOR	Coal	637V	218	North-East	3.2	North-East	97	1925
unnamed	TOP HAIGH MOOR	Coal	637W	219	East	2.5	North-East	97	1919
unnamed	LIDGETT	Coal	6386	235	West	1.2	North-East	79	1950
unnamed	LIDGETT	Coal	6387	237	Beneath Property	2.5	East	81	1950
unnamed	LIDGETT	Coal	638A	260	North-East	1.4	East	81	1932
unnamed	FENTON	Coal	638E	339	South-East	2.9	North-East	145	1957
unnamed	FENTON	Coal	638D	359	East	1.3	North-East	129	1953

Probable unrecorded shallow workings

Yes.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Adit	434408-005	434918 408638		Coal	
Shaft	434408-027	434954 408665		Coal	

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 31st 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 a notice to withdraw support was given in 1982.

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.

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.

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.

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.

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

