

Coal Mining Risk Assessment

20 TIVY DALE, CAWTHORNE

MR D CHEETHAM

26 SEPTEMBER 2023

20 Tivy Dale,
Cawthorne,
Barnsley,
S75 4EH

48340-ECE-XX-XX-RP-C-0004
CAT/RAN/ME

For the attention of Mr D Cheetham

26 September 2024

Dear Daryl,

No 20 Tivy Dale, Cawthorne – Coal Mining Risk Assessment

We write to provide a risk assessment regarding the possibility of shallow coal mining affecting the above site. This has been requested as part of the planning process for a proposed new dwelling. This risk assessment is based on a review and our interpretation of geological maps and memoirs, as well as a Consultants Coal Mining Report specific to this site.

ECE previously undertook a Coal Mining Risk Assessment, report reference 48340-ECE-XX-XX-RP-C-0001, and subsequent borehole investigation, report reference 48340-ECE-XX-XX-RP-C-0003, at Dale House, immediately to the south of the site.

The Site

The site is located off Tivy Dale (road), in the south west of Cawthorne, 6 km north west of Barnsley city centre and is centred on grid reference 427980, 407526. The site is understood to currently comprise a residential property with associated parking and external garden areas. A number of mature trees are present both within and bordering the site.

Residential dwellings and gardens border the site to the north east and south west of the site. Tivy Dale (road) follows the south eastern boundary with mature woodland located immediately beyond. Agricultural land is present to the west/north west of the site.

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Site History

Historical ordnance survey maps have been viewed through the National Library of Scotland website. The maps available to view online were surveyed between 1851 and 1970 and record the site to remain undeveloped throughout this period. Reference to historical aerial photography shows the site to be developed in its present-day layout including a residential property by 2002, indicating that the site was first developed at some point between 1970 and 2002.

The earliest map viewed, dated 1851, shows the area surrounding the site to predominantly comprise agricultural land with residential dwellings to the south west and north east of the site. Subsequent maps show gradual further development of residential dwellings to the north east and south west of the site. The map dated 1851 also shows a brickworks 200 m south of the site and a sandstone quarry approximately 400 m east of the site. These were not shown on the 1891 map and the quarry was recorded as disused by 1904. An air shaft is also recorded 300 m south of the site by the 1904 map and was still shown to be present in 1970.

Geological Review

The available geological maps (1:50,000 map sheet 87 and 1:10,000 map sheet SE20NE) and the British Geological Survey (BGS) online viewer have been reviewed. These indicate the solid geology below the majority of the site to comprise undifferentiated Pennine Lower Coal Measures Formation, comprising mudstone, siltstone and sandstone. The north west of the site is indicated to be underlain by sandstone of the Pennine Lower Coal Measures Formation. Superficial deposits are not indicated to be present.

No faults are indicated to cross the site.

SE20NE shows an inferred coal seam outcrop outside the site boundary, outcropping immediately east of the site, along Tivy Dale, on an approximately north east/south west orientation. This is shown to be the Blocking (Silkstone) Coal and is recorded to be between 0.4 and 1.5 m thick. The dip of the seam is not indicated in the immediate vicinity of the site, however, a 3 to 4° dip is indicated in the wider area and as such, the seam is anticipated to be present below the site at shallow depth. A second inferred coal seam is shown to outcrop to the south of the Blocking Coal and approximately 75 m south east of the site. This is recorded to be the Top Lousey (Low Silkstone) Coal which is indicated to be between 0.3 and 0.6 m thick and stratigraphically below the Blocking Coal. Assuming a dip of 3 degrees the Top

Lousey is estimated to underly the site at approximately 4 m below the south west end of the site and 7 m at the north east end of the site.

The Linfit Lousey Coal is indicated to be the next shallowest coal seam below the site and is recorded to be up to 0.5 m thick. It outcrops approximately 1.1 km south east of the site. No information on the dip of the strata in the immediate vicinity of the site is included on the geological maps reviewed, however the dip of the strata across the map is generally indicated to be 3 to 4 degrees east. Based on the available data, the Linfit Lousey Coal is located approximately 80 m below the site.

The BGS Memoir (Geology of the Barnsley District) has also been reviewed. This reports that the Blocking (Silkstone) Coal has been extensively worked. As the Blocking (Silkstone) coal is anticipated at shallow depth, it is possible that this has been worked from the surface, or via bell pits, at the site. The Top Lousey Coal is not noted to have been worked within the available memoirs, however the deeper Linfit Lousey Coal is recorded to have been previously worked by opencast methods.

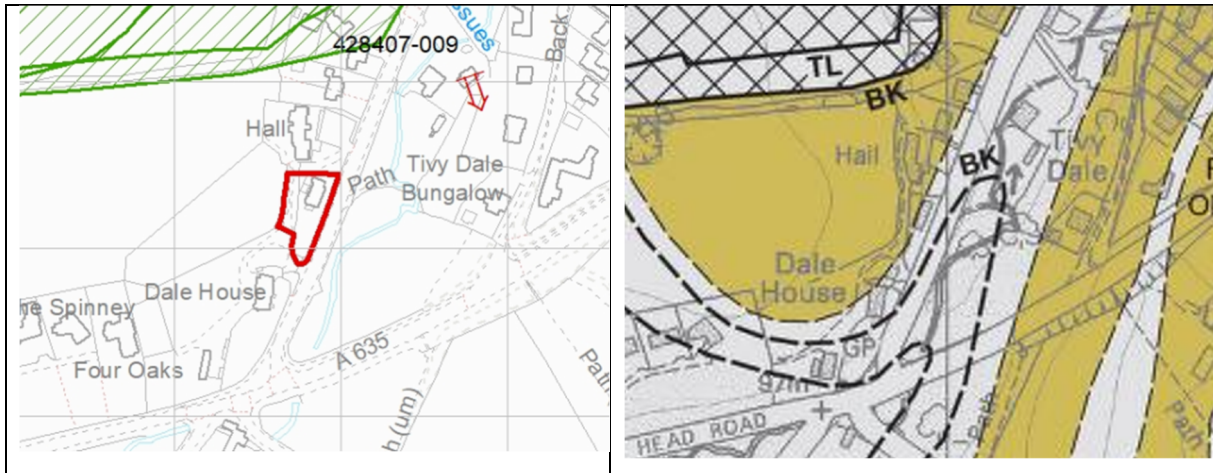
Coal Authority Consultants Report

A Coal Authority Consultants Coal Mining Report has been obtained for the site and a copy is appended.

The Coal Authority state that according to their records, no past underground mining is recorded in the vicinity of the site. However, they note that the site is within an area of probable unrecorded shallow workings. This is considered to relate to the Blocking (Silkstone) coal which is noted to outcrop immediately east of the site.

There are three abandoned mine plan catalogue numbers listed which are noted to intersect with some or all of the site boundary. Copies can be obtained if considered necessary.

The report and summary map do not identify any coal outcrops on or in the vicinity of the site. This disagrees with the published geological maps. An extract from the Coal Authority map is shown overleaf alongside an extract from the geological map:



The site is not in an area where any spine roadways within mine workings are present.

There is one mine entry, an adit (reference 428407-009), recorded within 100 m of the site, this is located approximately 90 m north east of the site with no treatment description recorded. It should be noted that The Coal Authority records are not exhaustive and that additional, unrecorded shafts of which the Coal Authority has no records may be present.

Several areas of opencast mining are indicated to be present within the vicinity of the site, these are located 75 m north, 250 m east, 200 m south and 400 m west of the site.

No faults, fissures or break lines are recorded to cross the site, and no Coal Authority managed tips are present within 500 m of the site.

The Coal Authority are not aware of any site investigations relating to the risk of coal mining or sites where remediation associated with coal mining has occurred within 50 m of the site.

The Coal Authority has not received any claims for mining related subsidence on the site since 31 October 1994.

No mine gas emissions or water treatment schemes are recorded within 500 m of the site.

The site is not within an area where workings are currently being undertaken, or where future underground workings are currently proposed.

There are no court orders recorded or section 46 notices given for the site area.

Borehole Investigation

ECE undertook a borehole investigation at the property immediately to the south of the site in September 2023, report reference 48340-ECE-XX-XX-RP-C-0001. The investigation comprised three boreholes completed to 20 m below ground level (bgl).

The borehole investigation encountered a 0.4 to 0.5 m thick intact coal seam in all three boreholes at a depth of 2.2 to 2.7 m bgl. The depth and thickness of this coal are consistent with the Top Lousey seam.

Given that the seam was found to be intact no underground workings are expected at Dale House, the property to the south of the site. Given the proximity of the subject site to the previous borehole investigation it is considered unlikely that the Top Lousey seam has been worked below the site. There is however potential that the shallower Blocking (Silkstone) coal is present at shallow depth and this may have been worked.

Risk Assessment

For there to be no significant risk to development from voids caused by old mine workings migrating to the surface, it is generally accepted that there should be ten times the worked seam thickness of competent ground above any workings and below the proposed foundation level. The shallowest seam below the site is indicated to be the Blocking (Silkstone) coal which has a thickness of between 0.4 and 1.5 m and is anticipated at very shallow depth. The Coal Authority suggest that unrecorded workings in this seam are likely. These could be opencast or underground via bell pits.

The next shallowest seam below the site is the Top Lousey (Low Silkstone) Coal. This is recorded to be 0.5 m thick and is anticipated to be present below the site at between around 4 and 7 m bgl. The seam is not recorded to have been worked in the vicinity of the site by the Coal Authority (CA) or by records held by the BGS and a borehole investigation previously completed in the vicinity of the site indicates the seam to be intact. If, however, unrecorded extraction of this seam was undertaken, this would have been at a depth of less than ten times the seam thickness and as such drilling and grouting may be required.

Due to the thickness (maximum 0.5 m) of the Linfit Lousey Coal and the depth at which it is estimated below the site (77 m), the thickness of competent ground between any underground workings of the seam which may be present, and proposed foundations is significantly in excess of the 5 m required and meets the criteria of competent cover. Furthermore, based on

the available information available from the BGS the Linfit Lousey Coal is indicated to have been mined by opencast methods rather than underground mine workings, it is therefore considered unlikely that the Linfit Lousey Coal has been previously mined beneath the site.

The Coal Authority records the site to be within an area of probable unrecorded shallow workings, this is thought to relate to the Blocking Coal which outcrops immediately to the east of the site which may therefore be present below the site at shallow depth. A borehole investigation is therefore recommended in order to determine the extent, if any, of unrecorded shallow workings present below the site. Should unrecorded shallow workings be identified beneath the site, a ground improvement regime, such as drilling and grouting, may be required.

The CA records a number of historic opencast mines within 250 m of the site (75 m north, 250 m east and 200 m south), unless otherwise indicated these were generally backfilled with natural ground removed from the mines as part of the mining processes. Assuming this was the case the historic opencast mines are not considered to be a significant source of gas generation or migration.

Conclusion

The site is within an area of probable unrecorded shallow workings, thought to refer to the Block (Silkstone) coal which outcrops adjacent to the eastern boundary of the site and is anticipated to lie below the site at very shallow depth.

The Top Lousey (Low Silkstone) Coal is anticipated to underly the site from around 4 m and although not recorded, could have been mined.

A rotary drilling investigation is therefore recommended to confirm the depth and condition of both the Blocking and Top Lousey Coal seams below the proposed new dwelling. The Linfit Lousey Coal, stratigraphically below the Top Lousey (Low Silkstone) Coal, is unlikely to have been extracted by underground mining. However, even if this seam had been extracted, the thickness of competent ground between the seam and foundations would be sufficient and no further investigation of this coal seam is considered necessary.

Should you have any queries, please get in touch.

Yours sincerely,

A handwritten signature in black ink on a light yellow rectangular background. The signature appears to be 'R Noble' in a cursive script.

Ruth Noble

Enc Consultants Coal Mining Report



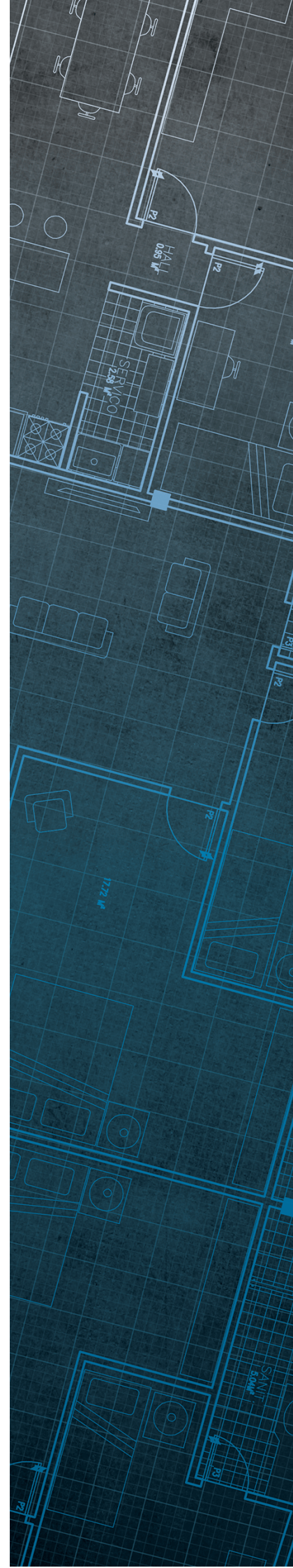
The Coal
Authority

Consultants Coal Mining Report

20 Tivy Dale
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Date of enquiry:	5 September 2024
Date enquiry received:	5 September 2024
Issue date:	5 September 2024

Our reference:	51003448313001
Your reference:	48340



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.

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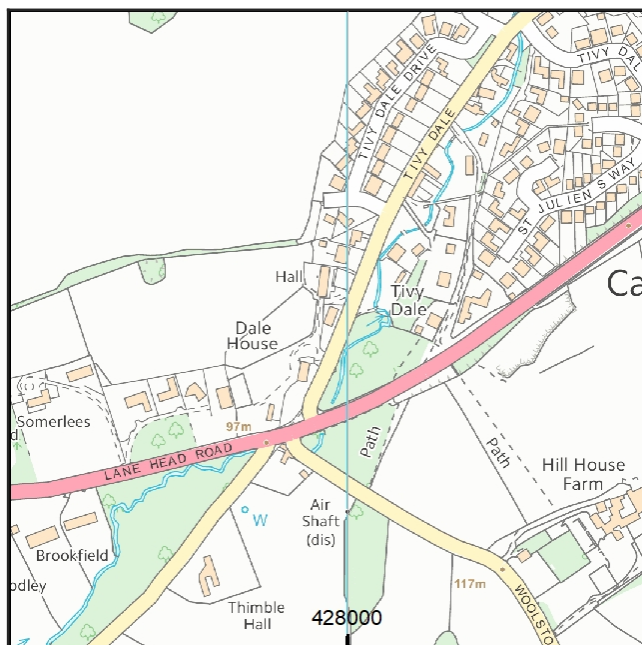
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Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

No past mining recorded.

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	428407-009	428078 407602		Coal	

Abandoned mine plan catalogue numbers

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

11469	10322	NE123
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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

No outcrops recorded.

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Opencast mines

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

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

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

Site investigations

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 **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk**.

Past underground coal mining

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

Probable unrecorded shallow workings

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

Spine roadways at shallow depth

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

Mine entries

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

Abandoned mine plan catalogue numbers

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

Outcrops

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

Geological faults, fissures and breaklines

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

Opencast mines

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

Coal Authority managed tips

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

Site investigations

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

Remediated sites

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

Coal mining subsidence

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

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

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

Mine gas

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

Mine water treatment schemes

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

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

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

Future underground mining

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

Coal mining licensing

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

Court orders

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

Section 46 notices

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

Withdrawal of support notices

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

Payment to owners of former copyhold land

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

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Eastwood

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