

Chevin

Geoenviro Associates LTD

Land At:

141 Toftshaw Lane, Bradford.

Coal Mining Risk Assessment

October 2021

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Land At: 141 Toftshaw Lane, Bradford, West Yorkshire, BD4 6QS.

Coal Mining Risk Assessment



Report Title	Land At: 141 Toftshaw Lane, Bradford. Coal Mining Risk Assessment	Site Address	141 Toftshaw Lane, Bradford, West Yorkshire, BD4 6QS. (Grid Ref: 419080,429580)
Author	Chevin Geoenviron Associates Ltd.	Report Type	Coal Mining Risk Assessment
Work Stage	Stage 1	Report Date	October 2021
Brief Description of the Report Contents	Review of information to develop an assessment of potential legacy coal mining issues.		

Land At: 141 Toftshaw Lane, Bradford, West Yorkshire, BD4 6QS.

Coal Mining Risk Assessment

Document Control

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Job Number: C0489

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Issue	Date	Status	Year
01	13 th October	Draft	2021

Land At: 141 Toftshaw Lane, Bradford, West Yorkshire, BD4 6QS.

Coal Mining Risk Assessment

Contents Page

1.0	INTRODUCTION	2
1.1	Terms and Conditions	2
1.2	Source of Information	2
2.0	SITE DETAILS	3
2.1	Introduction.....	3
3.0	GEOLOGY	3
3.1	Superficial Geology.....	3
3.2	Solid Geology	3
4.0	COAL MINING	5
4.1	Coal Authority CON29M Report & Interactive Mapping	5
4.3	Review of Online Historical Mapping	7
5.0	RISK ASSESSMENT & CONCLUSIONS	7
6.0	RECOMMENDATIONS	8

Land At: 141 Toftshaw Lane, Bradford, West Yorkshire, BD4 6QS.

Coal Mining Risk Assessment

APPENDIX CONTENTS

Appendix A

Figures and Drawings

Drawing No. C0489-01

Site Location Plan

Appendix B

Coal Authority Consultants Coal Mining Report

Land At: 141 Toftshaw Lane, Bradford, West Yorkshire, BD4 6QS.

Coal Mining Risk Assessment

1.0 INTRODUCTION

Chevin Geoenviron Associates Ltd (CGA), were commissioned by Belinda Starkey to carry out a Coal Mining Risk Assessment for land at 141 Toftshaw Lane, Bradford, West Yorkshire, BD4 6QS.

The purpose of this report is to review and interpret available information pertaining to the site and present the conclusions within a Coal Mining Risk Assessment, as required by the planning regime. The scope of the study is as follows:

- To provide general information on the site such as location and proposals;
- Review available geological maps & memoirs;
- Review appropriate information provided by the Coal Authority;
- Estimate the level of risk based on the information reviewed;
- To provide recommendations for further works where necessary.

1.1 Terms and Conditions

This report has been prepared for Belinda Starkey, in support of a planning application which relates to the construction of a new bungalow on the site of an existing steel framed agricultural building. The information in this report has been summarised following a review of readily available information and should not be used in a different context without reference to the original author. A Phase 1 desk study for the site was not available or requested as part of this study.

1.2 Source of Information

The following sources of information have been reviewed as part of this assessment.

- Coal Authority Consultants Coal Mining Report dated 8th October 2021; (Ref: 51002678245001)
- BGS Solid and Superficial Geology Mapping Sheets No.77, 1,50,000, Huddersfield, dated 2003;
- British Geological Survey, Geindex interactive web site. (Viewed 9th October 2021);
- Coal Authority Interactive web site. (Viewed 9th July 2021).
- Historical Maps: www.old-maps.co.uk. (Viewed 9th July 2021).

Land At: 141 Toftshaw Lane, Bradford, West Yorkshire, BD4 6QS.

Coal Mining Risk Assessment

2.0 SITE DETAILS

2.1 Introduction

The site is located south of Toftshaw Lane in East Bierley, approximately 5km south east of Bradford City centre. The wider site is approximately 0.4ha in area and the proposed development is centred on National Grid Reference: 419080, 429580. The proposed structure will be located inside an area currently occupied by an agricultural building measuring approximately 20m x 15m.

A Site Location Plan is presented as Drawing No. C0489-01 in Appendix A.

3.0 GEOLOGY

3.1 Superficial Geology

BGS mapping indicates the site and its immediate surroundings are free of superficial deposits. Undifferentiated Glacial Till is shown to be beyond 500m from the site.

3.2 Solid Geology

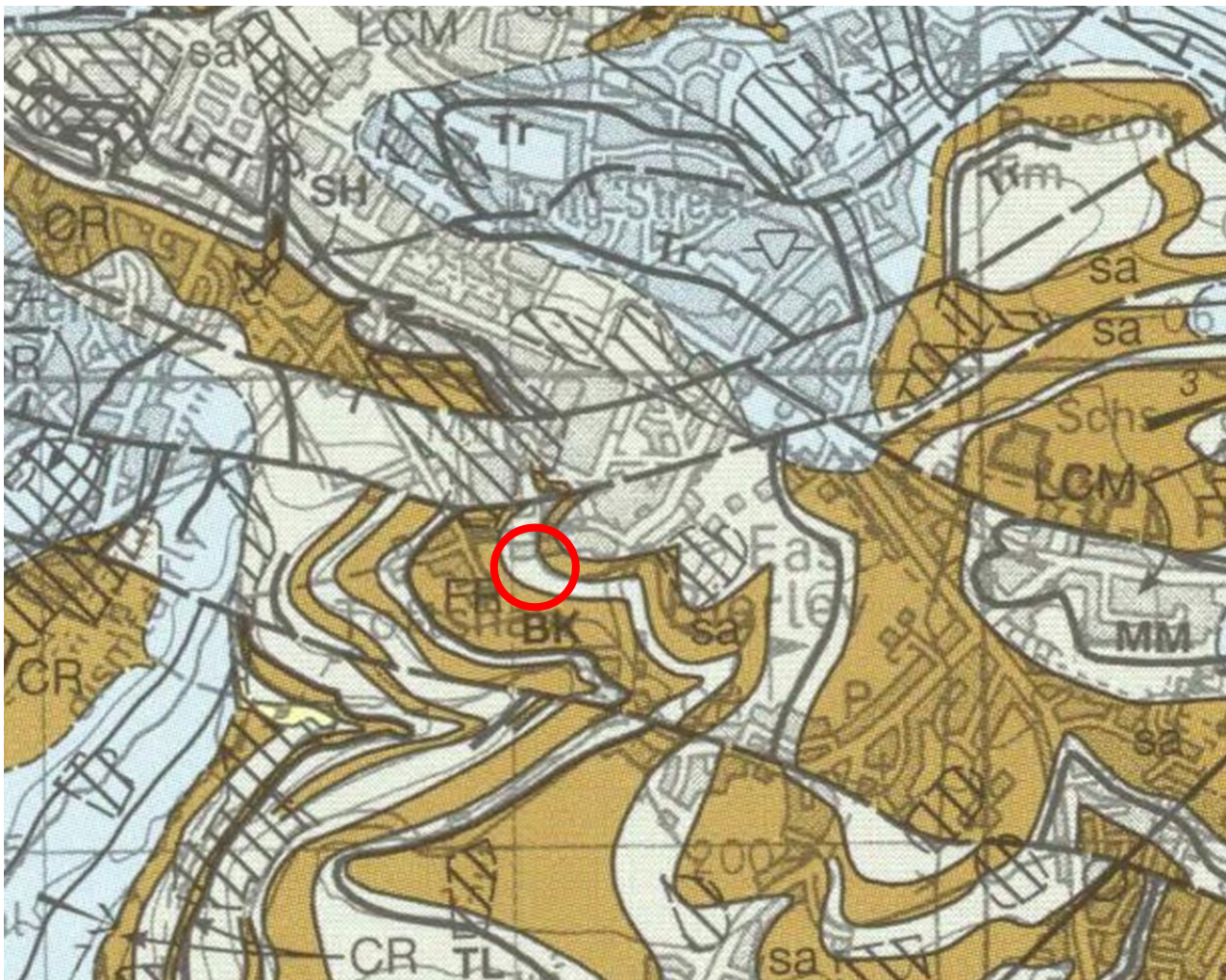
BGS Sheet No.77 Huddersfield (1:50,000) and interactive mapping shows the bedrock underlying the site to be the Pennine Lower Coal Measures Formation, comprising interbedded mudstone, siltstone, sandstone and coal seams. The site is within a geological block situated between two faults which trend east to west. These are located beyond 150m north and south of the site respectively and as such are not considered to affect the proposals.

The strata below the site are shown to include the Falhouse Rock (FR) sandstone, (west and south). This is recorded to be up to 12.0m in thickness and is underlain by the Blocking (BK) coal seam. This coal seam outcrops to the west of the site and is recorded to be up to 1.7m in thickness.

The named Middleton Main (MM) coal is shown to outcrop within the same geological block, inside 1km east. This seam is higher in the geological succession and as such, infers an easterly dip to the geology. It places the Blocking Coal and lower potentially productive seams, such as the Top Lousey (TL) or Trub Coal (Tr), at shallow depth below the study site.

Land At: 141 Toftshaw Lane, Bradford, West Yorkshire, BD4 6QS.

Coal Mining Risk Assessment



Extract from BGS Sheet No.77 Huddersfield 1:50,000 (2003). The red circle shows the approximate area of the site location.

Small areas of made ground recorded north and east of the study site may represent open cast or quarrying sites, however these are not recorded in near proximity to the proposals, or by information from the Coal Authority.

Land At: 141 Toftshaw Lane, Bradford, West Yorkshire, BD4 6QS.

Coal Mining Risk Assessment



Extract from BGS Sheet No.77 Huddersfield 1:50,000 (2003). Presenting the likely geological succession under the study site.

The nearest deep borehole record within the same geological sequence is the Toftshaw Colliery Shaft (Ref: SE12NE859). This was located beyond 0.3km north east of the site and reached 87m depth. In common with all other deep local records, it replicates the above succession, but is not detailed and is considered too distant to be representative of the site conditions.

4.0 COAL MINING

4.1 Coal Authority CON29M Report & Interactive Mapping

The Coal Authority Interactive map shows the site to be within an Area of Probable Shallow Coal Mine Workings, a Surface Coal Resources Area and a Development High Risk Area.

Two records of mine entries (Ref: 419429-019 and 419429-011) are located beyond 50m north east of the study site. These are recorded to be shafts that are perpendicular to the surface. Further shafts and adits directed towards the study site are located beyond 250m and are not thought to affect the proposals.

The Coal Authority Mining Report was obtained for an area larger than the proposed development. The report shows that the site is in a surface area that could be affected by underground mining in two seams of coal at 60m to 130m depth, and last worked in 1941.

Land At: 141 Toftshaw Lane, Bradford, West Yorkshire, BD4 6QS.

Coal Mining Risk Assessment

The report considers that any movement in the ground due to coal mining activity associated with these workings should now have stopped. However, the property is also in an area where the Coal Authority believes there is coal at or close to the surface and this coal may have been worked at some time in the past. There remains a potential that these workings were not recorded.

A summary of the information provided within the Coal Authority Mining Report and interactive map is presented below within Table 1.1.

Table 1.1 Summary of Coal Authority Report Information

Mining Activities	On Site	Further Information
<u>Section 1: Mining Activity and Geology</u>		
Past Underground Mining	Yes	Mining recorded beneath the property in two seams at depths of 60m to 130m and last worked in 1941.
Probable Unrecorded Shallow Workings	Yes	The Coal Authority consider that not all workings may have been recorded and will require this potential to be discounted by an intrusive investigation, most especially where the site is recorded within a Development High Risk Area.
Present Underground Coal Mining	No	The property is not considered to be within a surface area that could be affected by present underground mining.
Future Underground Mining	No	No recorded applications, licences or considerations by the Coal Authority.
Mine Entries	No	None recorded within, or within 20m of the boundary of the property.
Coal Mining Geology	No	No damage recorded due to geological faults or other lines of weakness.
Past Opencast Mines	No	The study site is not recorded by the report as a former open cast site.
Present Opencast Mines	No	The site does not lie within 200m of the boundary of an opencast site.
Future Opencast Site	No	No requested or granted licences to remove coal by opencast methods within 800m of the site.
Coal Mining Subsidence	No	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	No	None recorded.
Hazards Related to Coal Mining	No	The property has not been subject to remedial works, by or on behalf of the Coal Authority, under its Emergency Surface Hazard Call Out procedures.
Withdrawal of Support Notices	No	The property is in an area where a notice to withdraw support was given in 1945. However, 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 Copyholder Land	No	The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975 / 1994.

Land At: 141 Toftshaw Lane, Bradford, West Yorkshire, BD4 6QS.

Coal Mining Risk Assessment

4.3 Review of Online Historical Mapping

The earliest historical map covering the site and near surroundings was dated 1852-54, at which time the site comprised open fields. As today, Toftshaw Lane ran beyond the northern site boundary. This was lined by a number of smallholdings, some of which were notably north of the proposed development area.

By the 1920s, the study site area was defined by boundary walls and buildings of appropriate size to have been houses were north and north west of the proposed site area. The current site boundaries and access were defined by the late 1950s. The north of the site included a sizable building in the location of the present house, and a greenhouse. Land to the east was described as a nursery, though the site area remained undeveloped.

By the 1970s an agricultural building was located to the east of the proposed site area. Aerial photographs dated 1985 show a building covering the site area to the west of this. Following this no other buildings, mining features, or excavations are recorded for the proposed development area or it's near surroundings.

5.0 RISK ASSESSMENT & CONCLUSIONS

BGS, historical and Coal Authority mapping indicate that the site is in a coal mining area. The site is recorded to be within a Development High Risk Area, with known shallow coal workings in two seams below the site and also potentially in seams at shallower depth than those recorded.

Productive Coal up to 1.7m in thickness may be encountered in the Blocking (BK) coal seam that is interpreted below the site and productive thicknesses of coal may also be present in lower seams including the Top Lousey (TL) and Trub Coal (Tr).

Before any ground improvement such as grouting can be discounted, any resulting mine voids will require to be interpreted with respect to their rock cover and extraction thicknesses. This will require rotary drilling at the site. There is considered to be a low potential for unrecorded mine entries on the site.

Due to the unknown depth and thickness of surface mining, the thickness of competent rock cover over the potential shallow workings on the site, a **Medium to High Risk** of surface instability from past mining has been considered appropriate.

6.0 RECOMMENDATIONS

It is recommended that a number of rotary open hole boreholes be formed on the site, in order to further investigate the presence of coal and/or workings beneath. In consideration to the likely thicknesses and depth of potential influence from near surface workings, it is recommended that at least one borehole location progress to a target depth of 30m bgl.

The first borehole should interpret the thicknesses of any near surface coals and/or potential mine workings. Where a significant intact coal seam is found at shallow depth, in isolation it cannot be considered representative of an unworked coal. It would be usual to follow the initial deep borehole with further investigation.

In consideration to the size of the structure, a minimum of one further borehole should be located at the opposite end of the proposals, however this need only progress to depths below any coal or extractions encountered by the first location.

With regards to assessing risk of void migration, CIRIA 32 (Construction over abandoned mine workings, 1989), continues to be the go to guide in these situations and has recently been enhanced by CIRIA 758 (Abandoned Mine Workings) 2019.

These documents suggest a thickness of solid rock through which a void can migrate is 7h to 10h above the roof of the workings, where h is the height of the workings (generally assumed to be similar to the seam thickness). The lower end of this range (7h) is generally only applicable where the overlying strata are predominantly thickly bedded sandstones, otherwise the 10h rule is likely to be adopted.

Boreholes will ideally be in triangulation and continued to depths at which they bypasses any layers of coal or evidence of shallow workings identified by the first location. In the unlikely event that multiple coal seams have been worked, it may be necessary to take these initial boreholes to still greater depths and to consider the cumulative effect of several voids.

The proximity of this investigation to neighbouring occupied properties will require that all rock drilling is undertaken by use of a water flush method. It will be necessary to acquire a licence from the Coal Authority.

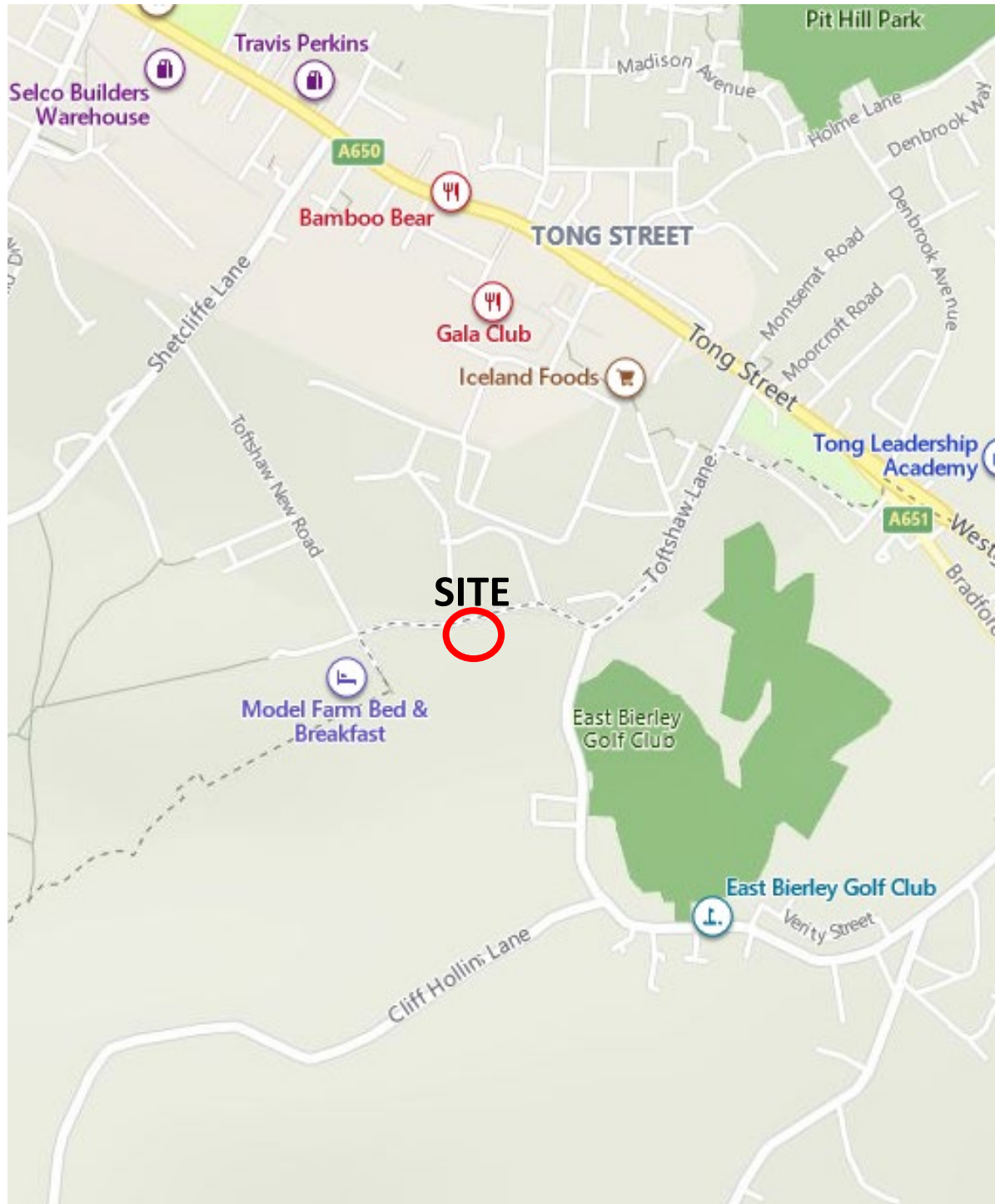
Land At: 141 Toftshaw Lane, Bradford, West Yorkshire, BD4 6QS.

Coal Mining Risk Assessment

Appendices

Figures and Drawings

Appendix A – Site Location Plan



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**Geo-environmental Consultancy
Ground Technologies & Investigation & Remediation**

**Project:
141 Toftshaw Lane, Bradford**

Client: Belinda Starkey

Project No. C0489

Date 13/10/2021

Land At: 141 Toftshaw Lane, Bradford, West Yorkshire, BD4 6QS.

Coal Mining Risk Assessment

Appendix B - Coal Authority Consultants Coal Mining Report

(No. 51002678245001)



The Coal
Authority

CON29M

coal mining report

141 TOFTSHAW LANE, BRADFORD, BD4 6QS



Known or potential coal mining risks

Past underground coal mining	Page 4
Future underground coal mining	Page 4
Mine entries	Page 5
Withdrawal of support	Page 6



Further action

No further reports from the Coal Authority are required. Further information on any next steps can be found in our Professional opinion.

For more information on our reports please visit www.groundstability.com



Professional opinion

According to the official mining information records held by the Coal Authority at the time of this search, evidence of, or the potential for, coal mining related features have been identified. In view of the coal mining circumstances we would recommend that any planned or future development should follow detailed technical advice before beginning work on site. Please see [page 3](#) for further details on **Future development**.

Your reference: **C0489**
Our reference: **51002678245001**
Date: **8 October 2021**

Client name:
Christiaan Wilkinson

If you require any further assistance please
contact our experts on:
0345 762 6848
groundstability@coal.gov.uk

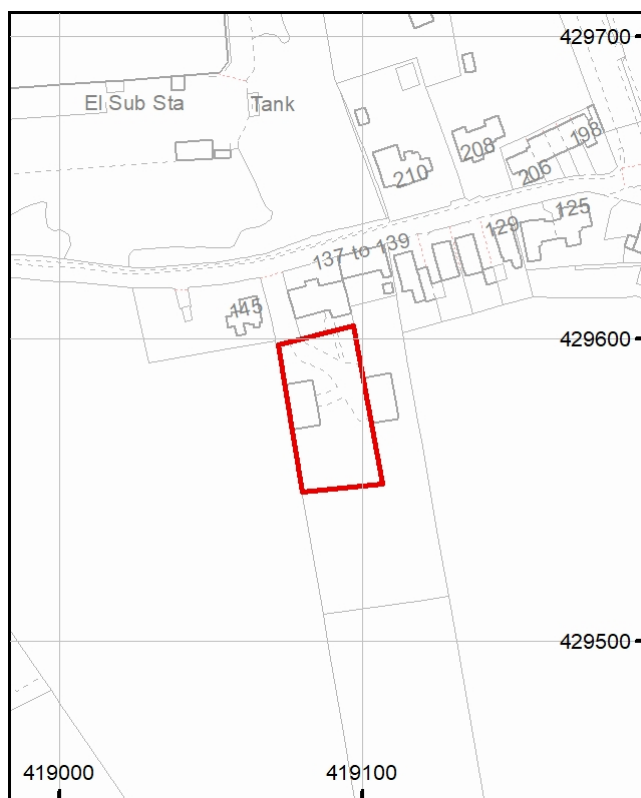


The Law
Society

Enquiry boundary

Key

Approximate position of enquiry boundary shown



We can confirm that the location is
on the coalfield



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This report is prepared in accordance with the latest Law Society's Guidance Notes 2018, the User Guide 2018 and the Coal Authority's Terms and Conditions applicable at the time the report was produced.



Accessibility

If you would like this information in an alternative format, please contact our communications team on 0345 762 6848 or email communications@coal.gov.uk.

Professional opinion



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. 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.

If you are looking to develop, or undertake works, within a coal mining development high risk area your Local Authority planning department may require a Coal Mining Risk Assessment to be undertaken by a qualified mining geologist or engineer. Should you require any additional information then please contact the Coal Authority on **0345 762 6848** or email cmra@coal.gov.uk.

Detailed findings

Information provided by the Coal Authority in this report is compiled in response to the Law Society's CON29M Coal Mining enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL.

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1 Past underground coal mining

The property is in a surface area that could be affected by underground mining in 2 seams of coal at 60m to 130m depth, and last worked in 1941.

Any movement in the ground due to coal mining activity associated with these workings should have stopped by now.

In addition the property is in an area where the Coal Authority believes there is coal at or close to the surface. This coal may have been worked at some time in the past. The potential presence of coal workings at or close to the surface should be considered, particularly prior to any site works or future development activity, as ground movement could still be a risk. Your attention is drawn to the Professional opinion sections of the report.

2 Present underground coal mining

The property is not within a surface area that could be affected by present underground mining.

3 Future underground coal mining

The property is not in an area where the Coal Authority has received an application for, and is currently considering whether to grant a licence to remove or work coal by underground methods.

The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area likely to be affected from any planned future underground coal mining.

However, reserves of coal exist in the local area which could be worked at some time in the future.

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

4 Mine entries

There are no recorded coal mine entries known to the Coal Authority within, or within 20 metres, of the boundary of the property.

This information is based on the information that the Coal Authority has at the time of this enquiry.

Based on the Coal Authority's knowledge of the mining circumstances at the time of this enquiry, there may be unrecorded mine entries in the local area that do not appear on Coal Authority records.

5 Coal mining geology

The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

6 Past opencast coal mining

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

7 Present opencast coal mining

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

8 Future opencast coal mining

There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

9 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.

10 Mine gas

The Coal Authority has no record of a mine gas emission requiring action.

11 Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Coal Authority, under its Emergency Surface Hazard Call Out procedures.

12 Withdrawal of support

The property is in an area where a notice to withdraw support was given in 1945.

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.

13 Working facilities order

The property is not in an area where an order has been made, under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

14 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.

Statutory cover



Coal mining subsidence

In the unlikely event of any coal mining related subsidence damage, the Coal Authority or the mine operator has a duty to take remedial action in respect of subsidence caused by the withdrawal of support from land or property in connection with lawful coal mining operations.

When the works are the responsibility of the Coal Authority, our dedicated public safety and subsidence team will manage the claim. The house or land owner ("the owner") is covered for these works under the terms of the Coal Mining Subsidence Act 1991 (as amended by the Coal Industry Act 1994). Please note, this Act does not apply where coal was worked or gotten by virtue of the grant of a gale in the Forest of Dean, or any other part of the Hundred of St. Briavels in the county of Gloucester.

If you believe your land or property is suffering from coal mining subsidence damage and you need more information on what to do next, please use the following link to our website which sets out what your rights are and what you need to consider before making a claim.

www.gov.uk/government/publications/coal-mining-subsidence-damage-notice-form



Coal mining hazards

Our public safety and subsidence team provide a 24 hour a day, 7 days a week hazard reporting service, to help protect the public from hazards caused by past coal workings, such as a mine shaft or shallow working collapse. To report any hazards please call **01623 646 333**. Further information can be found on our website: www.gov.uk/coalauthority.

Glossary



Key terms

adit - horizontal or sloped entrance to a mine

coal mining subsidence - ground movement caused by the removal of coal by underground mining

Coal Mining Subsidence Act 1991 - the Act setting out the duties of the Coal Authority to repair damage caused by coal mining subsidence

coal mining subsidence damage - damage to land, buildings or structures caused by the removal of coal by underground mining

coal seams - bed of coal of varying thickness

future opencast coal mining - a licence granted, or licence application received, by the Coal Authority to excavate coal from the surface

future underground coal mining - a licence granted, or licence application received, by the Coal Authority to excavate coal underground. Although it is unlikely, remaining coal reserves could create a possibility for future mining, which would be licensed by the Coal Authority

mine entries - collective name for shafts and adits

payments to owners of former copyhold land - historically, copyhold land gave rights to coal to the copyholder. Legislation was set up to allow others to work this coal, but they had to issue a notice and pay compensation if a copyholder came forward

shaft - vertical entry into a mine

site investigation - investigations of coal mining risks carried out with the Coal Authority's permission

stop notice - a delay to repairs because further coal mining subsidence damage may occur and it would be unwise to carry out permanent repairs

subsidence claim - a formal notice of subsidence damage to the Coal Authority since it was established on 31 October 1994

withdrawal of support - a historic notice informing landowners that the coal beneath their property was going to be worked

working facilities orders - a court order which gave permission, restricted or prevented coal mine workings