

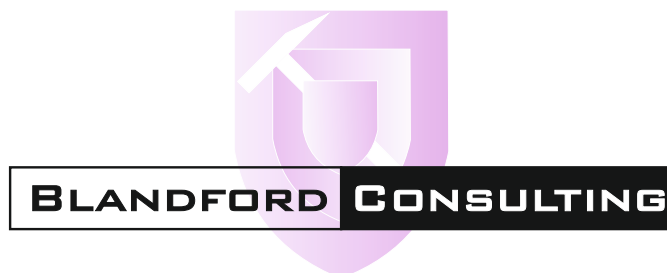
Report No. BC/MB/06.23.02.

Coal Mining Risk Assessment: Land at Gwelfor, Heol Llanelli, Trimsaran.

Prepared on behalf of:

Acorn (3000) Ltd.

By:



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Coal Mining Risk Assessment: Land at Gwelfor, Heol Llanelli, Trimsaran.

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Appendix

Copy of The Coal Authority's mining report reference no. 51003362612001.

Coal Mining Risk Assessment: Land at Gwelfor, Heol Llanelli, Trimsaran.

1 Introduction

This report has been prepared on behalf of our client:

***Acorn (3000) Ltd.,
Gwelfor,
Heol Llanelli,
Trimsaran,
SA17 4AG***

and relates to the above parcel of land at Gwelfor in Trimsaran where planning permission is being sought for a residential development. This report discusses the geology and mining history of the Site and the immediately surrounding area as they may affect the proposed development and thereby assesses the risk from the mining heritage and from the geology.

The following sources of data were used in the compilation of this report:

- i) *Research of published geological records;*
- ii) *Research of mining records held at The Coal Authority's archive in Mansfield;*
- iii) *Inspection of The Coal Authority's interactive map, accessed on the 25th April 2023;*
- iv) *The findings of The Coal Authority's mining report, reference no. 51003362612001;*
- v) *Inspection of Public Health England's on-line Radon interactive map, accessed on the 23rd June 2023, and*
- vi) *The archive records of Blandford Consulting.*

The findings of this report are necessarily based upon the data used in its compilation and may be amended in the future in the light of additional material information. The report must only be used in its entirety for its stated purpose.

/Cont....

2 Brief Description of the Site

The Site is situated towards the south-eastern extremity of Trimsaran; it is situated on north-westerly facing slopes near a tributary of the Gwendraeth Fawr River; it is 3.4 miles south-east of the centre of Kidwelly and approximately 4 miles north-west of the commercial centre of Llanelli (see *General Location Plan, drawing no. BC/MB/06.23.02.01*). The parcel of land is irregular in outline and occupies an area of approximately 1.88 hectares. The Site is situated within a semi-rural landscape on the fringes of Trimsaran amongst woodland and agricultural enclosures and is presently occupied with a bungalow. The Site slopes north-westwards from an approximate elevation of 124m aod in the south-east corner to approximately 104m aod in the north-west corner.

Figure 1
Aerial View of Site



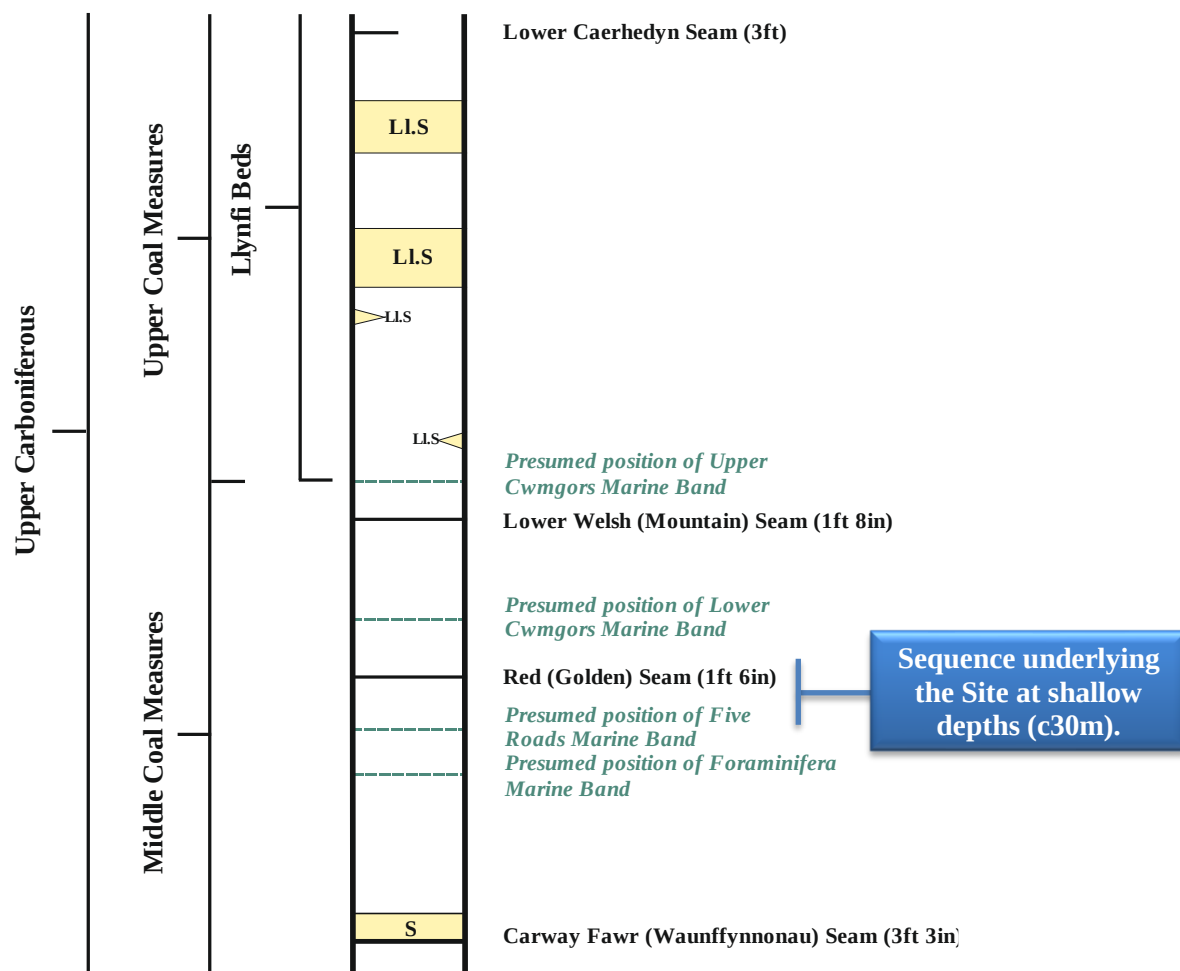
3 Geology of the Site

The Site is situated towards the north-western margins of the former South Wales Coalfield such that it is underlain at shallow depths by strata assigned to the Lower Coal Measures, a division of the Upper Carboniferous Period (see *Geology Plan, drawing no.*

/Cont....

BC/MB/06.23.02.02). The published geological sheet at a scale of 1:10,560 (SN 40 SE) shows the Site to be underlain with strata assigned to the Middle Coal Measures. The coal seam outcrops in the vicinity of the Site follow a north-easterly trend and include the Soap, Drap, Carway Fawr and Lower Welsh (Mountain) Seams. The partly proven and otherwise inferred outcrop of the Red (Golden) Vein is shown to pass through the Site and is likely to underlie the southern half of Site at shallow depths.

Figure 2
Part of the Stratigraphic Column.
(BGS SN 40 SE)



The measures of the South Wales Coalfield have been affected by large, normal faults frequently referred to as 'cross faults'. In the Trimsaran area such faults have a slightly sinuous trace at the surface and average trends towards the north. The published geological sheet shows

/Cont....

that no such faults affect the Site. The Trimsaran Disturbance, a large east-west trending belt of disturbed ground, is present approximately three-quarters of a mile north of the Site; there are a number of reverse faults and folds within the disturbance.

The published geological sheet shows the coal measures beneath the Site to be overlain with superficial deposits of glacial till, Boulder Clay and that the Site is not affected by landslip conditions, the geological provenance of the Site is one where landslip features would not be expected to form.

4 Mining History

The Site lies within an area where extensive underground coal mining operations have taken place, some dating back to the nineteenth century. Coal seams were accessed by adits driven into the mining horizons near their outcrops supplemented by air shafts; larger shafts gave access to deeper lying coal seams. Our searches identified that the Site is in a surface area that could be affected by underground mining in four coal seams at 90m to 420m depth, and last worked in 1952. The Coal Authority's interactive map shows that the Site is not affected by shallow nor by 'probable' workings, *i.e.* possible old workings for which The Coal Authority has no plan record of (see Figure 3).

There are no recorded disused mine entries within the confines of the Site or within 20m of its boundary.

The Site has not been part of an opencast site and is approximately 300m from the nearest opencast coal site, which has been restored.

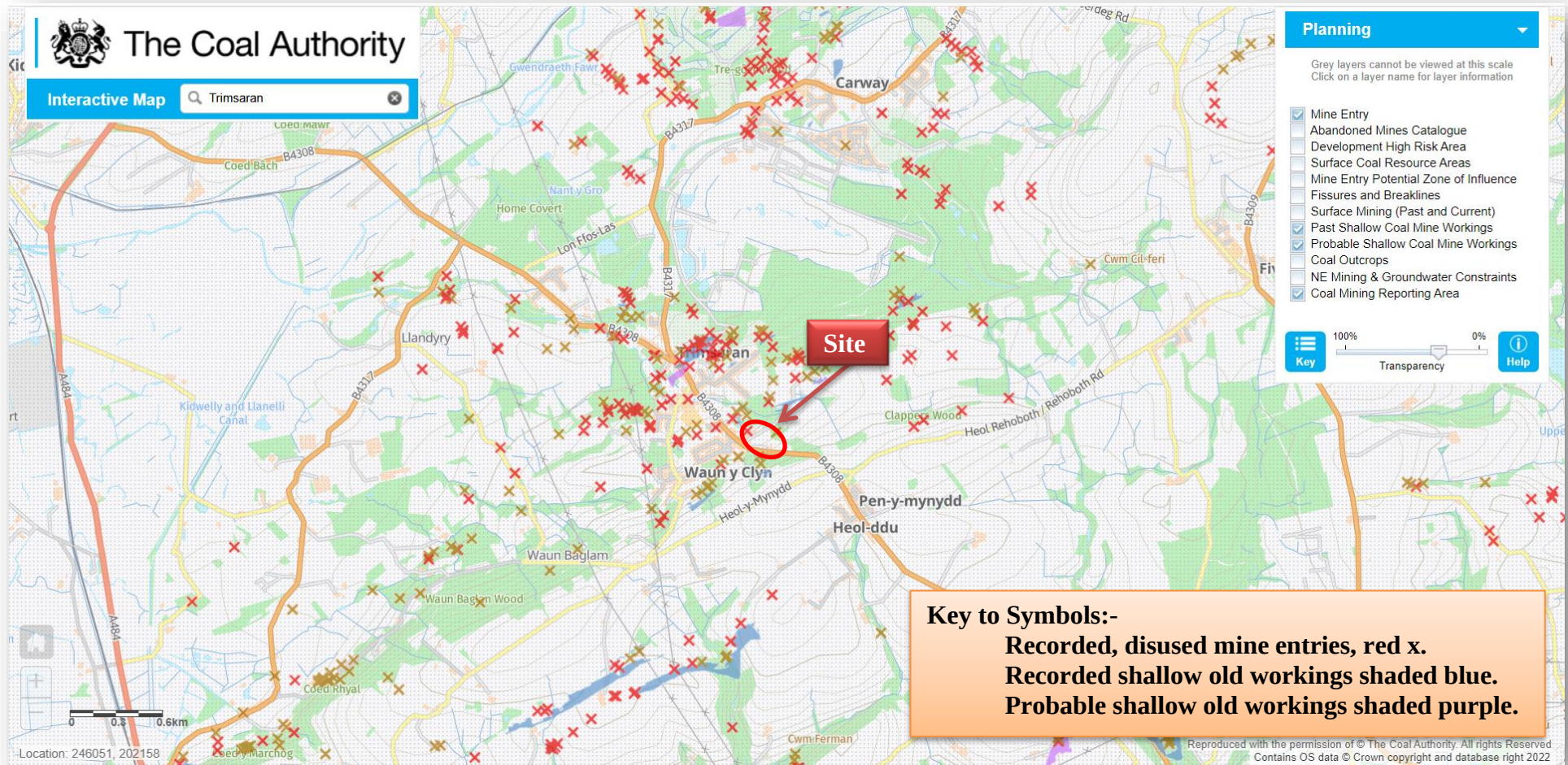
There are no operating coal mines in the area, either deep mines or opencast.

5 Mine Gases

When coal is mined gases, including methane, are released and may accumulate in the voids left by the mining operations. These gases may later vent to atmosphere or be displaced by

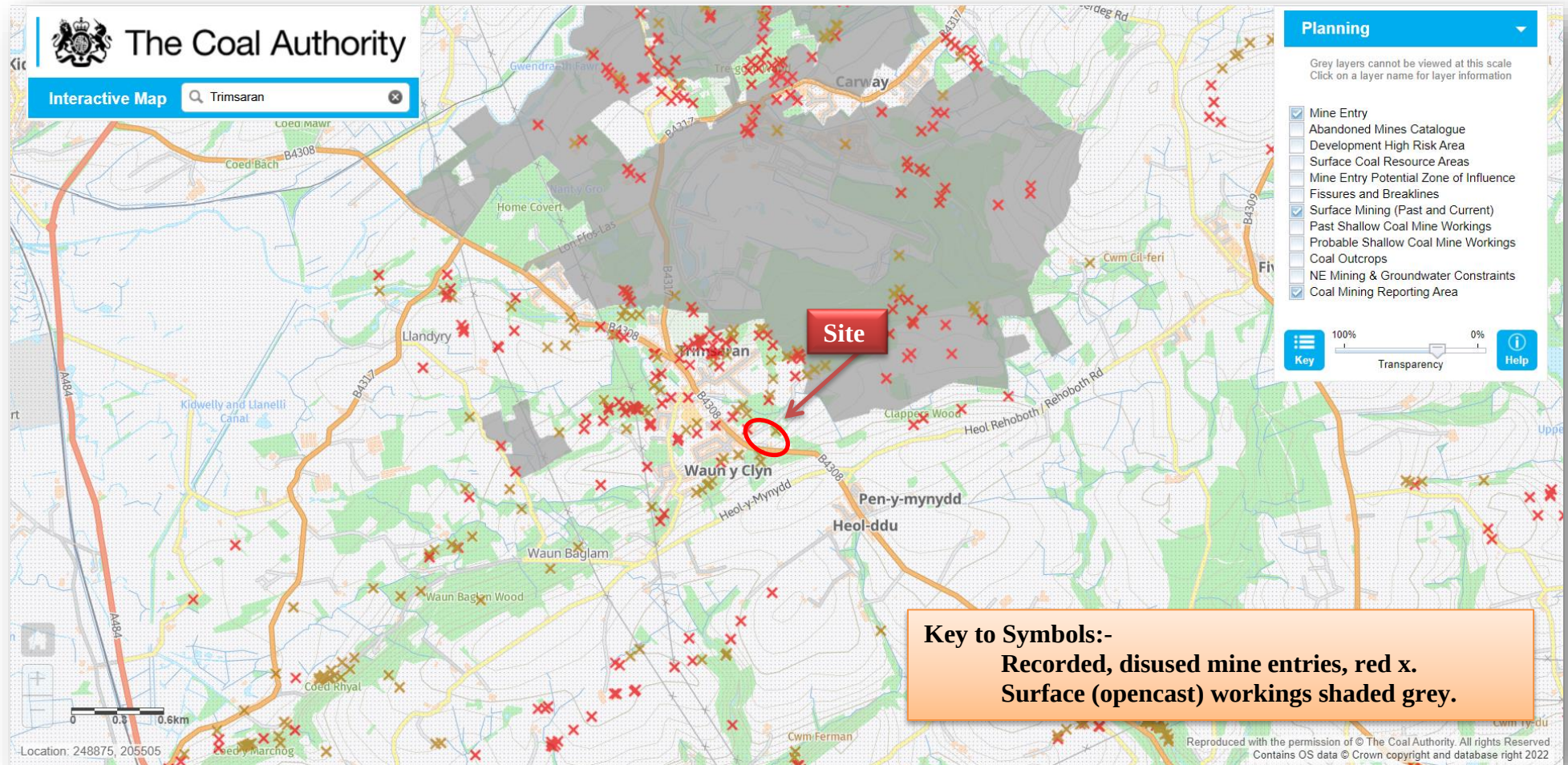
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Figure 3
Print-out of The Coal Authority's Interactive Map
 (Accessed 23rd June 2023)



/Cont....

Figure 4
Print-out of The Coal Authority's Interactive Map
(Accessed 23rd June 2023)



/Cont....

mine water flooding the mining voids and forced to the surface. Mine gases may, in certain circumstances, accumulate within buildings and pose a risk of asphyxiation, fire or explosion. A number of studies of the old workings across South Wales and dating back to the mid to late twentieth century have shown that there is little risk from mine gases. This may be as a result of the nature of the coal seams or because the shallow old workings have vented most of the mine gases to atmosphere or is as a result of the combination of the two. There are no recorded shallow mine workings underlying the Site that could act as a source for mine gases and no nearby disused mine entries that could act as a preferential pathway for mine gases venting from deeper old workings. The Coal Authority has no record of an incident at the Site involving mine gases that has required any action.

6 Radon Gas

Government guidelines recommend that the potential for Radon gas should be assessed for all new developments; the advice has been implemented by accessing Public Health England's on-line Radon map. The report identifies that the Site is in an area where the estimated maximum Radon potential is less than 1%. The appropriate response for Building Control purposes is NONE.

7 Discussion and Recommendations

7.1 Solid Geology

Published geological data indicates that the Site is not affected by normal faulting or by landslip conditions. It is considered that there are no issues relating to the solid geology of the Site that would affect the structural integrity of the proposed development and no further action is required in this respect.

7.2 Mining History

7.2.1 Mine Workings

The Site is within an area where extensive underground mine workings have taken place. Our searches have identified that there are no shallow mine workings nor

/Cont....

probable workings affecting the Site. The Site is in a surface area that could potentially be affected by underground mining in four coal seams at 90m to 420m depth, and last worked in 1952. It is considered that settlement associated with these workings is no longer occurring and these workings pose no risk to the proposed development.

The outcrop of the Red Vein is shown to pass fairly centrally through the Site such that the Seam underlies the southern third of the Site at shallow depths. The thickness of the Seam varies across the locality from 0.45m to approximately 1.00m, it is a high quality coal seam with a strong roof that provides good mining conditions, with the result that it has been mine extensively across the Coalfield. There are no recorded workings underlying the Site in the Seam, but the risk of unrecorded workings being present cannot be discounted. Any shallow old workings that might be present in the Seam would have a high risk of them collapsing to the surface. It is recommended that before any development takes place intrusive site investigation is carried out across the southern third of the Site in order to assess in greater detail the risk of shallow mine workings being present in the Red Vein. The site investigation should be designed and supervised by an experienced geologist or other competent person and will require a permit from The Coal Authority.

The Site has not been part of an opencast site and is approximately 300m from the nearest opencast coal site, which has been restored.

There are no active underground mines or opencast sites within influencing distance of the Site.

7.2.2 Mine Entries

There are no recorded mine entries within the Site or within 20m of it. The risk of an unrecorded mine entry being present on the Site cannot be entirely discounted given the mining history of the district. It would be prudent to monitor all excavations on the Site and if anything unusual is observed then the excavation

/Cont....

work should be stopped immediately and advice sought from a Consultant Geologist or from The Coal Authority.

7.2.3 Mine Gases

There are no recorded shallow mine workings underlying the Site that could act as a source for mine gases and no nearby disused mine entries that could act as a preferential pathway for mine gases venting from deeper old workings. The Coal Authority has no record of an incident at the Site involving mine gases that has required any action. The risk from mine gases is considered to be low.

7.3 Radon Gas

Reference to Public Health England's on-line Radon map identifies that the Site is within an area where the maximum Radon potential is less than 1%. With the result that NO Radon gas protection measures are required.

7.4 Summary of Risk Assessment

There is no recognised risk to the proposed development from the solid geology.

There is a risk of unrecorded shallow mine workings being present in the Red Vein.

The risk of a disused mine entry being present on the Site cannot be discounted.

7.5 Summary of Recommendations

In so far as the solid geology of the area is concerned, no particular measures are required in the design and construction of the foundations of the proposed dwellings.

Before any development takes place, intrusive site investigation must be carried out across the southern half of the Site in order to assess in greater detail the risk of shallow mine workings being present in the Red Vein. The site investigation should be designed

/Cont....

and supervised by an experienced geologist or other competent person and will require a permit from The Coal Authority.

Excavation work on the Site should be carefully monitored for any evidence of a disused mine entry and if any unusual features are observed then the work must be stopped immediately, and advice sought from a Consultant Geologist or other competent person or from The Coal Authority.

Public Health England's on-line Radon map indicates that NO Radon gas protection measures will be required.

7.6 Foundation Options

Boulder Clay is shown to be present across the Site. Across the northern half of the Site where the risk of unrecorded old workings is absent it is likely that shallow spread, either strip/trench or raft, foundations will be appropriate subject to an examination of the soils present there.

The findings of the recommended intrusive site investigation will be required in order to assess the appropriate foundation options for the southern third of the Site.



**Dr Malcolm Blandford,
Chartered Geologist.**

Report Date: 28th June 2023.

***Blandford Consulting,
Consultant Geologists and Geotechnical Engineers,
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PLANS



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CF48 4DR.

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Geologists Working With The Environment....

Study on Land at Gwelfor, Heol Llanelli, Trimsaran.

General Location Plan.

Plan Scale: 1:50,000.

Key to Symbols:



Approximate Position of Site.

Note:

North is at top of plan.

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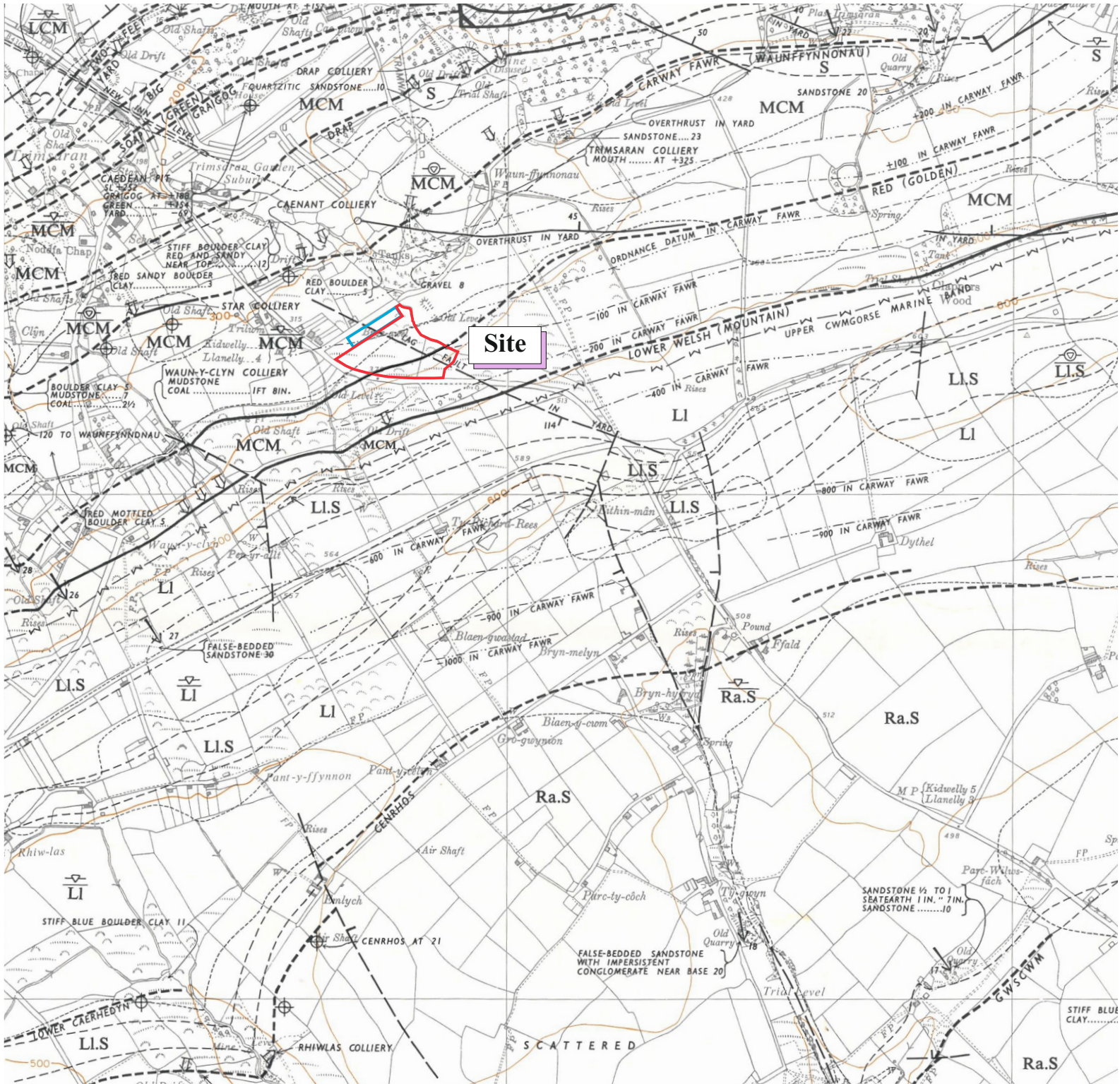
Drawing No: BC/MB/06.23.02.01.



Study on Land at Gwelfor, Heol Llanelli, Trimsaran.

Geology Plan.

Plan Scale: 1:10,560.



Key to Symbols:

- Approximate Site Boundary.
- Other Land in Client's Control.

Note:
North is at top of plan.

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Study on Land at Gwelfor, Heol Llanelli, Trimsaran.

Detailed Location Plan.

Plan Scale: 1:1,250.

Key to Symbols:

- Approximate Site Boundary.
- Other Land in Client's Control.
- - - Approximate Position of Red Vein Outcrop.

Notes:

North is at top of plan.

Plan taken from plan supplied by client.

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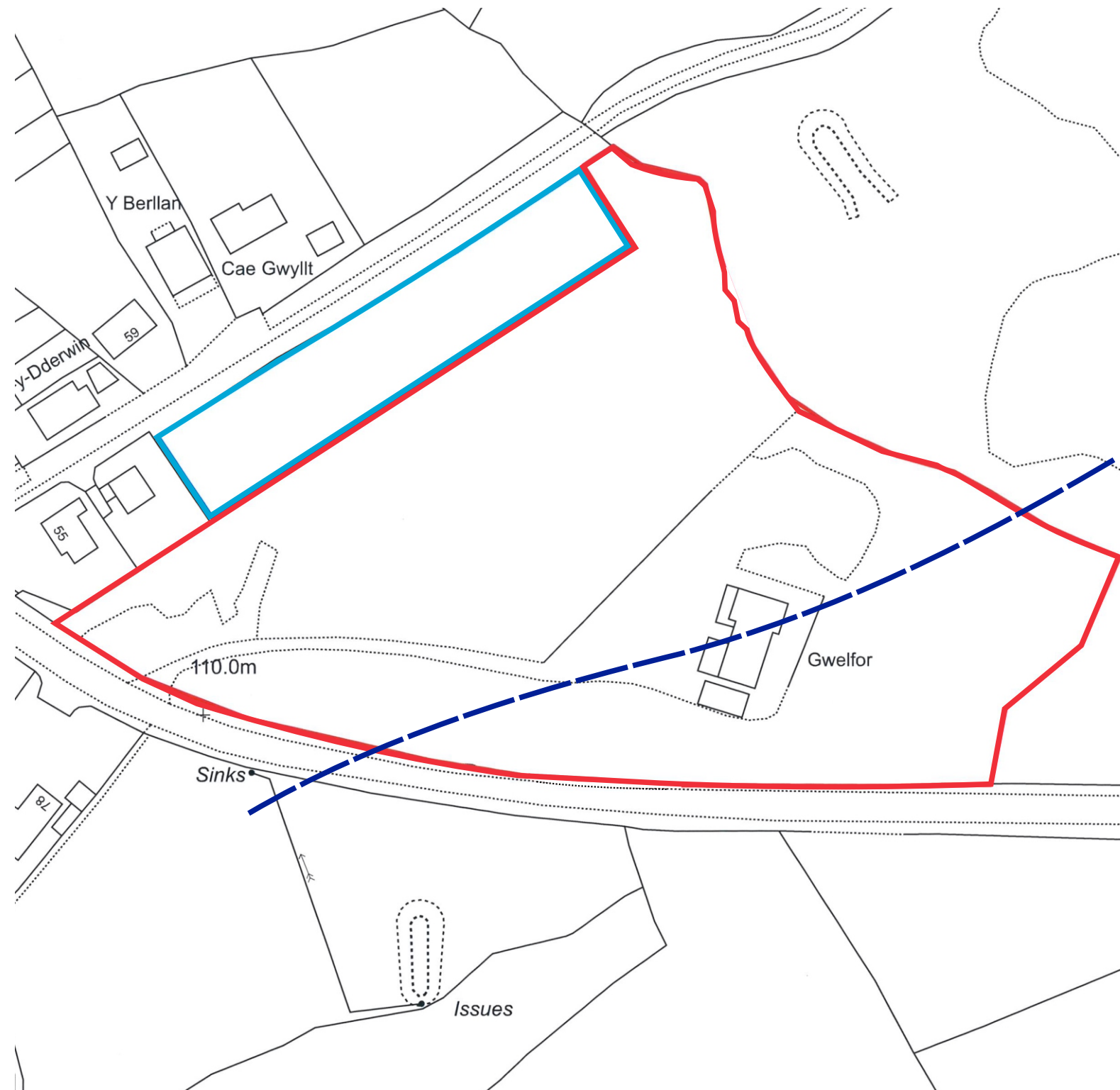


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Geologists Working With The Environment...

Drawing No: BC/MB/06.23.02.03.



Study on Land at Gwelfor, Heol Llanelli, Trimsaran.

Mining Risk Plan.

Plan Scale: 1:1,250.



Key to Symbols:

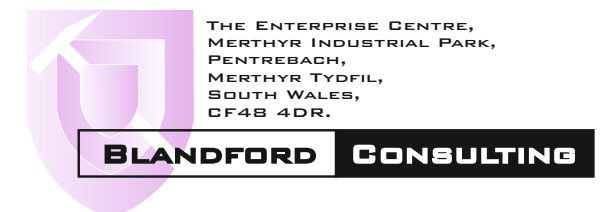
- **Approximate Site Boundary.**
- **Other Land in Client's Control.**
- - - **Approximate Position of Red Vein Outcrop.**
- Potential Area of Unrecorded Shallow Mine Workings.**

Notes:

North is at top of plan.

Plan taken from plan supplied by client.

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Drawing No: BC/MB/06.23.02.04.

APPENDIX

**COPY OF THE COAL
AUTHORITY'S MINING
REPORT, REFERENCE NO.
51003362612001.**



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Geologists Working With The Environment....



The Coal
Authority

CON29M

coal mining report

LAND AT GWELFOR, HEOL LLANELLI, TRIMSARAN, KIDWELLY,
CARMARTHENSHIRE, SA17 4AG



Known or potential coal mining risks

Past underground coal mining	Page 4
Future underground coal mining	Page 4
Mine entries	Page 5



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: **BC/MB/06.23.02**
Our reference: **51003362612001**
Date: **22 June 2023**

Client name:
BLANDFORD CONSULTING

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



The Law
Society

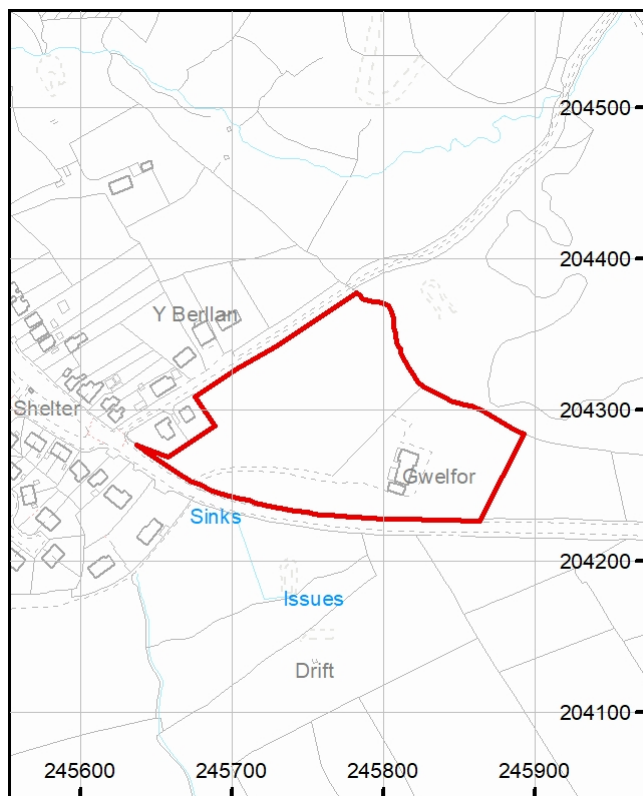
Enquiry boundary

Key

Approximate position of enquiry boundary shown



We can confirm that the location is
on the coalfield



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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.

MINE GAS: Please note, if there are no recorded instances of mine gas within 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.

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 4 seams of coal at 90m to 420m depth, and last worked in 1952.

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 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.

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 **0800 288 4242**. 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

mine gas - reports of alleged mine gas emissions received by the Coal Authority within 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

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



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