

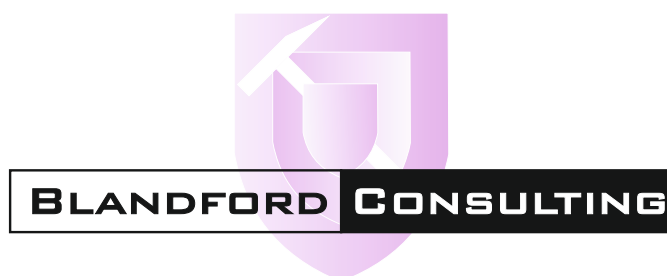
Report No. BC/MB/06.19.05.

Mining Risk Assessment: Land at Plymouth House, Merthyr Tydfil.

Prepared on behalf of:

Mr and Mrs D. Rees

By:



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Mining Risk Assessment: Land at Plymouth House, Merthyr Tydfil.

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List of Plans

Drawing No:		Scale:
<i>BC/MB/06.19.05.01.</i>	<i>General Location Plan.</i>	<i>1:50,000.</i>
<i>BC/MB/06.19.05.02.</i>	<i>Geology Plan.</i>	<i>1:10,560.</i>
<i>BC/MB/06.19.05.03.</i>	<i>Detailed Location Plan.</i>	<i>1:1,250.</i>

Appendix

Copy of The Coal Authority's Report, reference no. 51002146163001.

Mining Risk Assessment: Land at Plymouth House, Merthyr Tydfil.

1 Introduction

This report has been prepared on behalf of our client:

*Mr and Mrs D Rees,
2 Plymouth House,
Milbourne Terrace,
Merthyr Tydfil,
CF47 0UL*

and relates to land at Plymouth House in Merthyr Tydfil, where it is proposed to develop the land for housing. This report discusses the geology and mining history of the Site and the immediately surrounding area as they may affect the construction of the proposed dwellings and thereby assesses the mining risk to the proposed development. Recommendations are made for site investigation to examine further the risk from shallow mine workings and from a mine adit.

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) The findings of The Coal Authority's report, reference no. 51002146163001;*
- iv) Research of The Coal Authority's interactive map, accessed on the 18th June 2019;*
- v) Research of Public Health England's interactive Radon map 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.

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2 Brief Description of the Site

The parcel of land that is the subject of this report ('the Site') is located at the southern margins of the town of Merthyr Tydfil; it is approximately 1 km south-east of the centre of the town (see Figure 1 and *General Location Plan, drawing no. BC/MB/06.19.05.01*). The Site is located near the floor of the Taff Valley and is at an approximate elevation of 176m aod: it occupies an area of approximately 0.13 hectares (see *Detailed Location Plan, drawing no. BC/MB/06.19.05.03*). The Site lies within a mixed residential area where houses and bungalows are a mixture of terraced, semi-detached and detached.

Figure 1
Aerial View of Site



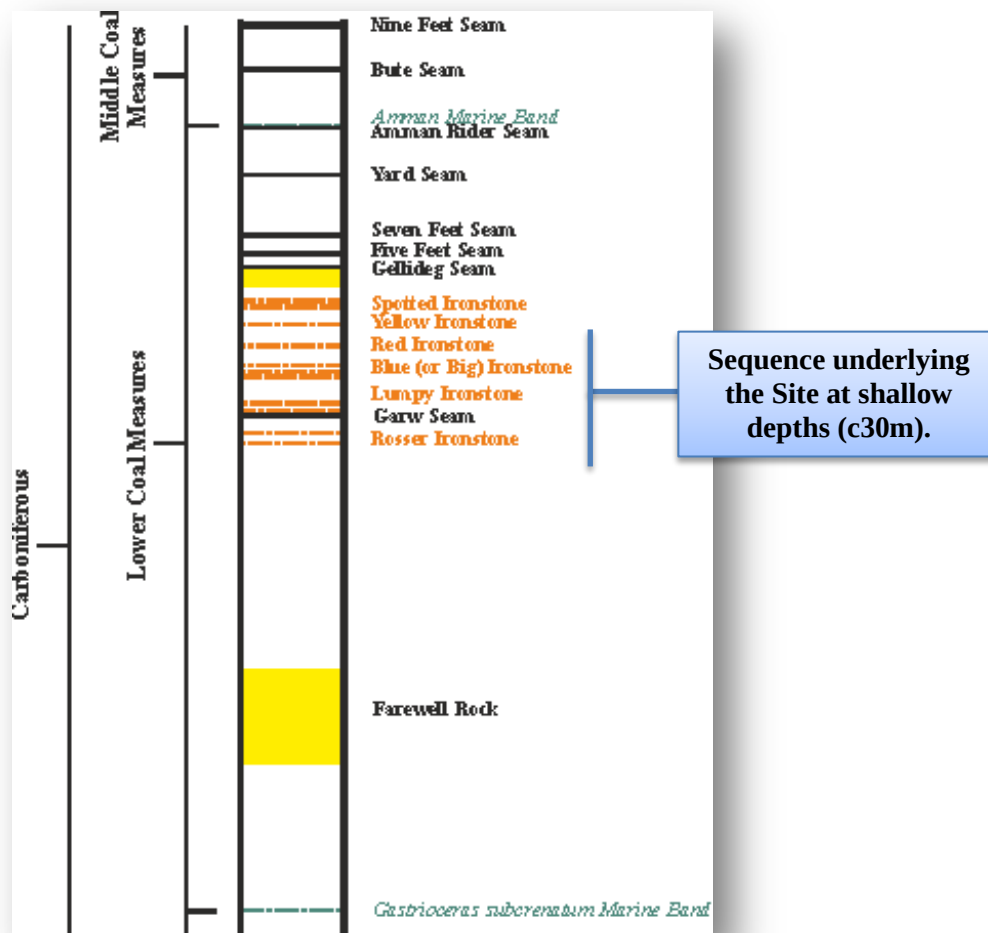
3 Geology of the Site

The Site is situated at the northern margin of the South Wales Coalfield and is underlain at shallow depths with strata assigned to the Lower Coal Measures, a sub-division of the Upper Carboniferous Period. The published geological sheets for the area at a 1:10,560 scale, (SO 00

/Cont....

NE and SO 00 SE), shows the inferred position of the outcrop of the Gellideg Seam to be present approximately 70m east of the Site and upslope from it (see *Geology Plan, drawing no. BC/MB/06.19.05.02*). Beneath the Gellideg Seam in the geological sequence are a series of five ironstone veins, the Garw Coal Seam and then the Rosser Ironstones (see Figure 2, Part of the Stratigraphic Column). The regional dip of the coal measures in this area is 1 in 12 towards the south-west such that the sequence containing the ironstone veins and the Garw Seam underlie the Site at shallow depths.

Figure 1
Part of the Stratigraphic Column.
 Scale: Not to Scale.



The measures of the South Wales Coalfield have been affected by large normal faults, frequently referred to as 'cross faults'. In the Merthyr Tydfil area these faults have a sinuous

/Cont....

trace at the surface and an average trend towards the north-west. Published geological information shows that the nearest such fault to the Site is the Merthyr Church Fault, the inferred surface position of which is shown to be 170m south-west of the Site.

The published geological sheet shows the Site to be covered with glacial deposits of river alluvium and with Made Ground that is almost certainly colliery spoil. We have no details of the thickness or engineering properties of the Alluvium or of the Made Ground that are present on the Site. The published geological sheet also shows that the Site is not affected by landslip conditions.

4 Mining History

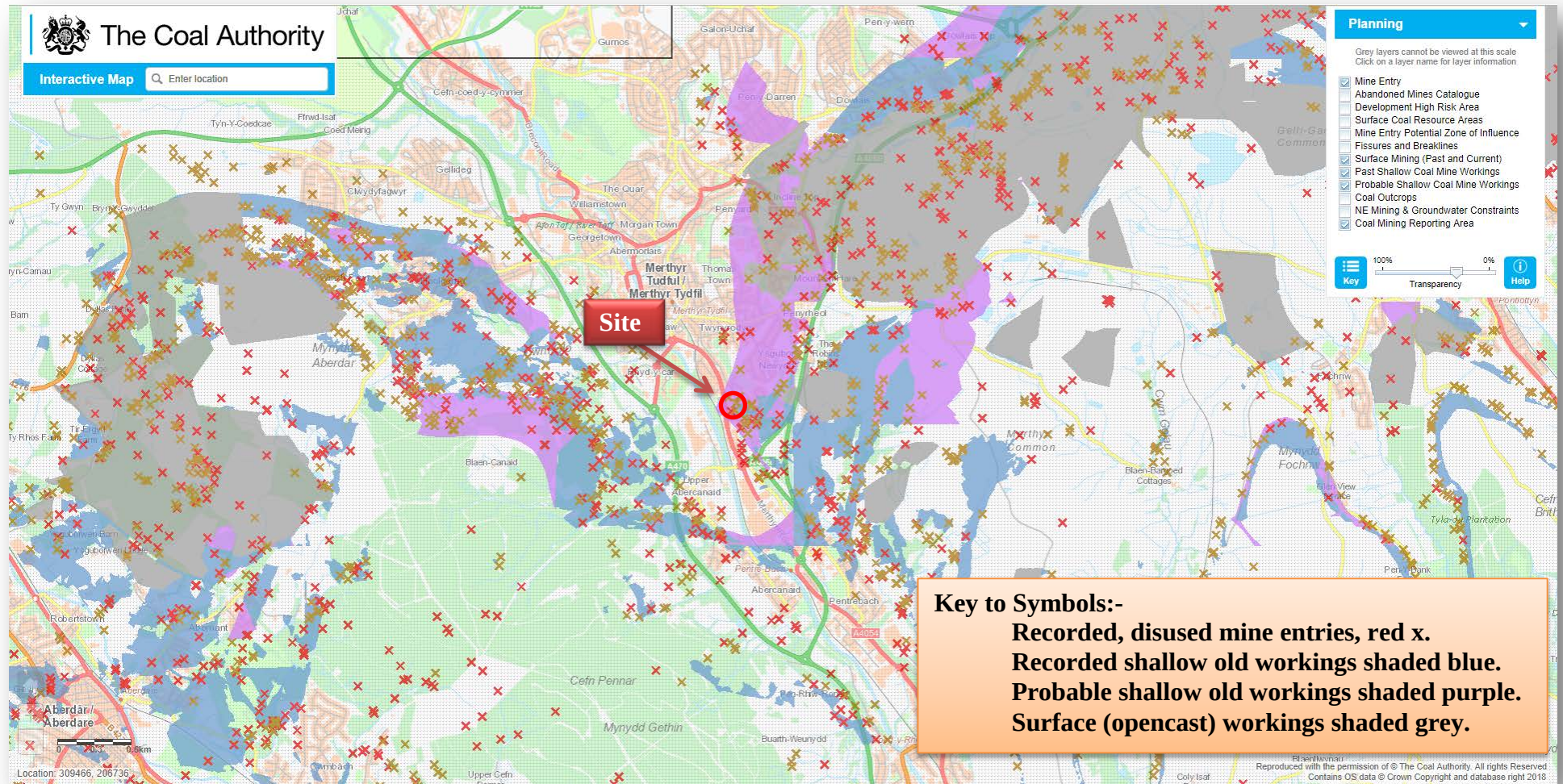
The general area has experienced extensive underground mining operations for coal and for ironstone dating back at least to the very earliest part of the nineteenth century. The workings were prosecuted from a number of adits driven into the valley sides at or near the outcrops of coal seams and ironstone veins and were supplemented with many shafts, principally to act as a source of air. Our searches identified that there are no records of underground coal workings within influencing distance of the Site. The mining records held by The Coal Authority are known to be incomplete, particularly in respect of older mining operations. The Coal Authority's interactive map shows 'probable' mine workings underlying the Site *i.e.* unrecorded shallow mine workings (see Figure 3).

The ironstone veins that underlie the Site at shallow depths have been extensively mined across the district and records held by The Coal Authority indicate that the Site is in a surface area that could be affected by underground mining in one of the ironstone veins at shallow depth. The mining of the ironstone vein ceased in 1855.

Our searches identified one disused mine entry, an adit, within the confines of the Site or within 20m of its boundaries. The adit is situated approximately 8m west of the Site (see *Detailed Location Plan, drawing no. BC/MB/06.19.05.03*) and the mining operations associated with the adit would have developed eastwards and northwards beneath the area where the Site is

/Cont...

Figure 3
Print-out of The Coal Authority's Interactive Map
 (Accessed 18th June 2019)



/Cont....

located. The location of the adit is consistent with The Coal Authority's reference to the ironstone workings at shallow depth in the vicinity of the Site.

Given the mining history of the locality, the risk of an unrecorded mine entry being present cannot be entirely discounted. The Site has not been part of an opencast coal site, and there have been no opencast mining operations close enough to the Site to affect the structural integrity of the proposed development. There are no operating collieries within influencing distance of the Site.

5 Mine Gases

When coal seams are disturbed during mining operations methane can be released and can collect with other mine gases in the mining voids left by the operations. In certain circumstances mine gases can accumulate within buildings and cause fire or explosion or can result in asphyxiation. 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 shallow coal workings beneath the Site that could act as a source of mine gases and The Coal Authority has no record of an emission of mine gas at the Site that has required action.

6 Radon Gas

An assessment of the risk from Radon gas has been carried out by accessing Public Health England's interactive Radon map. The map identifies that the Site lies within an area that is not affected by Radon gas.

/Cont....

7 Risk Assessment: Discussion and Recommendations

7.1 Solid Geology

Published geological data suggests that there are no issues relating to the solid geology of the Site that would affect the structural integrity of a residential development.

7.2 Mining History

7.2.1 *Shallow Mine Workings*

The locality has experienced extensive mining operations for both coal and ironstone and the Site lies within an area that could be affected by underground mining in one the ironstone veins at shallow depth. It is recommended that a programme of exploration boreholes is drilled on the Site with a view to determining the depth and nature of any shallow mine workings that may be present.

Otherwise, there are no active mines in the locality, deep mines or opencast mines, that would affect the structural integrity of the proposed development and the Site has not been part of an opencast coal site.

7.2.2 *Mine Entries*

Our searches found one recorded, disused mine entry within the bounds of the Site or within 20m of its boundary. The adit is situated approximately 8m west of the Site and its orientation is such that any shallow underground roadways extending from the adit will be present beneath the Site. The recommended exploratory programme should be designed to include an assessment of the risk from the adit.

The potential for a further unrecorded air shaft or adit to be present is unlikely but cannot be entirely dismissed given the mining history of the area. If anything unusual is observed during construction works then the work should be stopped

/Cont....

immediately and advice should be sought from a suitably experienced Chartered Geologist or from The Coal Authority.

7.2.3 Mine Gases

The risk to the development from mine gases is low but it would be prudent to monitor the recommended boreholes for the presence of mine gases.

7.3 Radon Gas

Public Health England's interactive Radon map identifies that the Site lies within an area that is not affected by Radon gas and the appropriate response for building control purposes is NONE.

7.4 Summary of Risk Assessment

There is a potential risk to a residential development from shallow mine workings and from a nearby adit. The presence of a disused mine entry within the confines of the Site is considered to be very low. There is no risk from Radon gas.

7.5 Summary of Recommendations

A programme of exploration boreholes should be drilled on the Site in order to examine in greater detail the risks from shallow mine workings and from the nearby adit; the boreholes should be monitored for the presence of mine gases. The boreholes should be designed and supervised by a Chartered Geologist and will require a permit from The Coal Authority.

If any unusual feature that might indicate the presence of a disused mine entry is encountered during excavation works on the Site, the work must be stopped immediately and advice sought from a suitable experienced Chartered Geologist or from The Coal Authority.

/Cont....

7.6 Foundation Options

The findings of the recommended borehole investigation will be needed to inform the appropriate choice of foundation options.

Consideration of the soil conditions present on the site is outside the scope of this report; however, it is noted that Made Ground may be present on at least part of the Site. An assessment of the soil conditions should be undertaken before determining the most appropriate foundation option.



**Dr Malcolm Blandford,
Chartered Geologist.**

Report Date: 19th June 2019.

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



*The Enterprise Centre,
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Pentrebach,
Merthyr Tydfil,
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Geologists Working With The Environment...

Study on Land at Plymouth House, Merthyr Tydfil.

General Location Plan.

Plan Scale: 1:50,000.

Key to Symbols:

 Approximate Position of Site.

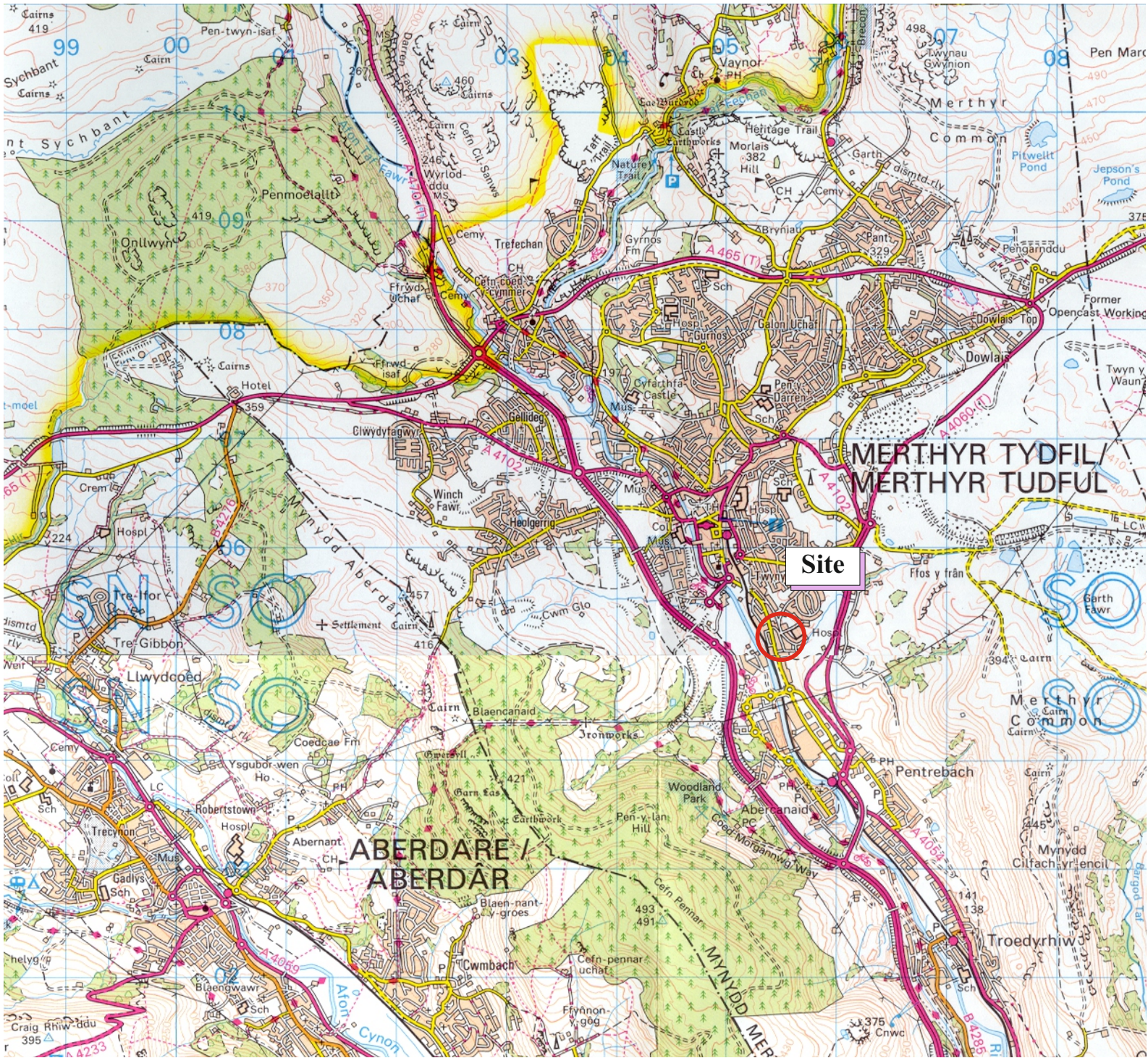
Note:
North is at top of plan.

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Study on Land at Plymouth House, Merthyr Tydfil.

Geology Plan.

Plan Scale: 1:10,560.

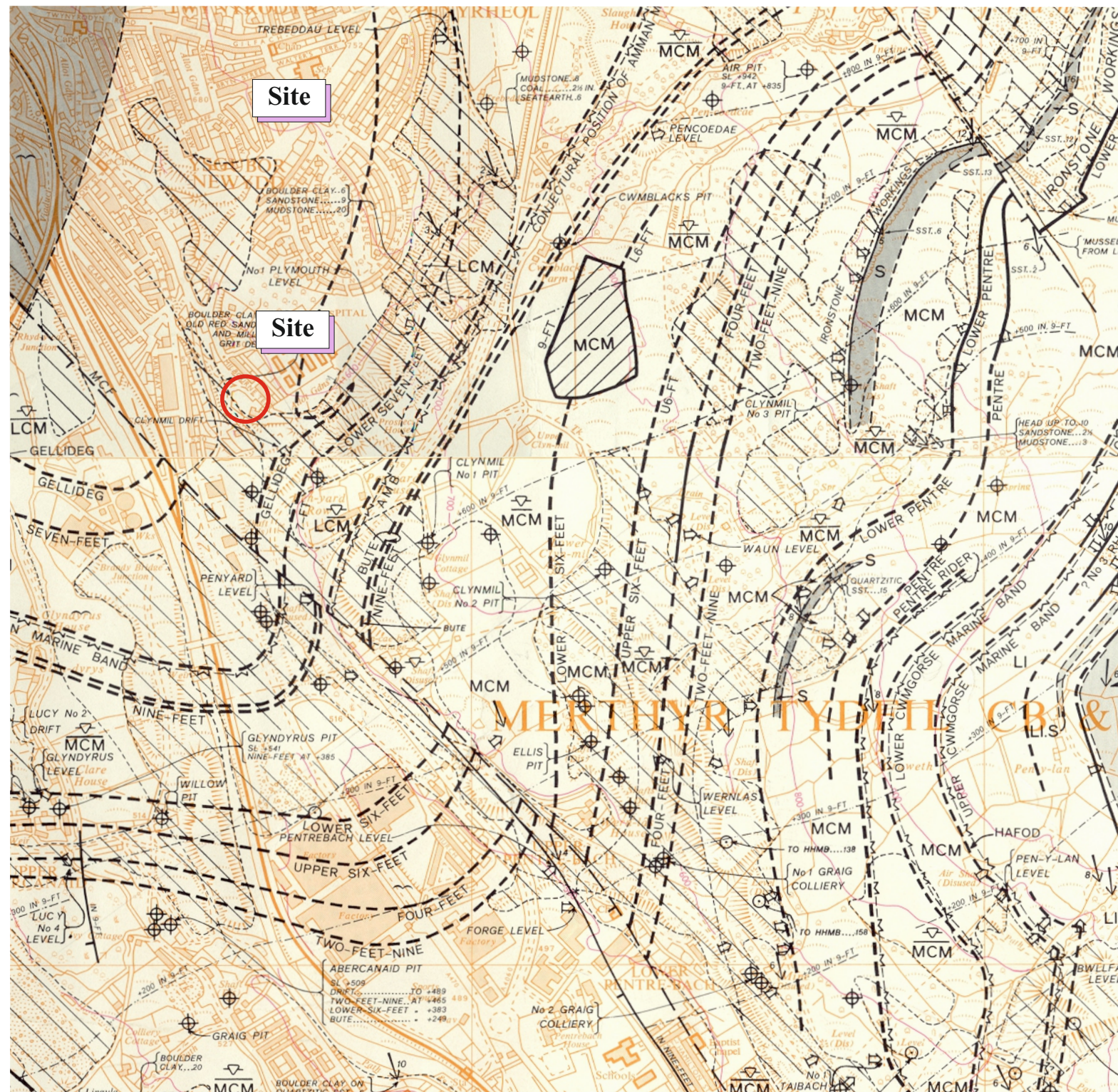
Key to Symbols:

— Approximate Site Boundary.

Note:

North is at top of plan.

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Drawing No: BC/MB/06.19.05.02.

Study on Land at Plymouth House, Merthyr Tydfil.

Detailed Location Plan.

Plan Scale: 1:1,250.

Key to Symbols:

— Approximate Site Boundary.

➤ Approximate position of disused mine adit.

Note:

North is as shown on plan.

Drawing extracted from documents provided by client.

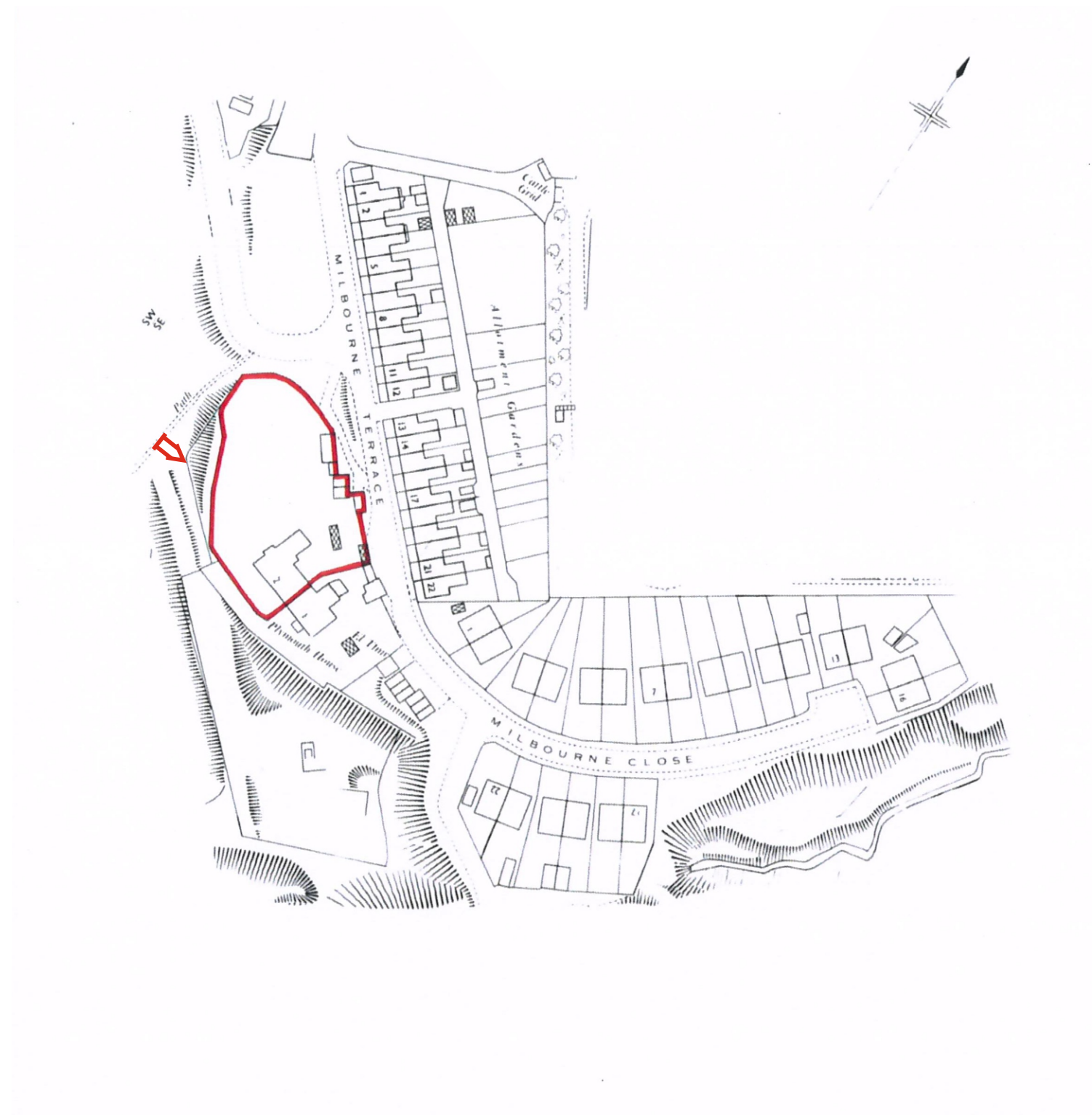
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Drawing No: BC/MB/06.19.05.03.



APPENDIX

**COPY OF COAL AUTHORITY'S
REPORT, REF NO:
51002146163001**



*The Enterprise Centre,
Merthyr Industrial Park,
Pentrebach,
Merthyr Tydfil,
South Wales,
CF48 4DR.*

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The Coal
Authority

CON29M

coal mining report

2, PLYMOUTH HOUSE, MILBOURNE TERRACE, MERTHYR TYDFIL, CF47 0UL



Known or potential coal mining risks

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



Further action

These additional reports can give further detail on the risks identified:

- Mine entry interpretive report
- Mine entry plan and data sheets

For more information please see our **Further action reports** on page 10



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/06.19.05**
Our reference: **51002146163001**
Date: **18 June 2019**

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

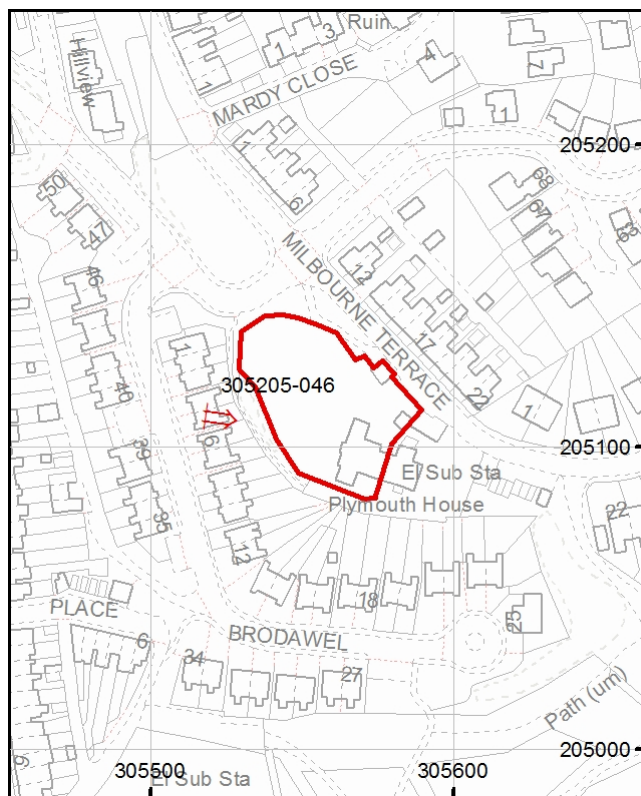
Approximate position of enquiry boundary shown



Disused adit



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.



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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.



What if this information changes?

If this report is for a residential property, insurance is included to cover any loss in property value caused by any changes in the information contained in this report. Please see the attached certificate of insurance for the terms and conditions of this insurance. The insurance does not cover non-residential property or further action reports.

Professional opinion



Mine entries

The enquiry boundary shows the approximate location of the disused mine entry/entries referred to in this report. Property owners have the benefit of statutory protection (under the Coal Mining Subsidence Act 1991). This contains provision for the making good, to the reasonable satisfaction of the owner, of physical damage caused by disused coal mine workings including disused coal mine entries. A leaflet setting out the rights and obligations of either the Coal Authority or other responsible persons under the 1991 Act can be obtained by visiting www.coal.gov.uk. Please note this Act is not valid where coal was worked or extracted 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 wish to discuss the relevance of any of the information contained in this report, you should seek the advice of a qualified mining engineer or surveyor. If you or your advisor wishes to examine the source plans from which the information has been taken, these are available to view, at our Coal Authority head office in Mansfield. To book an appointment please call **01623 637 225**. Should you or your advisor wish to carry out a physical investigation that may enter, disturb or interfere with any disused mine entry, prior permission must be sought from the owner. For coal mine entries, the owner will normally be the Coal Authority.

The Coal Authority, regardless of responsibility and in conjunction with other public bodies, provide an emergency, 24 hour call out facility in coalfield areas to assess the public safety implications of mining features (including disused mine entries). To report an emergency you can call **01623 646 333**.



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 not within a surface area that could be affected by any past recorded underground coal mining.

However 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.

The property is in a surface area that could be affected by underground mining in 1 seam of ironstone at shallow depth, and last worked in 1855.

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

Within, or within 20 metres of, the boundary of the property there is 1 mine entry, the approximate position of which is shown on the enquiry boundary plot. For reasons of clarity, mine entry symbols may not be drawn to the same scale as the plan.

There is no record of what steps, if any, have been taken to treat the mine entry.

For an additional fee, the Coal Authority can provide a Mine Entry Interpretive Report. The report will provide a separate assessment for the mine entry/entries referred to in this report. It gives an opinion on the likelihood of mining subsidence damage caused from ground movement as a consequence of the mine entry/entries. It also gives details of the remedies available for subsidence damage where the mine entry was sunk in connection with coal mining.

Please note that it may not be possible to produce a report if the main building to the property cannot be identified from Coal Authority plans (ie for development sites and new build).

For further advice on how to order this additional information please visit www.groundstability.com.

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.

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.

The owner therefore shouldn't incur cost or liability from repairs caused by the withdrawal of support from land and/or property in connection with lawful coal mining operations. Usually these actions will not need to involve your insurance company or mortgage lender.



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.



On behalf of the insurer

Coal Mining Report Insurance Policy Schedule

Policy number: 25840662

The insurer: Liberty Legal Indemnities – underwritten by Liberty Mutual Insurance Europe SE

Binding Authority contract number: RNMFP1903841

Property: 2, PLYMOUTH HOUSE, MILBOURNE TERRACE, MERTHYR TYDFIL, CF47 0UL

Report reference number: 51002146163001

Limit of cover: £50,000.00

Dated: 18 June 2019

This policy and schedule shall be read together and any word or expression to which a specific meaning has been attached in either shall bear such meaning wherever it may appear.

Where a Coal Mining Report has been obtained in connection with a sale of the property, cover is provided for the benefit of a purchaser and their lender; in the case of a re-mortgage or where the existing owner chooses to obtain a Coal Mining Report, cover is provided for the benefit of the owner and their lender.

The policy offers protection against loss sustained by the owner of the property if any new problems or adverse entries are revealed in a subsequent Coal Mining Report which were not revealed by the original report to which the policy was attached.

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<https://www.groundstability.com/insurance/terms/20190404/terms.html>

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



Further action reports

Mine entry interpretive report - assesses the risk of ground movement from mine entries in, or within 20 metres of, the property boundary. To order this report, use the same boundary as the CON29M report, then draw the building on the additional map screen.

For more information and to order this report please visit:

<https://www2.groundstability.com/interpretive-report>

Mine entry plan and data sheets - give additional information on mine entries recorded on a piece of land. To order this report use the same boundary as the CON29M report and a member of our team will contact you to confirm the mine entries to include in this bespoke report.

For more information and to order this report please visit:

<https://www2.groundstability.com/plan-and-data-sheets>