

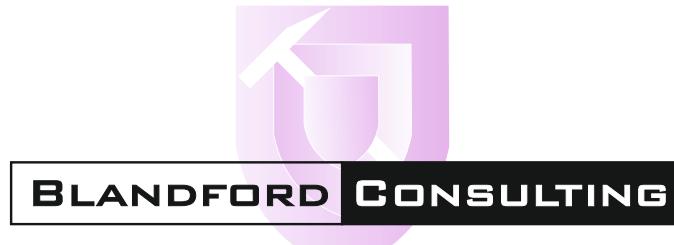
*Report No. BC/MB/04.15.03.*

# **Mining Risk Assessment on Land West of Penrhiw Street, Bryn, Port Talbot.**

*Prepared on behalf of:*

**Mr V. Price.**

*By:*



## **Copyright.**

*The copyright relating to this report and the plans and documents therein contained, which have been prepared by Blandford Consulting, is owned by them exclusively, and no such report, plan or document may be reproduced, published or adapted without their written consent. Complete or partial copies may be distributed by the client to facilitate discussions and matters relating to its commission. This report has been researched, prepared and compiled in the context of the purpose stated herein and must not be used in a different context.*

---

---



**THE ENTERPRISE CENTRE, MERTHYR INDUSTRIAL PARK,  
PENTREBACH, MERTHYR TYDFIL, SOUTH WALES, CF48 4DR.  
TEL: 01443 693353, FAX: 01443 693351  
EMAIL: SALES@BLANDFORDCONSULTING.COM  
WWW.BLANDFORDCONSULTING.COM**

---

---

## **Liability.**

*Blandford Consulting does not accept any liability other than arising out of the information that forms the basis of this report.*

## **Mining Risk Assessment on Land West of Penrhiw Street, Bryn, Port Talbot.**

### **Contents**

	<b>Page:</b>
<b>1. Introduction</b>	<b>1</b>
<b>2. Brief Description of the Site</b>	<b>2</b>
<b>3. Geology of the Site and Immediately Surrounding Area</b>	<b>2</b>
<b>4. Mining History</b>	<b>4</b>
<b>5. Mine Gasses</b>	<b>5</b>
<b>6. Risk Assessment</b>	<b>5</b>

### **List of Drawings**

<b>Drawing No:</b>		<b>Scale</b>
<i>BC/MB/04.15.03.01.</i>	<b><i>General Location Plan.</i></b>	<i>1:50,000</i>
<i>BC/MB/04.15.03.02.</i>	<b><i>Geology Plan.</i></b>	<i>1:50,000</i>
<i>BC/MB/04.15.03.03.</i>	<b><i>Detailed Location Plan.</i></b>	<i>Not to Scale</i>

### **Appendix**

*Copy of The Coal Authority's Report, reference no 51000838253001.*

# **Mining Risk Assessment on Land West of Penrhiw Street, Bryn, Port Talbot.**

## **1 Introduction**

This report has been prepared on behalf of our client:

***Mr V Price,  
The Old Stables,  
Broomhill,  
Port Talbot,  
SA13 2US.***

and relates to a parcel of land at Bryn near Port Talbot, the Site, where there is a proposal to develop the land with a number of detached dwellings and associated infrastructure. 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.

The following sources of data have been used in the compilation of this report,

- i) Research of published geological data;*
- ii) Research of mining records held at The Coal Authority's archive in Mansfield;*
- iii) The findings of The Coal Authority's mining report, reference no. 51000838253001; and*
- iv) Search of Blandford Consulting's archives.*

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

*/Cont....*

## 2 Brief Description of the Site

The parcel of land that is the subject of this report ('the Site') is situated on the eastern extremity of Bryn, approximately 5km north-east of the centre of Port Talbot and 4km north-west of the centre of Maesteg. The Site lies immediately to the north of the B4282 Maesteg to Port Talbot road (see Figure 1 and *General Location Plan, drawing no. BC/MB/04.15.03.01*). The Site is presently occupied with agricultural enclosures and small areas of woodland that have developed along streams. The Site is on southerly sloping land and is at elevations of between approximately 130m aod and 178m aod. (see *Detailed Location Plan, drawing no. BC/MB/04.15.03.03*).

**Figure 1**  
**Aerial View of Site**



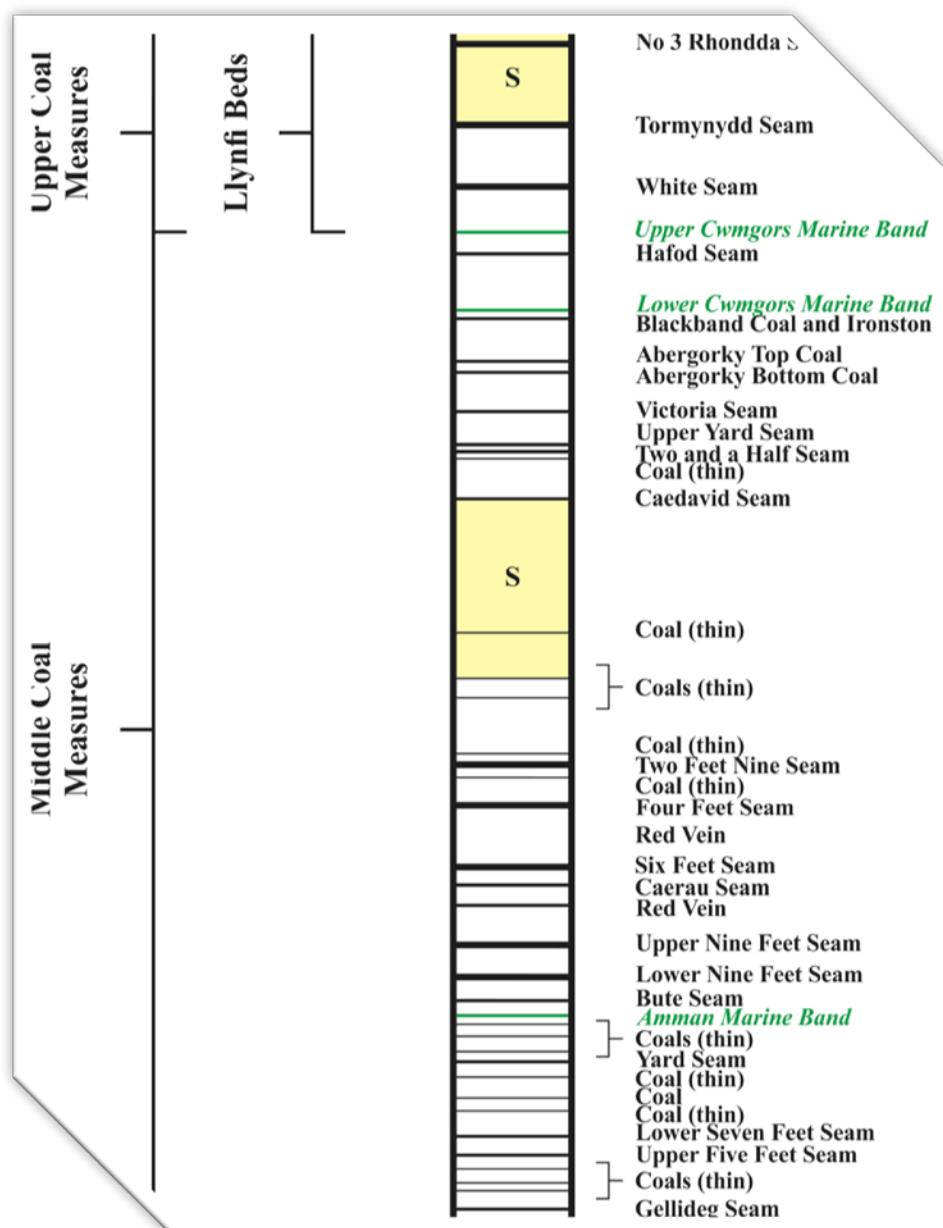
## 3 Geology of the Site and Immediately Surrounding Area

The Site is located centrally on the South Wales Coalfield and is underlain at shallow depths with strata assigned to the Middle Coal Measures, a sub-division of the Upper

/Cont....

Carboniferous Measures (see *Geology Plan, drawing no. BC/MB/04.15.03.02*). The most recently published geological sheet (Pontypridd Sheet 248 at 1:50,000 scale) shows the inferred positions of the outcrops of the Two Feet Nine and Six Feet Seams to pass immediately to the south of the Site (see Figure 1, Part of the Stratigraphic Column). The average dip of the strata in the district is between 1 in 2 and 1 in 4 towards the north, but the rate and direction of dip of the strata is locally affected by faults and folds.

**Figure 1**  
**Part of the Stratigraphic Column**  
**(Not to Scale)**



/Cont....

The measures of the South Wales Coalfield have been affected by large normal faults, frequently referred to as ‘cross faults’. In the Bryn area these faults have a sinuous trace at the surface and an average trend towards the north; published geological information indicates that the inferred positions of three faults cross the Site, variously near the western and northern boundaries of the Site. In addition, the measures in the Bryn area have been affected by a large east-west trending fault known as the Moel Gilau Fault. The published geological sheet for the area shows the inferred surface position of the fault to be approximately 400m south of the Site’s boundary. The fault is, therefore, beyond influencing distance of the Site.

The published geological sheet for this area shows the measures beneath the Site to be covered with deposits of glacial Boulder Clay. We have no detailed information on the depth or nature of the Boulder Clay underlying the Site.

Published information also indicates that the Site is not affected by landslip.

## 4 Mining History

The general area has experienced fairly extensive underground operations for both coal and ironstone dating back to the early nineteenth century. The workings were prosecuted from a number of adits driven into the valley sides at or near the outcrops of coal seams or ironstone veins, or else from shafts sunk near the valley floor. For the greater part the past underground mining operations were prosecuted on the northern side of the Ffrwd Wyllt.

The Coal Authority’s mining report identifies that the Site is within influencing distance of workings in five coal seams with depths ranging from shallow down to 130m; mining ceased in the area in 1950. A number of the workings will be at depths that are too deep and/or are of an age such that they will not affect the proposed development. The old workings described as ‘shallow’ may affect the proposed development.

Our searches found records of two disused mine entries, one shaft and one adit, within the confines of the Site or within 20m of it (see plan included in The Coal Authority’s mining report). The shaft is shown to be present outside the southern boundary of the Site and the adit is

/Cont....

shown to be present centrally near the southern boundary of the Site. There are no working collieries in the locality that would affect the proposed development. The Site has not been part of an opencast coal site (OCCS), and there have been no opencast mining operations close enough to the Site to affect the structural integrity of the proposed development.

## 5 Mine Gasses

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 mine water flooding the mining voids and forced to the surface. Mine gases may, in certain circumstances, accumulate within dwellings 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 nineteenth 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.

## 6 Risk Assessment

### 6.1 Solid Geology

Published geological data indicates the inferred positions of three faults that variously cross parts of the Site. Faults can act as loci for differential ground movement as a result of collapsing shallow mine workings, particularly where the pattern of mining is different on the two sides of the fault. Faults planes can also act as loci for differential movement during earthquakes. The presence of faults is not uncommon in South Wales and developments can take place in close proximity to faults subject to certain precautions being taken place. It is recommended that prior to development the faults are examined using exploratory boreholes in order to determine the precise locations of the faults. Wherever possible buildings should not be constructed where they straddle a fault plane.

/Cont....

Where a building straddles a fault plane it must be constructed on a reinforced raft designed to withstand differential vertical and lateral ground movements.

## 6.2 Mining History

### 6.2.1 Shallow Mine Workings

The locality has experienced extensive mining operations for coal, some of which are of an age and/or are at depths such that they will not affect the structural integrity of the proposed residential development. Our searches have identified that old workings are present that could adversely affect the proposed development and that are described as ‘shallow’. It is recommended that the pattern of old workings present is further examined in greater detail; the study should include a pattern of exploratory boreholes. Developing above shallow old workings is common across South Wales and if old workings are found to be present within the depth ranges that could affect the structural integrity of dwellings then the old workings should be stabilised by means of commonly used techniques such as a drilling and grouting exercise.

Otherwise, there are no active mines in the locality, deep mines or opencast sites, which would affect the structural integrity of the proposed development.

### 6.2.2 Mining History: Disused Mine Entries

Our searches found records of two disused shafts or adits within the confines of the Site or within 20m of its boundaries. A shaft is recorded a short distance outside the southern boundary of the Site and outside of the control of the current land owners/developers. An exclusion zone could be calculated for the shaft, within which no building should take place. To calculate the exclusion zone a request should be made to The Coal Authority in order to determine whether or not they have any records of any work that has been carried out to stabilise the shaft. In addition at least one exploratory borehole should be drilled within the Site as close to the shaft as is practical.

/Cont....

There is a record of one disused adit within the confines of the Site. The precise location of the adit should be determined by means of commonly used techniques such as trenching and drilling exploratory boreholes. When the adit has been located it should be made safe by means of commonly used techniques such as excavating it out and/or drilling and grouting. The adit may need to be formerly stopped up following a methodology to be agreed with the Coal Authority.

Mining records held by The Coal Authority are known to be incomplete and the risk of other unrecorded mine entries being present cannot be entirely ruled out. The situation should be monitored during site clearance works and further advice sought if any suspicious features are observed.

#### ***6.2.3 Mining History: Mine Gases***

Mine gases are produced during coal mining operations and may subsequently be stored or trapped within voids in mine workings. Where old workings are at shallow depths mine gases tend to vent to atmosphere, a process that is assisted as mining voids flood with water, displacing the mine gases. Underground mining operations in the locality ceased over sixty years ago, affording ample opportunity for mine gases to vent to atmosphere. It is considered that the risk from mine gases is very low but it would be prudent to monitor the exploratory boreholes for the presence of mine gases.

#### ***6.2.4 Mining History: Mining Operations***

There are currently no active mines in the locality that would influence the structural integrity of the proposed development and the Site has not been part of an opencast mine.

### **6.3 Foundation Options and Site Development**

The Site area is large and the details of the geology and mining history will vary across the Site. It is not possible to make recommendations on the appropriate foundation

/Cont....

options in the absence of the findings of the recommended further site investigation. However, the prevailing conditions on the Site are commonly found across South Wales and risk arising from the solid geology and mining history of the Site are all capable of being remedied by means of commonly used techniques and an appropriate layout for the residential development.

Any physical examination of the disused mine entries or shallow mine workings (including exploratory boreholes) will require a permit from The Coal Authority accompanied by a risk assessment. The recommended exploratory work should be designed and supervised by a Chartered Geologist or other competent person.



**Dr Malcolm Blandford,  
Chartered Geologist.**

*Date: 13<sup>th</sup> April 2015.*

*Blandford Consulting,  
Consultant Geologists and Geotechnical Engineers,  
The Enterprise Centre, Merthyr Industrial Park, Pentrebach, Merthyr Tydfil, CF48 4DR.  
Tel. No. (01443) 693353. Fax. No. (01443) 693351.*

# PLANS



THE ENTERPRISE CENTRE,  
MERTHYR INDUSTRIAL PARK,  
PENTREBACH,  
MERTHYR TYDFIL,  
SOUTH WALES,  
CF48 4DR.

**BLANDFORD CONSULTING**

*Geologists Working With The Environment....*



## General Location Plan.

Plan Scale: 1:50,000.

### Key to Symbols:



Approximate Position of Site.

### Note:

North is at top of plan.

© Crown Copyright Reserved



THE ENTERPRISE CENTRE,  
MERTHYR INDUSTRIAL PARK,  
PENTREBACH,  
MERTHYR TYDFIL,  
SOUTH WALES,  
CF48 4DR.

**BLANDFORD CONSULTING**

Drawing No: BC/MB/04.15.03.01.

Report on at Penhyddwaelod, Bryn, Port Talbot.



## Geology Plan.

Plan Scale: 1:50,000.

Key to Symbols:



Approximate Position of Site.

Note:

North is at top of plan.

© Crown Copyright Reserved



THE ENTERPRISE CENTRE,  
MERTHYR INDUSTRIAL PARK,  
PENTREBACH,  
MERTHYR TYDFIL,  
SOUTH WALES,  
CF48 4DR.

BLANDFORD CONSULTING

Drawing No: BC/MB/05.15.03.02.

## **Report on at Penhyddwaelod, Bryn, Port Talbot.**

## ***Detailed Location Plan.***

## Plan Scale: Not to Scale.

### **Key to Symbols:**

#### - Approximate Site Boundary.

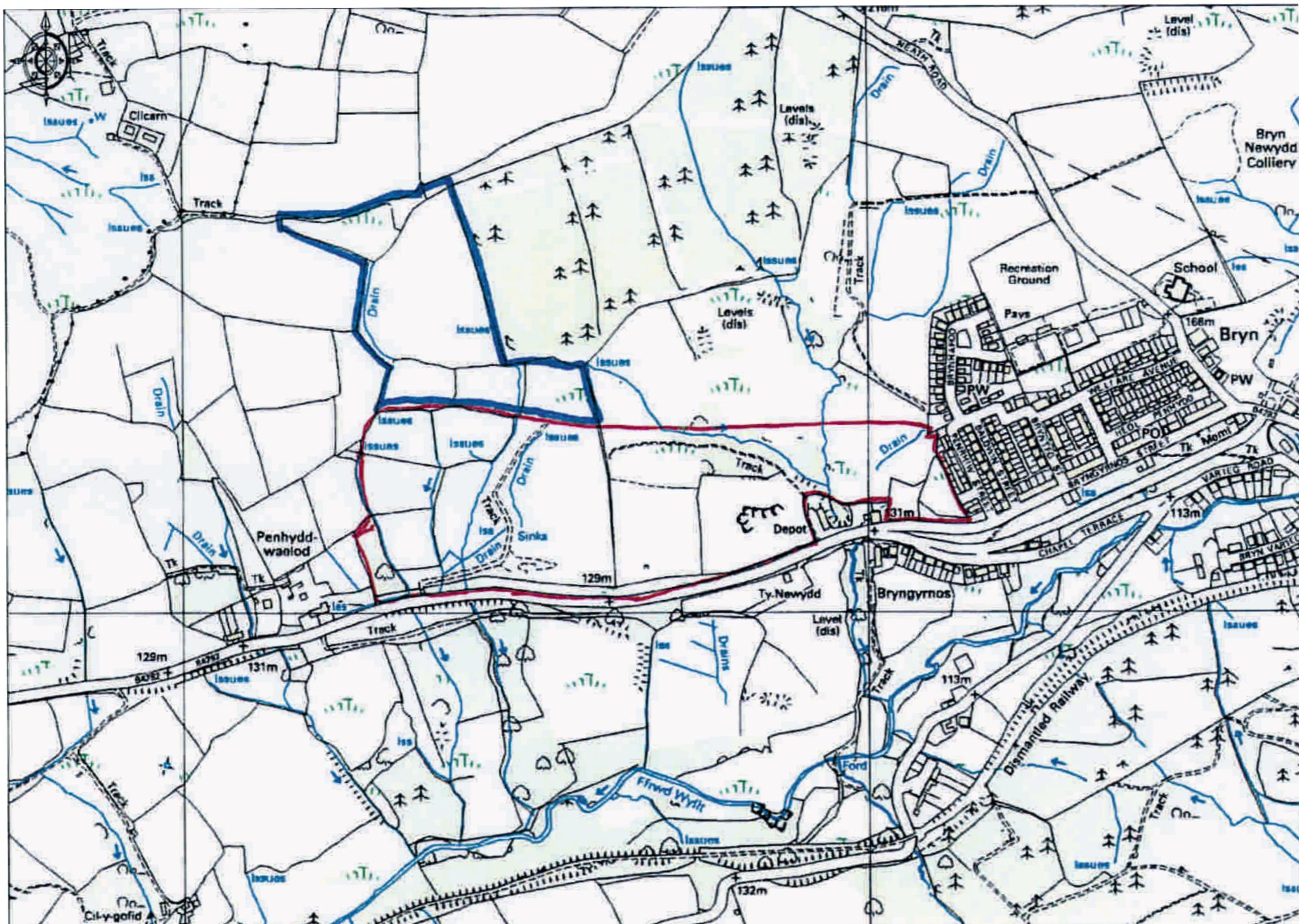
### Note:

*North is at top of plan.*

*Plan for identification only, do not scale.*

*Drawing extracted from documents provided by the CDN Planning Ltd.*

© Crown Copyright Reserved



# APPENDIX



THE ENTERPRISE CENTRE,  
MERTHYR INDUSTRIAL PARK,  
PENTREBACH,  
MERTHYR TYDFIL,  
SOUTH WALES,  
CF48 4DR.

**BLANDFORD CONSULTING**

*Geologists Working With The Environment....*



# The Coal Authority

Issued by:

The Coal Authority, Property Search Services, 200 Lichfield Lane, Berry Hill, Mansfield, Nottinghamshire, NG18 4RG  
Website: [www.groundstability.com](http://www.groundstability.com) Phone: 0345 762 6848 DX 716176 MANSFIELD 5

<b>BLANDFORD CONSULTING</b>	Our reference:	<b>51000838253001</b>
<b>MERTHYR TYDFIL INDUSTRIAL PARK</b>	Your reference:	<b>Bryn</b>
<b>PENTREBACH</b>	Date of your enquiry:	<b>09 April 2015</b>
<b>MERTHYR TYDFIL</b>	Date we received your enquiry:	<b>09 April 2015</b>
<b>MID GLAMORGAN</b>	Date of issue:	<b>09 April 2015</b>
<b>CF48 4DR</b>		

This report is for the property described in the address below and the attached plan.

## Non-Residential Coal Authority Mining Report

### 1 PENRHIW STREET, BRYN, PORT TALBOT, SA13 2SA

This report is based on and limited to the records held by, the Coal Authority, and the Cheshire Brine Subsidence Compensation Board's records, at the time we answer the search.

Coal mining	See comments below
Brine Compensation District	No

### Information from the Coal Authority

#### Underground coal mining

##### Past

The property is in the likely zone of influence from workings in 5 seams of coal at shallow to 130m depth, and last worked in 1950.

##### Present

The property is not in the likely zone of influence of any present underground coal workings.

##### Future

The property is in an area for which a licence to remove coal using underground methods is awaiting determination by the Coal Authority.

The property is in an area for which a licence to remove or otherwise work coal using underground methods was granted in October 1996. The grant of this licence is conditional on the applicant securing any other rights, permissions (including planning permission) and consents to enable operations to be carried out.

The property is not in an area that is likely to be affected at the surface from any planned future workings.

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

No notice of the risk of the land being affected by subsidence has been given under section 46 of the Coal Mining Subsidence Act 1991.

### **Mine entries**

Within, or within 20 metres of, the boundary of the property there are 2 mine entries, the approximate positions of which are shown on the attached plan.

Our records disclose the following information:

280192-004. Subsequent to a reported hazard in March 2011 this shaft location was mounded with 20 tonnes of clean stone and secured with 22m of timber post and rail fence..

280192-003. Subsequent to a collapse of the adit opening the entrance has been infilled with 230 tonnes of local spoil and the area regraded..

Records may be incomplete. Consequently, there may exist in the local area mine entries of which the Coal Authority has no knowledge.

For an additional fee, the Coal Authority will provide a supplementary Mine Entry Interpretive Report. The report will provide a separate assessment for the mine entry (entries) referred to in this report. It will give details based on information in the Coal Authority's possession, together with an opinion on the likelihood of mining subsidence damage arising from ground movement as a consequence of the existence of the mine entry/entries. It will also give 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 visit [www.groundstability.com](http://www.groundstability.com) or telephone 0345 7626 848.

### **Coal mining geology**

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

### **Opencast coal mining**

#### **Past**

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

#### **Present**

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

#### **Future**

The property is not within 800 metres of the boundary of an opencast site for which the Coal Authority is determining whether to grant a licence to remove coal by opencast methods.

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.

### **Coal mining subsidence**

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres, since 31st October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The 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**

There is no record of a mine gas emission requiring action by the Coal Authority within the boundary of the property.

## **Hazards related to coal mining**

The property has been subject to remedial works, by or on behalf of the Authority, under its Emergency Surface Hazard Call Out procedures.

## **Withdrawal of support**

The property is not in an area for which a notice of entitlement to withdraw support has been published.

The property is not in an area for which a notice has been given under section 41 of the Coal Industry Act 1994, revoking the entitlement to withdraw support.

## **Working facilities orders**

The property is not in an area for which 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.

## **Payments to owners of former copyhold land**

The property is not in an area for which a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

## **Comments on Coal Authority information**

The attached plan shows the approximate location of the disused mine entry/entries referred to in this report. For reasons of clarity, mine entry symbols may not be drawn to the same scale as the plan.

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 from disused coal mine workings including disused coal mine entries. A leaflet setting out the rights and the obligations of either the Coal Authority or other responsible persons under the 1991 Act can be obtained by telephoning 0345 762 6848 or online at [www.coal.decc.gov.uk/en/coal/cms/services/claims](http://www.coal.decc.gov.uk/en/coal/cms/services/claims).

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 adviser wish to examine the source plans from which the information has been taken these are normally available at our Mansfield office, free of charge, by prior appointment, telephone 01623 637235. Should you or your adviser wish to carry out any physical investigations that may enter, disturb or interfere with any disused mine entry the prior permission of the owner must be sought. 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 call out facility in coalfield areas to assess the public safety implications of mining features (including disused mine entries). Our emergency telephone number at all times is 01623 646333.

\*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.

In view of the mining circumstances a prudent developer would seek appropriate technical advice before any works are undertaken.

Therefore 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 good engineering practice developed for mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or mines of coal without the permission of the Coal Authority. Developers should be aware that the investigation of coal seams/former mines of coal may have the potential to generate and/or displace underground gases and these risks both under and adjacent to the

development should be fully considered in developing any proposals. The need for effective measures to prevent gases entering into public properties either during investigation or after development also needs to be assessed and properly addressed. This is necessary due to the public safety implications of any development in these circumstances.

### **Information from the Cheshire Brine Subsidence Compensation Board**

The property lies outside the Cheshire Brine Compensation District.

### **Additional Remarks**

Information provided by the Coal Authority in this report is compiled in response to the Law Society's Con29M Coal Mining and Brine Subsidence Claim enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL. This report is prepared in accordance with the Law Society's Guidance Notes 2006, the User Guide 2006 and the Coal Authority and Cheshire Brine Board's Terms and Conditions applicable at the time the report was produced.

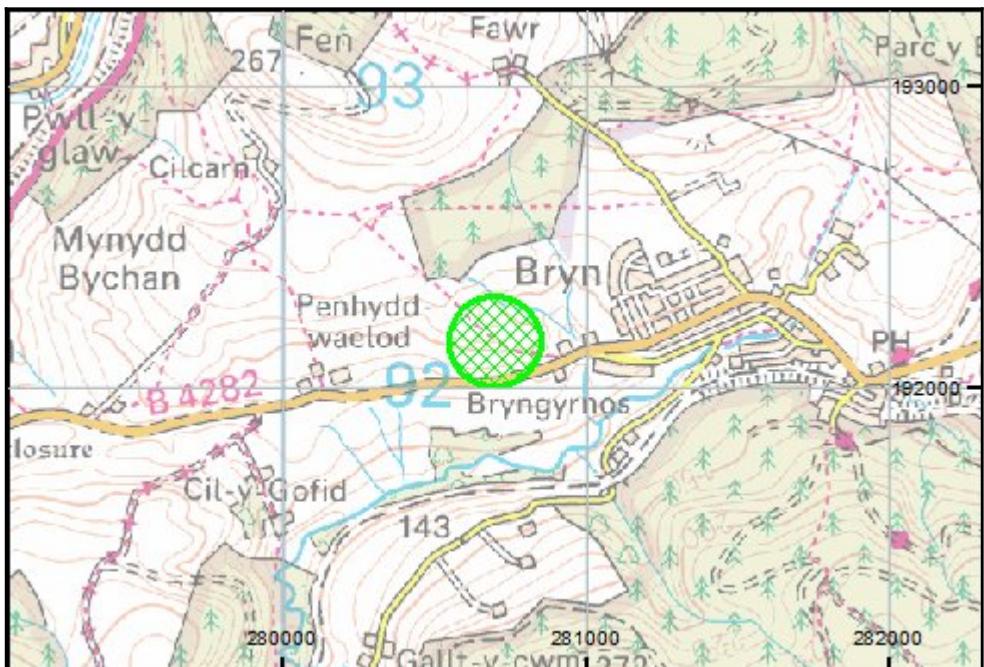
The Coal Authority owns the copyright in this report. The information we have used to write this report is protected by our database right. All rights are reserved and unauthorised use is prohibited. If we provide a report for you, this does not mean that copyright and any other rights will pass to you. However, you can use the report for your own purposes.

Issued by:	The Coal Authority, 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG
Tax Point Date:	09 April 2015
Issued to:	BLANDFORD CONSULTING MERTHYR TYDFIL INDUSTRIAL PARK PENTREBACH MERTHYR TYDFIL MID GLAMORGAN CF48 4DR
Property Search for:	1 PENRHIW STREET, BRYN, PORT TALBOT, SA13 2SA
Reference Number:	51000838253001
Date of Issue:	09 April 2015
Cost:	£59.00
VAT @ 20%:	£11.80
Total Received:	£70.80
VAT Registration	598 5850 68

## Location map



Approximate position  
of property



## Enquiry boundary

Reproduced by permission of Ordnance Survey  
on behalf of HMSO. © Crown copyright and  
database right 2015. All rights reserved.  
Ordnance Survey Licence number: 100020315

### Key

Approximate position of enquiry  
boundary shown



Disused Adit or Mineshaft



Mapping  
sourced from

**os** Ordnance Survey®