

Report No. BC/MB/11.17.04.

Mining Risk Assessment: Land at 44 Gwilym Road, Cwmllynfell, Swansea.

Prepared on behalf of:

Ms D England and Mr D Davies

By:



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Mining Risk Assessment: Land at 44 Gwilym Road, Cwmllynfell, Swansea.

Contents.

	Page:
1. Introduction	1
2. Brief Description of the Site	2
3. Geology of the Site	3
4. Mining History	4
5. Mine Gases	4
6. Radon Gas	7
7. Risk Assessment: Discussion and Recommendations	7

List of Plans

Drawing No:		Scale:
<i>BC/MB/11.17.04.01.</i>	<i>General Location Plan.</i>	<i>1:50,000.</i>
<i>BC/MB/11.17.04.02.</i>	<i>Geology Plan.</i>	<i>1:10,560.</i>
<i>BC/MB/11.17.04.03.</i>	<i>Detailed Location Plan.</i>	<i>1:1,250.</i>

Appendices

- Appendix I: Copy of Coal Authority Report No 111426-03.*
- Appendix II: Copy of Radon Gas Report.*

Mining Risk Assessment: Land at 44 Gwilym Road, Cwmllynfell, Swansea.

1 Introduction

This report has been prepared on behalf of our client:

***Ms D. England and Mr D. Davies,
Lotwen,
Heol Capel Hendre,
Ammanford,
SA18 3RP***

and relates to a parcel of land at 44 Gwilym Road in Cwmllynfell, where it is proposed to erect a detached dwelling. 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 mining risk.

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 mining report, reference no. 111426-03;*
- iv) Interrogation of The Coal Authority's Interactive Map, accessed 21st November 2017;*
- v) The findings of the a Radon Gas report obtained from Public Health England and*
- vi) the archive records of Blandford Consulting.*

/Cont....

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.

2 Brief Description of the Site

The parcel of land that is the subject of this report, 'the Site' is located on Gwilym Road in Cwmllynfell, on north-westerly facing slopes of Cwm Twrch; it is located centrally in Cwmllynfell, approximately 3.5km north-west of the commercial centre of Ystalyfera and approximately 6.5km east of the centre of Brynamman (see Figure 1 and *General Location Plan, drawing no. BC/MB/11.17.04.01*). The Site is located within a mixed residential area comprised principally of detached, semi-detached and terraced dwellings and shop units; it is presently unoccupied. The Site is roughly rectangular in outline with maximum dimensions of 19m and 6.5m (see *Detailed Location Plan, drawing no. BC/MB/11.17.04.03*) and is at an approximate elevation of 169m aod.

Figure 1
-Aerial View of the Site

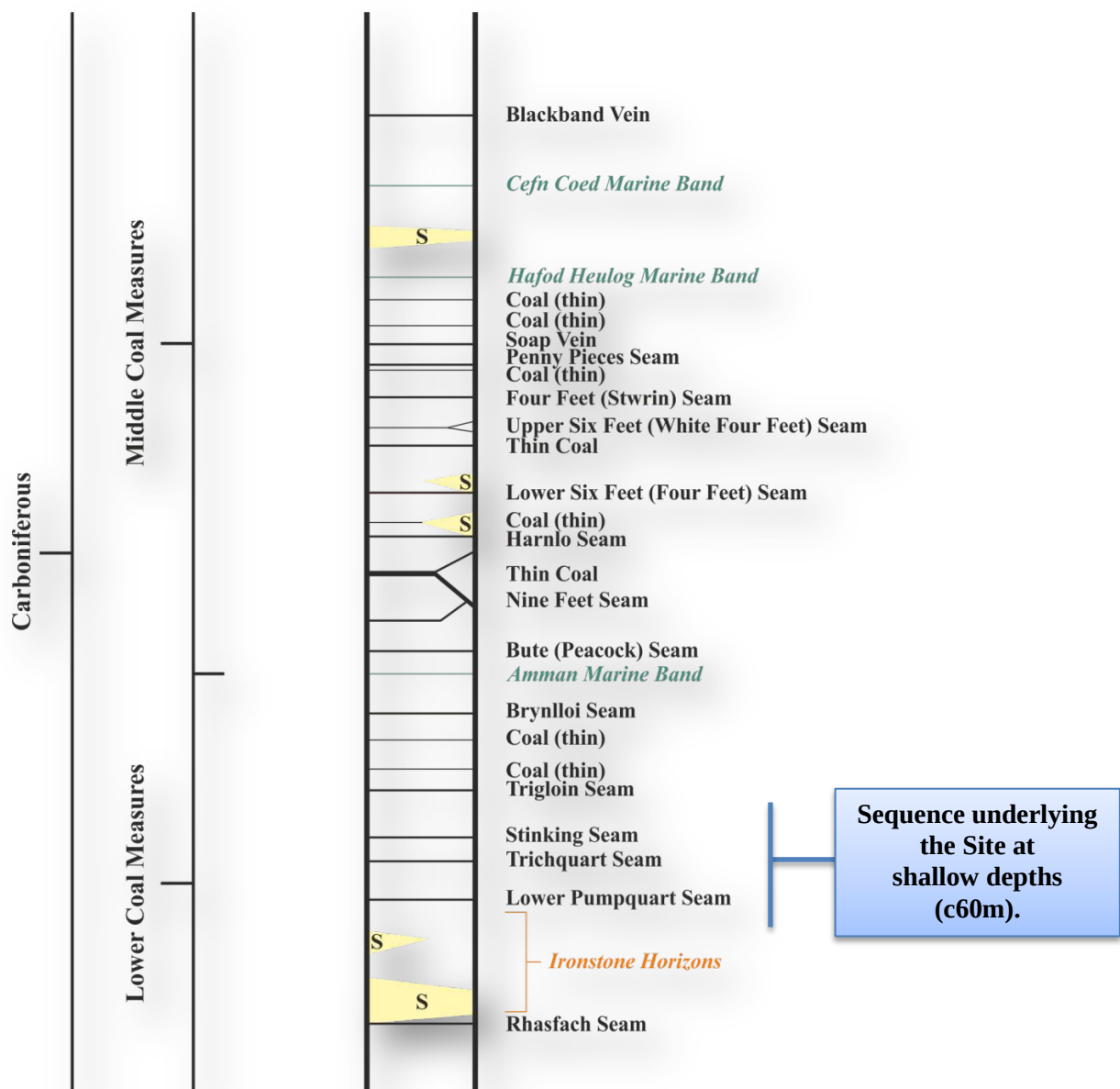


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3 Geology of the Site

The Site is situated towards the north-western margins of the South Wales Coalfield and is underlain at shallow depths by strata assigned to the Middle Coal Measures, a sub-division of the Upper Carboniferous Period. The most recently published geological sheets at the 1:10,560 scale (SN 50 NE,) shows the inferred outcrops of the Stinking, Triquart and Pumpquart Seams to be present 60m, 70m and 150m north of the Site respectively. The outcrops in the area follow a sinuous and generally east-west trend along the hillside and across the Twrch Valley.

Figure 2
Part of the Stratigraphic Column.
Scale: Not to Scale.



/Cont....

The regional strata dip in the area is approximately 1 in 5 southwards so that the above sequence of coal seams underlies the Site at increasing depths (see *Geology Plan, drawing no. BC/MB/11.17.04.02*). The three coal seams are thin, 0.75m or thinner, in this area.

The coal measures of the South Wales Coalfield have been affected by large faults. In the Cwmllynfell area these large faults have a slightly sinuous trace at the surface and average trends towards the north-west. The published geological sheet indicates that the Site is not affected by large scale faulting; the nearest such fault to the Site is the Cwmllynfell Fault, approximately 600m to the west.

The published geological sheet shows the coal measures to be overlain with deposits of River Alluvium; we have no detailed information regarding the thickness and engineering properties of the Alluvium at the Site. The published geological sheet also identified that the Site is not affected by landslip.

4 Mining History

Our searches identified that the Site is not within influencing distance of any recorded, old, underground workings. The coal seams underlying the Site are at the base of the productive coal measures and only two coal seams, the Triquart and Pumpquart, are present that have been the subject of underground mine workings anywhere in the area. There are no deeper coal seams in the geological sequence that may have been mined beneath the Site

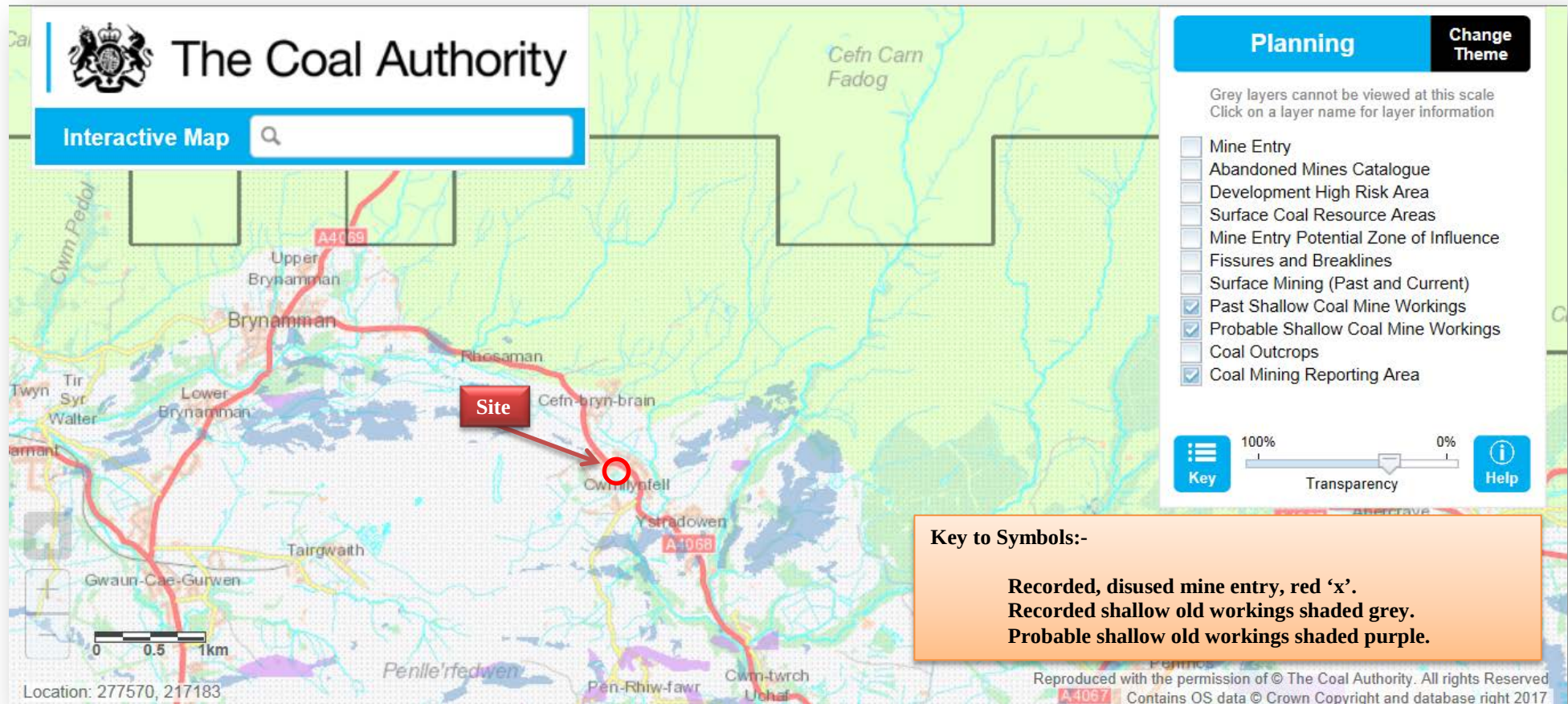
Otherwise, there are no active coal mines in the locality, either deep mines or opencast, that would affect the structural integrity of the proposed dwelling and the Site has not previously been part of an opencast coal site.

5 Mine Gases

When coal is mined methane is released and may accumulate, sometimes with other mine gases, in the voids left by the mining operation. The gases may vent to atmosphere or be pushed

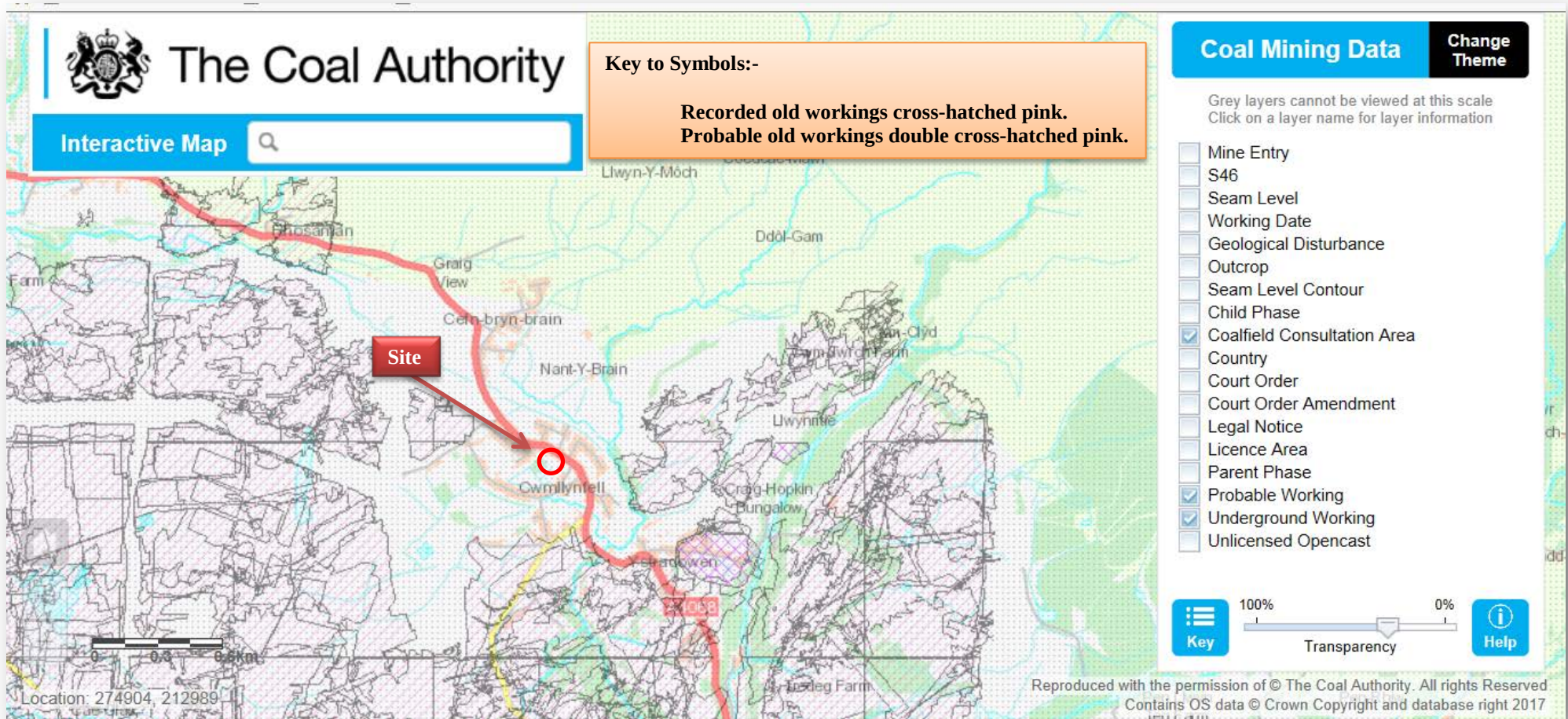
/Cont....

Figure 3
Print-out of The Coal Authority's Interactive Map
 (Interrogated 21st November 2017)



/Cont....

Figure 4
Print-out of The Coal Authority's Interactive Map
 (Interrogated 21st November 2017)



/Cont...

out of the mining voids as they flood with mine water and in certain circumstances the gases can accumulate in voids and result in 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. There are no recorded shallow mine 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

Government advice is that the risk from Radon gas should be assessed for all new dwellings. This has been done by obtaining from Public Health England a Radon gas report for the immediately adjacent 43 Gwilym Road. The geology at the Site is the same as at 43 Gwilym Road so that the findings of the report can be applied to the Site. The Radon report states that the Site is in an area that is not affected by Radon gas; the appropriate response for building control purposes is NONE.

7 Risk Assessment: Discussion and Recommendations

7.1 Solid Geology

There are no features associated with the solid geology of the Site that would require any particular measures to be included in the design and construction of the foundations for the proposed dwelling. It is recommended that no further action is required in this respect.

7.2 Mining History

7.2.1 Mine Workings

There are no records of shallow mine workings underlying the Site and The Coal Authority's interactive map shows no 'probable shallow mine workings' beneath

/Cont....

the Site. There are no deeper coal seams beneath the Site that could have been exploited by underground mining operations.

There are no active underground mines in the locality and the Site has not been part of an opencast coal site.

7.2.2 Mine Entries

Our searches found no record of a disused entry within the confines of the Site or 20m of its boundary. The risk of an unrecorded mine entry being present within the Site is extremely low, but cannot be entirely discounted. Excavation works on the Site should be monitored for unusual features. If anything unusual is observed then the excavations should be stopped immediately and advice sought from a Chartered 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 of mine gases and The Coal Authority has no record of a gas emission at the Site that has required action. The risk to the new dwelling from mine gases is extremely low.

7.3 Radon Gas

A Radon gas report for the adjacent 43 Gwilym Road obtained from Public Health England identifies the Site as being in an area that is not affected by Radon gas; the appropriate action for building control purposes is NONE.

7.4 Risk Assessment

There is no risk to the proposed dwelling from the solid geology, from underground or opencast mining operation, from mine gases or from Radon gas.

/Cont....

7.5 Recommendations

The risk of an unrecorded, disused mine entry being present within the confines of the Site is extremely low but cannot be entirely discounted. If any unusual features are encountered during excavation works the works must be stopped immediately and advice sought from a Chartered Geologist or from The Coal Authority.

7.6 Foundation Option

In so far as the solid geology and mining history of the Site are concerned conventional shallow spread foundations will be appropriate; strip/trench or raft. This advice is subject to an examination of the soils on the Site.



**Dr Malcolm Blandford,
Chartered Geologist.**

Report Date: 22nd November 2017.

**Blandford Consulting,
Consultant Geologists and Geotechnical Engineers,
The Enterprise Centre, Merthyr Industrial Park, Pentrebach, Merthyr Tydfil, CF48 4DR.
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PLANS



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

Study on Land at Gwilym Road, Cwmllynfell.

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 Gwilym Road, Cwmllynfell.

Geology Plan.

Plan Scale: 1:10,560.

Key to Symbols:
 Approximate Position of Site.

Note:
North is at top of plan.

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Study on Land at Gwilym Road, Cwmllynfell.

Detailed Location Plan.

Plan Scale: 1:2,500.

Key to Symbols:

 **Approximate Site Boundary.**

Note:

North is at top of plan.

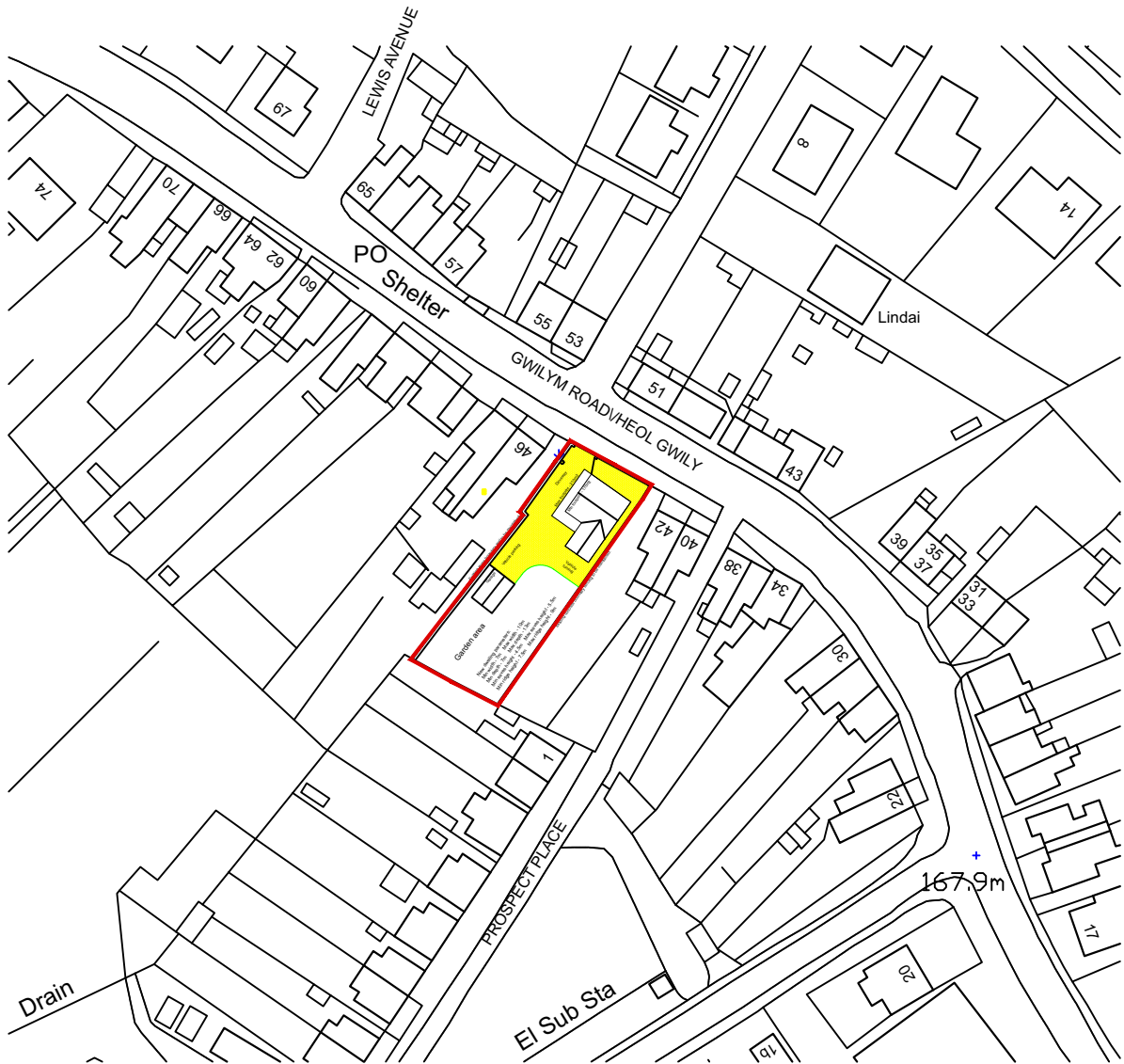
*Drawing extracted from Drawing
CW318/03.C prepared by DR Design.*

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MERTHYR TYDFIL,
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APPENDIX I

**COPY OF COAL AUTHORITY'S
REPORT, REF NO:
1 1 1 4 2 6 - 0 3**



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

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Geologists Working With The Environment...

The Coal Authority	
Cost:	£38.30
Plus V.A.T.	£6.70
Total Received:	£45.00
V.A.T. Reg Number	598 5850 68

MESSRS JENNINGS,
17 GORING ROAD,
LLANELLI,
SA15 3HF

This matter is being dealt with by Phil Huddleston

Our Ref: 111426-03

Your Ref: AR DAV 599 0001

Electronic Ref:

Date: 19 March 2003

Dear Sir,

Coal Mining Report
PLOT OF LAND, GWILYM ROAD, CWMLLYNFELL, NEATH

I refer to the enquiry dated 12th March 2003, received 18th March 2003, in connection with the above.

This report is based on and limited to the records in the possession of The Coal Authority at the time the search is answered.

Ordnance Survey (O.S.) is undertaking a Positional Accuracy Improvement Programme of its mapping data. The Coal Authority (CA) has no control over the timing of issue of Positionally Improved mapping data by O.S. or over users of that data. In some instances the relative position between surface features and coal mining features may alter as a consequence of this programme. The CA will ensure that the integrity of its database is maintained by replotting some mining information to sustain the relationship between that mining information and the improved O.S. surface positions, some of which are now being released. However, mining reports are currently being produced against pre improved O.S. mapping whilst the Authority updates its database in line with the O.S. changes.

Past Underground Mining

According to the records in our possession, the property is not within the zone of likely physical influence on the surface from past underground coal workings.

However you may wish to know that the property is in an area where coal is believed to exist at or close to the surface that may have been worked at some time in the past.

Present Underground Mining

The property is not within the zone of likely physical influence on the surface from any present underground coal workings.

Future Underground Mining

The property is not within a geographical area for which a licence to extract coal by underground methods is awaiting determination by the Coal Authority.

The property is not within a geographical area for which a licence to extract coal by underground methods has been granted.

The property is not within the zone of likely physical influence at the surface from plans of future workings in our possession.

However reserves of coal exist in the locality which could be worked at some time in the future subject to feasibility, licences, and planning consents.

We have no record of any notice of the risk of the land being affected by subsidence being given under S.46 of the Coal Mining Subsidence Act 1991.

Shafts and Adits

We have no knowledge of any mine entries within, or within 20 metres of, the boundary of the property.

Surface Geology

Records in our possession do not disclose any fault or other line of weakness at the surface as having affected the stability of the property.

Past Opencast Mining

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

Present Opencast Mining

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

Future Opencast Mining

The property is not within 800 metres of the geographical boundary of an opencast site for which a licence to extract coal by opencast methods is awaiting determination.

The property is within 800 metres of the geographical site boundary of the East Pit East prospective opencast site for which a licence to extract coal by opencast methods was granted in October 1994. The grant of this licence is conditional on the applicant securing any other rights, permissions (including planning permissions) and consents to enable him to carry out his operations.

Subsidence

The records in our possession do not disclose any damage notice or claim having been given, made or pursued in respect of the property since 1 January 1984.

The records in our possession do not disclose any current "Stop Notice" affecting the property.

The records in our possession do not show any request having been made to execute preventative works under S.33 of the Coal Mining Subsidence Act 1991.

Withdrawal of Support

The property does not lie within a geographical area in respect of which a notice of entitlement to withdraw support has been published.

The property does not lie within a geographical area in respect of which a notice has been given under S.41 of the Coal Industry Act 1994, revoking the entitlement to withdraw support.

Working Facilities Orders

The property is not within a geographical area that is the subject of an Order 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 within an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Additional Remarks

In view of the mining circumstances a prudent developer would seek appropriate technical advice before works are undertaken on site. All proposals should have regard to good engineering practice in mining areas as identified in authoritative publications on mining stability problems. In any event, no activities should be undertaken that intersect, disturb, or interfere with any coal or mines of coal without permission of the Coal Authority.

These replies are prepared in accordance with the Law Society's Guidance Notes 1998.

We acknowledge the receipt of your remittance in payment of our fee.

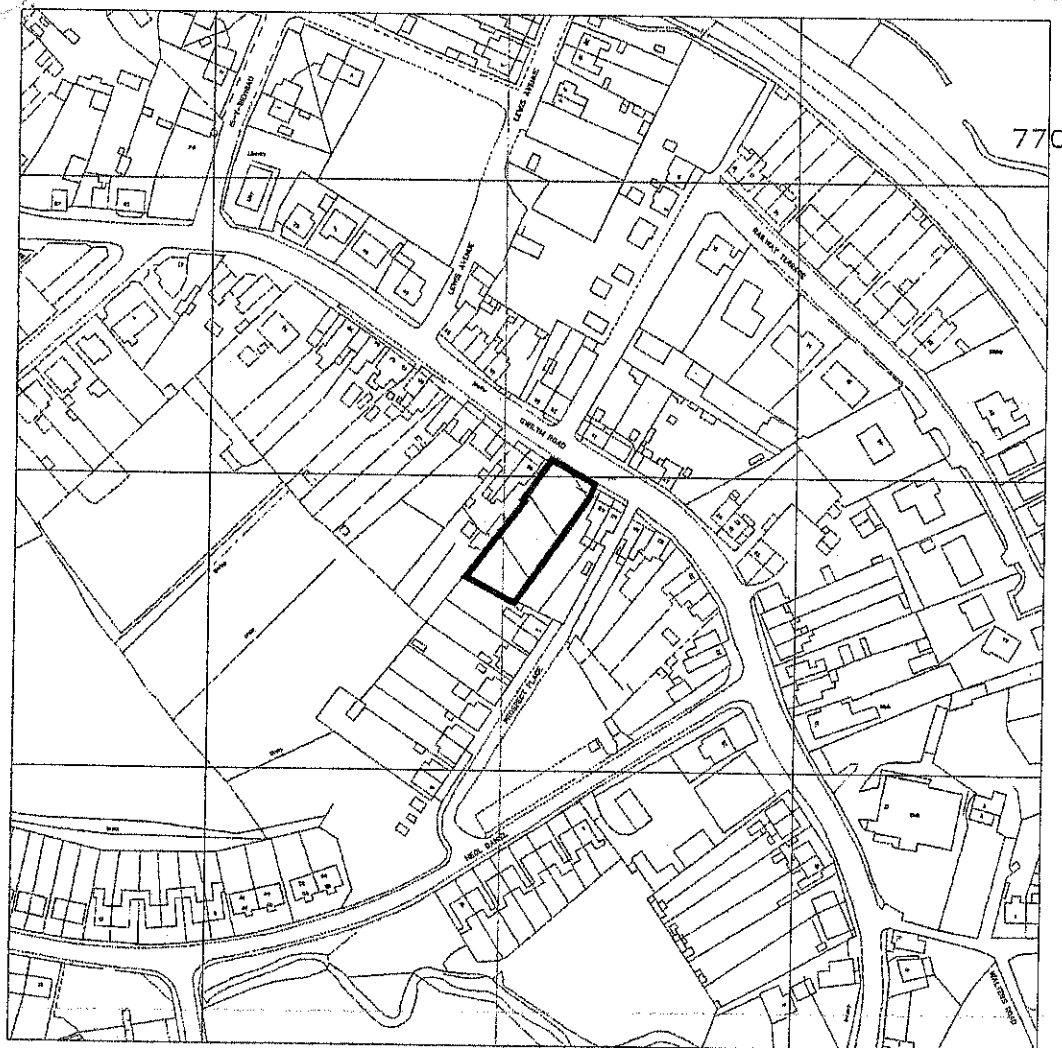
Yours faithfully



Albert Schofield

Director of Mining Records and Services

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Crown Copyright. Quoted scale is approximate.

SCALE: 1:2500

This map is reproduced from the Ordnance Survey material by The Coal Authority [or division thereof] with the permission of the Controller of Her Majesty's Stationery Office. Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Licence Number: AL51060A001.

This is a plan of the boundaries of the property in respect of which this report has been prepared. It is the responsibility of the user to ensure that the boundaries shown correspond with those of the property.

APPROXIMATE POSITION OF ENQUIRY BOUNDARY SHOWN



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APPENDIX II

COPY OF RADON GAS REPORT



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

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Geologists Working With The Environment....



Radon Risk Report for addresses in England and Wales

Issued by Public Health England and British Geological Survey. This is Based upon Crown Copyright and is reproduced, where applicable, with the permission of Land & Property Services under delegated authority from the Controller of Her Majesty's Stationery Office, © Crown copyright and database right 2014MOU512.

Address searched: 43 Gwilym Road, Cwmllynfell, Swansea, SA9 2GN

Grid reference searched:

274658 East

212903 North

Date of report: 21 November 2017

Guidance for existing properties

Is this property in a radon Affected Area? - No

A radon Affected Area is defined as where the radon level in at least one property in every hundred is estimated to exceed the Action Level.

The estimated probability of the property being above the Action Level for radon is: 0-1%

The result may not be valid for buildings larger than 25 metres.

If this site is for redevelopment, you should undertake a GeoReport provided by the British Geological Survey.

This report informs you of the estimated probability that this particular property is above the Action Level for radon. This does not necessarily mean there is a radon problem in the property; the only way to find out whether it is above or below the Action Level is to carry out a radon measurement in an existing property.

Radon Affected Areas are designated by the Public Health England. PHE advises that radon gas should be measured in all properties within Radon Affected Areas.

If you are buying a currently occupied property in a Radon Affected Area, you should ask the present owner whether radon levels have been measured in the property. If they have, ask whether the results were above the Radon Action Level and if so, whether remedial measures were installed, radon levels were re-tested, and the results of re-testing confirmed the effectiveness of the measures.

Further information is available from PHE or <http://www.ukradon.org>

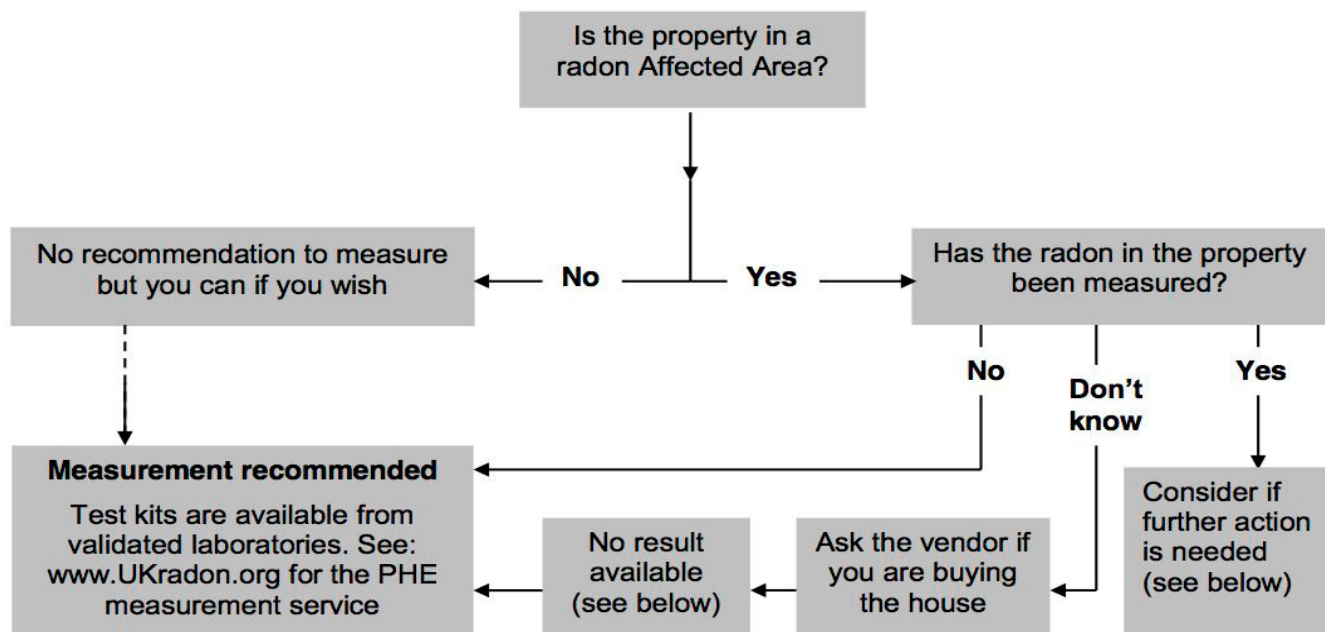
Guidance for new buildings and extensions to existing properties

What is the requirement under Building Regulations for radon protection in new buildings and extensions at the property location? - None

If you are buying a new property in a Radon Affected Area, you should ask the builder whether radon protective measures were incorporated in the construction of the property.

See the Radon and Building Regulations for more details.

PHE guidance for occupiers and prospective purchases



Existing radon test results: There is no public record of individual radon measurements. Results of previous tests can only be obtained from the seller. Radon levels can be significantly affected by changes to the building or its use, particularly by alterations to the heating and ventilation which can also be affected by changes in occupier. If in doubt, test again for reassurance.

Radon Bond: This is simply a retained fund, the terms of which are negotiated between the purchaser and the vendor. It allows the conveyance of the property to proceed without undue delay. The purchaser is protected against the possible cost of radon reduction work and the seller does not lose sale proceeds if the result is low. Make sure the agreement allows enough time to complete the test, get the result and arrange the work if needed.

High Results: Exposure to high levels of radon increases the risk of developing lung cancer. If a test in a home gives a result at or above the Action Level of 200 Becquerels per cubic metre of air (Bq/m³), formal advice will be given to lower the level. Radon reduction will also be recommended if the occupants include smokers or ex-smokers when the radon level is at or above the Target Level of 100 Bq/m³; these groups have a higher risk. Information on health risks and radon reduction work is available from PHE. Guidance about radon reduction work is also available from some Local Authorities, the Building Research Establishment and specialist contractors.

PHE designated radon website:

<http://www.ukradon.org>

Building Research Establishment:

<http://www.bre.co.uk/page.jsp?id=3137>