



RHONDDA
GEOTECHNICAL
SERVICES

COAL MINING GAS RISK ASSESSMENT

NEATH PORT TALBOT C.B.C.

PLANNING APPLICATION P2023/070

PROPOSED FUNERAL HOME GARAGE

PENTWYN FARM

38 PENTWYN BAGLAN ROAD

BAGLAN

SA12 8EB

9/05/2024

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COAL MINING RISK ASSESSMENT

1. INTRODUCTION

Granted planning permission P2023/070 from Neath Port Talbot C.B.C. is for a detached funeral home garage with associated retaining works and parking infrastructure. Pre-commencement Condition 7 states the following:-

7. Prior to the commencement of development, a preliminary mine gas risk assessment setting out recommendations shall be submitted to and approved in writing by the Local Planning Authority. The mine gas risk assessment shall be undertaken by a competent person as defined in the National Planning Policy Framework and conducted in accordance with 'CL:AIRE - Good Practice for Risk Assessment for Coal Mine Gas Emissions, October 2021' and having regard to current guidance - 'Land Contamination: Risk Management (LCRM; 2020)'. It shall document the findings of each step of the decision tree in Figure 13.1 of the Decision support tool for mine gas risk assessment on page 35 of CL:AIRE - Good Practice for Risk Assessment for Coal Mine Gas Emissions.

Reason- In the interests of human health and to accord with Policy EN8 of the Local Development Plan

Richard Davies BSc. (Hons), MSc., F.G.S. of Rhondda Geotechnical Services has been commissioned as the competent person as defined above to prepare a Coal Mining Gas Risk Assessment for the proposed development site. The purpose of this preliminary assessment is to provide the L.P.A. with information on any possible risk from mine gas emissions. If a risk is established, then a more detailed assessment will be required. This will need to categorise the risk and make recommendations for remedial measures to be incorporated into the construction if considered necessary.

The proposed development is centred on grid reference 275350, 192060 at an elevation of approximately 15m A.O.D. The site is trapezoidal averaging 50m x 30m. The proposed building is 17m x 15m. The site is surrounded on three sides by residential development with the southwestern boundary fronting onto Pentwyn Baglan Road. There are no surface watercourses. The site location and site boundary can be seen overleaf in Figures 1 and 2.

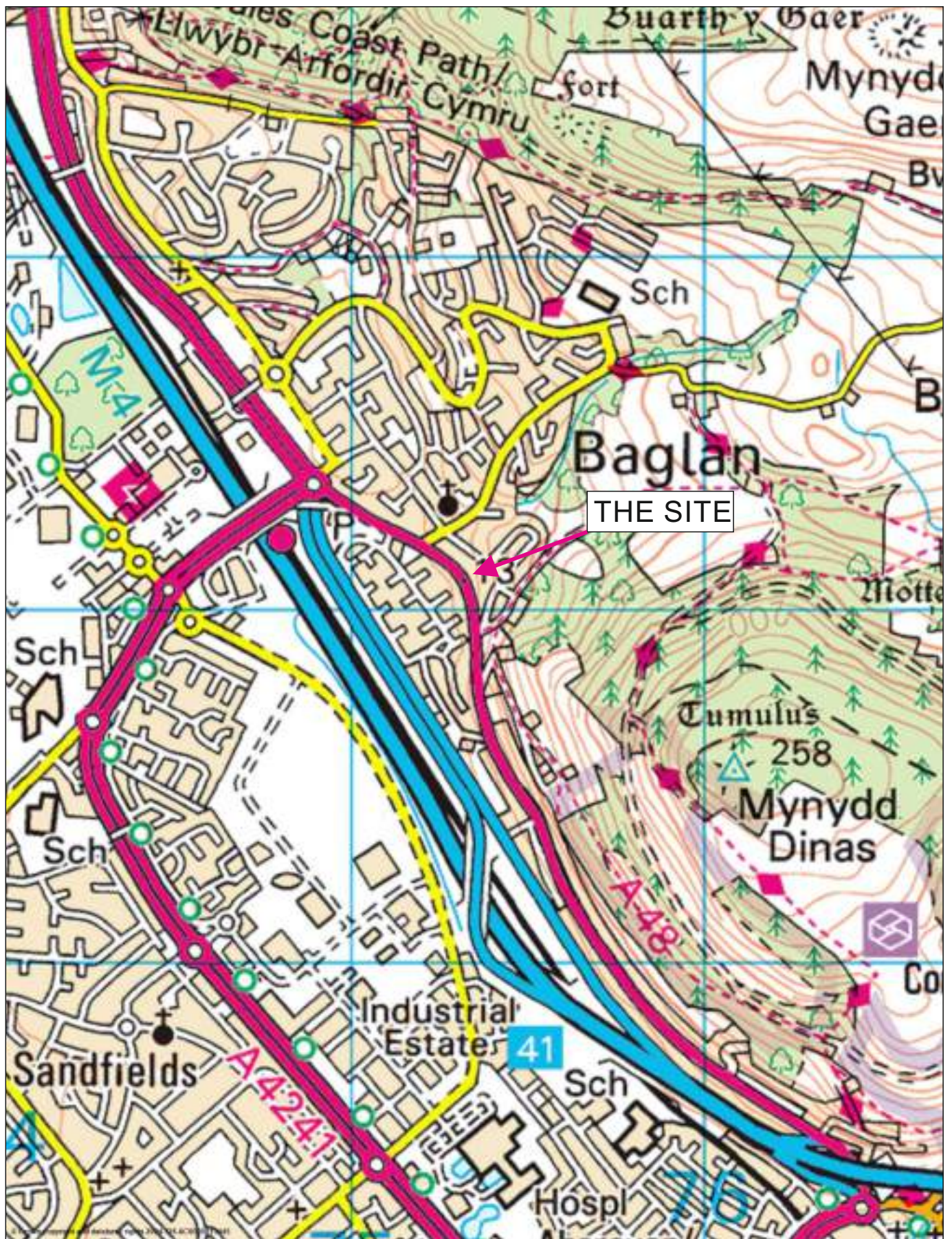


FIGURE 1
SITE LOCATION.

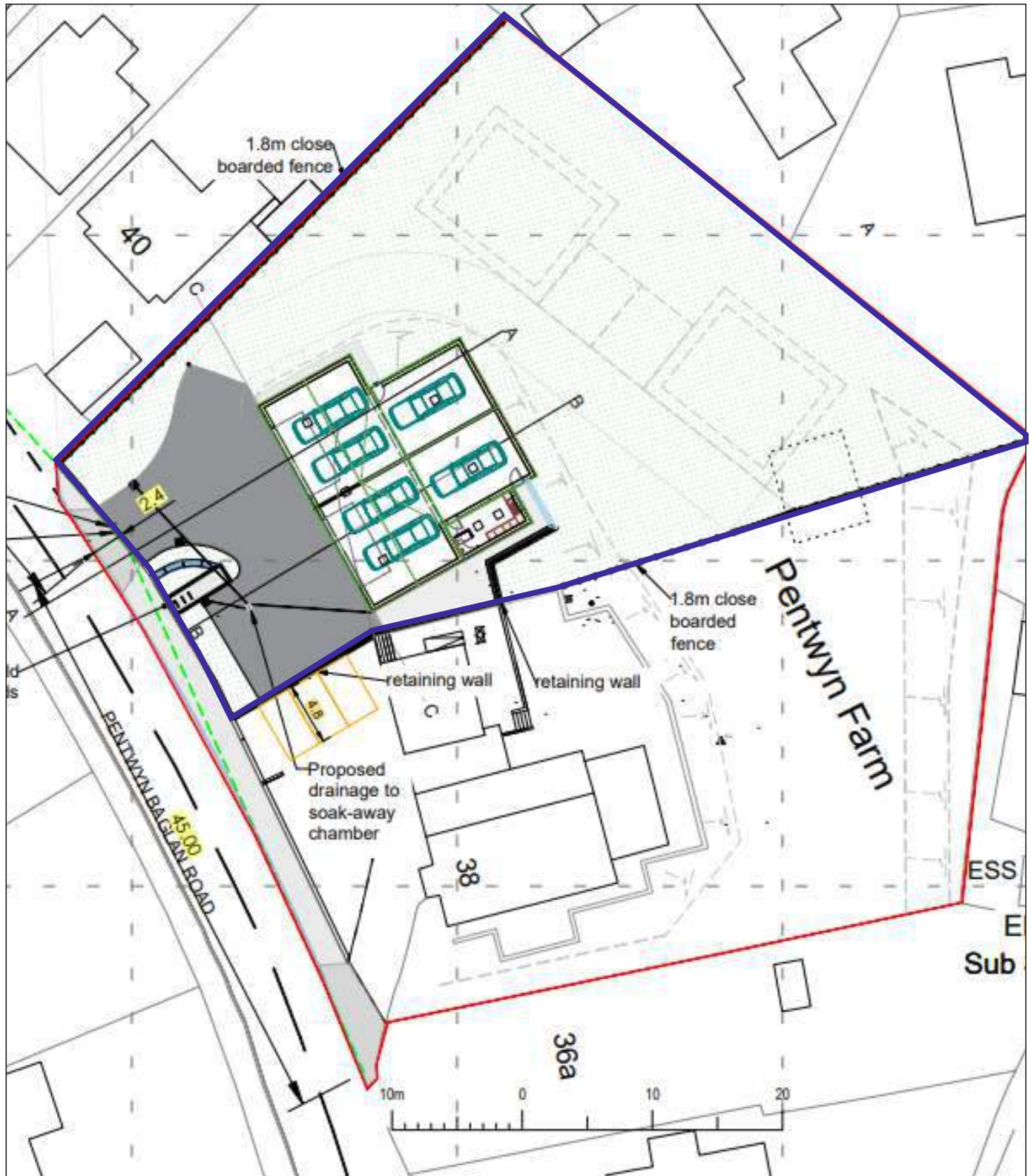


FIGURE 2
SITE BOUNDARY FOR PLANNING IN BLUE.

2. SOURCES OF INFORMATION

The site sits within a Coal Mining Reporting Area, according to the latest advice contained in the 2021 CL:AIRE document Good Practice for Risk Assessment for Coal Mine Gas Emissions, if a site is within a Coal Mining Reporting Area then a mine gas risk assessment should be carried out. The first stage of this should be a desk-based review. The CL:AIRE document states it is essential to purchase a current Consultants Coal Mining Report from the Coal Authority to inform the desk based assessment. It then suggests that other sources of data are also used. Those mentioned do not include the Geological Survey map sheets and Memoirs, far and away the most authoritative sources of information available outside of the Coal Authority. This assessment has been based on extensive research of the following:-

- a) Coal Authority Consultants Report ref MR-51003417530001.
 - b) The C.A. interactive viewer.
 - c) The 6" to the mile Geological Survey sheet SS 79SE (1949-52 revision, pub. 1970).
 - d) The Memoirs of the Geological Survey of The South Wales Coalfield, part IV Pontypridd and Maesteg (first edition 1903 and third edition, 1963) and other mining archive sources.
 - e) British Coal Rationalised Development Plan 07/D/SS/79 SE.
 - f) Mine abandonment plan 12899.
- 2a) The Consultants Report states that there is no recorded underground coal mining beneath the site, or within a zone of influence of the site. The report goes on to say the C.A. believe there are no shallow unrecorded workings or shallow spine roadways beneath the site. The report lists no mine entries within 100m of the boundary of the site and none within the site boundary. An extract of the Summary of Findings map is shown in Figure 3. This shows nothing as there are no recorded mining features within 100m of the site. There are no faults, fissures or breaklines recorded on the site. There are no opencast mines within 500m of the site.

In section 2 the report records no site investigations or surface hazards that have required remedial action within 50m of the site boundary. The C.A. has received no damage notices or subsidence claims for properties within 50m since October 1994 (i.e. since the formation of the C.A. to take liability for legacy

mining issues). There are no records of gas emissions requiring action within 500m of the site boundary. Section 3 states there is no licensing for present or future coal mining within 200m. There are no Section 46 notices or Withdrawal of Support notices. In Section 4 the Consultants Report states that based on the responses in the report no further information has been highlighted.

All these facts will feed into the later quantitative risk assessment. The Consultants Report is attached in Appendix 1.

2b) The C.A. interactive viewer contains a vast amount of information from various sources, particularly on the mining data window. An extract from the planning window can be seen in Figure 4. A linear area of Development High Risk runs just south of the site. There are other linear areas of Development High Risk in the surrounding area north and south of the site. The purple colour indicates they are buffer zones around coal seam outcrops. The brown circular areas are 20m exclusion zones around mine entries.

In order to fully understand why sites have a high risk status it is informative to study the Coal Mining Data window. This window is far superior to the planning window as it is at a larger scale. There are multiple datasets which can be turned on and off. An extract from the Mining Data Window is reproduced as Figure 5 overleaf. For clarity only two sets of data are turned on in Figure 5- seam outcrops and mine entries. The red crosses are mine entries. As stated in the Consultants Report, there are none within influencing distance of the site. There are five widely scattered mine entries north and south of the site. The closest is 300m due south of the site

The brown lines are coal seam outcrops. What the viewer shows that the S.o.F map doesn't, are seam outcrops around site but further than 50m away. It is essential to have an appreciation of these to fully understand the local geology. This in turn influences the coal seam geometry and the potential risk from mining (and hence mine gas) to the site. Faults are not shown on the interactive viewer, but the distinctive break in the outcrop pattern south and east of the site indicate faulting is present. C.A. seam codes have been added to the plan. In many cases the seam names are muddled and unhelpful in C.A. data on the South Wales Coalfield. The seam code closest to the site is SW0141, supposedly the Gellideg Seam. South of this, three seams are ascending in numerical order to the northeast. These are in ascending order, the Punchin, No.2 Rhondda, and No.2 Rhondda Rider. From SW0141-SW0851 is a huge stratigraphical jump.



FIGURE 3

SUMMARY OF FINDINGS MAP FROM THE CONSULTANTS REPORT.

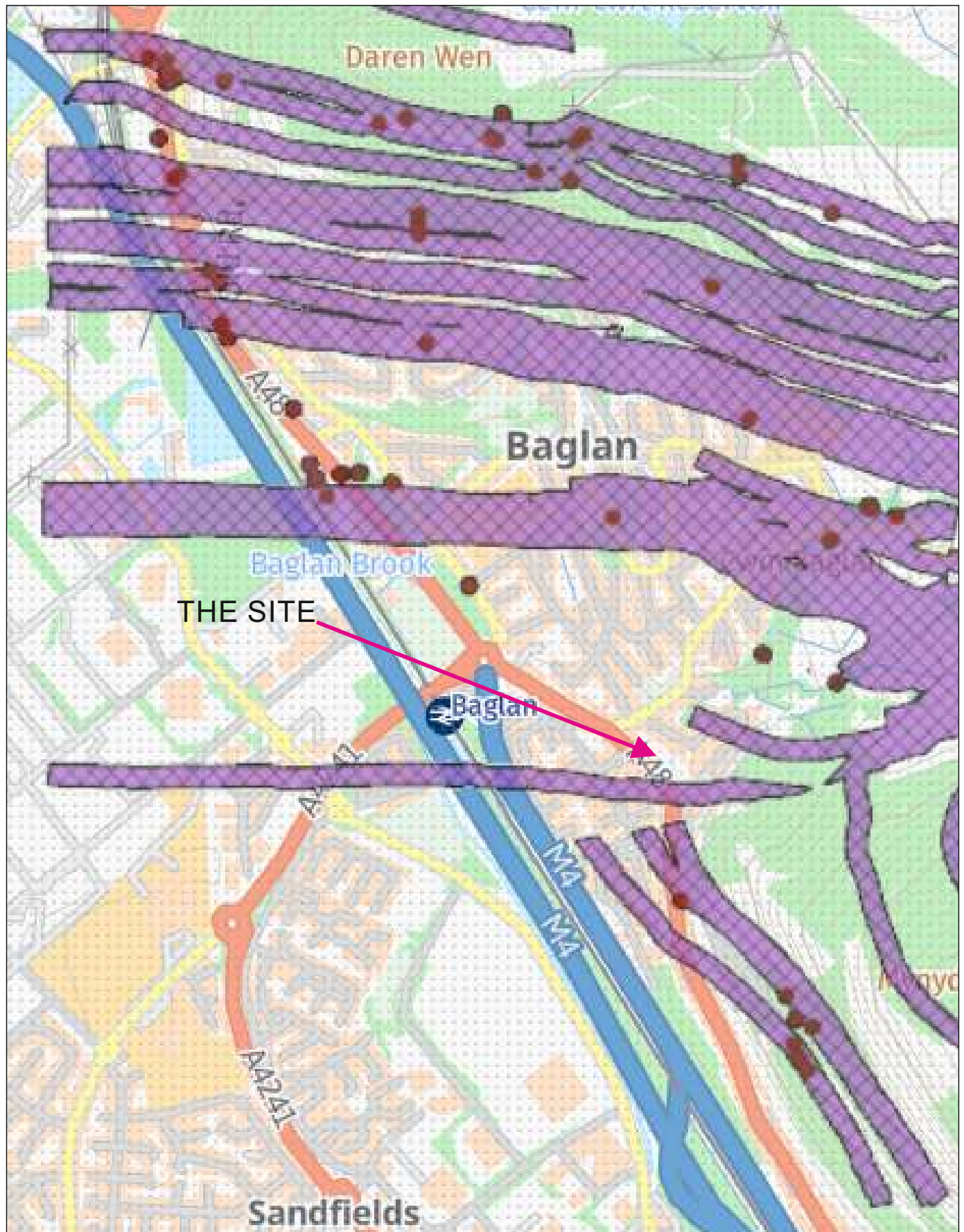


FIGURE 4
COAL AUTHORITY INTERACTIVE VIEWER, PLANNING WINDOW.
HATCHED AREAS ARE CLASSES AS DEVELOPMENT HIGH RISK.

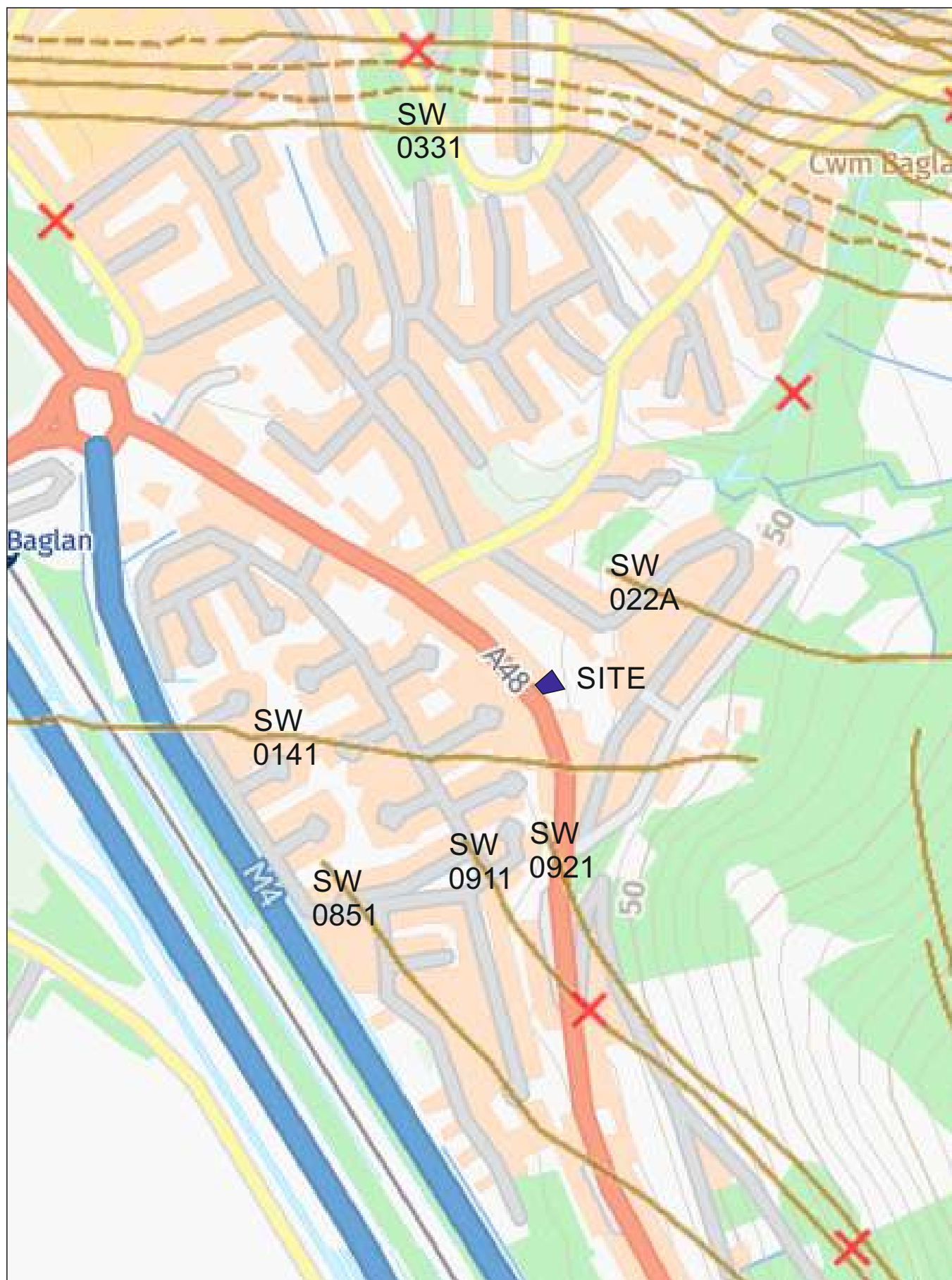


FIGURE 5

C.A. VIEWER, MINING DATA WINDOW. THE RED CROSSES ARE MINE ENTRIES, BROWN LINES ARE COAL SEAM OUTCROPS.

2c, d and e) The six inch to the mile Geological Survey sheet SS 79SE covers the area around the site. An extract of the map has been reproduced as Figures 6 overleaf. The site is outlined in blue. Thicker black lines are coal seam outcrops. South of the site the outcrop pattern is similar to Figure 5 with three outcrops marked on the hillside above the A48. The highest of these is identified as the Field Seam. Below that is the Wernddu with the lowest seam tentatively identified as the Wernpistyll. The arrow symbols on the Wernddu outcrop are adits (sub-horizontal mine entrances). The outcrop of the Wernpistyll is annotated "old workings". Steep strata dips of 33° and 29° are recorded in quarries further up the hillside. North of the site is a short, unidentified outcrop with "old bell pits" marked above it. Bell pits are primitive coal workings. A short shaft (usually 3m-12m) would be sunk down dip from the outcrop and the coal would be mined outwards with little or no roof support usually for a radius of 8m-15m. When conditions became too dangerous the pit would be abandoned and another sunk nearby. The location is now covered by housing. North of the bell pits the Amman Marine Band is marked. The A.M.B. marks the junction between the Lower and Middle Coal Measures. The area of the site is marked L.C.M. (Lower Coal Measures) with an outcrop labelled Gellideg west of the site. It is always very useful to study the survey sheets in conjunction with the Memoirs. Used together, the six-inch survey sheets and the Memoirs are an invaluable source of much detailed geological information on the area. Much of this has been obtained from mining records. Due to the very high economic importance of the area, extensive government funded geological surveys have been carried out in the past. These were completed in 1845, 1899 and 1954 respectively. Very little information on historical coal mining in the area is missing. The Lower Coal measures are poorly known in the Baglan area because of thick superficial deposits and few mining records. There is one difference between Figures 5 and 6. South of the site in Figure 5 is a seam outcrop. Labelled SW0141 this is supposedly the Gellideg Seam. The Gellideg outcrop in Figure 6 curves around and returns to the southwest. More important than the exact orientation of the Gellideg outcrop is the thinner dashed line running approximately east-west just south of the site. This is the Moel Gilau Fault. The fault is a major structural feature of the South Wales Coalfield. The Memoirs state it runs for 13 miles from Llandyfodwg out into Baglan Bay. The throw of the fault is huge with a maximum of 3750' (1143m) in the Afan Valley decreasing to 2700' (823m) at Baglan. This explains the geological situation around the site where the Lower Coal Measures beneath the site are brought up against the

Rhondda Beds of the Upper Coal Measures a mere 150m south of the site. This also explains the truncation of the seams in Figure 5 as the Interactive Viewer does not show faults.

When there are differences between the C.A. data and the Geological Survey it is beneficial to consult the British Coal Rationalised Development Plan. The British Coal Development Plan was a huge project mainly concerned with estimating coal reserves and land usage for planning opencast mining. The primary source of information was the Geological Survey together with input from geological observations made by N.C.B./B.C. geologists on working opencast sites. A massive amount of further information came from drilling records off prospecting sites dating back as far as 1947 and the formation of the N.C.B. Figure 7 shows the B.C.D.P for the area around the site. The outcrop pattern is very similar to the viewer. It is noticeable is that the seam outcrops have been given their correct local names as used by the Geological Survey. The current C.A. seam codes are directly derived from the B.C.D.P. For example, 14 the Gellideg = SW0141 with the addition of an extra SW0 in front and 1 at the end. Similarly, 92 Field Coal = SW0921. These are the same codes as on the Interactive Viewer in Figure 5. There are no nearby prospecting sites and so there is no physical evidence as to the correct position of the Gellideg outcrop. The C.A. position would put it at a shallower depth beneath the site than the Survey position. Whichever is correct is rendered irrelevant by the position of the fault. Although shown as a line, it is actually a broad zone of disruption. It is also at a very shallow angle, approximately 20° to the north in the Baglan area. This means it will underlie the site and there will be no workable coal beneath the site. This confirms the C.A. position in the Consultants Report that can be no unrecorded workings beneath the site.

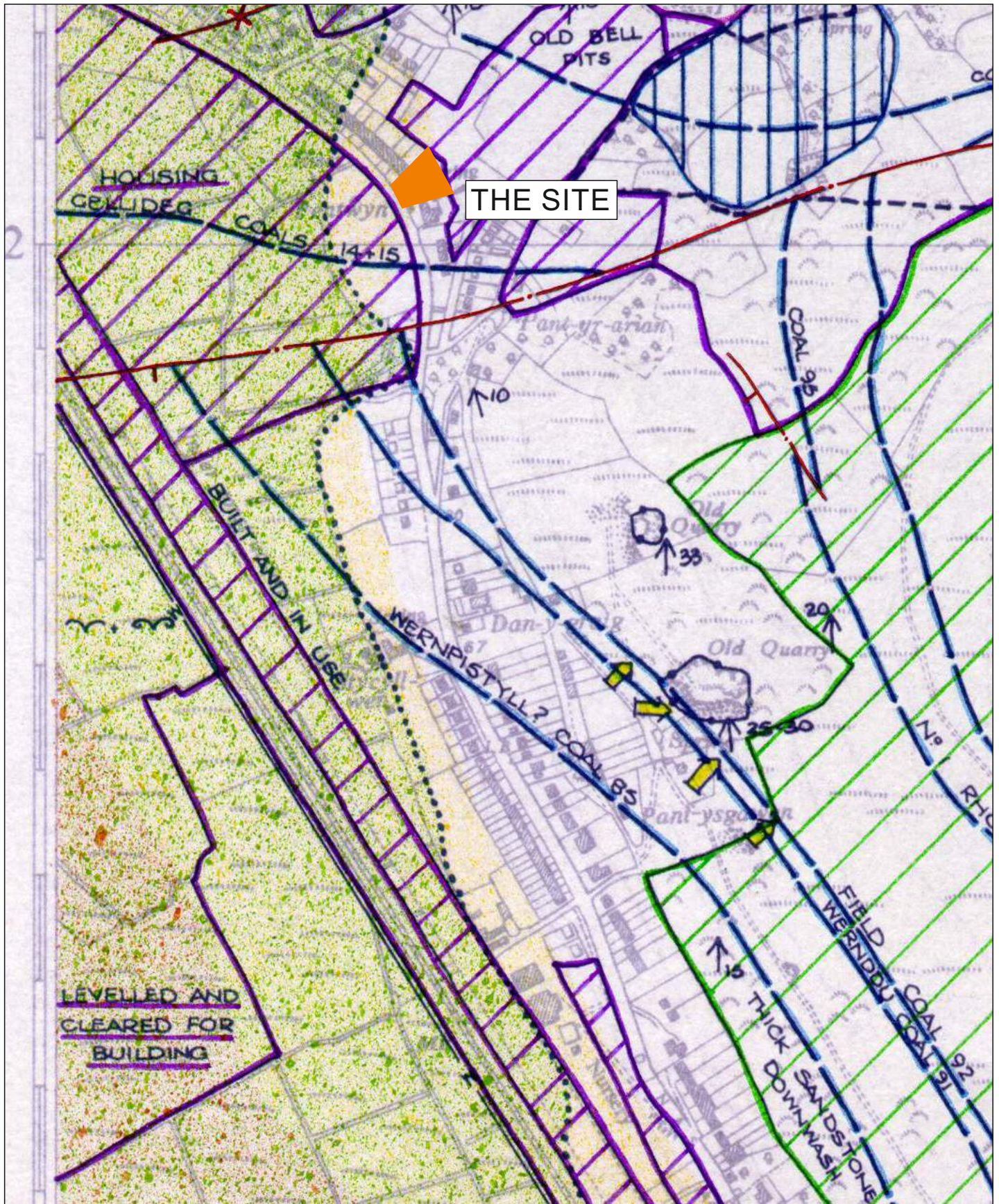


FIGURE 7
SECTION OF B.C.D.P, 07/D/SS/79 SE.
THE SITE IS HIGHLIGHTED IN ORANGE.

2f) Abandonment Plan 12899 shows the shallow workings from the adits/levels marked on Figures 5-7. A section of the plan is shown in Figure 8. These were of very limited extent and were only worked with limited success between 1938-1940. The contour lines on Figure 6 show the mouths are 150' (45.7m) above the site. These cannot possibly present a threat of mine gas to the proposed development.

3. CONCLUSIONS

All the extensive evidence presented in the preceding sections show there can be no risk to the site from Mine Gas. Planning condition 7 mentions the Decision Support Tool, Figure 13.1 on Page 35 of the CL:AIRE publication Good Practise for Risk Assessment for Coal Mine Gas Emissions. Within this rigid framework there is no room for past experience, or practical knowledge of coal mining, and there is certainly no allowance for the hydrogeology of the South Wales Coalfield. The arbitrary insistence that all workings must be >150m deep is particularly ridiculous. In this instance the flow chart can be followed to reach the decision above. This may not be true in many cases where there is no mine gas risk and there has to be a discussion around this at some point.

IS THE SITE WITHIN A C.A. DEFINED COAL MINING REPORTING AREA

>YES>

ARE ALL THESE STATEMENTS TRUE.

ALL MINE ENTRIES >50m FROM SITE BOUNDARY.

ALL WORKINGS >150m DEPTH

NO FAULTS OR POTENTIAL PATHWAYS CONNECTING THE SURFACE TO DEEPER UNFLOODED WORKINGS.

OUTSIDE AREA OF PAST OR PROBABLE SHALLOW WORKINGS ON THE COAL AUTHORITY INTERACTIVE VIEWER.

>YES>

NEGLIIBLE RISK ZONE.

DETAILED FINDINGS WITHIN THIS REPORT.

MITIGATION NOT REQUIRED.

NO FURTHER ACTION REQUIRED.

Richard Davies BSc. (Hons.), MSc., F.G.S.

9/05/2024

APPENDIX 1
COAL AUTHORITY
CONSULTANTS REPORT
PENTWYN FARM
BAGLAN



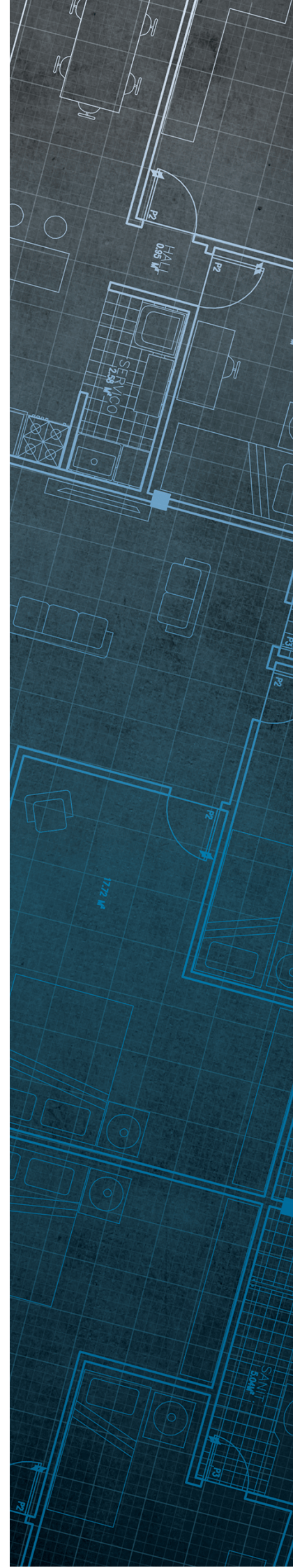
The Coal
Authority

Consultants Coal Mining Report

Pentwyn Farm
38 Pentwyn Baglan Road
Baglan
Neath Port Talbot
SA12 8EB

Date of enquiry:	12 April 2024
Date enquiry received:	12 April 2024
Issue date:	12 April 2024

Our reference:	51003417530001
Your reference:	



Consultants

Coal Mining Report

This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

RICHARD Davies

Enquiry address

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Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

No past mining recorded.

Probable unrecorded shallow workings

None.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

None recorded within 100 metres of the enquiry boundary.

Abandoned mine plan catalogue numbers

The following abandoned mine plan catalogue numbers intersect with some, or all, of the enquiry boundary:

SWR2654		
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Please contact us on 0345 762 6848 to determine the exact abandoned mine plans you require based on your needs.

Outcrops

No outcrops recorded.

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Opencast mines

None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations

None recorded within 50 metres of the enquiry boundary.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

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.

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

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

Withdrawal of support notices

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.

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.

Section 4 – Further information

Based on the responses in this report, no further information has been highlighted.

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 500m of 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.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk**.

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

Opencast mines

Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips

Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations

Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites

Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence

Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas

Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of 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.

Mine water treatment schemes

Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining

Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing

Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders

Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices

Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

Withdrawal of support notices

Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land

Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.