Report No. BC/MB/02.25.04.

Geo-Environmental Report (Tier 1): Land at Abergarwed Farm.

Prepared on behalf of:

Absolute Scaffolding

By:

BLANDFORD CONSULTING

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Geo-Environmental Report (Tier 1): Land at Abergarwed Farm.

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Appendices

Appendix I: ***Copy of The Coal Authority's Mining Report, reference no. 51002284166001.***

Appendix II: ***Copy of British Geological Survey's Radon Report.***

Geo-Environmental Report (Tier 1): Land at Abergarwed Farm.

1 Introduction

This report has been prepared on behalf of our client:

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and relates to the above parcel of land at Abergarwed Farm where it is proposed to construct a storage building. This report discusses the geology mining history and environmental setting of the Site and the immediately surrounding area as they may affect the proposed development and thereby assesses the risk from contamination.

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

i) *Research of published geological records;*

ii) *The findings of the 'Coal Mining Risk Assessment: Land at Abergarwed Farm', reference no. BC/MB/04.20.07, published by Blandford Consulting;*

iii) *The findings of The Coal Authority's report, reference no: 51002284166001;*

iv) *The findings of Envirocheck Report reference no:369751530_1_1;*

v) *Inspection of British Geological Survey's GeoIndex, accessed on the 13th February 2025* 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 plot of land where it is proposed to construct the storage facility, 'the Site' is located in a rural area and is situated on the floor of the Neath Valley, approximately 11km east of the commercial centre of Neath and 7.5m south-west of the centre of Glyn Neath (see Figure 1 and *General Location Plan, drawing no. BC/MB/02.25.04.01*). The Site is located at the eastern fringes of Abergarwed and close to the River Neath and is largely surrounded by a mixture of woodland and agricultural enclosures. The Site is irregular in outline and the proposed storage building has dimensions of approximately 30m by 20m; the site occupies an area of approximately 1.18 hectares and is fairly level at an elevation of approximately 22m aod (see Figure 1 and *Detailed Location Plan, drawing no. BC/MB/02.25.04.03).*

Figure 1
Aerial View of Site



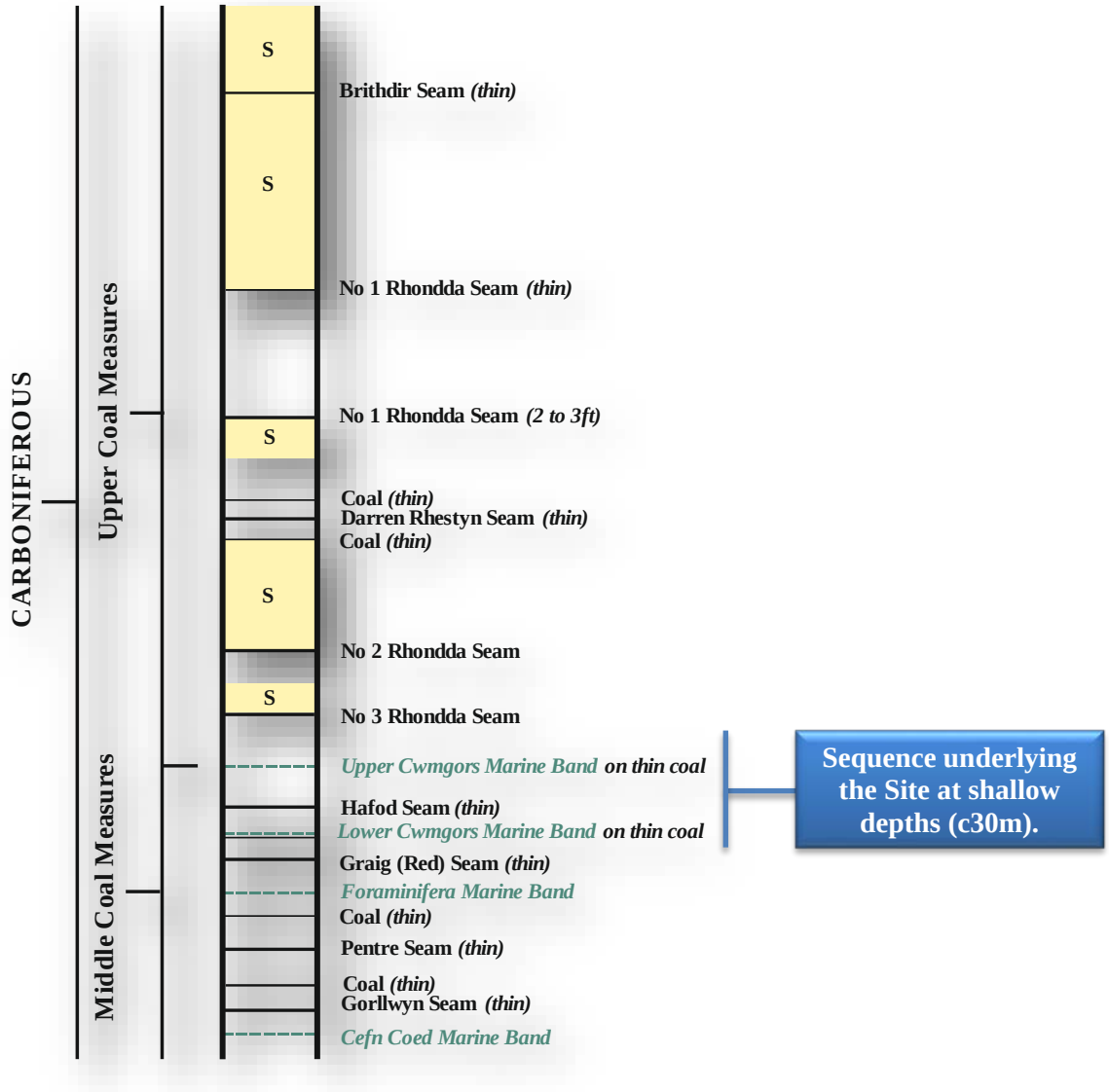
3 Geology of the Site

The Site is situated towards the northern margins of the former South Wales Coalfield. The inferred position of the Upper Cwm Gors Marine Band is shown on the published geological

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sheet (Sheet ST 18 NE) to pass through or in the immediate vicinity of the Site. The Marine Band marks the division between the Upper and Middle Coal Measures. The geological sheet shows the inferred position of the outcrop of the No 3 Rhondda Seam to be present immediately to the east of the Site, such that the seam does not underlie the Site (see *Geology Plan, drawing no. BC/MB/02.25.04.02)*. There are no coal seams underlying the Site at shallow depths that are thick enough to have supported underground mining operations.

Figure 2
Indicative Stratigraphic Column.



/Cont….

The coal measures of the South Wales Coalfield have been affected by large faults. These large faults have a slightly sinuous trace at the surface and, in the Abergarwed area, average trends towards the north-west. The Site is not affected by any such faulting.

The published geological sheet indicates that the coal measures are locally overlain with deposits of river alluvium. The geological sheet also shows the presence of an area of Made Ground that encroaches across most of the Site, including the location of the proposed development, the Made Ground is most likely comprised of colliery spoil. We have no detailed information relating to the engineering properties or thickness of the soils at the Site.

The published geological sheet also shows that the Site is not affected by landslip conditions.

4 Hydrology and Hydrogeology

4.1 Hydrology

There are no streams or land drains crossing the Site and no bodies of standing water on the Site.

4.2 Hydrogeology

Groundwater Protection Policy (GP3) and the Water Framework Directive (WFD) Maps are managed by Natural Resources Wales (NRW) and an inspection of these maps indicated the following:

- The south-eastern half of the Site, including the proposed storage unit, is at risk from flooding from rivers or from the sea (Flood Zone 2) (see *Flood Risk Plan: Rivers/Sea, drawing no. BC/MB/02.25.04.04*).
- There is no predicted risk of flooding from surface waters across (see *Flood Risk Plan: Surface Water, drawing no. BC/MB/02.25.04.05*).
- The Superficial Aquifer designation for the Site is High Vulnerability Secondary A Aquifer.

/Cont….

- The Bedrock Aquifer designation for the Site is High Vulnerability Secondary A Aquifer.
- The Site is not within a designated Drinking Water Safeguard Zone.
- The Site is not within a Groundwater Source Protection Zone.
- There are two designated Water Abstraction Licences within influencing distance, both south of the Site and both in the name of Neath Canal Navigation, the abstractions are for the purpose of transferring water between sources.

5 History of the Site

5.1 1877-1878 Edition

A review of the history of the Site has been undertaken by means of research of the various editions of Ordnance Survey maps. The 1877-1878 Edition shows the Site to have been in a mainly rural setting and to be occupied by agricultural enclosures and by the Neath Canal, the latter occupying the north-western section of the Site (see *Extract from Ordnance Survey Sheet 1877-1878, drawing no. BC/MB/02.25.04.06*). A tramway was present immediately outside the western corner of the Site, it ran in a north-westerly direction up the valley side. It appears that the tramway terminated at the canal, where it is likely coal was loaded into barges. Coal levels and an air shaft were present on the valley side above the Site, approximately 90m north of it. A small area of raised ground, almost certainly colliery spoil, was associated with the coal levels. A second tramway ran north-eastwards up the valley side, approximately 30m distant from the northern boundary of the Site at its closest point. An 'old', *i.e.* disused, kiln was present 120m south-west of the Site. The River Neath is shown to be present approximately 100m south of the Site.

5.2 1899 Edition

This Edition shows there had been no significant change to the Site and the immediately surrounding area since the previous edition (see *Extract from Ordnance Survey Sheet*

/Cont….

1899, drawing no. BC/MB/02.25.04.07). The notable exceptions are that the tramway, coal levels and air shaft are all annotated as 'old', *i.e.*, disused.

5.3 1918 Edition

This edition shows that the tramway had been re-established, and a series of railway sidings established on the Site with branches extending south-eastwards and south-westwards (see *Extract from Ordnance Survey Sheet 1918, drawing no. BC/MB/02.25.04.08*). A limited amount of land raising was associated with the sidings, most likely to create suitable gradients and almost certainly constructed with colliery spoil. The sidings were associated with the Ynys-arwed Colliery. A coal level is shown 20m north-west of the north-west corner of the Site. An 'old', *i.e.* disused, air shaft is shown 100m north of the north-west corner of the Site.

5.4 1962 Edition

This edition shows that all the mining activities had ceased, and tramways had been dismantled (see *Extract from Ordnance Survey Sheet 1962, drawing no. BC/MB/02.25.04.09*). A disused level not previously seen is shown approximately 70m north of the Site. The Site was occupied with a mixture of mainly woodland with some rough grazing, a land drain crossed the access road into the Site.

5.5 1993 Edition

This edition shows that the length of the Neath Canal running through the north-western part of the Site had been filled, the canal terminated at the north-eastern boundary of the Site (see *Extract from Ordnance Survey Sheet 1993, drawing no. BC/MB/02.25.04.10*). The Site, itself, was occupied with an agricultural enclosure.

5.6 2000 Edition

The Aerial Photograph dated 2000 identifies that Site is largely unoccupied except for what appears to be a hard standing at its southern end (see *Extract from Aerial Photograph 2000, drawing no. BC/MB/02.25.04.11*). Industrial buildings are present

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beyond the southern boundary of the Site, apparently associated with storage arrangements.

5.7 Present

The Site is presently occupied with a storage building used by ASW Scaffolding Ltd, the previously identified area of hard standing is still present. (see Figure 2).

6 Environmental Issues

No part of the Site lies within an area designated as having a sensitive land use, including designated landscape areas (see *Environmental Review Plan, drawing no. BC/MB/02.25.04.12*).

There are no Control of Major Incident Sites (COMAH), explosive sites, Notification of Installations Handling Hazardous Substances status (NIHHS) or planning hazardous substance consents within 250m of the Site. Most of the Site lies within an area of potentially infilled land (non-water), and a large area of potentially infilled land (non-water) lies immediately to the south.

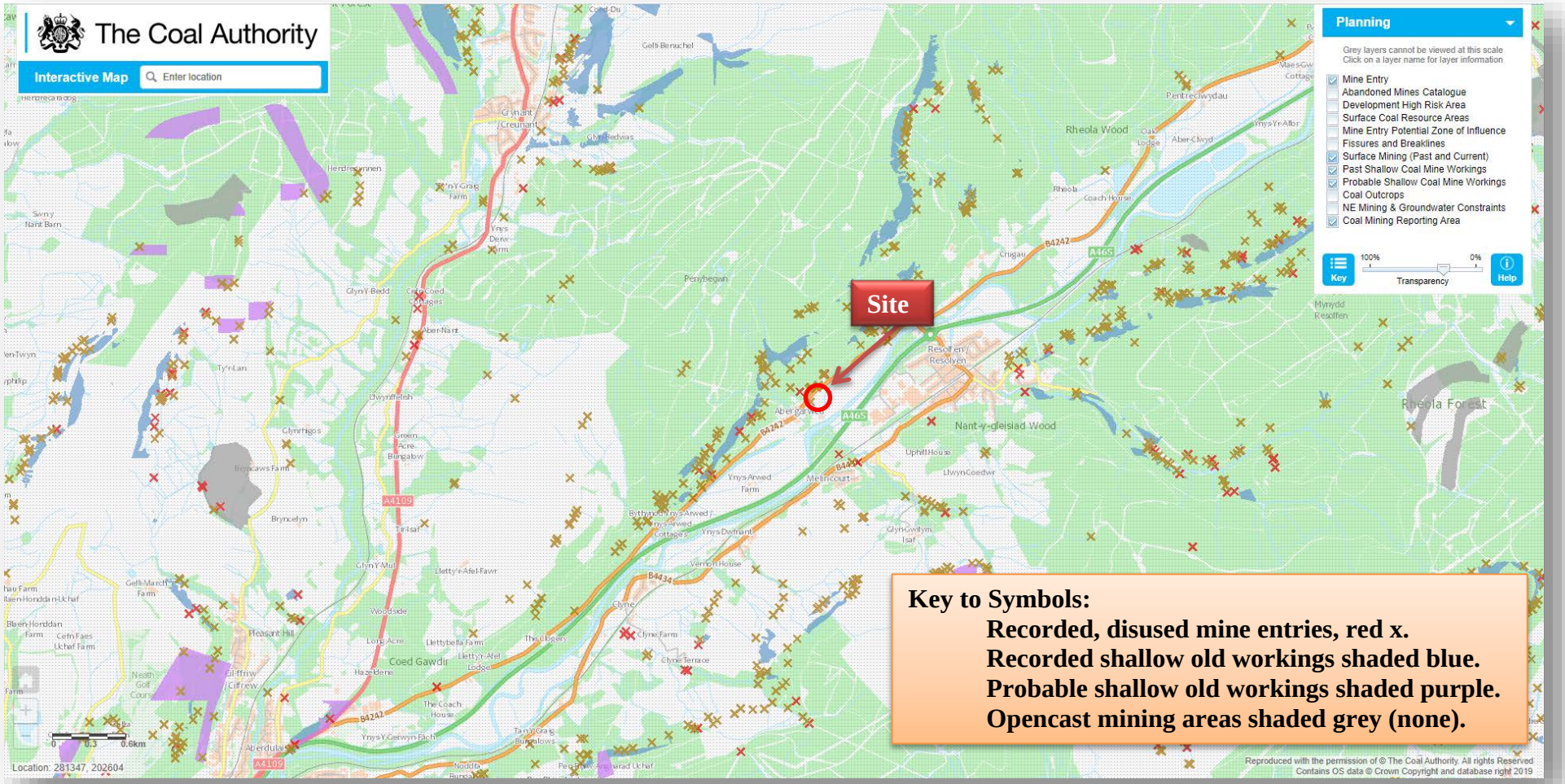
7 Mining History

The area has been subject to fairly extensive coal mining operations dating back to the nineteenth century. Coal seams were accessed by adits driven into the mining horizons near their outcrops supplemented by air shafts; larger shafts gave access to deeper lying coal seams. Our searches identified that the Site is not within an area that could be affected by past coal mining; The Coal Authority's interactive map also shows that there are no recorded old workings underlying the Site, shallow or otherwise (see Figure 3).

The Coal Authority's mining report identifies that the Site is not affected by any underground mining. The Mining Remediation Authority's (formerly The Coal Authority) on-line resource identifies that there are no recorded mine workings underlying the Site.

/Cont….

Figure 3
Print-out of The Coal Authority's Interactive Map
(Accessed 13th February 2025)



Key to Symbols:
Recorded, disused mine entries, red x.
Recorded shallow old workings shaded blue.
Probable shallow old workings shaded purple.
Opencast mining areas shaded grey (none).

/Cont….

The Coal Authority's mining report identifies that there is only one recorded mine entry within the confines of the land holding or within 20m of it. The adit is situated north of and at a significantly higher elevation than the land holding such that a collapse of the adit could not affect any part of the land holding, including the Site. The adit is approximately 110m distant from the proposed storage unit, itself. The adit served as one of several entries for old workings in the No. 3 Rhondda Seam that extend beneath the hillside on the north side of the Vale of Neath and away from the Site. Any collapse of these old workings could not affect any part of the land holding, including the Site.

There are no active coal mines in the locality, either deep mines or opencast, and the Site has not previously been part of an opencast coal site.

8 Risk Assessment – Environmental, Tier 1

8.1 Conceptual Model, Environmental

A conceptual model (see chart below) was developed in order to provide a basis for the Risk Assessment; it was based on the source-pathway-receptor approach. There are a few recorded industrial uses of the Site that could present a source of contamination of the soils therein; namely the tramway line, sidings and colliery spoil that was on the land and also the surface of the Ynys-arwed Colliery in the earlier part of the 20th Century.

8.2 Hydrology and Hydrogeology

The superficial deposits on the Site are classed as high vulnerability Secondary A and the bedrock high vulnerability Secondary A aquifer. The superficial deposits on the Site are of river alluvium.

8.3 Contaminated Soils

Whilst there are identified sources of potential contamination, the nature of the development can be categorised as 'Commercial', thereby reducing the potential for interaction between a recognised source and pathway. The use of the Site as a storage

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unit will prevent contact between end-users and the original soils; a hard surface will be present, whether it is concrete for foundations or tarmac for road/parking, thereby removing any significant pathway between source and receptor.

Conceptual Model

Source	Pathway/ Linkage	Receptor	Probability & Consequence	Risk
Soil Tramway Land, sidings, Made Ground/ Colliery Surface	Ingestion/ Dermal Contact	Future on-site users (commercial)	Unlikely/negligible	Low
		Construction workers	Unlikely/negligible	Low Assumes the use of PPE
		Maintenance workers		
		Adjacent commercial/ residential land users	Unlikely/negligible	Low
	Permeation	Subsurface plastic water pipes	Unlikely/negligible	Low
	Vertical Groundwater Migration	Minor aquifer	Unlikely/negligible	Low
Gas Ground gas from infilled canal with unknown material	Horizontal movement through bedrock/soils	Future on-site users (commercial)	Unlikely/negligible	Extremely unlikely to be putrescible material therefore low risk; *this should be confirmed with trial pits*
Mine Gas Nearby mine entries	No pathway	Future on-site users (commercial)	Unlikely/negligible	Low

The Site is already used for commercial purposes and this development of part of the Site will not increase any risks presented to end-users in relation to contaminated soils. The nature of the proposed development will only allow for sensitive end-users to use the Site for short periods of time and infrequently: it is therefore concluded that there is extremely low potential for either chronic or acute exposure to any contaminants that may or may not be present in the soils therein. During the construction phase workers may come into contact with the soils and so it is essential that they are made aware of the findings of this report and use the appropriate PPE at all times where necessary.

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Around the 1918 period the Site was occupied with sidings associated with the Ynys-arwed colliery and there is a possibility that reprofiling of the land used colliery waste from the colliery. The colliery mined the No. 2 Rhondda Seam, a coal seam that has a relatively high sulphur content. Any colliery spoil or spillages associated with colliery may pose a risk of aggressive attack on buried concrete and services. It is recommended that soil samples are collected and analysed at a suitably certified laboratory to test for the risk of aggressive soil conditions.

If, at any time, conditions on Site are found to differ from those discussed in this report, this Practice should be informed immediately so that any necessary action may be taken before the development proceeds.

8.4 Landfill Gases

The Neath Canal was partially in-filled during the latter part of the 20th Century; it is not known what material was used in this process. It is entirely reasonable to assume that non-putrescible material was used for the filling purposes as the exercise would have been an engineering one. Whilst this may be the case, it would be prudent to carry out a trial pitting exercise in the area of the in-filling in order to examine the physical nature of the material therein. If, as expected, engineering/non-putrescible material was used, then it can be concluded that the risk from landfill gas is negligible as there will be no source. If, however, putrescible material is found, the conceptual model should be updated and the Local Authority informed so that steps can be taken to assess the risk to the development from potential ground gases.

Regarding the areas of potentially infilled land (non-water) within a 250m radius of the Site. CIRIA C665 Table 7.1 classes the hazard as low for an off -site landfill (methane and carbon dioxide) more than 50m distant from the Site. Moreover, the infilled area is likely to be filled with colliery spoil from the nearby New Gored Merthyr Colliery so is extremely unlikely to have putrescible material within it. It is therefore considered that no further action needs to be taken in the respect of ground gases.

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8.5 Radon Gas

An assessment of the risk from Radon gas has been carried out by obtaining from the British Geological Survey a Radon report. The report identifies the Site as being within an area that is not affected by Radon; the appropriate response for building control purposes is NONE.

8.6 Mine Gases

An assessment of the risk from mine gases has been carried out based on an assessment of geological and mining data that is available in the public domain and broadly following the guidance offered in CL:AIRE.

When coal is mined methane is released and may accumulate in the voids left by the mining operations, other mine gases (carbon dioxide, carbon monoxide and depleted oxygen) may subsequently accumulate in mining voids as a result of various chemical processes. 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.

The principal release of methane occurs when the coal is cut with a decreasing quantity of methane venting over time. The process declines over a number of decades and tends to have ceased within 50 years of the coal being cut. The coal seams present across the South Wales Coalfield have a poorly developed cleat that inhibits the lateral passage of methane gas through the body of the coal and may be a contributing factor to the absence of mine gases noted in site investigations carried out across South Wales.

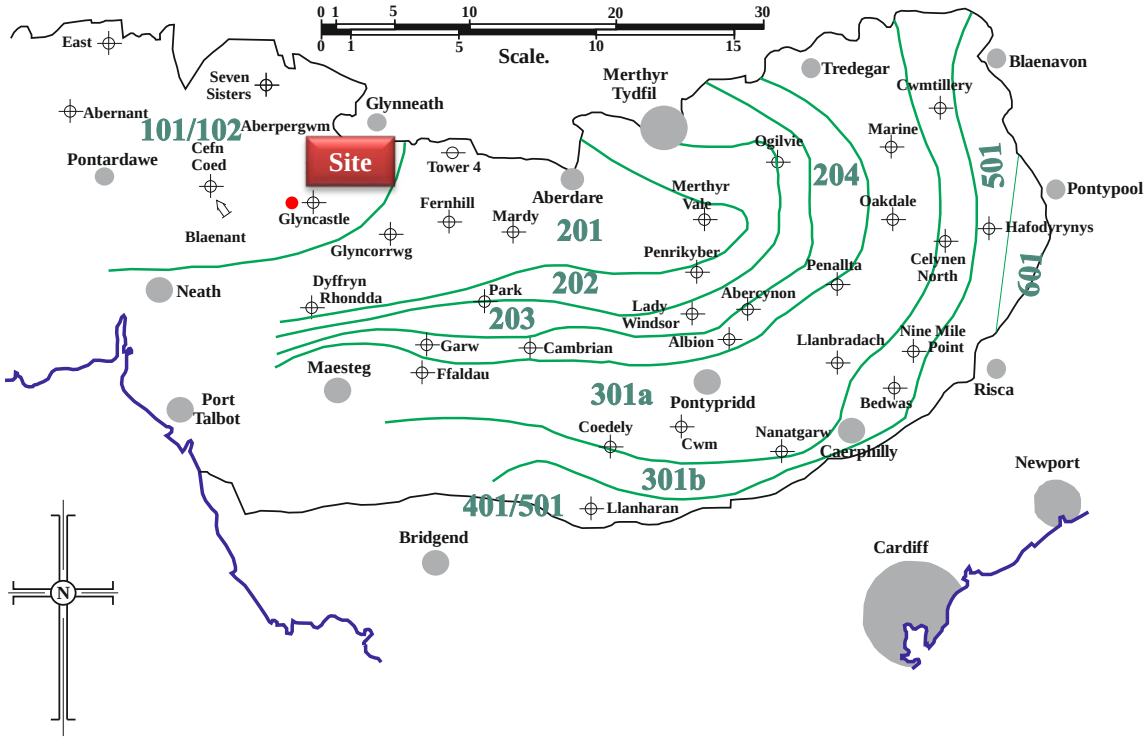
Carbon monoxide may accumulate in mine workings as a result of spontaneous combustion that may be triggered, for example, by the use of air flush when drilling boreholes into old workings. The Coal Authority has published a list of coal seams that are prone to spontaneous combustion, none of the coal seams found on the South Wales Coalfield appear on the list.

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A number of site investigations of 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, although some risk may be present. 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.

The Site is situated fairly centrally within the bounds of the South Wales Coalfield where the coal seams underlying the Site are low to medium rank coals (301a) coking coals, such coal seams offer a reduced risk of generating a number of mine gases as a result of their lower volatile content (see Figure 4).

Figure 4
The Variation of Coal Rank Across The South Wales Coalfield.
- Based on the Nine Feet Seam -
(Blandford 1986.)

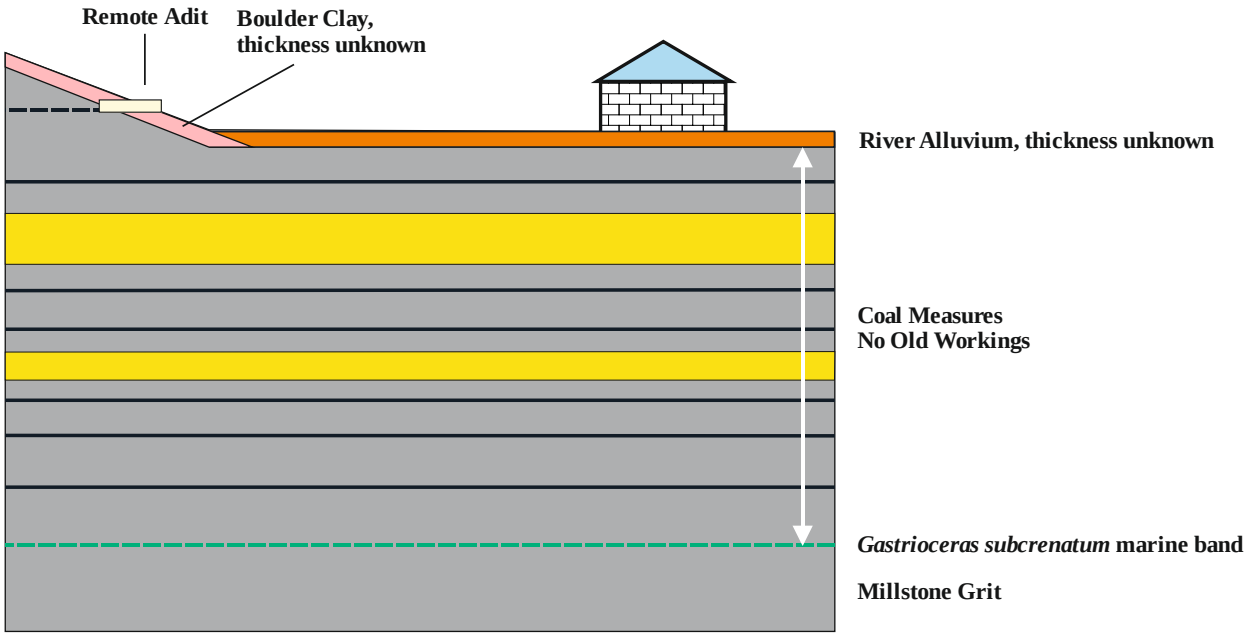


A conceptual model has been prepared for the development (see Figure 5). The published geological sheet identifies that the superficial deposits across the locality are of river alluvium. The thickness of river alluvium present is in excess of 10m, the total depth at the Site is unknown.

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The Coal Authority's interactive on-line map identifies that there are no underground workings nor probable coal workings affecting the Site.

Figure 5
Conceptual Model



The Coal Authority's mining report identifies that there are no shallow spine roads and no records of any past coal mining operations affecting the Site.

There are no old workings that could be in hydraulic continuity with coal seams that are generating acid mine water.

There have been no recorded mine gas incidents at the Site.

The Coal Authority's mining report identifies that there is a single recorded mine entry within 20m of the Site. The disused mine entry in question is an adit on the valley side above the Site, it is approximately 110m from the proposed new storage unit. A second mine adit has been identified from the Ordnance Survey Sheets, it was approximately 30m from the Site boundary and approximately 80m from the proposed storage unit. To pose a risk to the proposed development, mine gas would need to accumulate to dangerous levels of concentration at an adit and the concentration remain intact and travel across the open valley to the storage unit. There is no preferential pathway by which

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such a concentration of mine gases would travel from the adits to the proposed storage unit and remain at dangerous levels of concentration.

There are no operating collieries in the area.

There are no opencast sites within 500m of the Site.

There are no faults affecting the Site and no coal workings that might create a preferential pathway allowing mine gases to reach the surface.

It is considered that there is a 'low' risk of mine gases affecting the development, a categorisation that requires no further investigation.

9 Discussion and Recommendations

9.1 Solid Geology

There are no issues relating to the solid geology of the Site that would affect the structural integrity of the proposed development, and no further action is required in this respect.

9.2 Mining History

9.2.1 Mine Workings

There are no recorded old workings underlying the Site, shallow or otherwise and there is no coal seam at shallow depths beneath the Site that is thick enough to have supported an underground mining operation. There are no active coal mines in the area that could affect the structural integrity of the proposed development, and the Site has not been part of an opencast coal site. There is no requirement for the foundations to include mitigation against subsidence arising from the collapse of mine workings.

/Cont….

The Made Ground present on the Site is likely to be comprised of colliery spoil that may have relatively high sulphate concentrations that may be aggressive to buried concrete. It is recommended that soil samples are collected and tested to determine their chemistry.

9.2.2 Mine Entries

The Coal Authority's mining report identifies that there is a single, recorded mine entry within the land holding or within 20m of it; the adit is approximately 110m distant from the location of the proposed building. The adit is at a higher elevation than the land holding, and a collapse of the adit could not affect the land holding, including the Site.

The risk of an unrecorded mine entry being present on the Site cannot be entirely discounted given the mining history of the district. However, it is extremely unlikely in this case because there is no thick coal seam outcrop present on the Site and no thick coal seam at shallow depths beneath the Site that might have been the subject of a mining operation. However, it would be prudent to monitor excavations on the Site and if anything, unusual is observed then the excavation work should be stopped immediately, and advice sought from a Consultant Geologist or from The Coal Authority.

9.2.3 Mine Gases

An assessment of the risk from mine gases following the advice in the CL:ARE guidance categorises the Site as 'low', requiring no further action.

9.2.4 Radon Gas

A Radon report obtained from the British Geological Survey identifies that the Site lies within in area that is not affected by Radon. The appropriate response for building control purposes is NONE.

/Cont….

9.3 Contaminated Land

The Neath Canal was partially in-filled during the latter part of the 20th Century; it is not known what material was used in this process. The risk from landfill gas as the result of putrescible material being present in the fill should be assessed by means of trial pits. If putrescible material is found, the conceptual model should be updated and the Local Authority informed so that steps can be taken to assess the risk to the development from potential ground gases. The remainder of the identified potential sources of contamination are not considered to pose a high risk to any sensitive receptor as the development will not include a recognised pathway between source and receptor. It is recommended that no further action be taken in this respect unless conditions on the Site dictate otherwise.

10 Qualifications of Authors of the Report

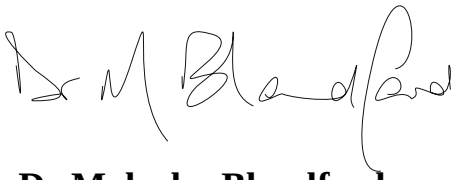
Dr Malcolm Blandford is a Consultant Geologist and Fellow of the Geological Society of London and has over 40 years' experience of studying the geology of and mining operations across South Wales. Dr Blandford worked in the coal mining industry for 16 years before entering private practice where, amongst other matters, he was responsible for the exploration for opencast sites, colliery extensions and proposed new collieries, for assessing methane emissions from coal seams, methane transmission through strata and the potential for in situ coal seam combustion. Dr Blandford has advised on Coal Bed Methane licence applications and has extensive experience of exploration practice, of interpreting coal mining records, and of assessing the occurrence and movement of coal mine gases. Dr Blandford has variously undertaken and/or project managed a large number of site investigation programmes and environmental assessments.

David Blandford has a Master's degree in Environmental Risk Management and a Batchelor's degree in applied industrial science with particular regard to the environmental implications of the paper making processes. Since graduating with his Master's degree, David Blandford has been employed full time undertaking environmental assessments and the related site investigation works.

/Cont….



David Blandford,
Environmental Consultant.



Dr Malcolm Blandford,
Consultant Geologist.

Report Date 18th February 2025.

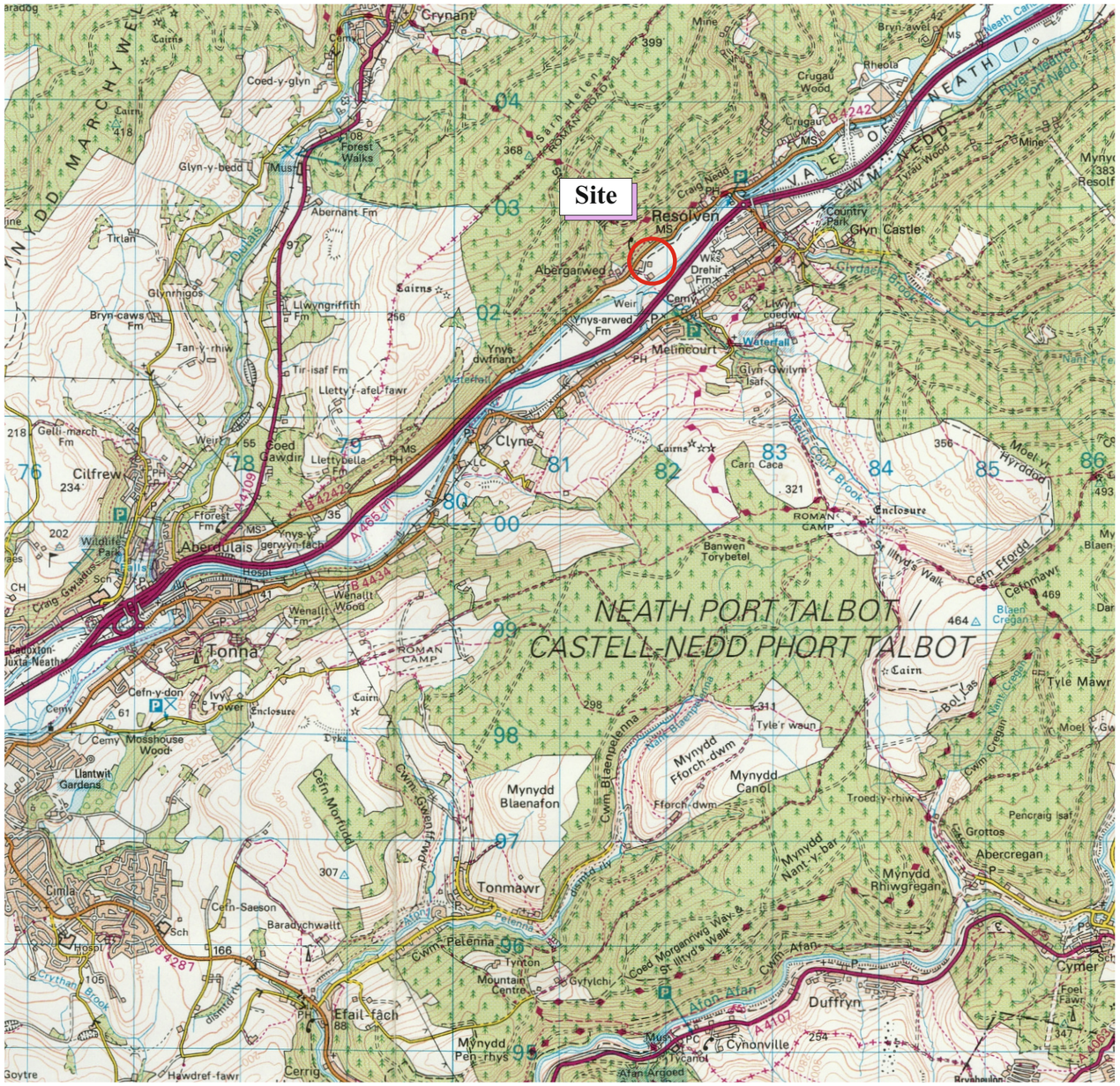
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PLANS

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Geologists Working With The Environment....



Study on Land at Abergarwed Farm, Abergarwed.

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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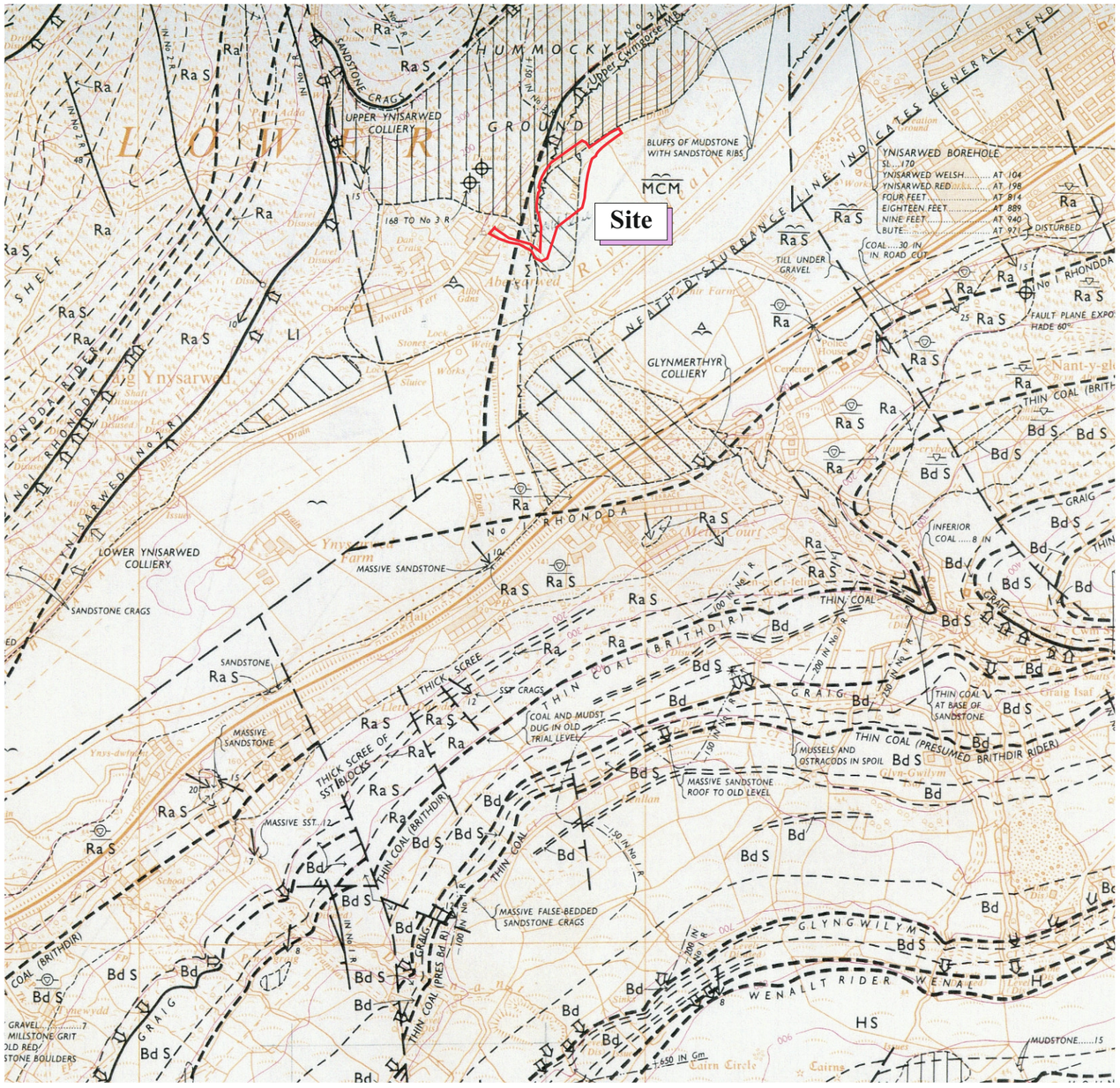
Geologists Working With The Environment....

Drawing No: BC/MB/02.25.04.01.

Study on Land at Abergarwed Farm, Abergarwed.

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 Abergarwed Farm, Abergarwed.

Detailed Location Plan.

Plan Scale: See Plan.

Key to Symbols:

Approximate Position of Site.

Note:

North is at top of plan.

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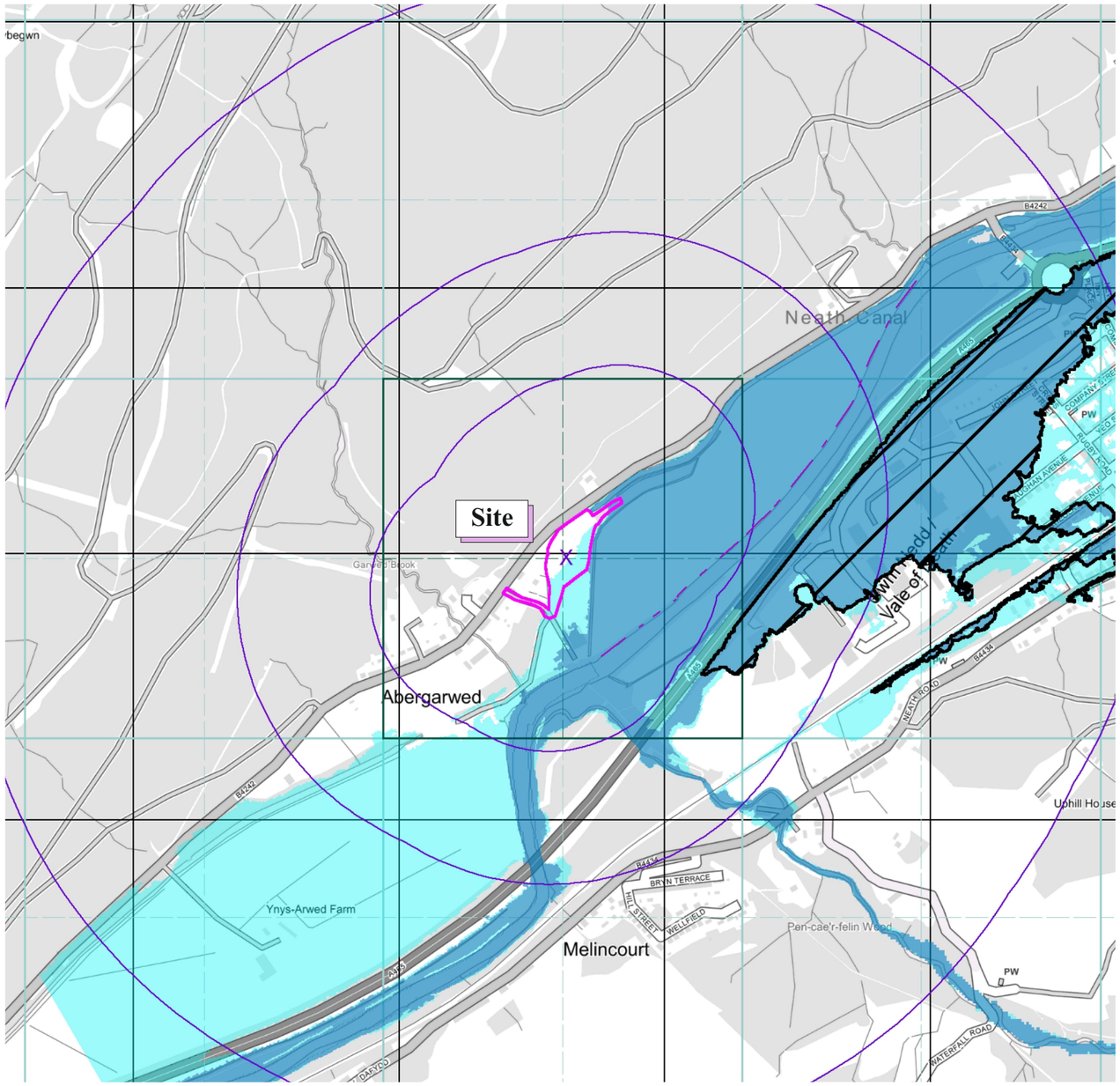
Geologists Working With The Environment....

Drawing No: BC/MB/02.25.04.03.

Study on Land at Abergarwed Farm, Abergarwed.

Flood Risk Plan: Rivers/Sea.

Plan Scale: 1:10,000.



Key to Symbols:

- **Approximate Site Boundary.**
- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Notes:

North is at top of plan.

Locations are approximate and should not be scaled.

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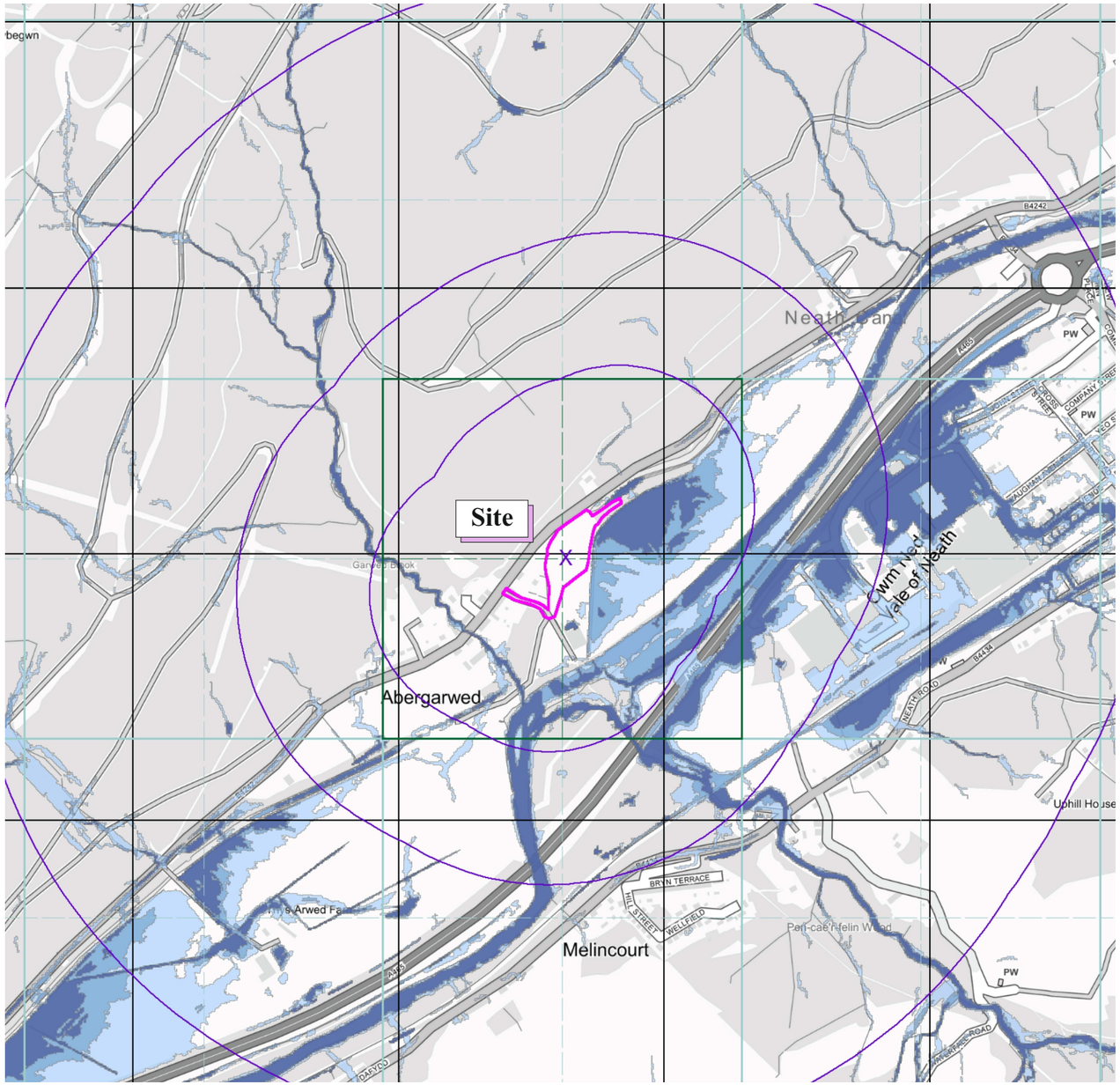
Geologists Working With The Environment....

Drawing No: BC/MB/02.25.04.04.

Study on Land at Abergarwed Farm, Abergarwed.

Flood Risk Plan: Surface Water.

Plan Scale: 1:10,000.



Key to Symbols:

Approximate Site Boundary.

General
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Risk of Flooding from Surface Water
- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

Suitability
See the suitability map below
- National to county
- County to town
- Town to street
- Street to parcels of land
- Property

Notes:

North is at top of plan.

Locations are approximate and should not be scaled.

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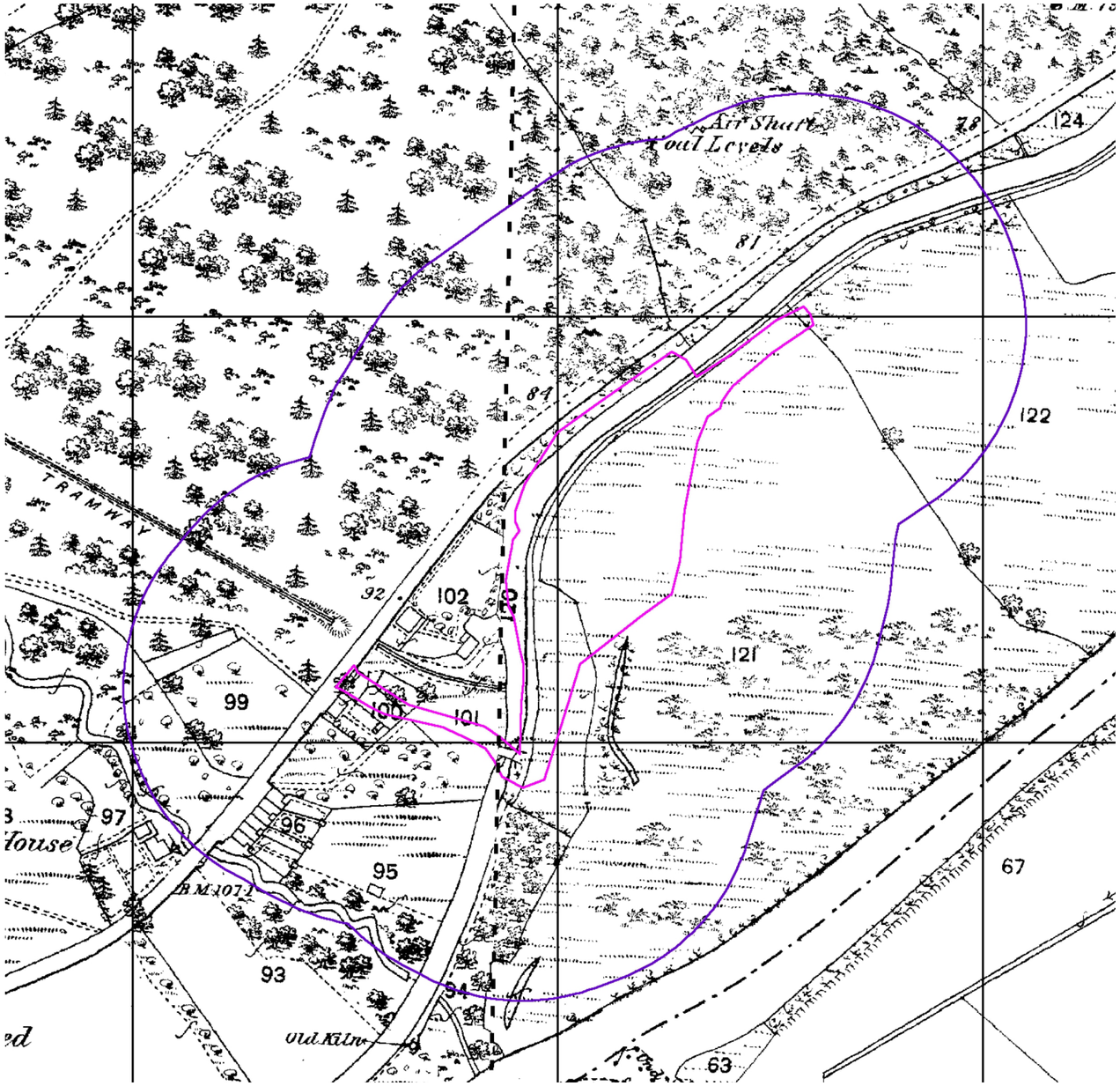
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Geologists Working With The Environment....

Drawing No: BC/MB/02.25.04.05.



Study on Land at Abergarwed Farm, Abergarwed.

Extract from Ordnance Survey Plan: 1877 - 1878 Edition.

Plan Scale: Approx. 1:2,500.

Key to Symbols:

Approximate Site Boundary.

Notes:

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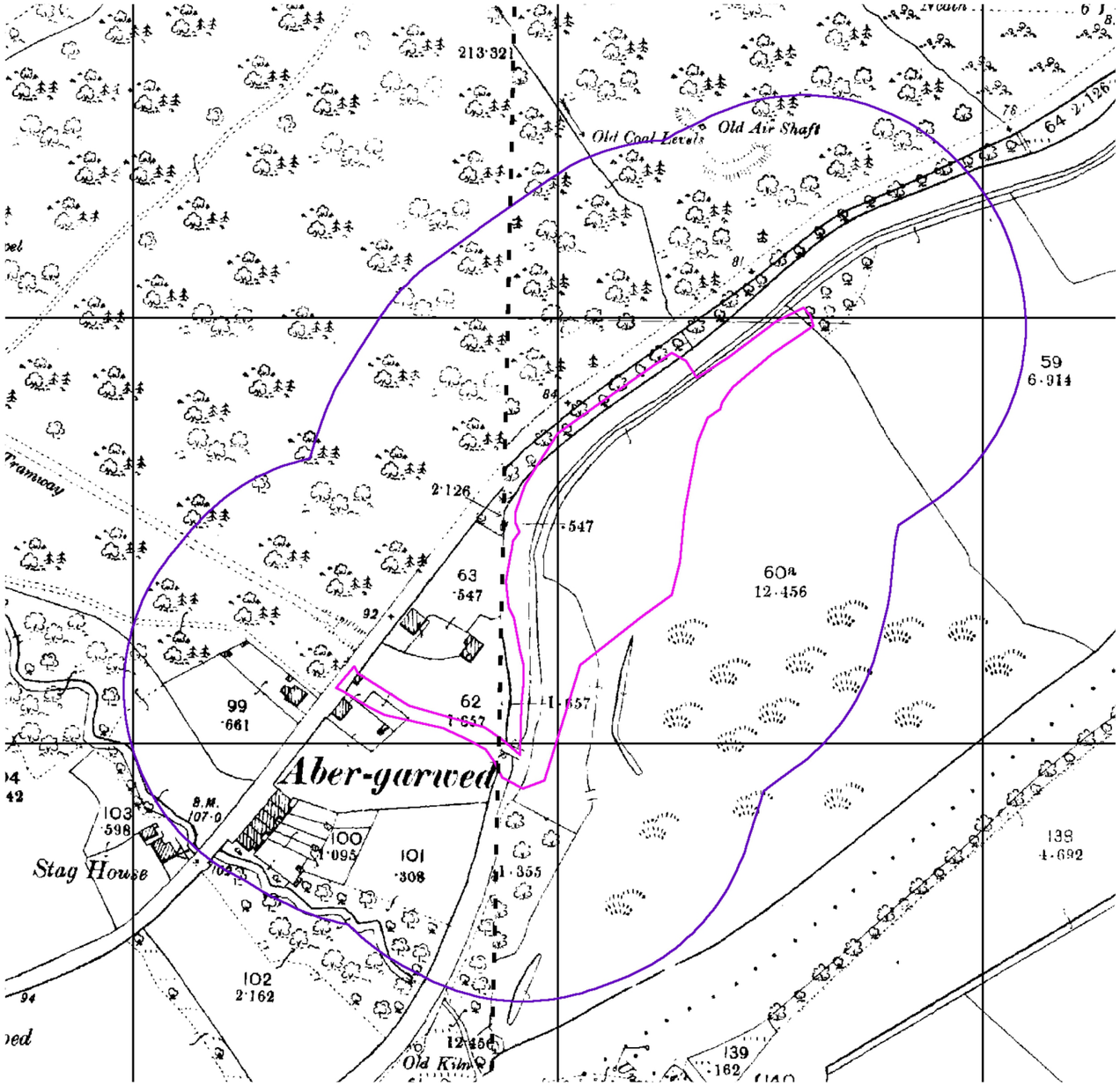
Geologists Working With The Environment....

Drawing No: BC/MB/02.25.04.06.

Study on Land at Abergarwed Farm, Abergarwed.

Extract from Ordnance Survey Plan: 1899 Edition.

Plan Scale: Approx. 1:2,500.



Key to Symbols:

Approximate Site Boundary.

Notes:

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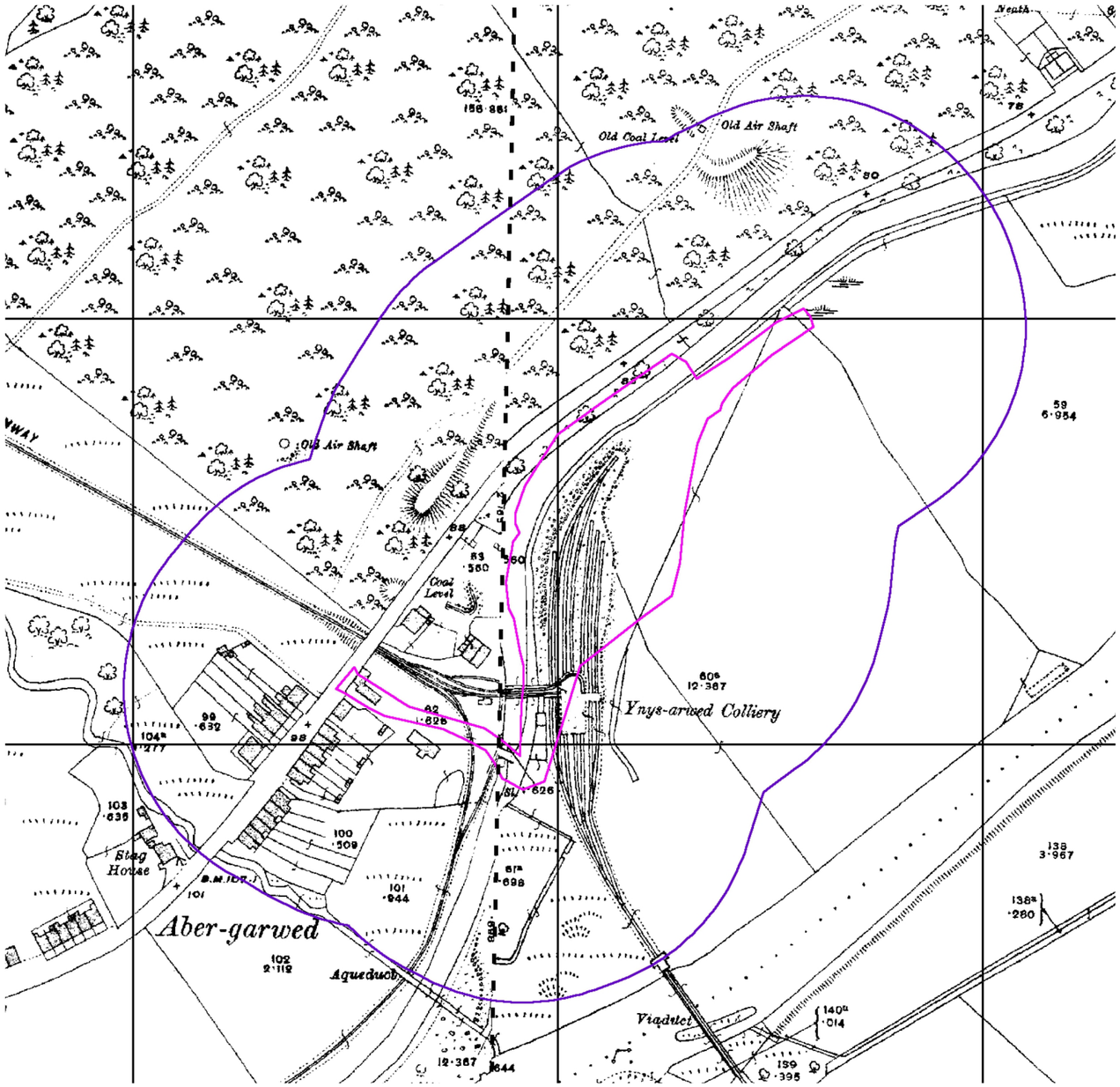
Geologists Working With The Environment....

Drawing No: BC/MB/02.25.04.07.

Study on Land at Abergarwed Farm, Abergarwed.

Extract from Ordnance Survey Plan: 1918 Edition.

Plan Scale: Approx. 1:2,500.



Key to Symbols:

Approximate Site Boundary.

Notes:

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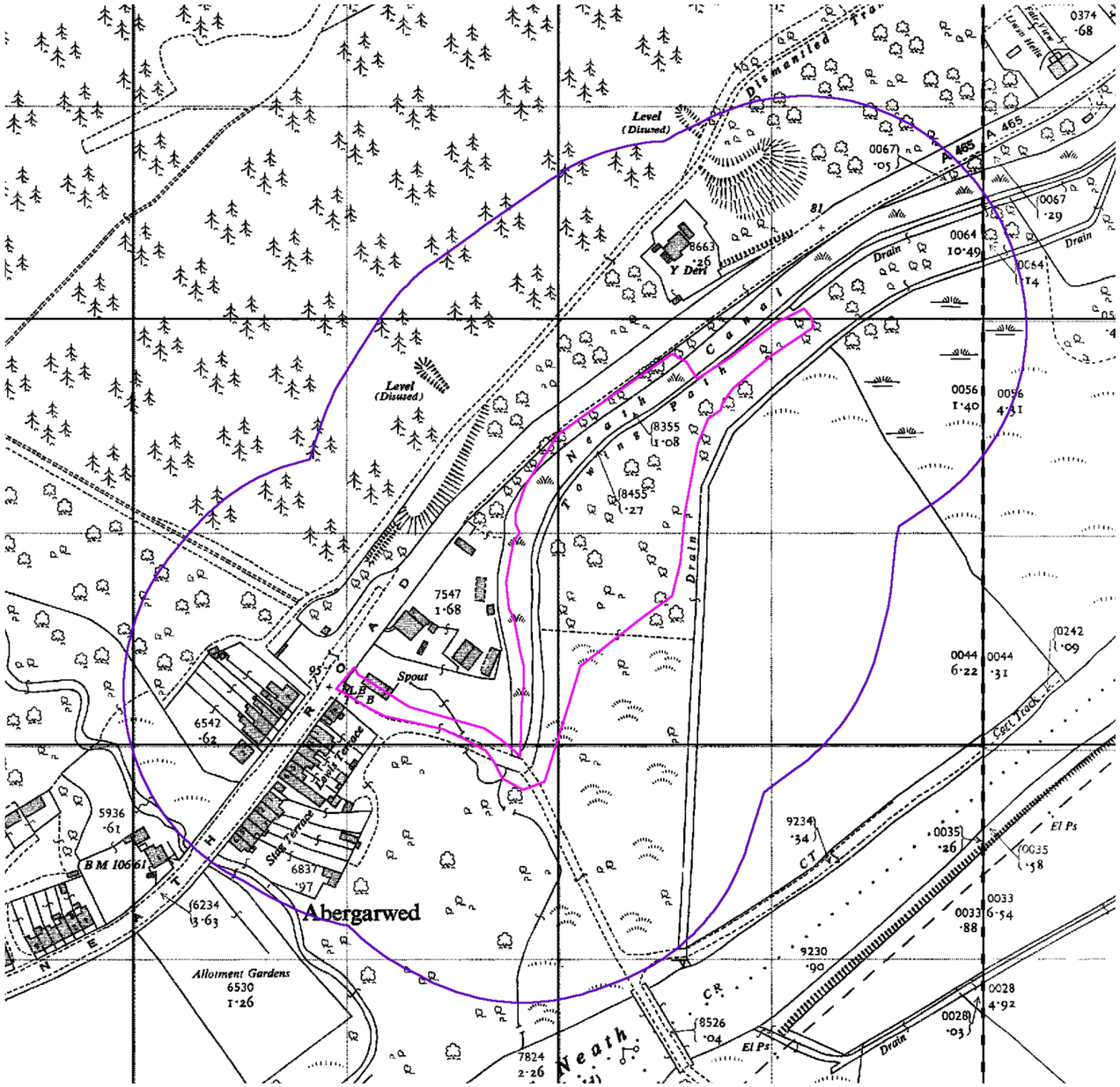
Geologists Working With The Environment....

Drawing No: BC/MB/02.25.04.08.

Study on Land at Abergarwed Farm, Abergarwed.

Extract from Ordnance Survey Plan: 1962 Edition.

Plan Scale: Approx. 1:2,500.



Key to Symbols:

Approximate Site Boundary.

Notes:

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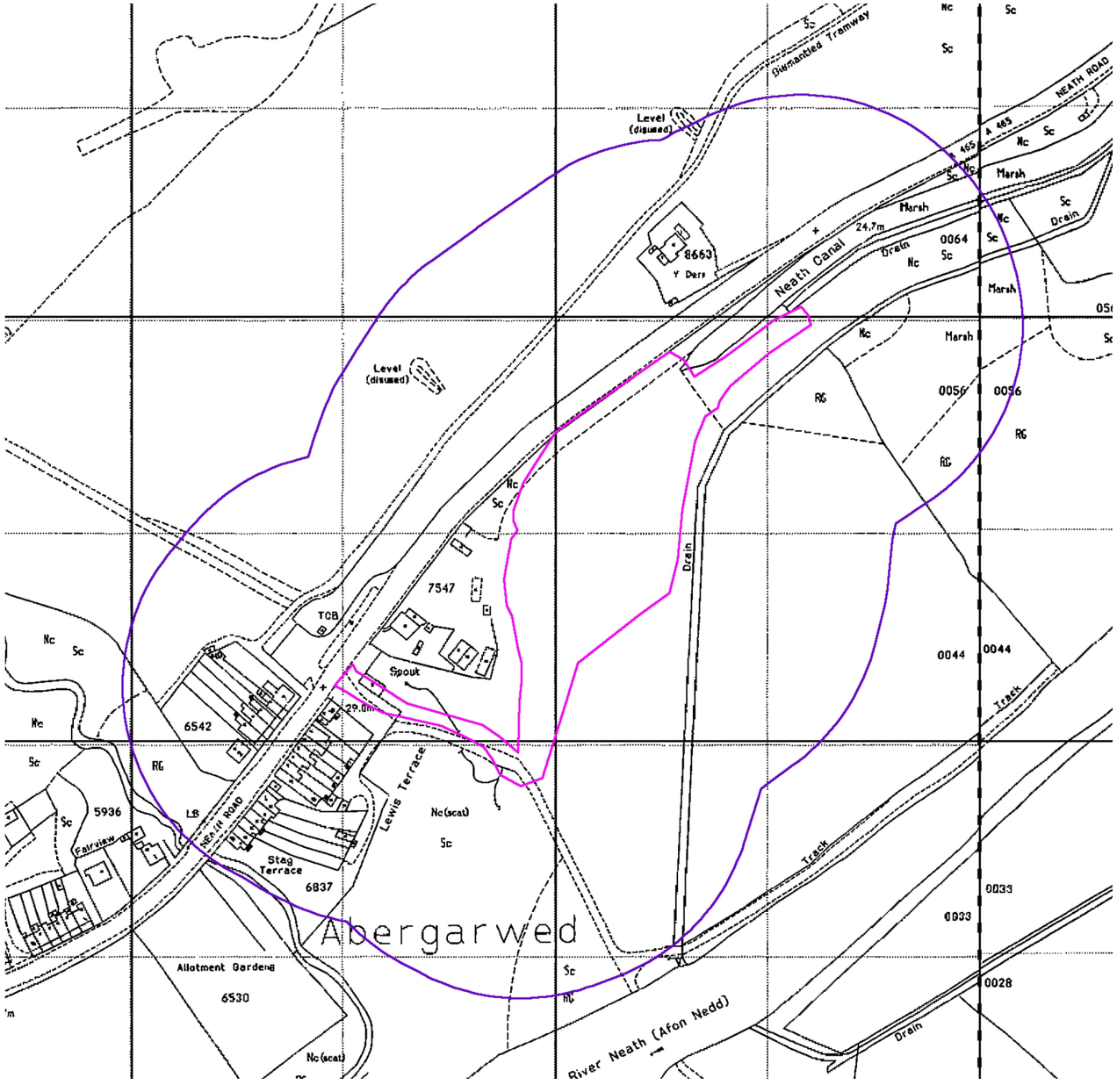
Geologists Working With The Environment....

Drawing No: BC/MB/02.25.04.09.

Study on Land at Abergarwed Farm, Abergarwed.

Extract from Ordnance Survey Plan: 1993 Edition.

Plan Scale: Approx. 1:2,500.



Key to Symbols:

Approximate Site Boundary.

Notes:

North is at top of plan.

Locations are approximate and should not be scaled.

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Geologists Working With The Environment....

Drawing No: BC/MB/02.25.04.10.



Study on Land at Abergarwed Farm, Abergarwed.

Historical Aerial Photograph 2000.

Plan Scale: Approx. 1:2,500

Key to Symbols:

Approximate Site Boundary.

Notes:

North is at top of plan.

Locations are approximate and should not be scaled.

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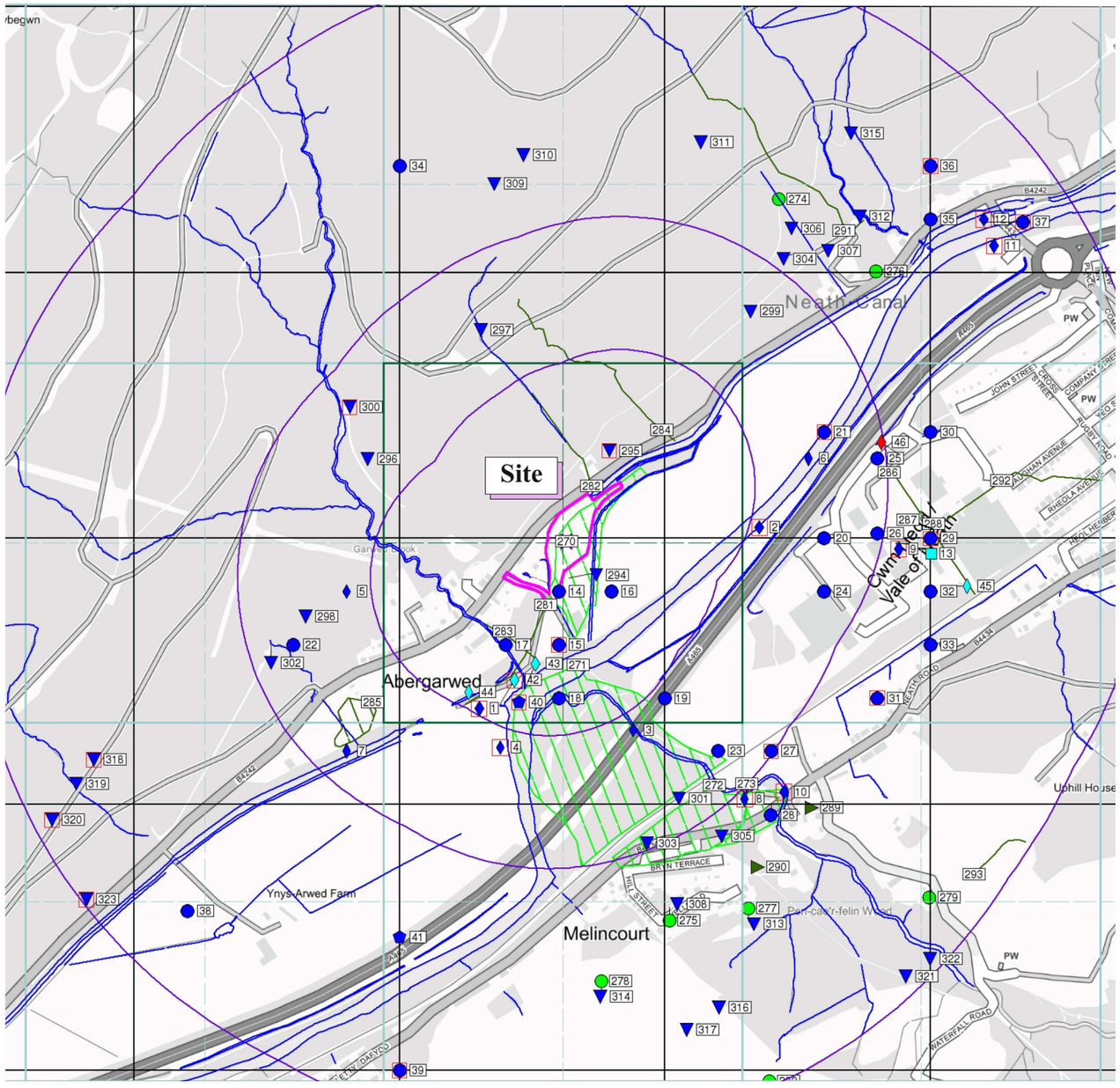
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Drawing No: BC/MB/02.25.04.11.



Notes:

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Geologists Working With The Environment....

Study on Land at Abergarwed Farm, Abergarwed.

Environmental Review Plan.

Plan Scale: 1:10,000.

Key to Symbols:

Approximate Site Boundary.

General
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

Agency and Hydrological
- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Hazardous Substances
- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Geological
- BGS Recorded Mineral Site

Waste
- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

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Drawing No: BC/MB/02.25.04.12.

Appendix I

Copy of The Coal Authority's Report, Ref No: 5100228416600 1

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The Coal Authority

CON29M
coal mining report

ABERGARWED FARM, ABERGARWED FARM, NEATH ROAD, ABERGARWED, NEATH PORT TALBOT, SA11 4DD

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

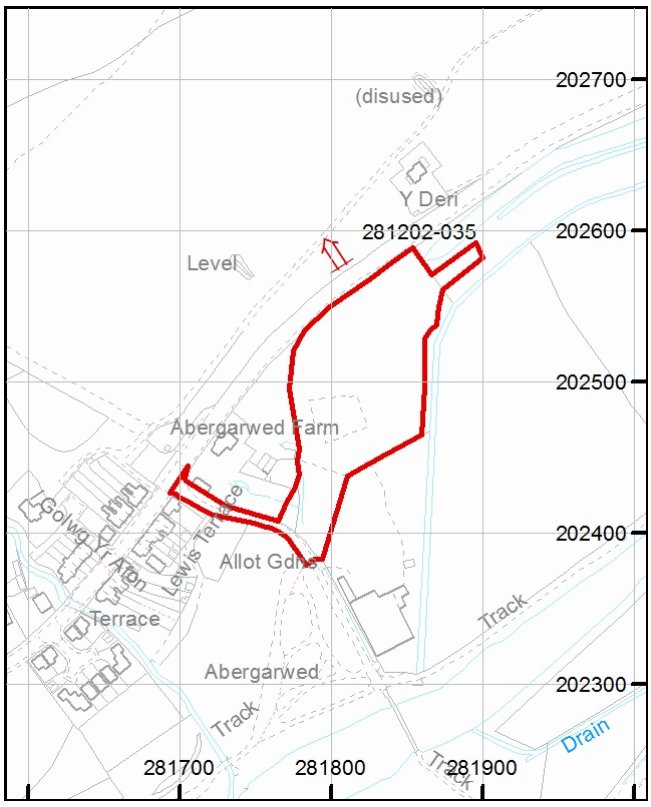
According to the official mining information records held by the Coal Authority at the time of this search, evidence of, or the potential for, coal mining related features have been identified. In view of the coal mining circumstances we would recommend that any planned or future development should follow detailed technical advice before beginning work on site. Please see page 3 for further details on Future development.

Enquiry boundary

Key

Approximate position of enquiry boundary shown

Disused adit



We can confirm that the location is **on the coalfield**

Map data

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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.

Accessibility

If you would like this information in an alternative format, please contact our communications team on 0345 762 6848 or email communications@coal.gov.uk.

Professional opinion

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.

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.

This information is based on the information that the Coal Authority has at the time of this enquiry.

Based on the Coal Authority's knowledge of the mining circumstances at the time of this enquiry, there may be unrecorded mine entries in the local area that do not appear on Coal Authority records.

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.

12 Withdrawal of support

The property is not in an area where a notice to withdraw support has been given.

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

13 Working facilities order

The property is not in an area where an order has been made, under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

14 Payments to owners of former copyhold land

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

Statutory cover



Coal mining subsidence

In the unlikely event of any coal mining related subsidence damage, the Coal Authority or the mine operator has a duty to take remedial action in respect of subsidence caused by the withdrawal of support from land or property in connection with lawful coal mining operations.

When the works are the responsibility of the Coal Authority, our dedicated public safety and subsidence team will manage the claim. The house or land owner ("the owner") is covered for these works under the terms of the Coal Mining Subsidence Act 1991 (as amended by the Coal Industry Act 1994). Please note, this Act does not apply where coal was worked or gotten by virtue of the grant of a gale in the Forest of Dean, or any other part of the Hundred of St. Briavels in the county of Gloucester.

If you believe your land or property is suffering from coal mining subsidence damage and you need more information on what to do next, please use the following link to our website which sets out what your rights are and what you need to consider before making a claim.
www.gov.uk/government/publications/coal-mining-subsidence-damage-notice-form



Coal mining hazards

Our public safety and subsidence team provide a 24 hour a day, 7 days a week hazard reporting service, to help protect the public from hazards caused by past coal workings, such as a mine shaft or shallow working collapse. To report any hazards please call 01623 646 333. Further information can be found on our website: www.gov.uk/coalauthority.

Glossary

Key terms

adit - horizontal or sloped entrance to a mine

coal mining subsidence - ground movement caused by the removal of coal by underground mining

Coal Mining Subsidence Act 1991 - the Act setting out the duties of the Coal Authority to repair damage caused by coal mining subsidence

coal mining subsidence damage - damage to land, buildings or structures caused by the removal of coal by underground mining

coal seams - bed of coal of varying thickness

future opencast coal mining - a licence granted, or licence application received, by the Coal Authority to excavate coal from the surface

future underground coal mining - a licence granted, or licence application received, by the Coal Authority to excavate coal underground. Although it is unlikely, remaining coal reserves could create a possibility for future mining, which would be licensed by the Coal Authority

mine entries - collective name for shafts and adits

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

Appendix II

Copy of British Geological Survey's Radon Report

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Geologists Working With The Environment....

GeoReports

British Geological Survey

Malcolm Blandford
Blandford Consulting
Valleys Enterprise Centre
Merthyr Tydfil Industrial Park
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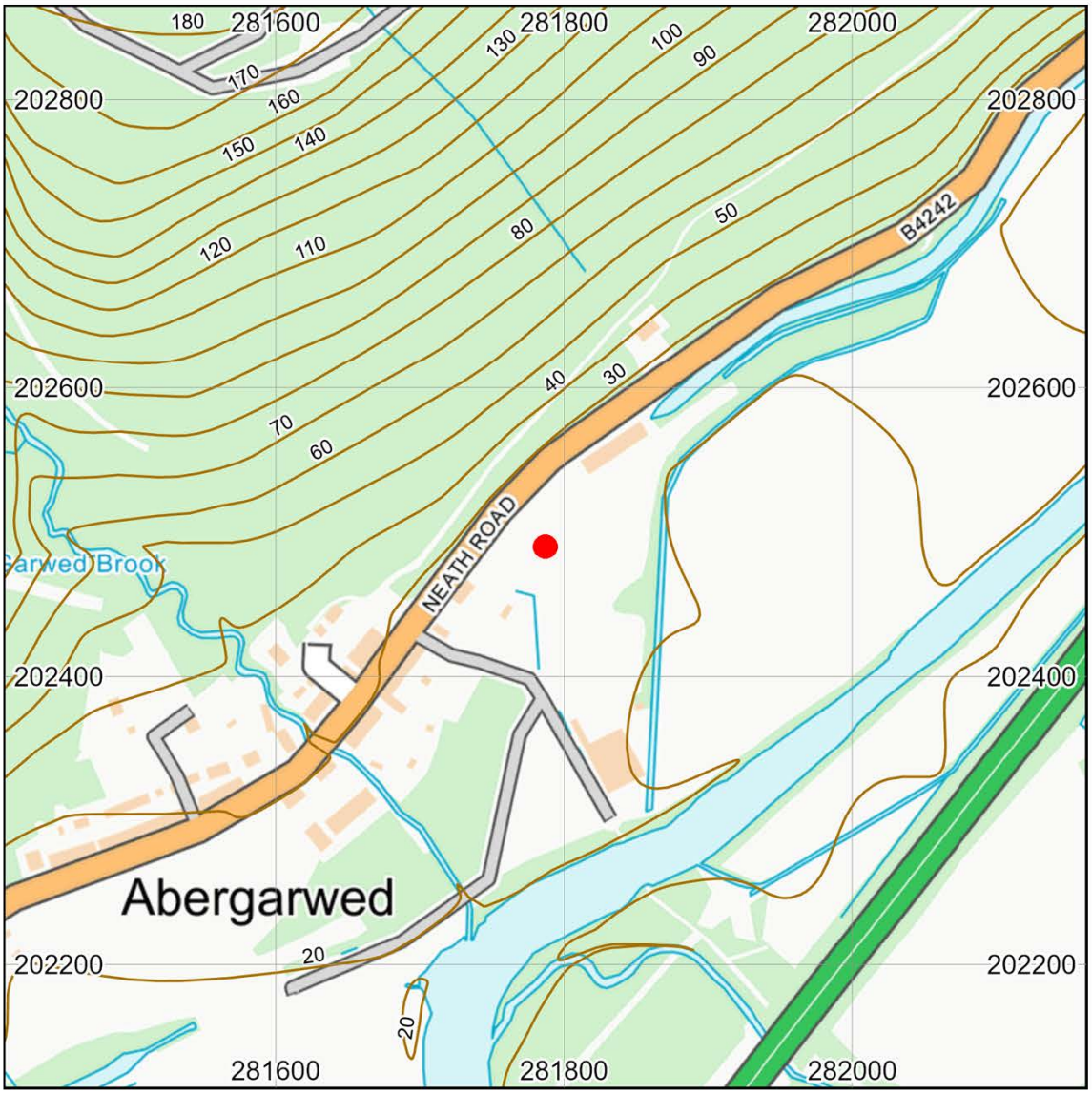
Radon Report

Advisory report on the requirement for radon protective measures in new buildings, conversions and extensions to existing buildings. The report also indicates whether a site is located within a radon Affected Area

Report Id: *BGS_341792/59048*

Client reference: BC/MB/02.25.04

Search location



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Search location indicated in red

Point centred at: 281787,202490

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Radon Report: UK

When extensions are made to existing buildings in high radon areas, or new buildings are constructed in these areas, the Building Regulations for England, Wales, Scotland and Northern Ireland require that protective measures are taken against radon entering the building.

This report provides information on whether radon protective measures are required. Depending on the probability of buildings having high radon levels, the Regulations may require either:

1. No protective measures
2. Basic protective measures
3. Full protective measures

This is an advisory report on the requirement for radon protective measures in new buildings, conversions and extensions. The report also indicates whether a site is located within a radon Affected Area

Requirement for radon protective measures

The determination below follows advice in *BR211 Radon: Guidance on protective measures for new buildings (2023 edition), which also provides guidance on what to do if the* result *indicates that protective measures are required.*

Is the property in an area where radon protective measures are required for new buildings or extensions to existing ones as described in publication BR211 (2023 edition) Radon: Guidance on protective measures for new buildings?

NO RADON PROTECTIVE MEASURES ARE REQUIRED FOR THE REPORT AREA.

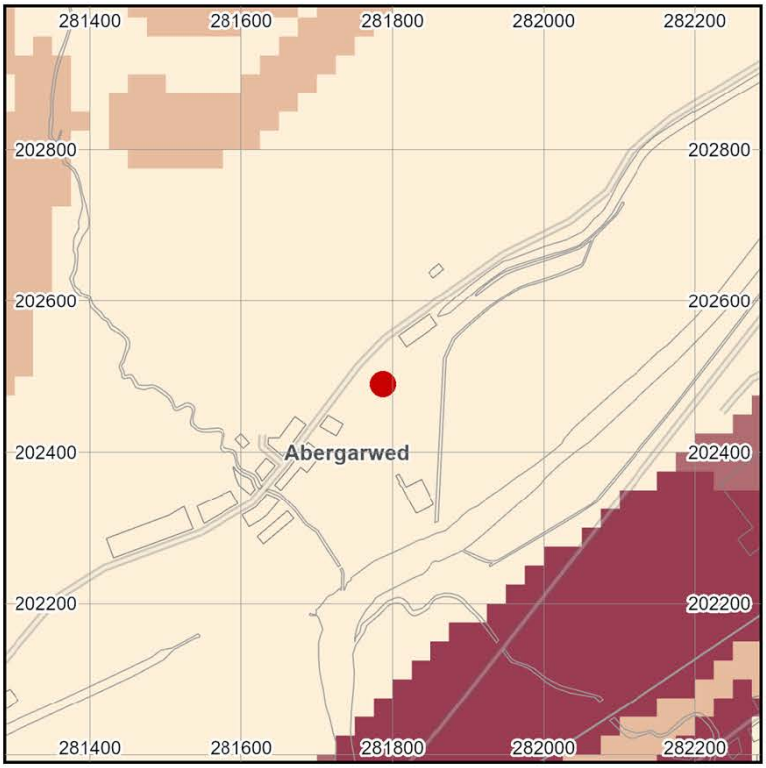
More details of the protective measures required are available in *BR211 Radon: Guidance on protective measures for new buildings (2023 Edition)*.

Whether or not the radon level in a building is above or below the radon Action Level can only be established by having the building tested. The UKHSA provides a radon testing service which can be accessed at www.ukradon.org or by telephone (01235 822622).

If you require further information or guidance, you should contact your local authority building control officer or approved inspector.

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Radon Affected Area



	% Homes estimated to be at or above the action level
	0-1%
	1-3%
	3-5%
	5-10%
	10-30%
	30-100%

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Scale: 1:10 000 (1cm = 100 m)
Search area indicated in red

Is the property in a radon Affected Area as defined by the UK Health Security Agency (UKHSA) and if so what percentage of homes are estimated to be at or above the Action Level? **NO**

Additional Information

THE PROPERTY IS IN AN AREA WHERE LESS THAN 1% OF HOMES ARE ESTIMATED TO BE AT OR ABOVE THE ACTION LEVEL. THE PROPERTY IS NOT IN A RADON AFFECTED AREA.

The UKHSA recommends a radon 'Action Level' of 200 Becquerels per cubic metre of air (Bq m^{-3}) for the annual average of the radon gas concentration in a home. Where 1% or more of homes are estimated to be at or above the Action Level the area should be regarded as a radon Affected Area.

This report informs you whether the property is in a radon Affected Area and the percentage of homes that are estimated to be at or above the radon Action Level at this location. Being in an Affected Area does not necessarily mean there is a high radon level within the property; the only way to determine the radon level is to carry out a radon measurement.

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The UKHSA advises that radon gas should be measured in all properties within radon Affected Areas and that homes with radon levels at or above the Action Level (200 Bq m^{-3}) should be remediated. Householders with levels between the Target Level (100 Bq m^{-3}) and Action Level should seriously consider reducing their radon level, especially if they are at greater risk, such as if they are current or ex smokers. Whether or not a home is in fact above or below the Action Level or Target Level can only be established by having the building tested. The UKHSA provides a validated radon testing service which can be accessed at www.ukradon.org.

The information in this report provides an answer to one of the standard legal enquiries on house purchase in England and Wales, known as Law Society CON29 Enquiries of the Local Authority (2016); 3.14 Radon Gas: Do records indicate that the property is in a “Radon Affected Area” as identified by the UKHSA. The data can also be used to advise house buyers and sellers in Scotland and Northern Ireland.

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

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 at or above the radon Action Level and if so, whether remedial measures were installed, radon levels were re-tested, and if the results of re-testing confirmed the effectiveness of the measures.

Further information on radon is available from the UKHSA at www.ukradon.org.

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What is radon?

Radon is a naturally occurring radioactive gas, which is produced by the radioactive decay of radium which, in turn, is derived from the radioactive decay of uranium. Uranium is found in small quantities in all soils and rocks, although the amount varies from place to place. Radon released from rocks and soils is quickly diluted in the atmosphere. Concentrations in the open air are normally very low and do not present a hazard. Radon that enters enclosed spaces such as some buildings (particularly basements), caves, mines, and tunnels may reach high concentrations in some circumstances. The construction method and degree of ventilation will influence radon levels in individual buildings. A person's exposure to radon will also vary according to how particular buildings and spaces are used.

Inhalation of the radioactive decay products of radon gas increases the chance of developing lung cancer. If individuals are exposed to high concentrations for significant periods of time, there may be cause for concern. In order to limit the risk to individuals, the Government has adopted an Action Level for radon in homes of 200 becquerels per cubic metre (Bq m^{-3}). The Government advises householders that, where the radon level is at or above the Action Level, measures should be taken to reduce the concentration.

Radon in workplaces

The Ionising Radiation Regulations 2017 require employers to take action when radon is present above a defined level in the workplace. Advice may be obtained from your local Health and Safety Executive Area Office or the Environmental Health Department of your local authority. The BRE publishes a guide (BR293)**: Radon in the workplace.** BRE publications may be obtained from the BRE Bookshop, Tel: 01923 664262, email: bookshop@bre.co.uk website: www.brebookshop.com

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