
From: Heard, Julie
Sent: 01 February 2024 09:35
To: Ferreira, Marlene
Subject: FW: P/24/0013
Attachments: Geo-Env Report.pdf

From: Matthew Jones <mgjones@maxiom.net>
Sent: 01 February 2024 09:30
To: Heard, Julie <Julie.Heard@merthyr.gov.uk>
Subject: P/24/0013

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MeI

In response to your letter dated 30/01/2024, please find attached the mining risk assessment/Geo Environmental report.

Thanks

Matthew Jones
07970842615

Report No. BC/MB/08.19.04.

Geo-Environmental Report: Land at Colliers Row, Brondeg, Merthyr Tydfil.

Prepared on behalf of:

Maxiom Developments Ltd.

By:



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Geo-Environmental Report: Land at Colliers Row/Brondeg, Merthyr Tydfil.

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Appendix

Copy of The Coal Authority's Report, reference no. 51000874376001.

Geo-Environmental Report: Land at Colliery Row/Brondeg, Merthyr Tydfil.

1 Introduction

This report has been prepared on behalf of our client:

***Maxiom Developments Ltd,
5 Thornbury Close,
Merthyr Tydfil,
CF48 1HP***

and relates to land lying to the east of Brondeg and to the north of Colliers Row in Merthyr Tydfil. It is proposed to develop the land for housing. This report discusses the geology and mining history of the Site and the immediately surrounding area as they may affect the proposed development and discusses the risk from past mining operations. The report also discusses the industrial history of the locality and is a Tier 1 (Desk Study) Risk Assessment for contaminated land. Recommendations are made for exploratory boreholes to examine in greater detail and, where appropriate, stabilise any shallow mine workings that may underlie the Site and also recommends intrusive ground investigation to assess in more detail the risk of contamination in the soils.

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

- i) Research of published geological records;*
- ii) Research of mining records held at The Coal Authority's archive in Mansfield;*
- iii) The findings of The Coal Authority's report, reference no. 51001019337002;*
- iv) The Coal Authority's interactive map, accessed 21st August 2019;*
- v) The findings of Envirocheck report no.178575776_1_1 and*
- vi) the archive records of Blandford Consulting.*

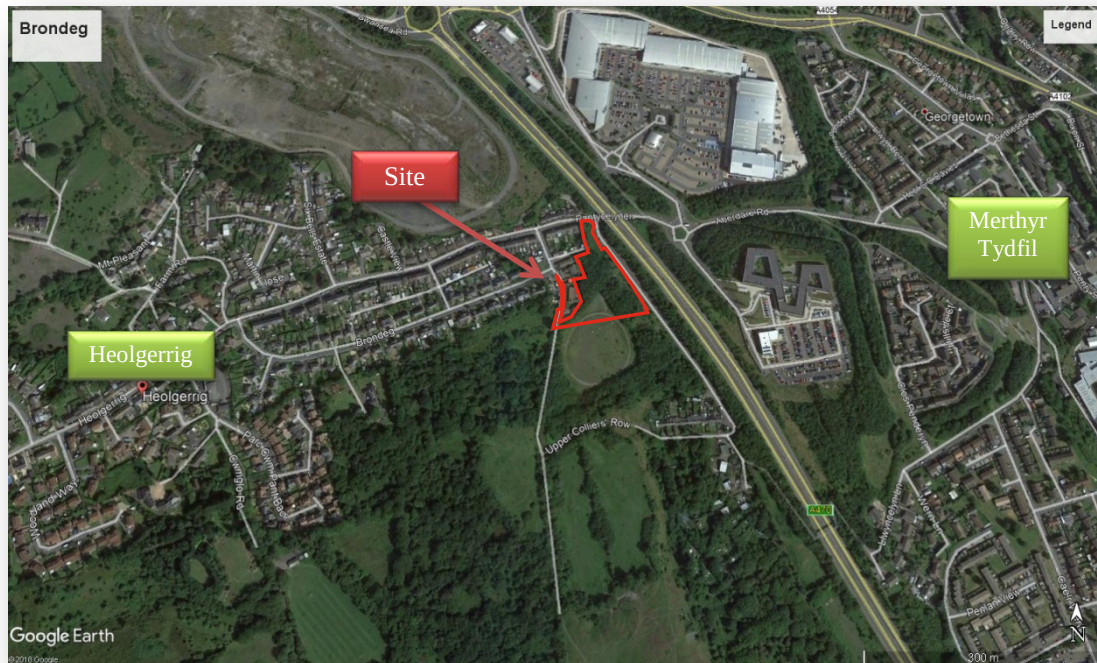
/Cont....

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 plot of land that is the subject of this report, 'the Site' is located on the western fringes of Merthyr Tydfil, approximately 700m west of the town centre; it is irregular in outline and occupies an area of approximately 0.82 hectares (see Figure 1 and *General Location Plan, drawing no. BC/MB/08.19.04.01*). The Site is located in a residential area on the fringes of the town and is bounded on its western side by residential dwellings and a lane; to the north is Aberdare Road and beyond it the Trago Mills retail site; to the east is the public highway serving Colliers Row, beyond which is the A 470 (T), and to the south there are a mixture of agricultural enclosures and open countryside.

Figure 1
Aerial View of the Site



/Cont....

The northern two thirds or so of the site is overgrown with immature trees and saplings and the southern part is an enclosure with what appears to be a trotting track on it. The Site is situated close to the floor of the Taff Valley.

3 Geology of the Site

The Site is situated near the northern margin of the South Wales Coalfield and is underlain at shallow depths by strata assigned to the Lower Coal Measures, a sub-division of the Upper Carboniferous Period. The most recently published geological sheet at 1:10,560 scale (SO 00 NW) shows the inferred positions of the outcrop of the Garw Seam to pass through the Site (see *Geology Plan, drawing no. BC/MB/08.19.04.02*). However, mining records indicate that the outcrops are south-east of the positions shown on the published geological sheet such that the outcrop of the Five Feet/Gellideg Seam passes through the south-west corner of the Site (see *Plan of Old Workings in the Five Feet/Gellideg Seam, drawing no. BC/MB/08.19.04.04*). A number of ironstone bands are present within the coal measures, occurring above and below the Garw Seam (see Figure 2, Part of the Stratigraphic Column).

In the Brondeg area the regional dip of the coal measures is 1 in 12 towards the south, with the result that the coal measures underlying the Site at shallow depths is the sequence containing the five ironstone veins and the Garw Seam.

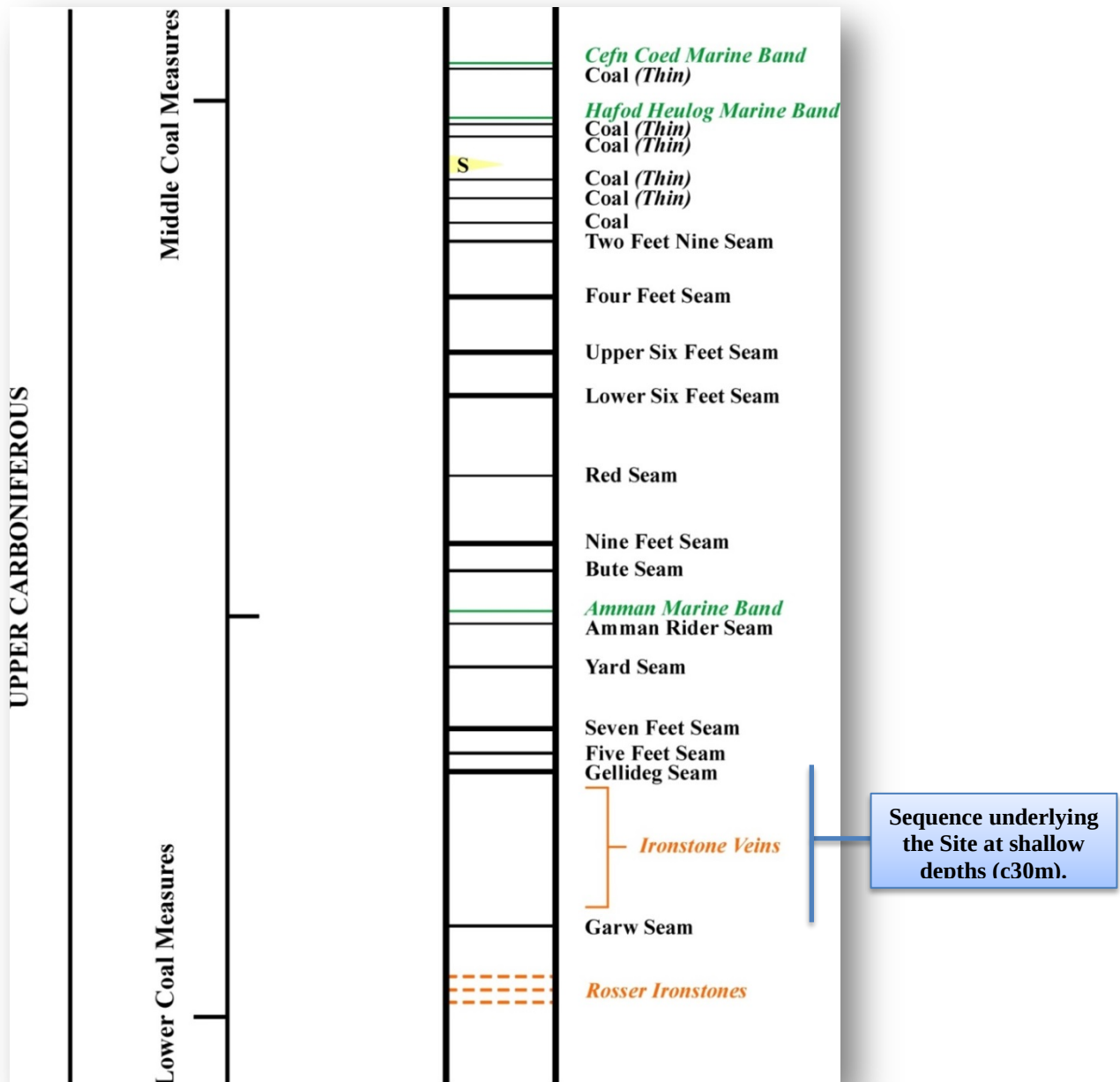
The coal measures of the South Wales Coalfield have been affected by large faults. In the Brondeg area these large faults have a slightly sinuous trace at the surface and an average trend towards the north-west. The published geological sheet indicates that the Site is not affected by large scale faulting.

The published geological sheet indicates that locally the coal measures are overlain with deposits of glacial till, Boulder Clay; we have no detailed information regarding the thickness and engineering properties of the Boulder Clay in the vicinity of the Site. Published geological records indicate that the Site is not affected by landslip.

/Cont....

Figure 2
Part of the Stratigraphic Column.

Scale: Not to Scale.



4 Mining History

The area has been subject to extensive mining operations for both coal and ironstone dating back to the earliest part of the nineteenth century. Coal seams and ironstone veins were

/Cont....

accessed by adits driven into the mining horizons near their outcrops and by shafts sunk into the deeper coal seams and ironstone veins; there are a large number of disused shafts and adits in the locality (see *Plan of Disused Mine Entries, drawing no. BC/MB/08.19.04.05*). Air shafts were also sunk in order to provide ventilation to the underground mining operations.

The extensive coal mining operations that have taken place in the vicinity of the Site all lie to the west and south-west of the Site. The Five Feet Gellideg Seam is the lowest coal seam in the geological sequence that has been widely mined and the old workings in the Seam do not underlie the Site. The Coal Authority's mining report covers a larger area than the Site but does not include the finger of land along the lane at the western side of the Site. However, the report is broadly applicable to the Site and identifies that there are no shallow coal workings that may affect the Site and there is no disused mine entry within the confines of the Site or within 20m of its boundary. Further, the Site has not been part of an opencast coal site. An inspection of The Coal Authority's interactive map identifies that the inclusion of the finger of land along the lane does not alter any of the findings of The Coal Authority's report.

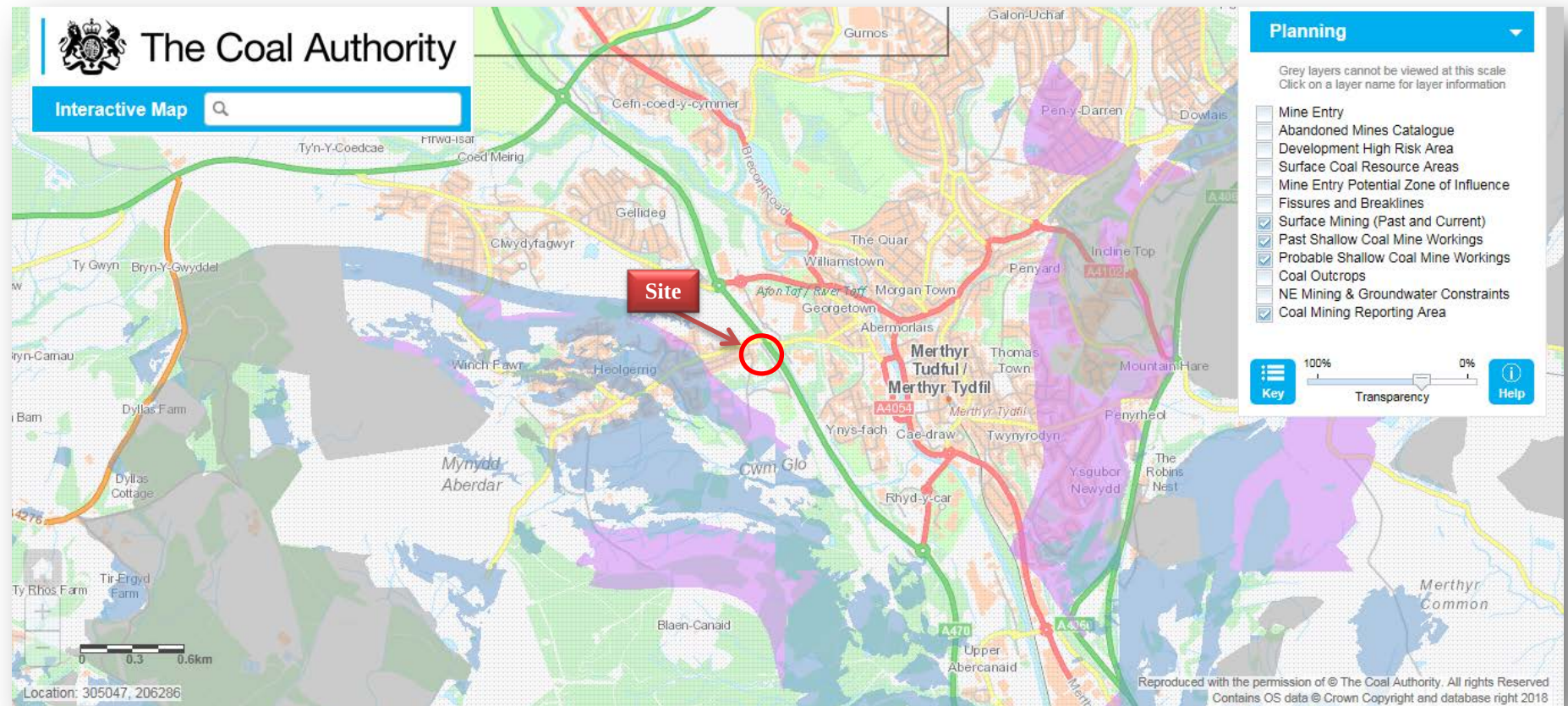
From the early 1800s extensive underground mining operations took place in the five ironstone veins present above the Garw Seam, together with the Rosser Ironstone Veins. The workings were prosecuted from a number of drift mine entries and shafts that were interconnected and stretched from Clwydyfagwyr at the north end of the Borough southwards to Abercanaid. The Rhydycar Pit, 500m south-east of the Site, was an important part of this extensive mining operation. The underground mining operations for the ironstone veins extend across the area in which the Site is situated. In the Brondeg area the Garw Seam is too thin to have been mined underground as a coal operation but the Seam was often mined together with the overlying ironstone vein and the coal used in the smelting operations.

The records held by The Coal Authority are not a complete record of past coal mining activities and the presence of unrecorded disused mine entry within the confines of the Site cannot be entirely dismissed, particularly in this area where extensive underground mining operations began before comprehensive records were being kept.

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

/Cont....

Figure 3
Print from The Coal Authority's Interactive Map
 (accessed 21st August 2019)



/Cont....

5 Mine Gases

When coal is mined methane gas is released and may accumulate with other mine gases in the mining voids. A number of studies of the old workings around Merthyr Tydfil and dating back to the mid to late twentieth century have shown that there is little risk from mine gases. This may be as a result of the nature of the coal seams or because the shallow old workings have vented most of the mine gases to atmosphere or is as a result of the combination of the two. There are no recorded shallow coal workings underlying the Site that could act as a source of mine gases and The Coal Authority has no record of an emission of gas at the Site that has required action.

6 Radon Gas

The risk to a residential development on the land from Radon gas has been assessed by referring to Public Health England's interactive map. The map shows that the Site lies within an area where the maximum radon potential is 5-10%. The risk from Radon gas should be assessed in greater detail by obtaining a report from the British Geological Survey.

7 Hydrogeology and Hydrology

7.1 Hydrology

The Site lies within the Taff catchment and there are no drains or streams crossing the Site and there are no bodies of standing water on the Site. The site is not within a designated surface water, river or coastal flood risk zone (see *Risk of Flooding from Rivers Map, drawing no. BC/MB/08.19.04.05*). There is no risk of surface flooding (see *Risk of Surface Flooding, drawing no. BC/MB/08.19.04.06*) and a potential for groundwater flooding at the Site (see *Risk of Groundwater Flooding, drawing no. BC/MB/08.19.04.07*).

/Cont....

7.2 Hydrogeology

The Groundwater Vulnerability Map for Gwent, South and Mid Glamorgan (Sheet 36), published jointly by the Environment Agency, British Geological Survey and the Soil Survey and Land Research Centre, identifies the local geology as a minor aquifer having a high permeability (see *Groundwater Vulnerability Map, drawing no. BC/MB/08.19.04.08*).

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

- The site is not within a Groundwater Source Protection Zone.
- The superficial aquifer designation at the Site is ‘unproductive strata’ (see *Superficial Aquifer Designation Map, drawing no. BC/MB/08.19.04.09*).
- The site is defined as a Secondary A Bedrock Aquifer (see *Bedrock Aquifer Designation Map, drawing no. BC/MB/08.19.04.10*).
- The site is not within a designated Drinking Water Safeguard Zone.
- There are no abstraction licences located within the Site or downstream of the Site along the Nant Cwm-pant-bach.

8 History of the Site and Surrounding Area

8.1 1879 - 1880 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 1879 - 1880 Edition shows the Site to have been situated within a fairly industrial landscape of collieries with their associated tramways and spoil heaps (see *Extract from Ordnance Survey Sheet 1875-1881, drawing no. BC/MB/08.19.04.11*). The collieries variously mined coal, ironstone or both. A mainline railway was present along the eastern boundary of the Site, within 30m of it at its closest point. Local railways and tramways associated with the coal mining operations ran along both the western and eastern boundaries of the Site. A large area of cinder tip

/Cont....

associated with the Cyfarthfa Ironworks was present to the east of the Site and was within 60m at its closest. Aberdare Road formed the northern boundary of the Site with railway and tramway features immediately to the east. A large area of colliery spoil occupied the area to the south; it extended across almost the entire area of the Site itself. The finger of land that is the western part of the Site was a tramway. Beyond which there were agricultural enclosures and woodland. Pen-yr-heolgerrig Quarry was present 150m north-west of the Site.

8.2 1919 Edition

This Edition shows the Site and the main features of the immediately surrounding area to have been largely unchanged from the previous edition (see *Extract from Ordnance Survey Sheet 1919, drawing no. BC/MB/08.19.04.12*). It is not evident from this edition whether the nearby collieries were still operating, but it is thought that they had all closed by this time. The Pen-yr-heolgerrig Quarry is identified on this edition. A series of terraced dwellings were present along Aberdare Road immediately to the west of the Site.

8.3 1958-1964 Edition

This Edition shows the Site and the main industrial features of the immediately surrounding area to have been largely unchanged from the previous edition (see *Extract from Ordnance Survey Sheet 1919, drawing no. BC/MB/08.19.04.13*). The Pen-yr-heolgerrig Quarry is identified on this edition, but it appears that it has stopped operating and at least part of it is identified as a refuse site. The area of dwellings along Aberdare Road had expanded substantially as a ribbon development with the Brondeg housing Estate of semi-detached houses to the south of the road. A large, unspecified 'works' was present 120m north-west of the Site. The land to the west of the Site is shown to still be a mixture of agricultural enclosures and woodland.

8.4 1979-1990 Edition

The Site itself is unchanged since the previous edition and is shown to be occupied by an area of colliery spoil (see *Extract from Ordnance Survey Sheet 1979-1990, drawing no. BC/MB/08.19.04.14*). The land to the west of the Site is shown to be still an area of

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agricultural enclosure and woodland. A chapel and a detached dwelling had been built on the western boundary of the Site. The works to the north of the Site were, at this period of time, a brickworks. A small retail park had been developed on part of the cinder tip to the north-east of the Site.

8.5 1994-1995 Edition

The Site and the immediately surrounding area were largely unchanged from what was evident on the previous edition (see *Extract from Ordnance Survey Sheet 1994-1995, drawing no. BC/MB/08.19.04.14*). The brickworks had closed.

8.6 2000 Aerial Photograph

The photograph shows many of the features evident on the 1994-1995 Edition to still be present (see *Historical Aerial Photograph, 2000, drawing no BC/MB/08.19.04.15*). The disused brickworks to the north and the small retail park to the north-east are both still evident. The railway line running close to the eastern boundary of the Site had been redeveloped into a dual carriageway, the A470(T). Road construction works to serve a new retail park were taking place immediately to the east of the A470(T). The northern part of the Site is covered with trees and the southern part is under grass.

8.7 Present

The former brickworks site has been remediated and is now a large retail outlet, Trago Mills. The former small retail park to the north-east of the Site is now the larger Cyfarthfa Retail Park. A large medical facility has been built on that part of the cinder tip lying to the east of the Site. Otherwise, the Site and the immediately surrounding area are little changed since 2000.

9 Environmental Issues

No part of the Site lies within an area designated as having a sensitive land use, including designated landscape areas. The Cwm Glo a Glyndyrys SSSI occupies the land to the south of the Site; it is approximately 120m from the Site at its closest.

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The Site itself is shown to have been ‘infilled’, a reference to the colliery spoil that has been deposited on the majority of the Site. The ‘infilled’ area extends southwards from the Site and is one of several large areas of colliery spoil; the Trago Mills site is a further example. The former cinder tip occupies an extensive area to the east of the Site. At least part of the former Pen-yr-heolgerrig Quarry is shown to have been used for a period of time as a refuse site. 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.

10 Risk Assessment – Tier 1

A conceptual model (see diagram) was developed in order to provide a basis for the Risk Assessment; it was based on the source-pathway-receptor approach. The extensive coal and ironstone mining operations that have taken place in a large area around the Site, including the colliery spoil on the Site, itself, are one main source of potential contamination. The former Pen-yr-heolgerrig Quarry and the refuse site on the same land are another potential source. The former brick-making operations on land to the north are a third potential source of soil contamination.

Conceptual Model

Source	Pathway	Receptor	Probability & Consequence	Risk
Soil Tip material/ colliery spoil /Brick works hydrocarbons, metals, inorganic compounds	Ingestion/ Dermal Contact	Future on-site users (residential)	Likely/moderate	Moderate
		Construction workers Maintenance workers	Unlikely/mild	Low (assumes the use of PPE)
		Adjacent commercial/ residential land users	Unlikely/mild	Low
	Permeation	Subsurface plastic water pipes	Likely/moderate	Moderate
	Vertical Groundwater Migration	Minor aquifer	Unlikely/Mild	Low
Gas Refuse tip	No preferred pathway. Site is at lower elevation than tip and is 200m distant	Future on-site users (residential)	Unlikely/Mild	Low

/Cont....

With regards to landfill gas, there are no identified on-site sources. The refuse tip identified as lying approximately 200m distant from the Site ceased operations more than 50 years ago. The material placed in this tip is of unknown provenance. Given the distance from the tip to the Site, the time elapsed since the tip ceased operation, the higher elevation of the tip than the Site, and the fact that the 2 features are separated by a small water course, it is considered that the risk in this respect is negligible. Guidance laid out in CIRIA C665 would attribute a low risk to a new landfill site being within 50m of a site such as this. Given the above factors, it is considered that the risk from gas to the Site and its future end users can be classed as extremely low.

11 Mining Risk Assessment: Discussion and Recommendations

11.1 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 development. It is recommended that no further action is required in this respect.

11.2 Mining History

11.2.1 Shallow Mine Workings

The area has been subject to extensive underground mining operations since at least the earliest part of the nineteenth century. The inferred position of the outcrop for the Five Feet/Gellideg Seam passes through the south-west corner of the Site; if the inferred position is reasonably accurate then the outcrops passes through the Site with a north-westerly trend and the seam does not underlie the overwhelming majority of the Site. Our searches found no record of old coal workings underlying the Site.

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Beneath the Gellideg Seam there are five ironstone veins that have been mined extensively throughout this area. The old workings extend beneath the area of the Site and at least some of the workings will be at very shallow depths.

Shallow old ironstone workings are likely to underlie the Site at more than one horizon and the workings are likely to be at sufficiently shallow depths whereby there is a significant risk that they may collapse to the surface and induce surface subsidence. It is recommended that rotary percussive boreholes are drilled to determine the details of the shallow geology and any old workings found to be present are stabilised by means of a drilling and grouting operation.

11.2.2 Mine Entries

Our searches found no record of disused mine entries within the bounds of the Site or 20m of its boundaries. Although the presence of an unrecorded entry cannot be entirely dismissed, there are mining records of local underground mine workings and these identify no mine entries within the confines of the Site. The situation should be monitored during site clearance works and further advice sought if any suspicious features are observed.

11.2.3 Mine Gases

Various studies of the shallow old workings in the Heolgerrig area have found no particular risk from mine gases. Whilst there are no shallow coal mine workings underlying the Site that could act as a source of mine gases, the shallow old ironstone workings likely to underlie the Site may be connected underground to old coal workings. There is a low risk that gases from the coal workings could migrate into the ironstone workings, posing a risk to any development at the Site. It would be prudent to monitor any exploratory boreholes for evidence of mine gases.

/Cont....

11.3 Summary of Mining Risk Assessment

There is a significant risk of shallow mine workings being present beneath the Site in one or more ironstone vein with the old workings at shallow enough depths to pose a risk of surface subsidence. There is a low risk of mine gases from old coal working migrating into ironstone workings through underground mining passages and posing a risk to any development at the Site.

11.4 Recommendations

The risk resulting from the mining heritage at the Site should be explored with exploratory boreholes. It would be prudent to include in any exploration programme monitoring to assess the presence or otherwise of mine gases. If shallow old workings are found to be present the risk to surface developments from those mining relics should be reduced by means of drilling and grouting.

The recommended site investigation and any subsequent works will require a permit from The Coal Authority accompanied by a risk assessment and should be designed and supervised by a Chartered Geologist or other competent person.

12 Environmental Assessment: Discussion and Recommendations

12.1 Hydrology and Hydrogeology

There are no drains crossing the Site, and there are no bodies of standing water on the Site. The Site is not prone to flooding from rivers or surface water; however there is a potential risk of flooding at the surface from groundwater.

The Site is underlain with strata classified as a 'minor aquifer' with high permeability and the bedrock is designated as a Secondary A Aquifer with unproductive strata. The superficial deposits are designated as unproductive. There are identified on-Site sources of contamination however the pathway to any sensitive water receptor is extremely

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limited, so it is considered that there is a negligible risk to a recognised groundwater resource from this development.

12.2 Contaminated Soils

The industrial history of the immediately surrounding area presents a moderate risk of the soils having been contaminated. It is recommended that the physical and chemical nature of the soils be investigated in order to assess the risk posed to end users of the Site.

12.3 Landfill Gas

There are no identified sources of gas underneath the Site, however there is a recorded refuse tip (disused) situated approximately 200m to the east of it. When considered in context with the topography and the hydrogeology/hydrology of the area, the risk posed from this source is considered to be negligible and that no further action need be taken in this respect.



David Blandford,
Environmental Consultant.



Dr Malcolm Blandford,
Chartered Geologist.

Report Date: 22nd August 2019.

**Blandford Consulting,
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The Enterprise Centre, Merthyr Industrial Park, Pentrebach, Merthyr Tydfil, CF48 4DR.
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PLANS



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

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Geologists Working With The Environment...

General Location Plan.

Plan Scale: 1:50,000.

Key to Symbols:



Approximate Position of Site.

Note:
North is at top of plan.

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Geology Plan.

Plan Scale: 1:10,560.

Key to Symbols:
— Approximate Site Boundary.

Note:
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Study on Land at Colliers Row, Brondeg, Merthyr Tydfil.

Detailed Location Plan.

Plan Scale: 1:2,500.

Key to Symbols:

 **Approximate Site Boundary.**

Note:

North is at top of plan.

*Drawing extracted from documents
provided by client.*

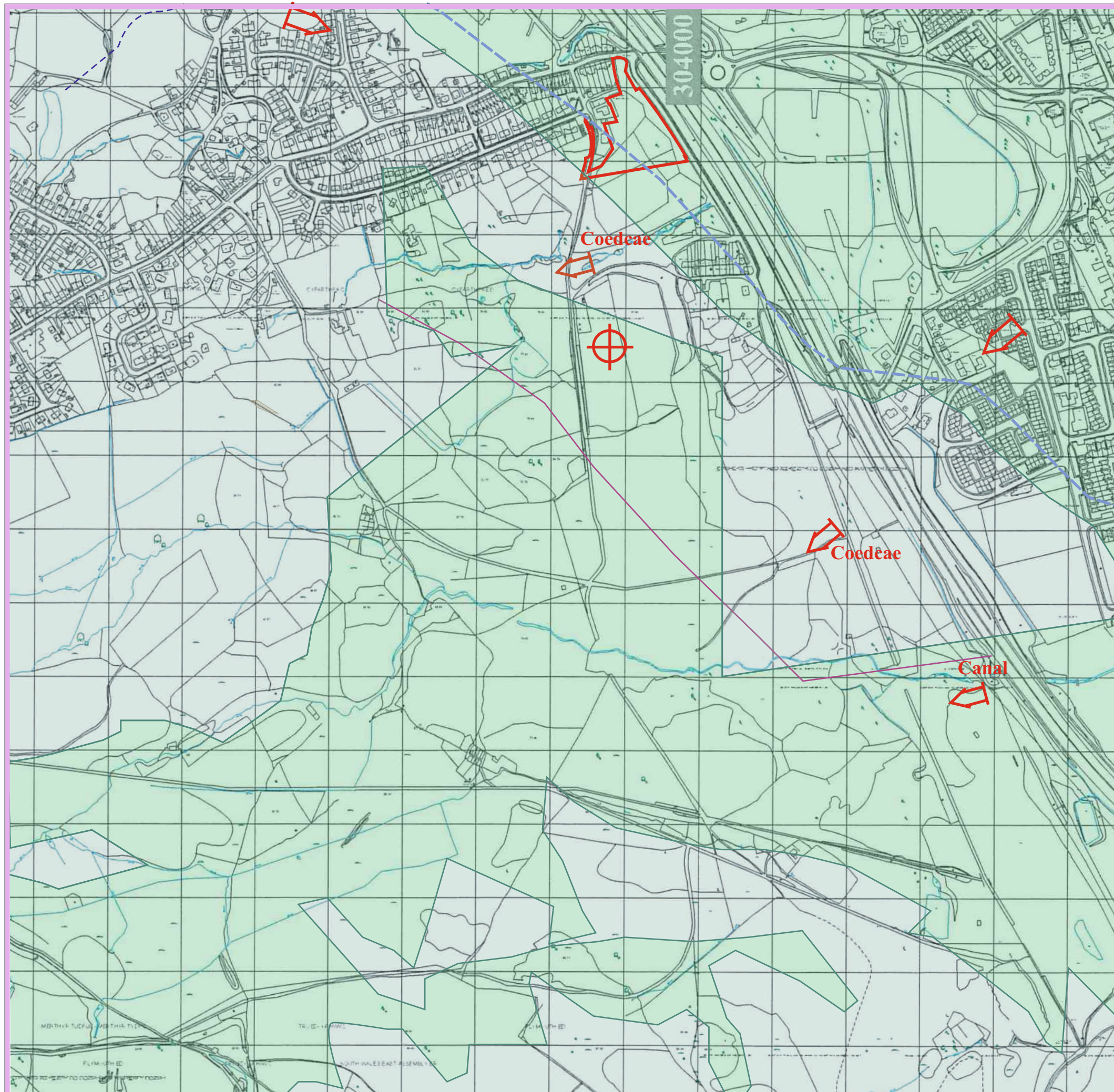
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Drawing No: BC/MB/08.19.04.03.



Study on Land at Colliers Row, Brondeg, Merthyr Tydfil.

Plan of Old Workings in the Five Feet/Gellideg Seam.

Plan Scale: 1:5,000.

Key to Symbols:

-  **Approximate Site Boundary.**
-  **Approximate Position of Disused Shaft.**
-  **Approximate Position of Disused Adit.**
-  **Approximate Position of Outcrop of Five Feet/Gellideg Seam.**
-  **Approximate Extent of Old Workings.**

Note:

North is at top of plan.

*Plan is for identification only, do not
scale from this plan.*

*Additional Mine Entries may be
present in the area.*

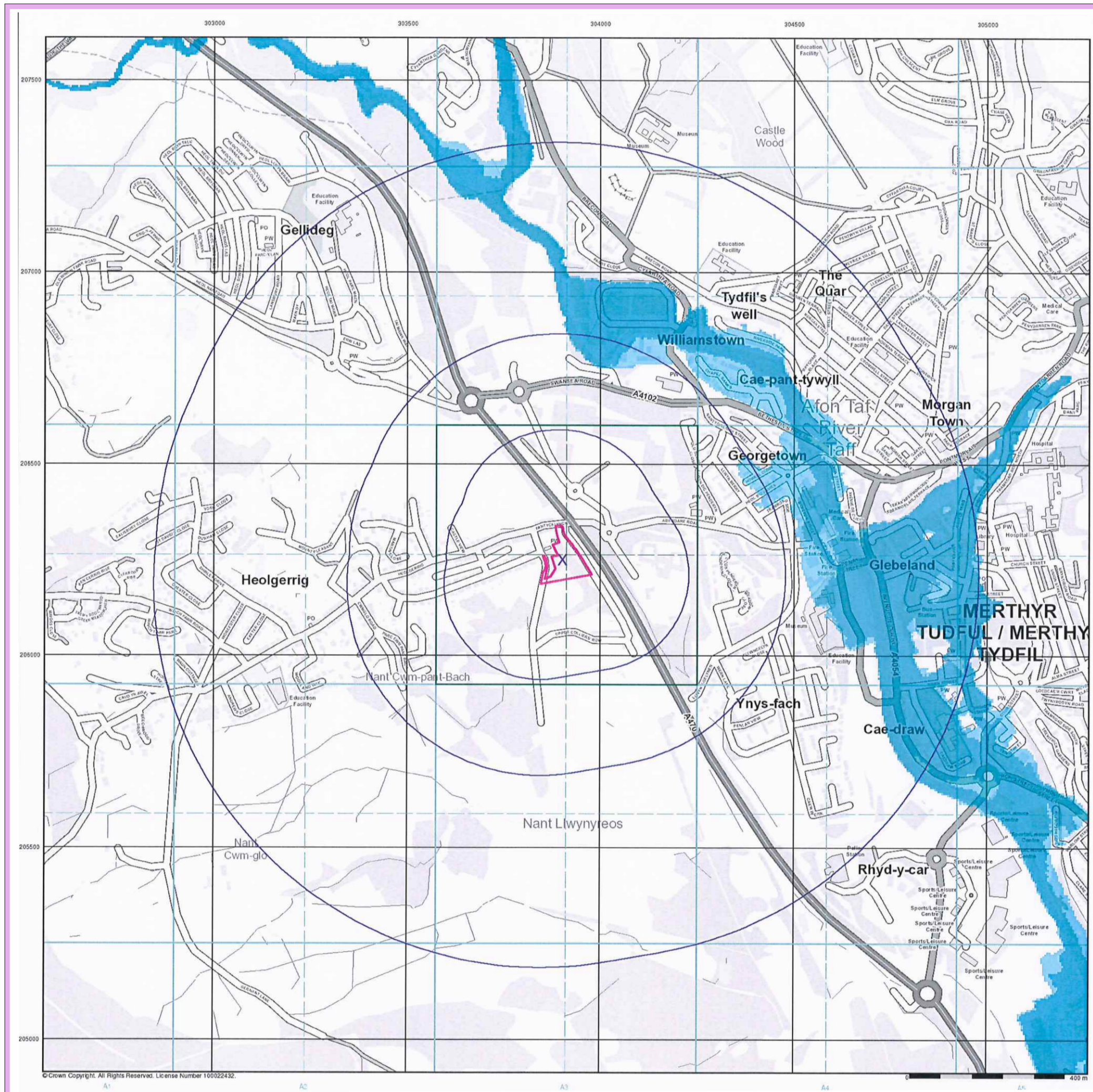
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Drawing No: BC/MB/08.19.04.04.



Study on Land at Colliers Row, Brondeg, Merthyr Tydfil.

Risk of Flooding from Rivers.

Plan Scale: See Drawing.

Key to Symbols:

- General**
 - Specified Site
 - Specified Buffer(s)
 - Bearing Reference Point
- Agency and Hydrological (Flood)**
 - 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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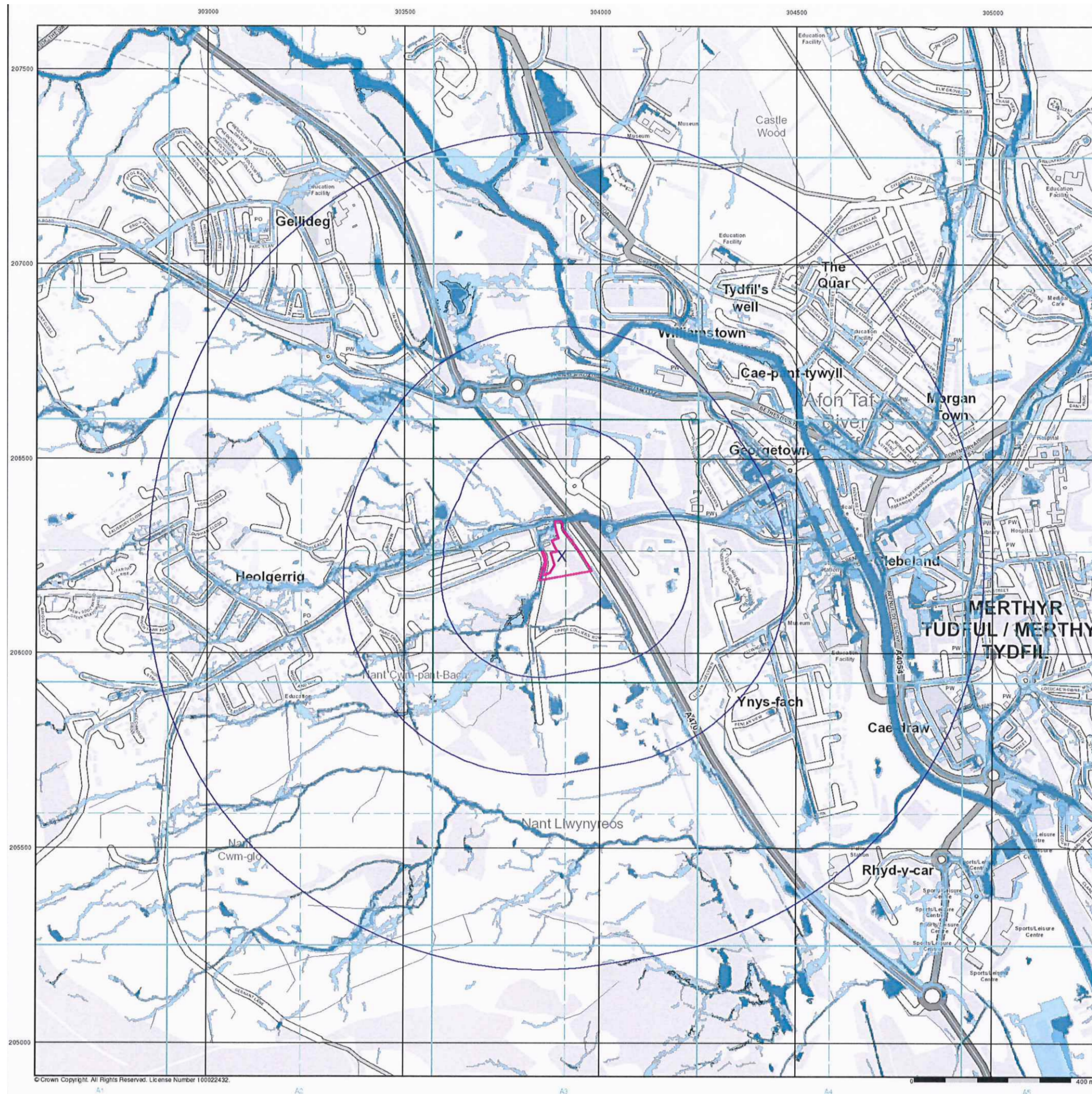
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Drawing No: BC/MB/08.19.04.05.

Geologists Working With The Environment...



Study on Land at Colliers Row, Brondeg, Merthyr Tydfil.

Risk of Surface Flooding.

Plan Scale: See Drawing.

Key to Symbols:

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:
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Study on Land at Colliers Row, Brondeg, Merthyr Tydfil.

Risk of Groundwater Flooding.

Plan Scale: See Drawing.

Key to Symbols:

BGS Flood GFS Data

General

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

Agency and Hydrological (Flood)

- Limited Potential for Groundwater Flooding to Occur
- Potential for Groundwater Flooding of Property Situated Below Ground Level
- Potential for Groundwater Flooding to Occur at Surface

Notes:

North is at top of plan.

*Locations are approximate
and should not be scaled.*

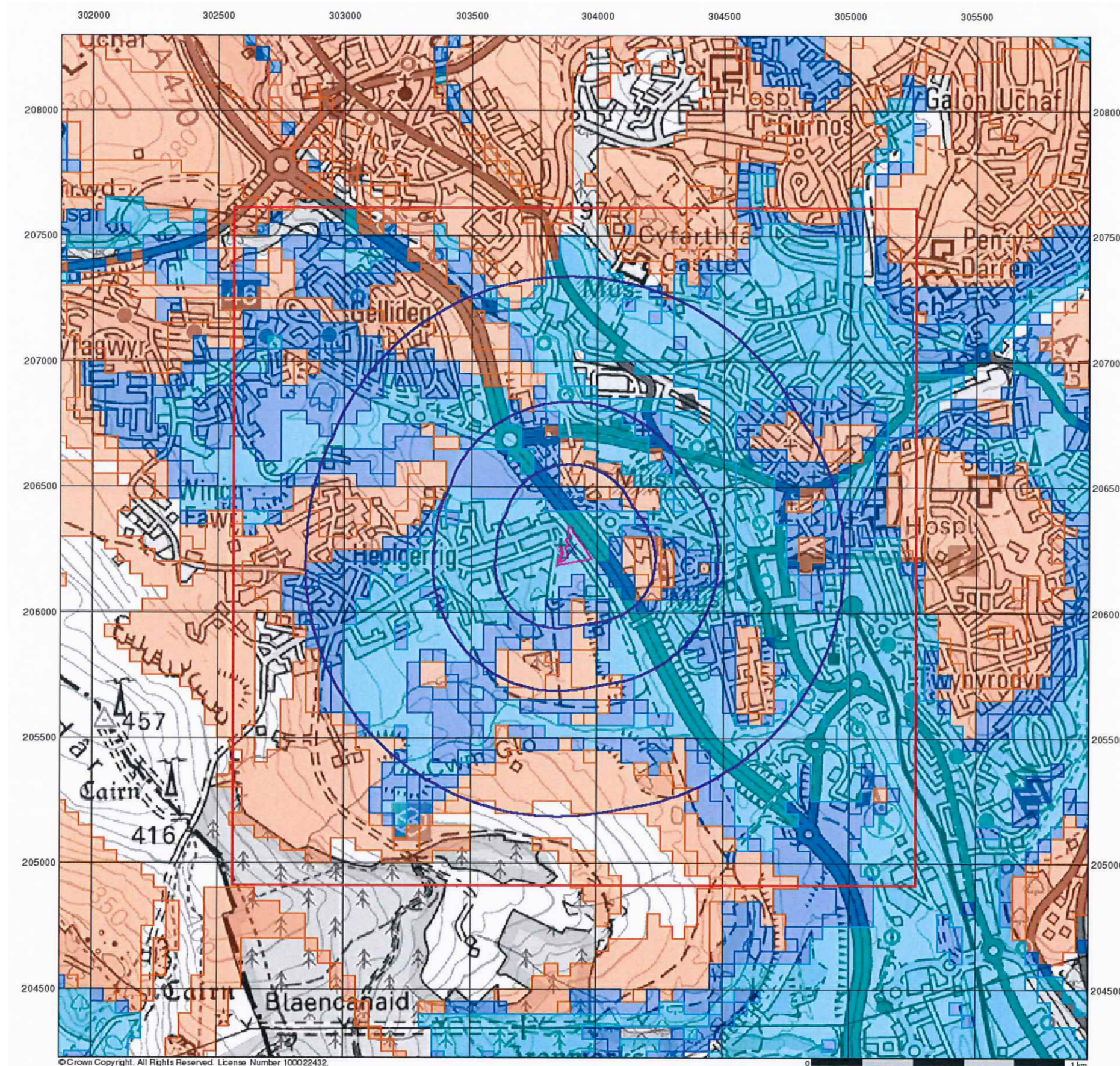
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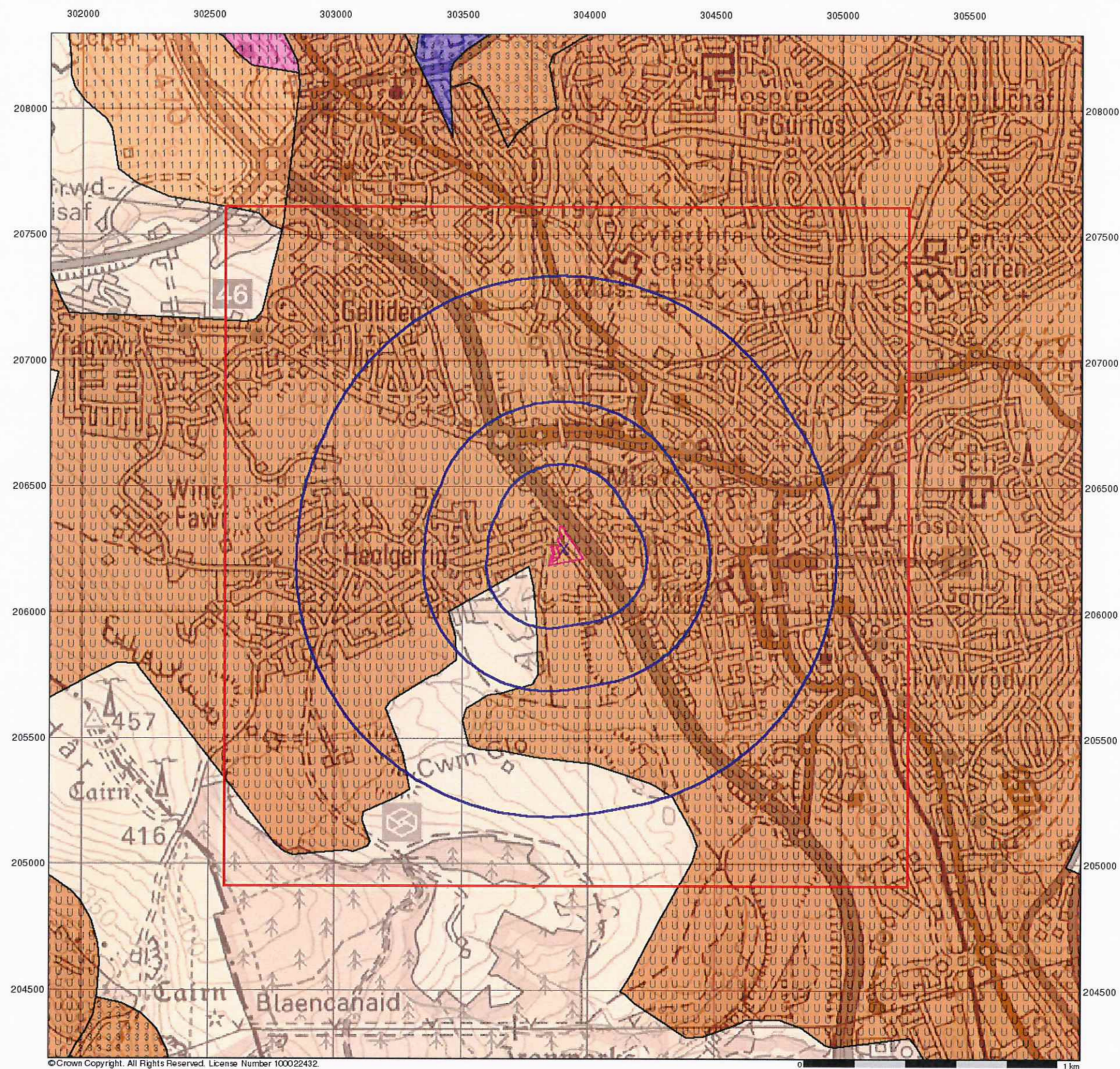


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Groundwater Vulnerability Map.

Plan Scale: See Drawing.

Key to Symbols:

General

-  Specified Site
-  Specified Buffer(s)
-  Bearing Reference Point
-  Slice
-  Map ID

Agency and Hydrological

Geological Classes	Soil Classes
Major Aquifer (Highly Permeable)	 High (H) 1, 2, 3, U
	 Intermediate (I) 1, 2
	 Low
Minor Aquifer (Variably Permeable)	 High (H) 1, 2, 3, U
	 Intermediate (I) 1, 2
	 Low
Non Aquifer (Negligibly Permeable)	
Water or Sea	
Drift Deposit	

Notes:

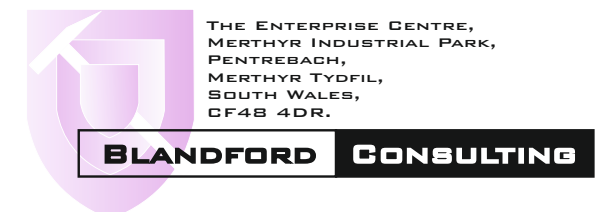
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Superficial Aquifer Designation Map.

Plan Scale: See Drawing.

Key to Symbols:

General

 Specified Site

 Specified Buffer(s)

 Bearing Reference

 Slice

 Map ID

Agency and Hydrological

Geological Classes

 Principal Aquifer

 Secondary A Aquifer

 Secondary B Aquifer

 Secondary Undifferentiated

 Unproductive Strata

 Unknown

 Unknown (Lakes and Landslip)

Notes:

North is at top of plan.

Locations are approximate and should not be scaled.

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Bedrock Aquifer Designation Map.

Plan Scale: See Drawing.

Key to Symbols:

General

 Specified Site

 Specified Buffer(s)

 Bearing Reference

 Slice

 Map ID

Agency and Hydrological

Geological Classes

 Principal Aquifer

 Secondary A Aquifer

 Secondary B Aquifer

 Secondary Undifferentiated

 Unproductive Strata

 Unknown

 Unknown (Lakes and Landslip)

Notes:

North is at top of plan.

Locations are approximate and should not be scaled.

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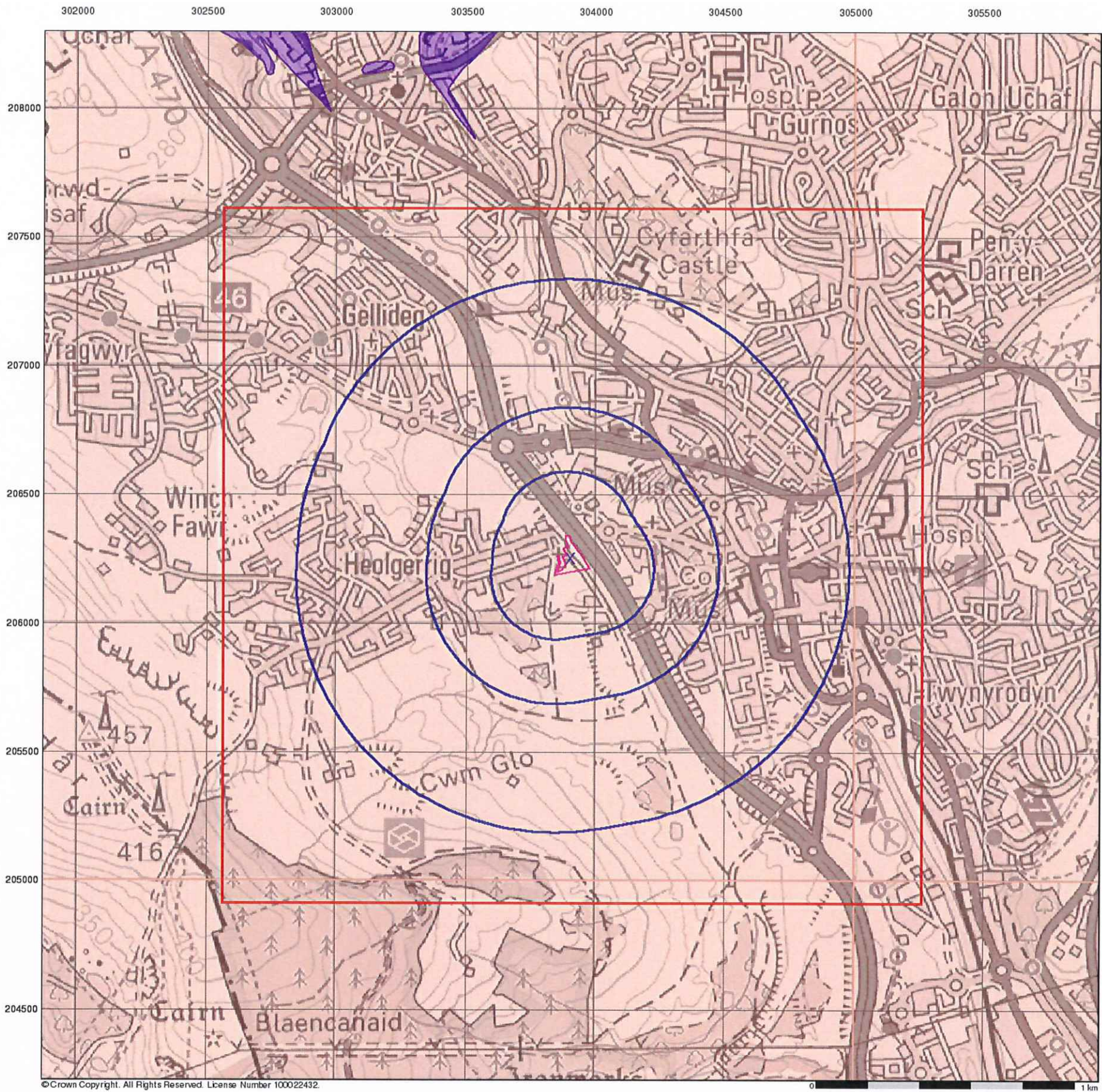


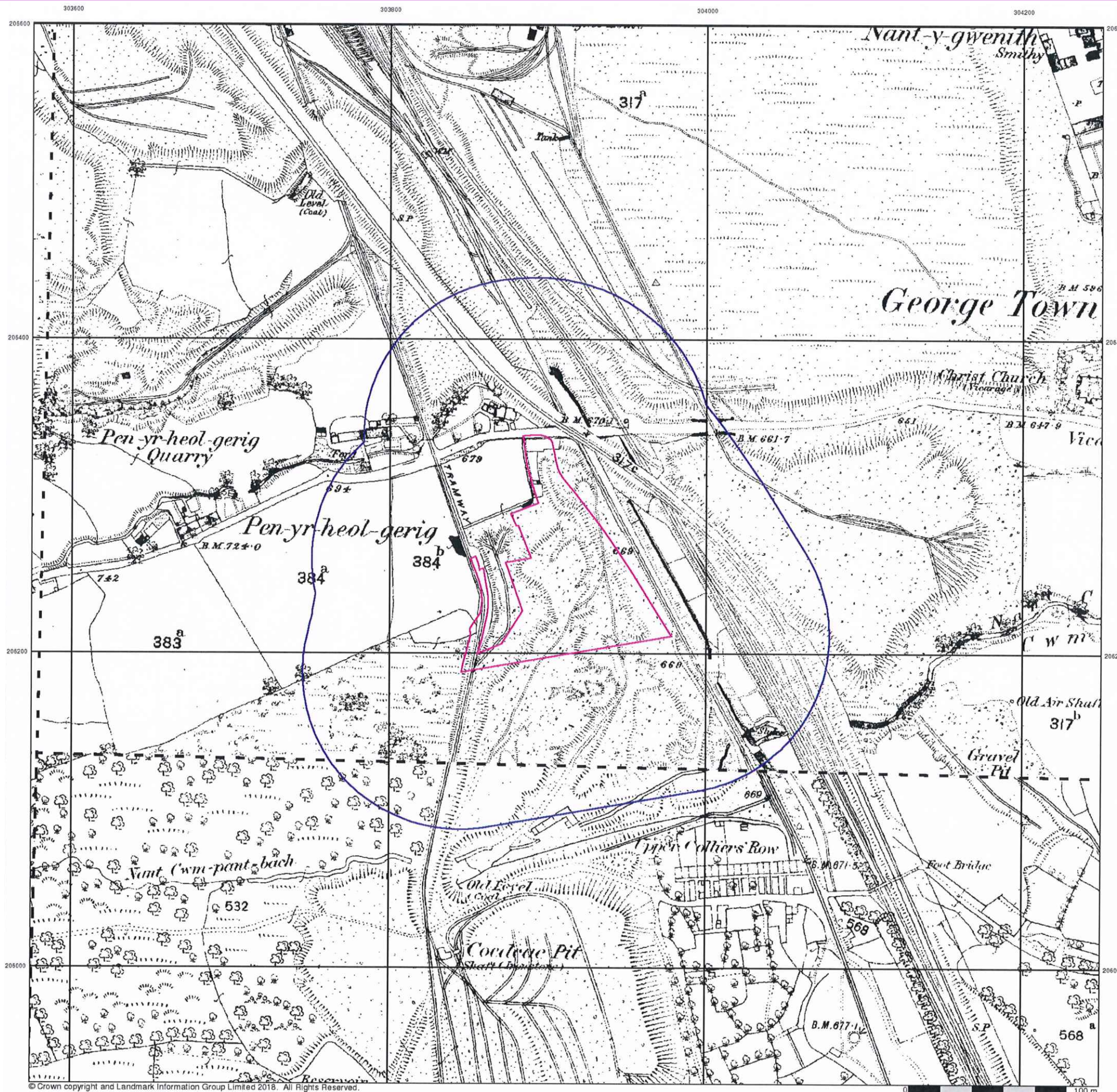
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Study on Land at Colliers Row, Brondeg, Merthyr Tydfil.

Extract from Ordnance Survey Sheet 1875-1881.

Plan Scale: 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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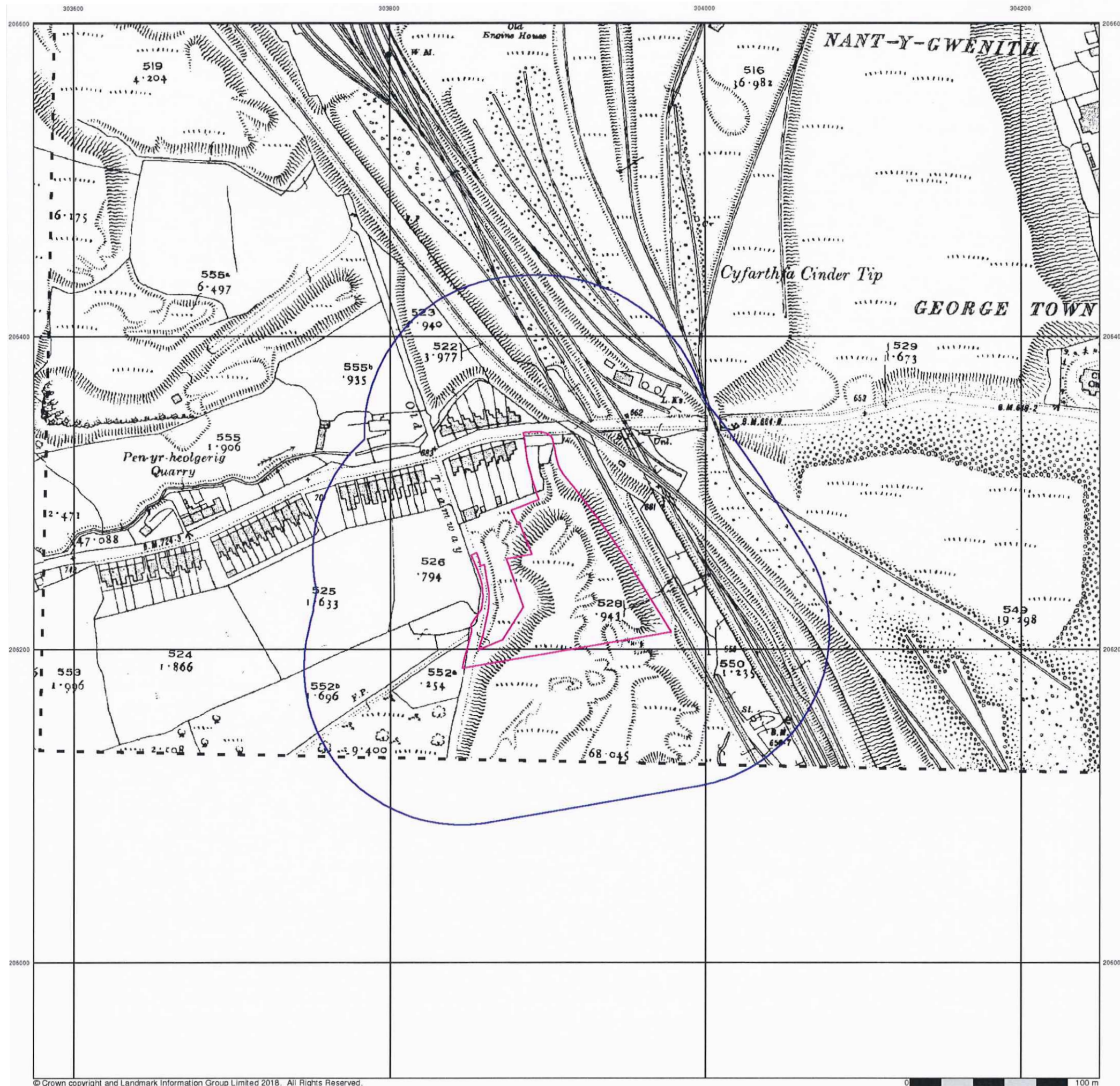
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Drawing No: BC/MB/08.19.04.11.



Study on Land at Colliers Row, Brondeg, Merthyr Tydfil.

Extract from Ordnance Survey Sheet 1919.

Plan Scale: 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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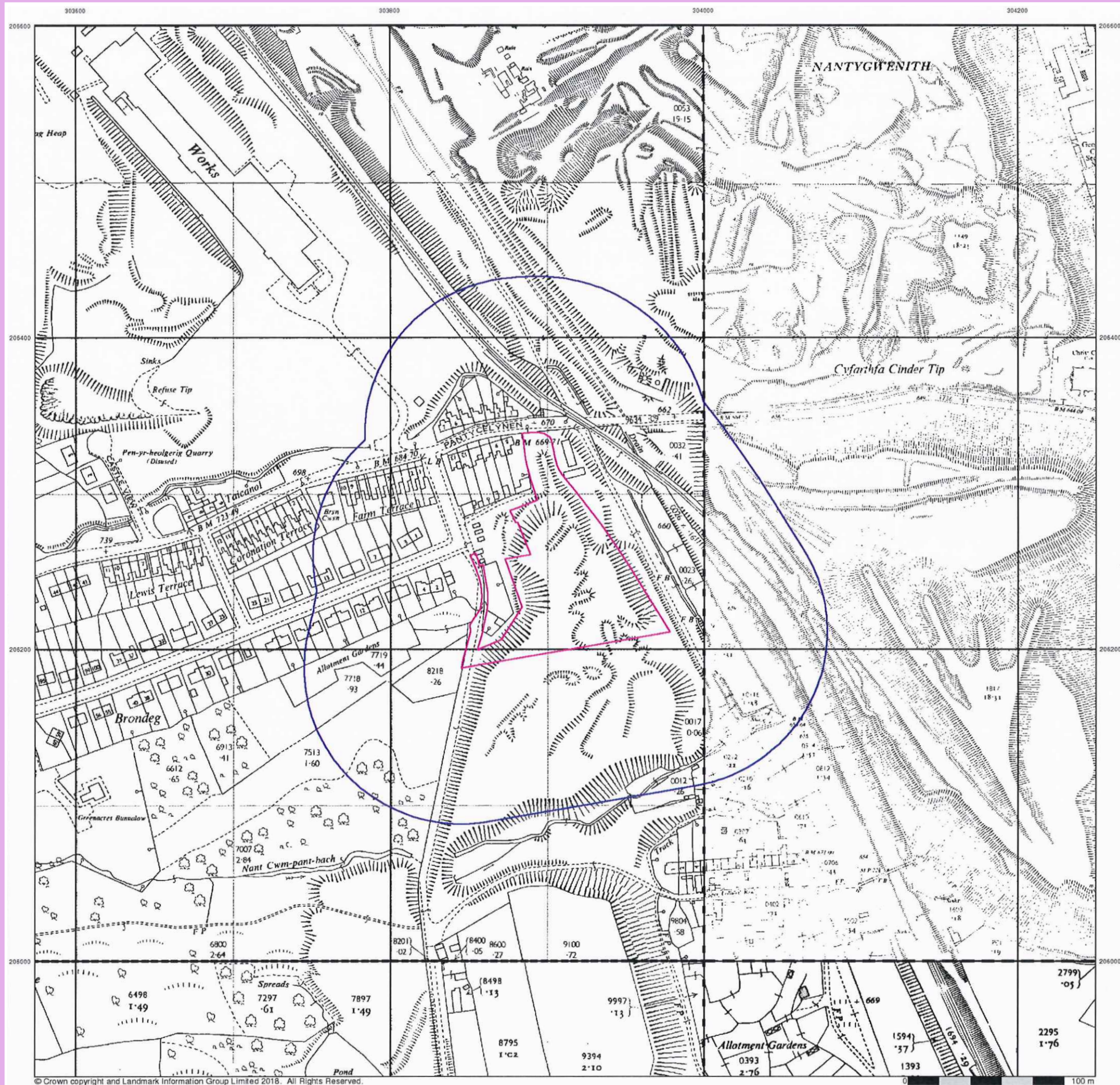
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Drawing No: BC/MB/08.19.04.12.



Study on Land at Colliers Row, Brondeg, Merthyr Tydfil.

*Extract from Ordnance
Survey Sheet 1958-1964.*

Plan Scale: 1:2,500.

Key to Symbols:

 **Approximate Site Boundary.**

Notes:

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and should not be scaled.*

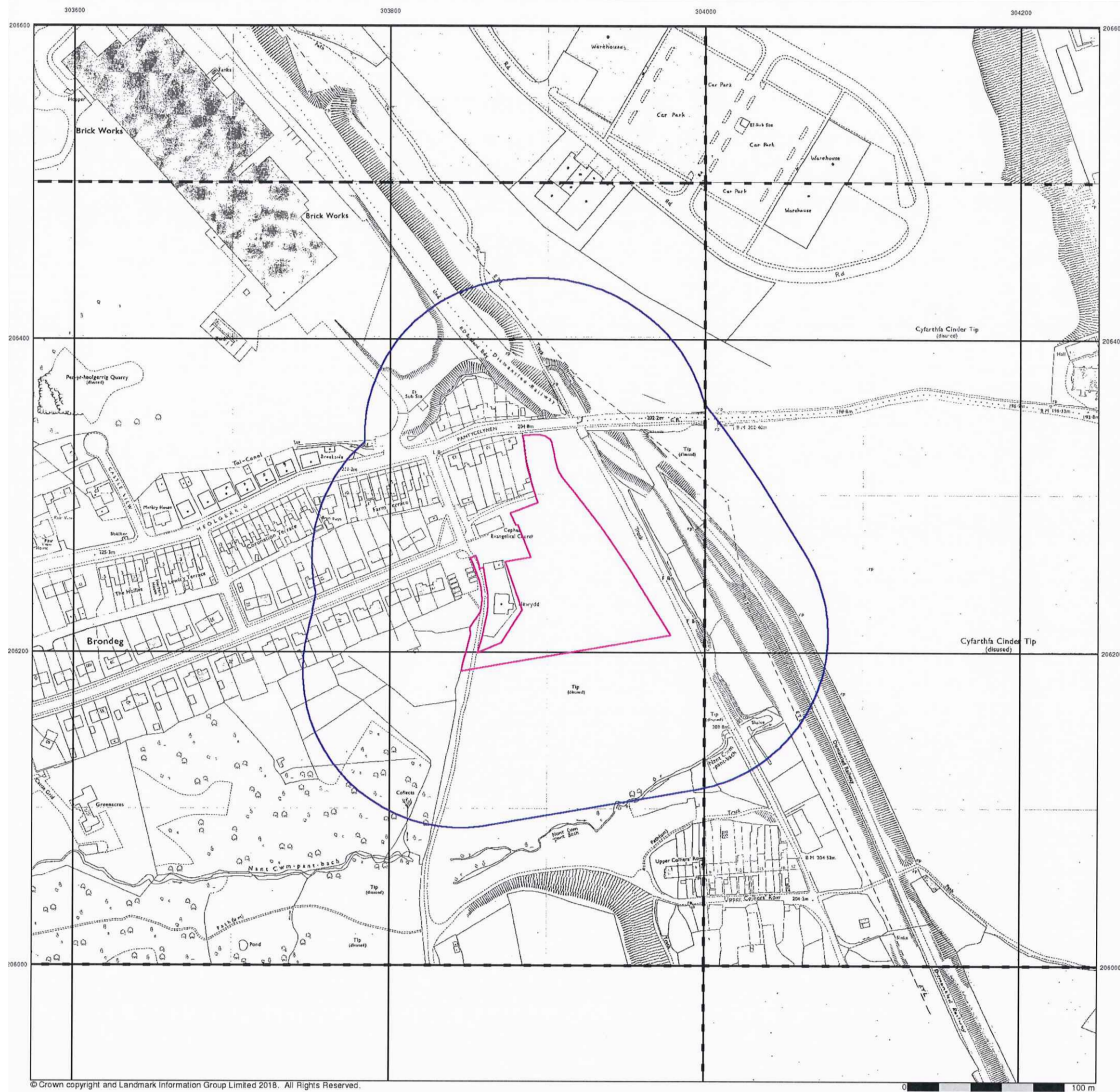
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Study on Land at Colliers Row, Brondeg, Merthyr Tydfil.

Extract from Ordnance Survey Sheet 1979-1990.

Plan Scale: 1:2,500.

Key to Symbols:

— Approximate Site Boundary.

Notes:

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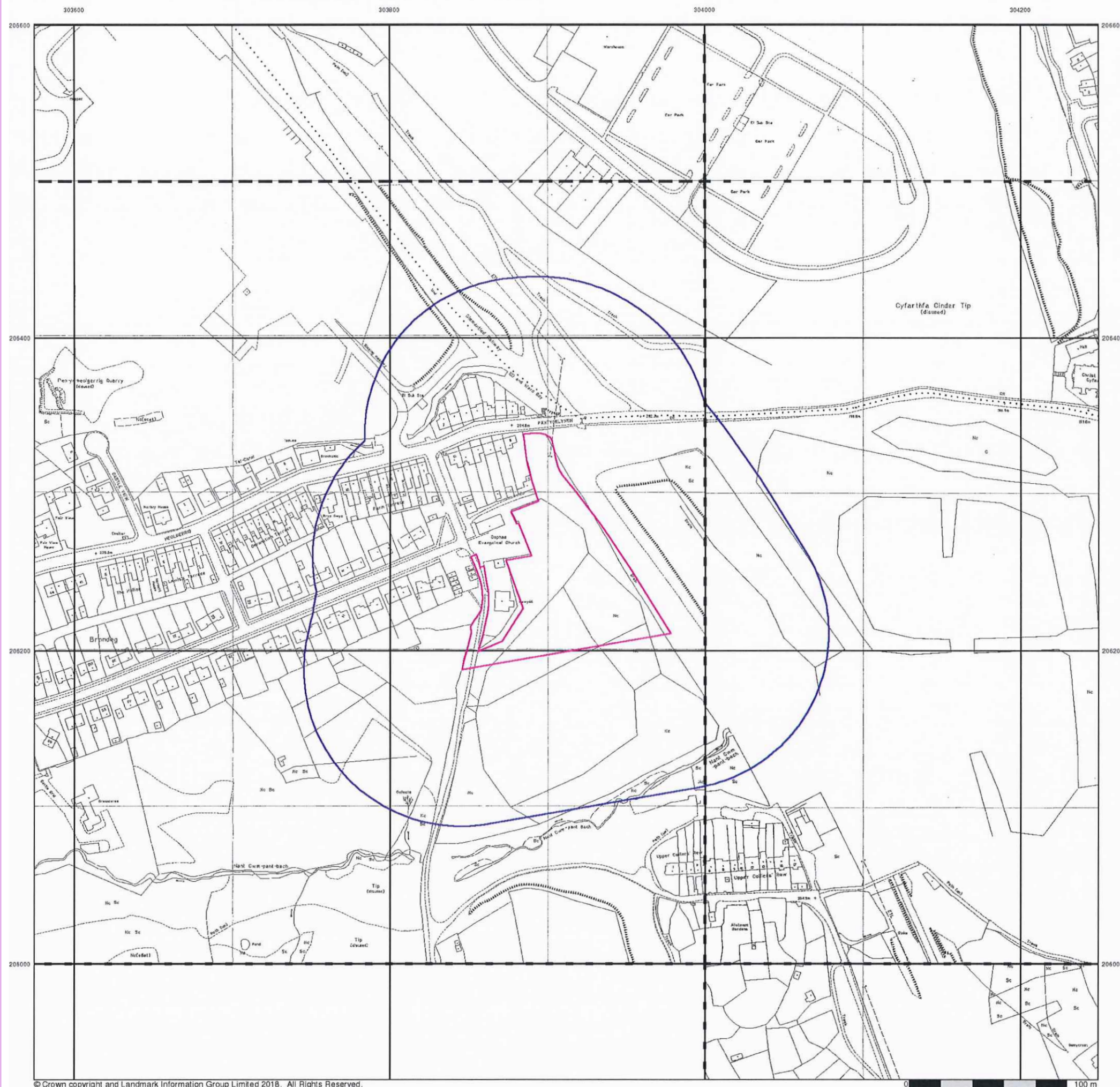
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Study on Land at Colliers Row, Brondeg, Merthyr Tydfil.

Extract from Ordnance Survey Sheet 1994-1995.

Plan Scale: 1:2,500.

Key to Symbols:

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Notes:

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Study on Land at Colliers Row, Brondeg, Merthyr Tydfil.

Historical Aerial Photograph, 2000.

Plan Scale: 1:2,500.

Key to Symbols:

 **Approximate Site Boundary.**

Notes:

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Drawing No: BC/MB/08.19.04.16.

Sensitive Land Use Map.

Plan Scale: See Drawing.

Key to Symbols:

General

- | | | |
|----------------|---------------------|-------------------------|
| Specified Site | Specified Buffer(s) | Bearing Reference Point |
| Slice | Map ID | |

Sensitive Land Uses

- | | |
|------------------------------------|-------------------------------------|
| Ancient Woodland | National Park |
| Area of Adopted Green Belt | Nitrate Sensitive Area |
| Area of Unadopted Green Belt | Nitrate Vulnerable Zone |
| Area of Outstanding Natural Beauty | Ramsar Site |
| Environmentally Sensitive Area | Site of Special Scientific Interest |
| Forest Park | Special Area of Conservation |
| Local Nature Reserve | Special Protection Area |
| Marine Nature Reserve | World Heritage Sites |
| National Nature Reserve | |

Notes:

North is at top of plan.

Locations are approximate and should not be scaled.

Data supplied by:



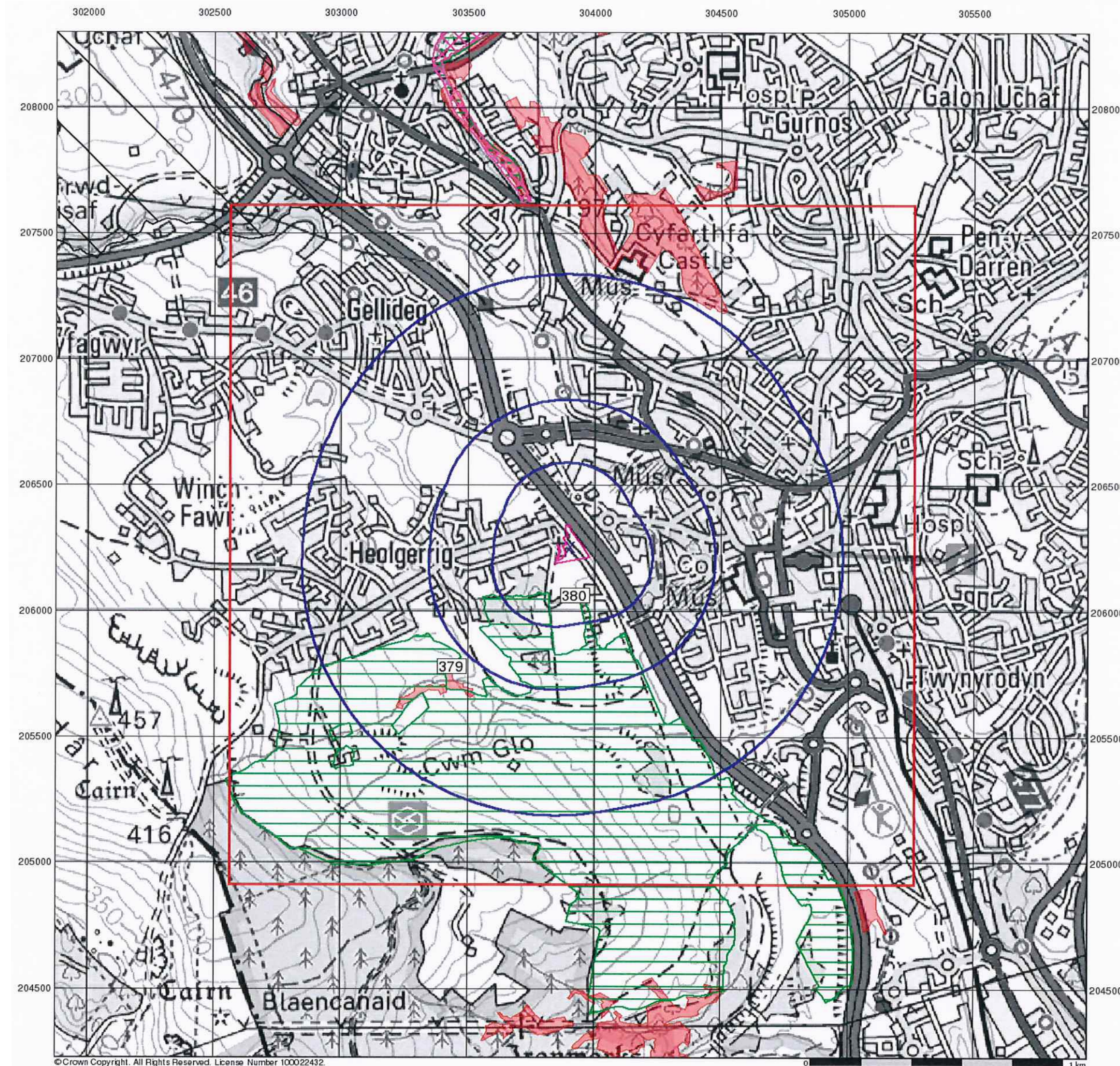
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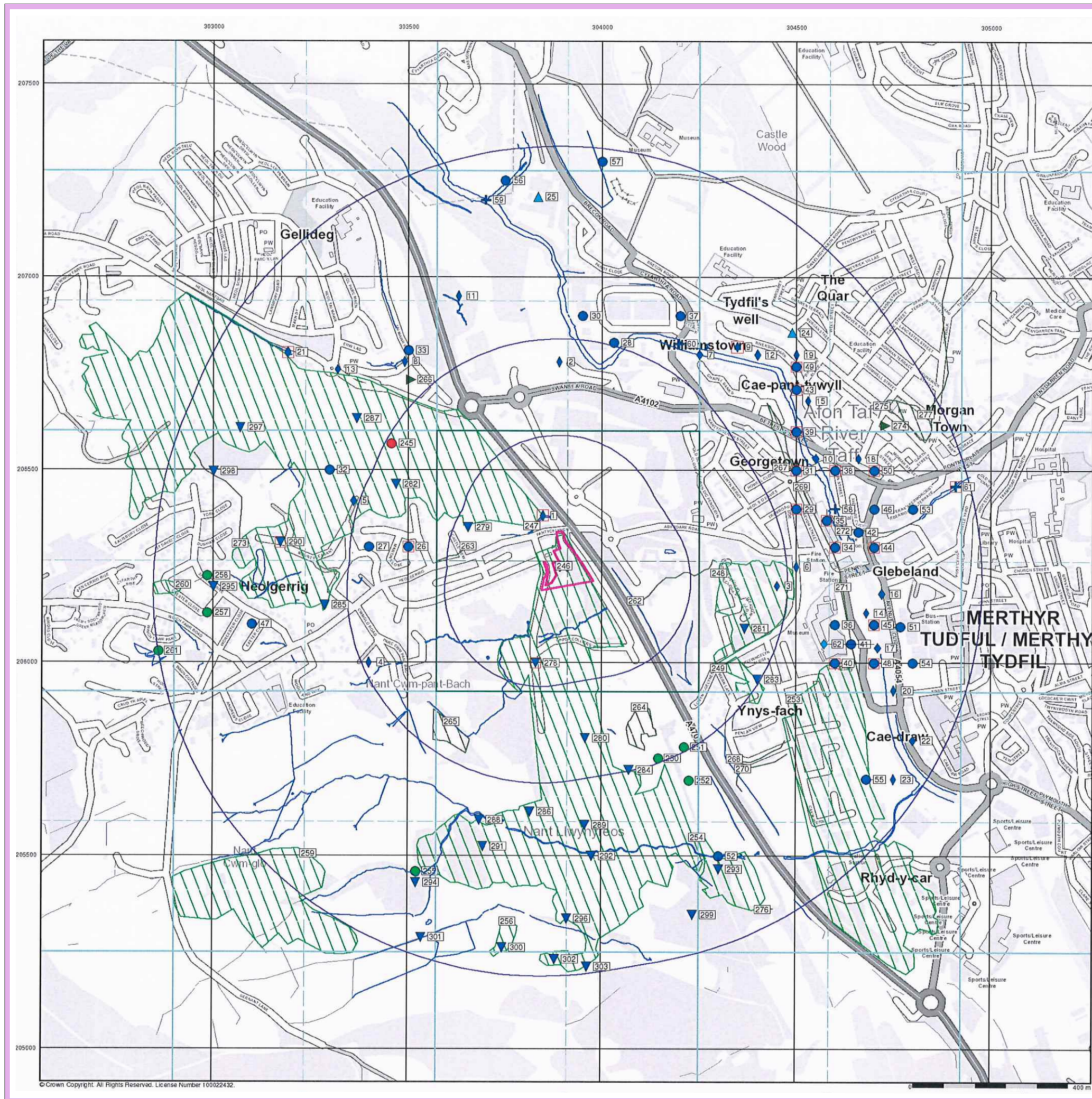


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Drawing No: BC/MB/08.19.04.17.





Study on Land at Colliers Row, Brondeg, Merthyr Tydfil.

Site Sensitivity Map.

Plan Scale: See Drawing.

Key to Symbols:

General	Agency and Hydrological	Waste
Specified Site	Contaminated Land Register Entry or Notice (Location)	BGS Recorded Landfill Site (Location)
Several of Type at Location	Contaminated Land Register Entry or Notice	BGS Recorded Landfill Site
Discharge Consent	Enforcement or Prohibition Notice	EA Historic Landfill (Buffered Point)
Integrated Pollution Control	Integrated Pollution Prevention and Control	EA Historic Landfill (Polygon)
Local Authority Integrated Pollution Prevention and Control	Local Authority Pollution Prevention and Control Enforcement	Integrated Pollution Control Registered Waste Site
Pollution Incident to Controlled Waters	Prosecution Relating to Authorised Processes	Licensed Waste Management Facility (Landfill Boundary)
Prosecution Relating to Controlled Waters	Registered Radioactive Substance	Licensed Waste Management Facility (Location)
River Network or Water Feature	River Quality Sampling Point	Local Authority Recorded Landfill Site (Location)
Substantiated Pollution Incident Register	Water Abstraction	Local Authority Recorded Landfill Site
Water Industry Act Referral	COMAH Site	Potentially Infilled Land (Non-water)
Explosive Site	NIHS Site	Potentially Infilled Land (Non-water)
Planning Hazardous Substance Consent	Planning Hazardous Substance Enforcement	Potentially Infilled Land (Water)
BGS Recorded Mineral Site		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 Treatment or Disposal Site (Location)
		Registered Waste Treatment or Disposal Site

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APPENDIX I

**COPY OF THE COAL
AUTHORITY'S REPORT
51001019337002**



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

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Issued by:

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

**LANDMARK INFORMATION GROUP
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SOWTON INDUSTRIAL ESTATE
ABBEY COURT
UNIT 5/7 EAGLE WAY
EXETER
DEVON
EX2 7HY**

Our reference: **51001019337002**
Your reference: **74218585_2|**
Date of your enquiry: **27 October 2015**
Date we received your enquiry: **27 October 2015**
Date of issue: **27 October 2015**

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

Non-Residential Coal Authority Mining Report

SITE AT TYNEWYDD, BRONDEG, HEOLGERRIG, MERTHYR TYDFIL,

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

Coal mining	See comments below
Brine Compensation District	No

Information from the Coal Authority

Underground coal mining

Past

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

However the property is in an area where the Coal Authority believe 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 prior to any site works or future development activity. Your attention is drawn to the Comments on Coal Authority Information section of the report.

Present

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

Future

The property is not in an area for which the Coal Authority is determining whether to grant a licence to remove coal using underground methods.

The property is not in an area for which a licence has been granted to remove or otherwise work coal using underground methods.

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

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

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

Mine entries

There are no known coal mine entries within, or within 20 metres of, the boundary of the property.

Coal mining geology

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

Opencast coal mining

Past

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

Present

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

Future

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

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

Coal mining subsidence

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

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

The Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Mine gas

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

Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Authority, under its Emergency Surface Hazard Call Out procedures.

Withdrawal of support

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

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

Working facilities orders

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

Payments to owners of former copyhold land

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

Comments on Coal Authority information

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

Therefore if development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply good engineering practice developed for mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or mines of coal without the permission of the Coal Authority. Developers should be aware that the investigation of coal seams/former mines of coal may have the potential to generate and/or displace underground gases and these risks both under and adjacent to the development should be fully considered in developing any proposals. The need for effective measures to prevent gases entering into public properties either during investigation or after development also needs to be assessed and properly addressed. This is necessary due to the public safety implications of any development in these circumstances.

Information from the Cheshire Brine Subsidence Compensation Board

The property lies outside the Cheshire Brine Compensation District.

Additional Remarks

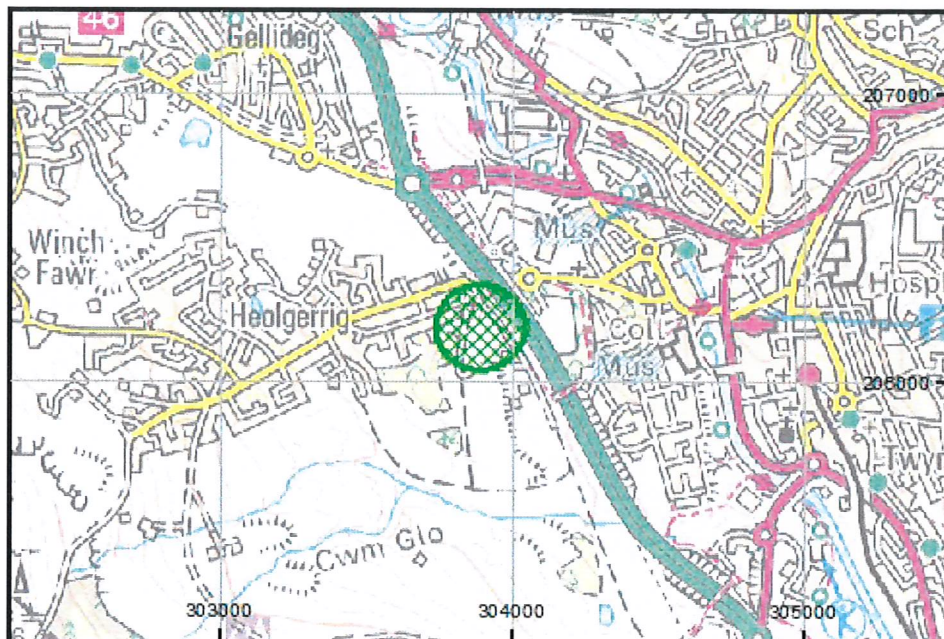
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Location map



Approximate position
of property



Enquiry boundary

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Key

Approximate position of enquiry
boundary shown

