



RHONDDA
GEOTECHNICAL
SERVICES

PHASE 1 CONTAMINATED LAND REPORT

N.P.T. PLANNING APP. P2022/0230

PROPOSED RESIDENTIAL DEVELOPMENT

35 PARISH ROAD

CWMGWRACH

GLYNNEATH

N.P.T.

SA11 5SW

9/08/2023

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INTRODUCTION-PURPOSES AND AIMS

Planning permission ref. P2022/0230 has been granted by Neath Port Talbot L.P.A. This is for the demolition of an existing bungalow and the construction of two new residential properties at 35 Parish Road, Cwmgwrach. As Conditions 4 and 5, N.P.T. L.P.A. have indicated that they require a Contaminated Land Risk Assessment. Rhondda Geotechnical Services have been engaged to carry out this work. The exact wording of the conditions is as follows:-

4. No development shall commence on site until an assessment of the nature and extent of contamination affecting the application site area has been submitted to and approved in writing by the Local Planning Authority. This assessment must be carried out by or under the direction of a suitably qualified competent person in accordance with BS10175 (2011) 'Investigation of Potentially Contaminated Sites Code of Practice' and shall assess any contamination on the site, whether or not it originates on the site. The report of the findings shall include

(i) a desk top study to identify all previous uses at the site and potential contaminants associated with those uses and the impacts from those contaminants on land and controlled waters. The desk study shall establish a 'conceptual site model' (CSM) which identifies and assesses all identified potential source, pathway, and receptor linkages;

(ii) an intrusive investigation to assess the extent, scale and nature of contamination which may be present, if identified as required by the desk top study;

(iii) an assessment of the potential risks to: - human health, - groundwater and surface waters - adjoining land, - property (existing or proposed) including buildings, crops, livestock, pets, woodland and service lines and pipes,- ecological systems, - archaeological sites and ancient monuments; and - any other receptors identified at (i)

(iv) an appraisal of remedial options, and justification for the preferred remedial option(s). Reason: To ensure that information provided for the assessment of the risks from land contamination to the future users of the land, neighbouring land, controlled waters, property and ecological systems is sufficient to enable a proper assessment, and to ensure compliance with Policies SP16 and EN8 of the Neath Port Talbot Local Development Plan.

5 No development shall commence on site until a remediation scheme to bring the site to a condition suitable for the intended use by removing any unacceptable risks to human health, buildings, other property and the natural and historic environment shall be prepared and submitted to and approved in writing with the Local Planning Authority. The scheme shall include all works to be undertaken, proposed remediation objectives, remediation criteria and site management procedures. The measures proposed within the remediation scheme shall be implemented in accordance with an agreed programme of works. Reason: To ensure that risks from land contamination to the future users of the land and neighbouring land are minimised, together with those to controlled waters, property and ecological systems, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors, and to ensure compliance with Policies SP16 and EN8 of the Neath Port Talbot Local Development Plan.

Conditions 4.2, 4.3 and 5 are entirely dependent on the recommendations of the report to discharge conditions 4.1. However, it can be assumed that an intrusive investigation will be carried out for reasons given overleaf.

The report will follow the guidelines set out in the document Development of Land Affected by Contamination: A Guide for Developers (Version 3). This was produced by the Welsh Land Contamination Working Group in 2017. In particular the methodology set out in appendix B with the check list for Phase 1 will be followed. The contaminated land exposure assessment (henceforth CLEA) produced by The Environment Agency will be used in the conceptual model, particularly regarding the source-pathway-receptor concept for pollutant linkages. The entire project will be guided by the 2021 C.L.R.M which has now superseded the withdrawn 2004 Defra/E.A. document CLR11 (Model Procedures for the Management of Land Contamination).

The current definition of contaminated land is “any land which appears to the local authority in whose area it is situated in to be in such a condition, by reason of substances in or under the ground that:-

- a. “Significant harm is being caused, or there is a significant possibility of such harm being caused OR
- b. Pollution of controlled waters is being, or is likely to be caused”

(Section 78A Part 2A Environmental Protection Act)

This act also requires that a risk based approach should be used for assessing the contamination status of a site. For a site to be designated as contaminated it must be shown that the site is not fit for its current, or intended use. Statutory guidance states that a two stage approach should be adopted for the assessment of contaminated land.

1. Identification of potential pollution linkages
2. Assessment of the risk to receptors

The first stage (The Phase 1 report) is a qualitative assessment of the plausible pollution linkages that exist or may exist on site. This involves the development of a site conceptual model. This may then be refined in Phase 2 after an intrusive investigation, followed by laboratory testing of samples obtained, but only if the Phase 1 deems it necessary. It was known from previous work on the site that there is a thin layer of Made Ground covering some of the plot. For this reason a Phase 1 report would inevitably conclude a Phase 2 report was necessary. Therefore it was decided to carry out an intrusive investigation with soil sampling and laboratory analysis from the outset. It is then intended to present both the Phase 1 and Phase 2 reports to N.P.T. to allow them to be reviewed together.

1. AUTHOR CREDENTIALS

The author of this report is Richard Davies. He graduated with a Batchelor of Science honours degree in Geology from Liverpool University in 1979. After starting his career as an engineer in the coal industry, he moved into site investigation in the 1980's and has many years experience working on contaminated land. He is a Fellow of The Geological Society and holds a Master's Degree in Applied Environmental Geology from Cardiff University. He is also a Supporter Member of CL: AIRE (Contaminated Land: Applications in Real Environments)

2. SITE DESCRIPTION

The site is centred on grid reference 287610, 205430 and is at an elevation of approximately 130m-135m. A.O.D. A narrow, straightened surface watercourse forms the northern development boundary. The site adjoins residential properties to the east and west. The southern boundary fronts onto Parish Road.

The site is a featureless cultivated garden area. The site location is shown in Figure 1 overleaf. Figure 2 shows the development boundary within the land ownership area. Figure 3 is a recent aerial photograph of the site.

3. SITE WALKOVER

A walkover survey is part of the Phase 1 Template. This really aimed at far larger sites with former industrial use where differing areas can be delineated. The site is a compact, single plot with no differing areas to be delineated. The site was previously visited to carry out rotary drilling to investigate possible coal mining legacy issues and a brief description of the site is contained in the previous section.

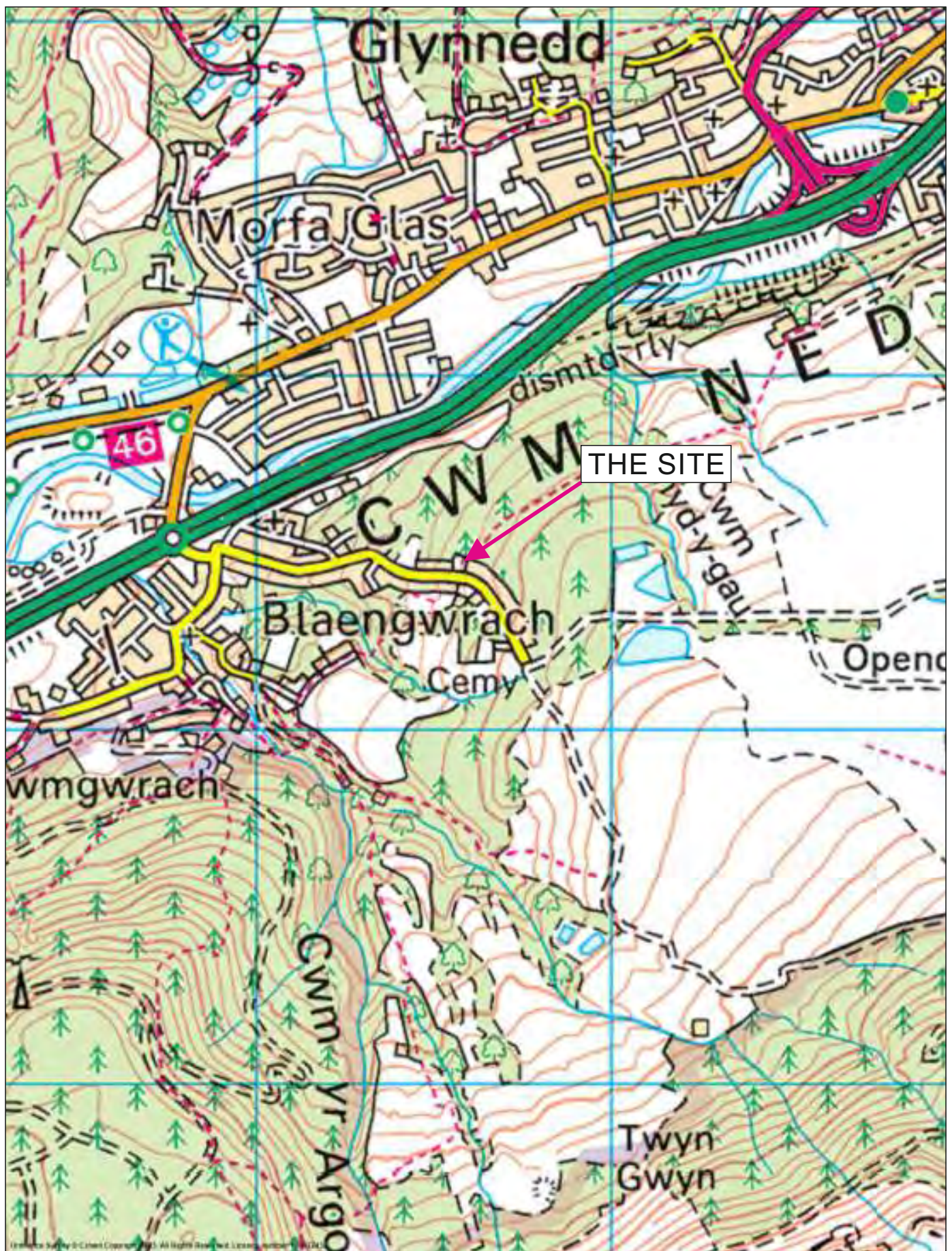


FIGURE 1
SITE LOCATION

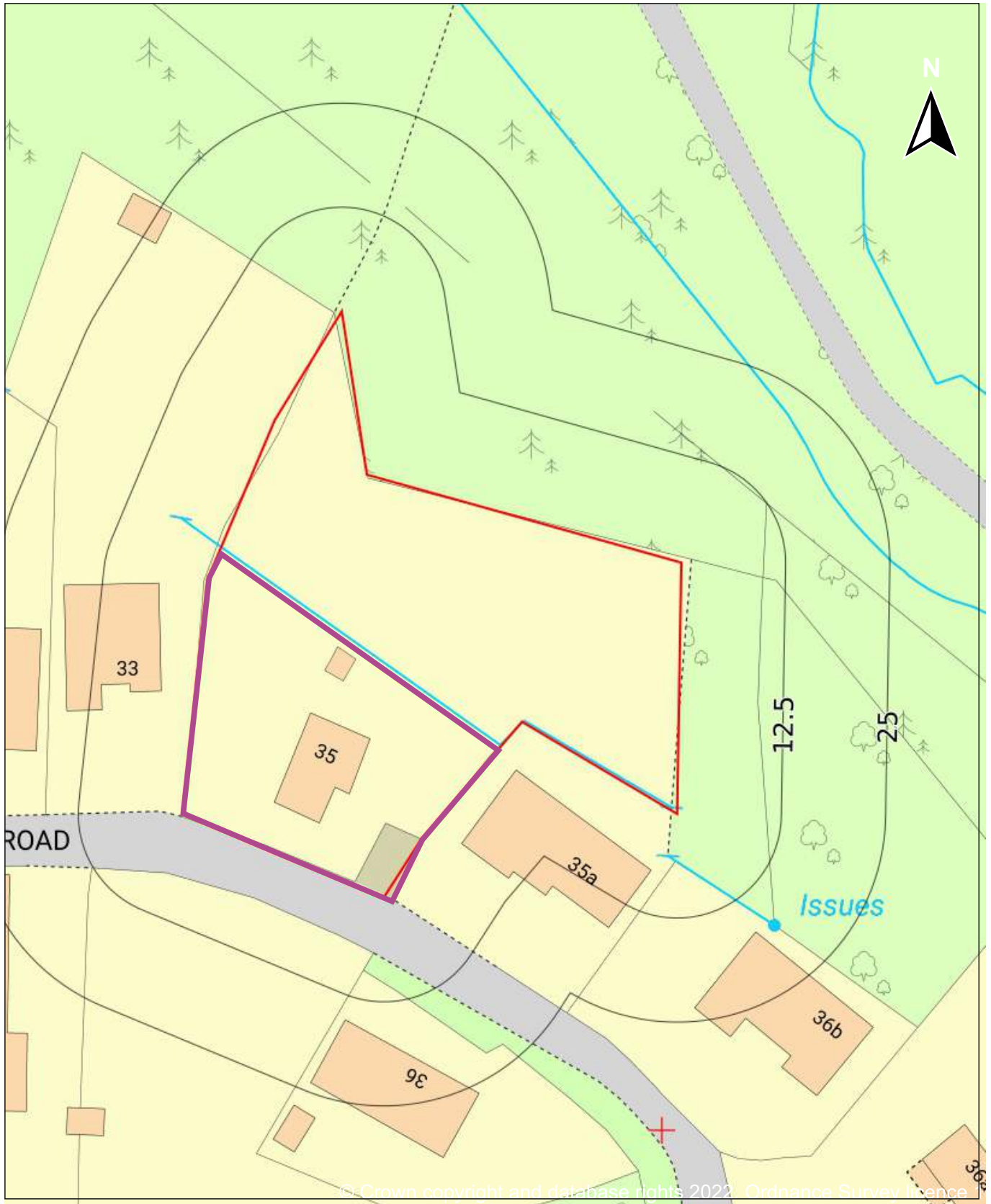


FIGURE 2

SITE BOUNDARY. N.B. THE RED LINE IS THE LAND OWNERSHIP BOUNDARY. THE PLANNING APPLICATION BOUNDARY IS THE SMALLER AREA DENOTED BY THE PURPLE BOUNDARY



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FIGURE 3
THE SITE IN A RECENT (2020) AERIAL PHOTO.

4. SITE HISTORY

In order to gain a thorough understanding of the history of the site a comprehensive collection of historical Ordnance Survey maps was purchased from Groundsure. These were at both 1:1250, 1:2500 and 1:10560 scales (later maps are at 1:10,000). Obviously, the larger scale maps are preferable for a desk study, but sometimes a large gap in dates means it is necessary to fall back on the smaller scale maps. Another reason for using the smaller scale maps is that they provide a broader contextual setting for the site. In terms of both the site and the immediate surrounding area, there have been some changes from the earliest (1876) map to the present day. These changes have been relatively minor compared to the explosive development seen in some of the later established areas of the South Wales Coalfield.

Extracts from the original maps are presented overleaf as Figures 4-9. These have been slightly truncated from the originals for reasons of page fit and file size. The maps have the eastern or western margin truncated. This has been done alternately so nothing of significance to the desk study is missing from the extracts.

1876 (Figure 4) SITE- The 1876 map shows the site bisected by an “old tramway”. The northern half of the site is an undeveloped field. The southern half is rough pasture and is wooded. A stream runs along the northern edge of the tramway embankment.

SURROUNDING AREA- The immediate surroundings are semi-rural with woodland and open fields. There are multiple signs of coal mining. An airshaft is marked to the northeast. The tramway through the site runs up the hillside to a small mine. The rails have been lifted for re-use and a second tramway is marked running down from the mine towards the Neath Valley. A track is marked adjoining the southern site boundary. The course of the track is almost identical to the present-day Parish Road. The only habitation is a farm 160m southwest of the site and a second building 250m northwest of the site. Off the western margin are large areas of mining spoil.

1899 (Figure 5) SITE- The only change is the trees are gone.

SURROUNDING AREA- The mine to the southeast of the site appears to have closed. Both tramlines are now labelled “old” and the tracks have been lifted. The air shaft is labelled “old”. West of the site a pond occupies the site of an “old quarry”. This was actually an Ironstone “patch” a form of primitive opencast mine worked entirely by hand. The extent of the spoil from the mining activity is clearly visible. The solitary building in the middle of the former mine remains, as does the farmhouse southwest of the site.

1919 (Figure 6) SITE- The site unchanged

SURROUNDING AREA- The surrounding area is unchanged although a gradual loss of natural woodland is evident since 1875.

1962 (Figure 7) SITE-The site now has No.35 built on it occupying its current footprint. There is a large jump in published 1:2500 maps. This is normal in most areas of South Wales. The 1938 and 1948 1:10,560 revisions were consulted and show some houses built on Parish Road from the 1938 map onward. The site remains undeveloped on both maps. This places the construction of No.35 sometime between 1948-62. The appearance and construction suggest it was built in the 1950s.

SURROUNDING AREA- Parish Road is lined for much of its length with detached properties. A public cemetery has been laid out 200m south of the site. The disturbed ground and spoil from the Ironstone mining west of the site is still much in evidence.

1984 (Figure 8) SITE- The site remains unchanged.

SURROUNDING AREA- The ground to the north and east of the garden boundaries of Parish Road has been entirely covered with coniferous tree planting. The area of mining spoil west of the site appears to have been partially reinstated. Although not apparent on the large-scale maps there was very extensive opencast coal mining south and east of the site. The forestry planting was part of the reinstatement of these workings.

2003 (Figure 9) SITE The last large-scale revision carried out by the O.S. shows no change to the site.

SURROUNDING AREA -There have been additional residential properties built on Parish Road.

More recent small-scale maps (2001, 2010 and 2021) have been checked but add little of relevance to the desk study. For this reason, they have not been reproduced here. The aerial photographs on pages 8-12 of the Enviroinsight report are far superior for this purpose. The Enviroinsight report is attached as Appendix A. In summary, the history of the site as shown by the O.S. maps show a single change from undeveloped land to the residential plot it is today. The wider surrounding area shows the early decline of the iron industry and underground coal mining. The surrounding area then becoming increasingly residential as it is today.

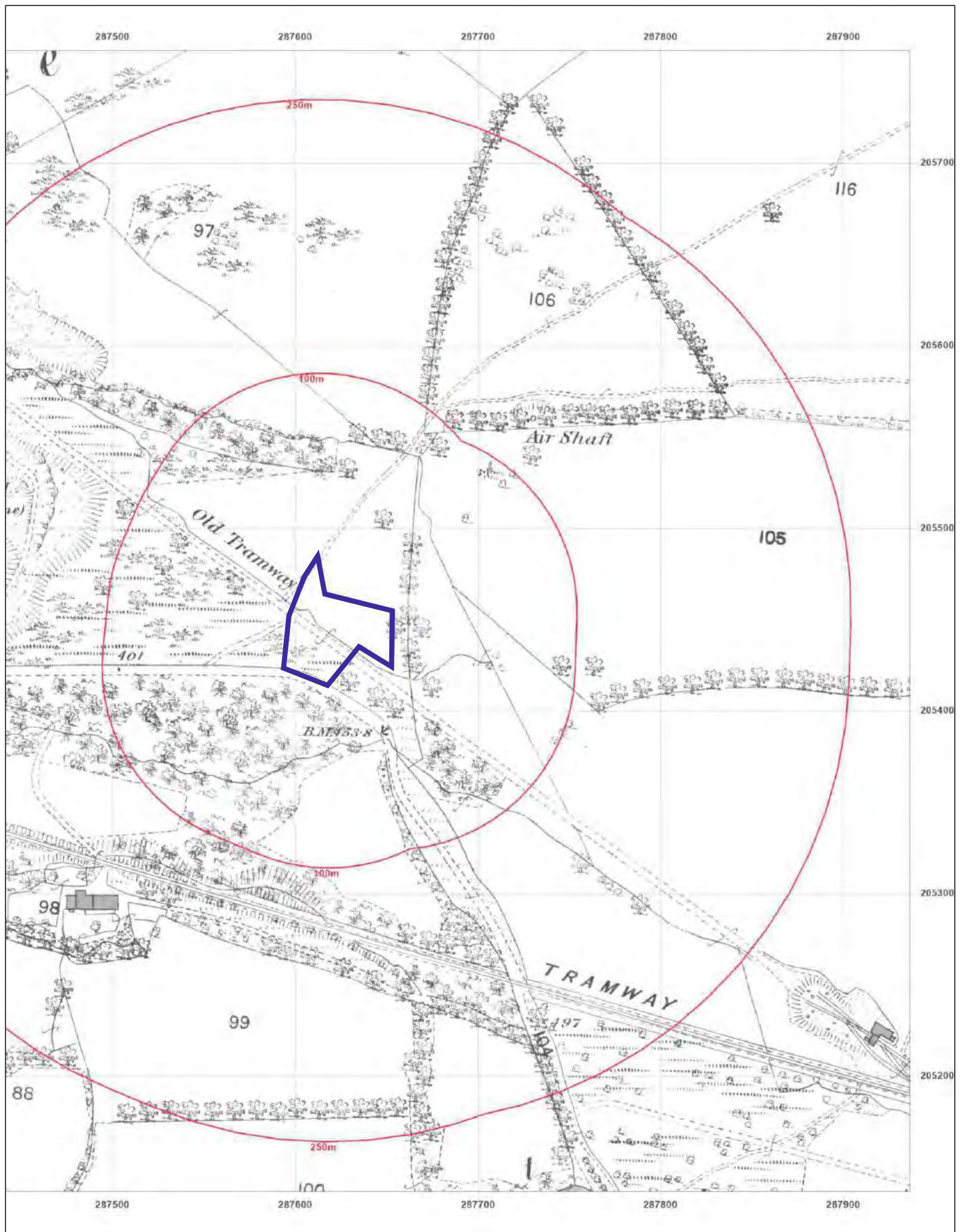


FIGURE 4
THE SITE (OUTLINED IN BLUE) IN 1876

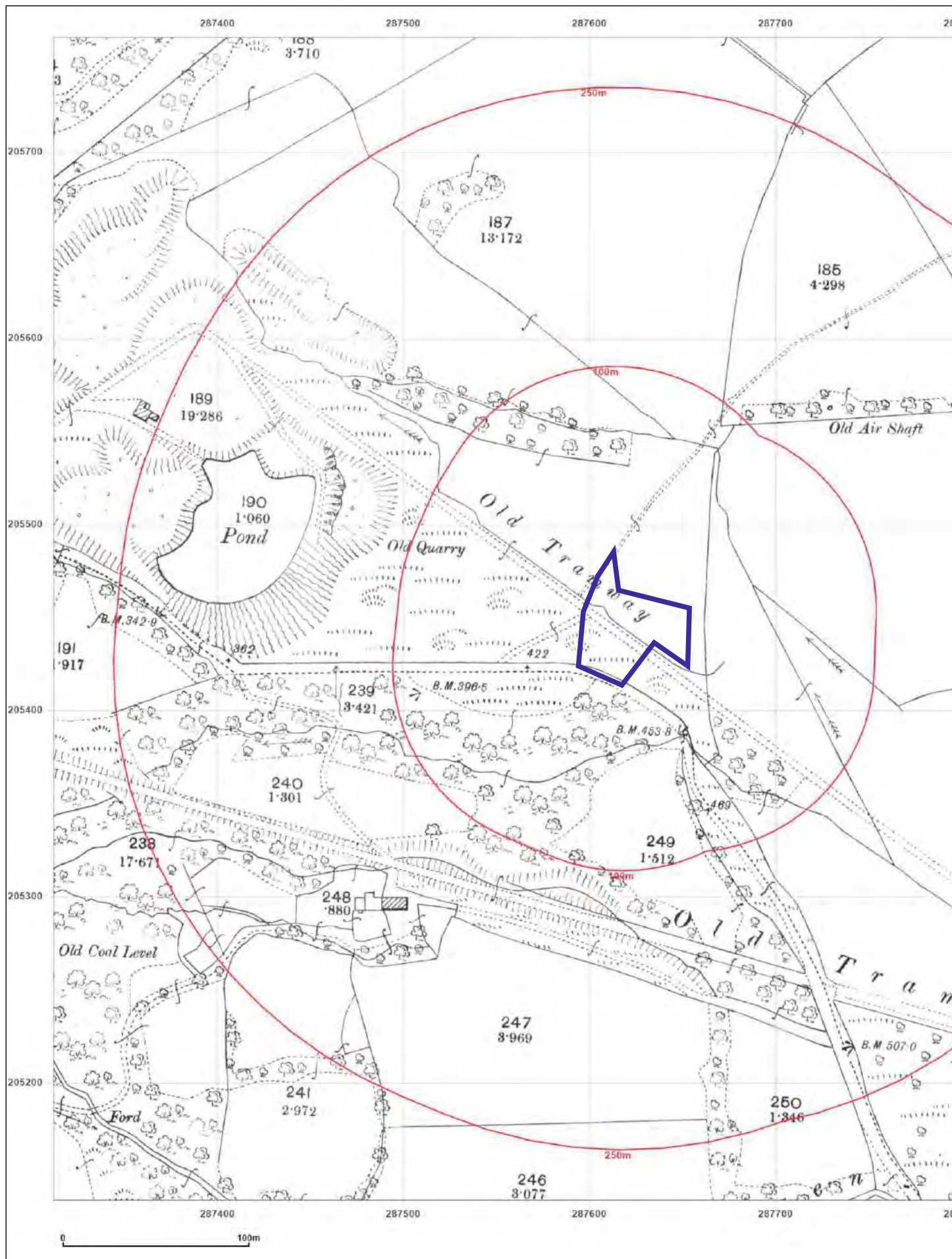


FIGURE 5
THE SITE IN 1899

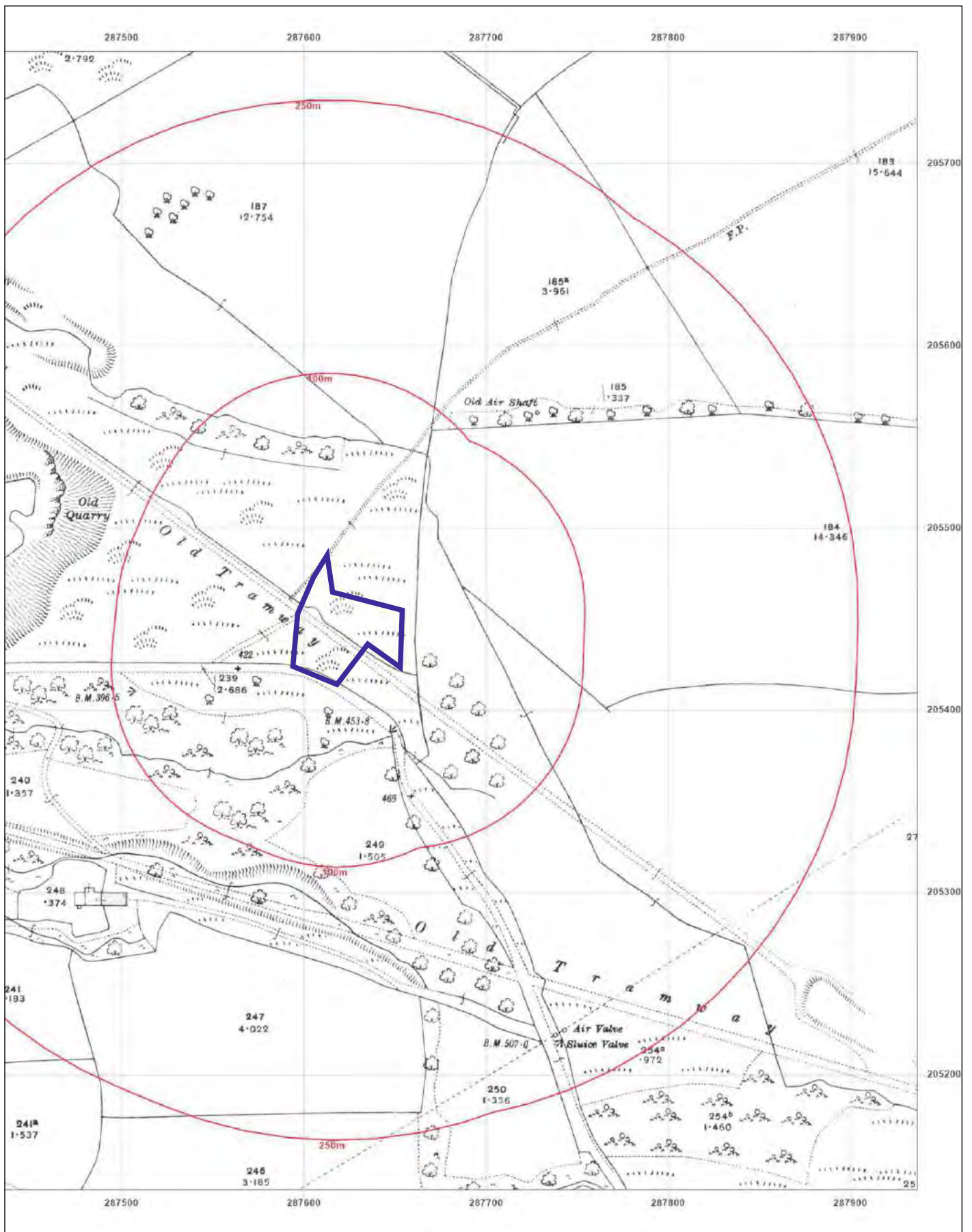


FIGURE 6
THE SITE IN 1919

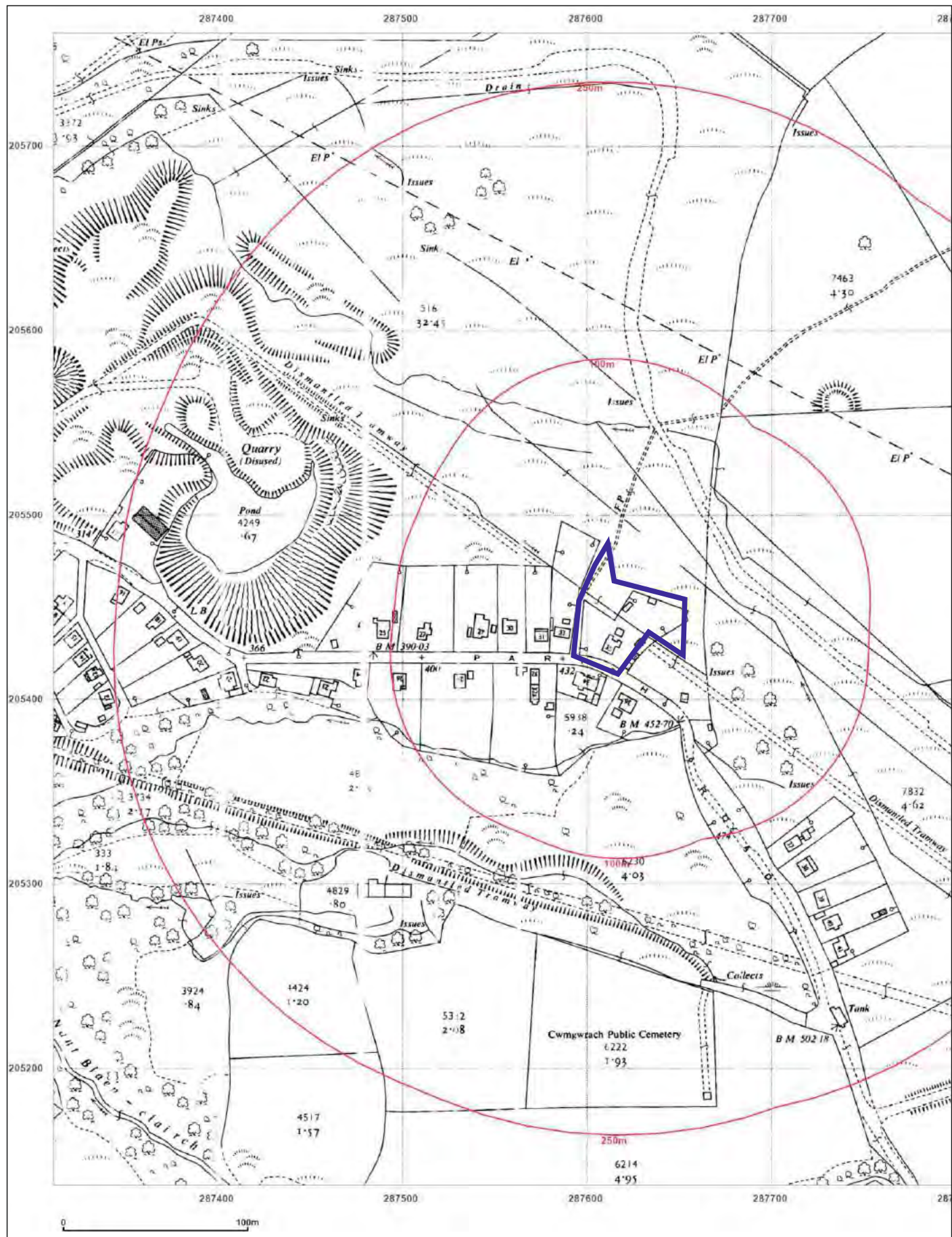


FIGURE 7
THE SITE IN 1962

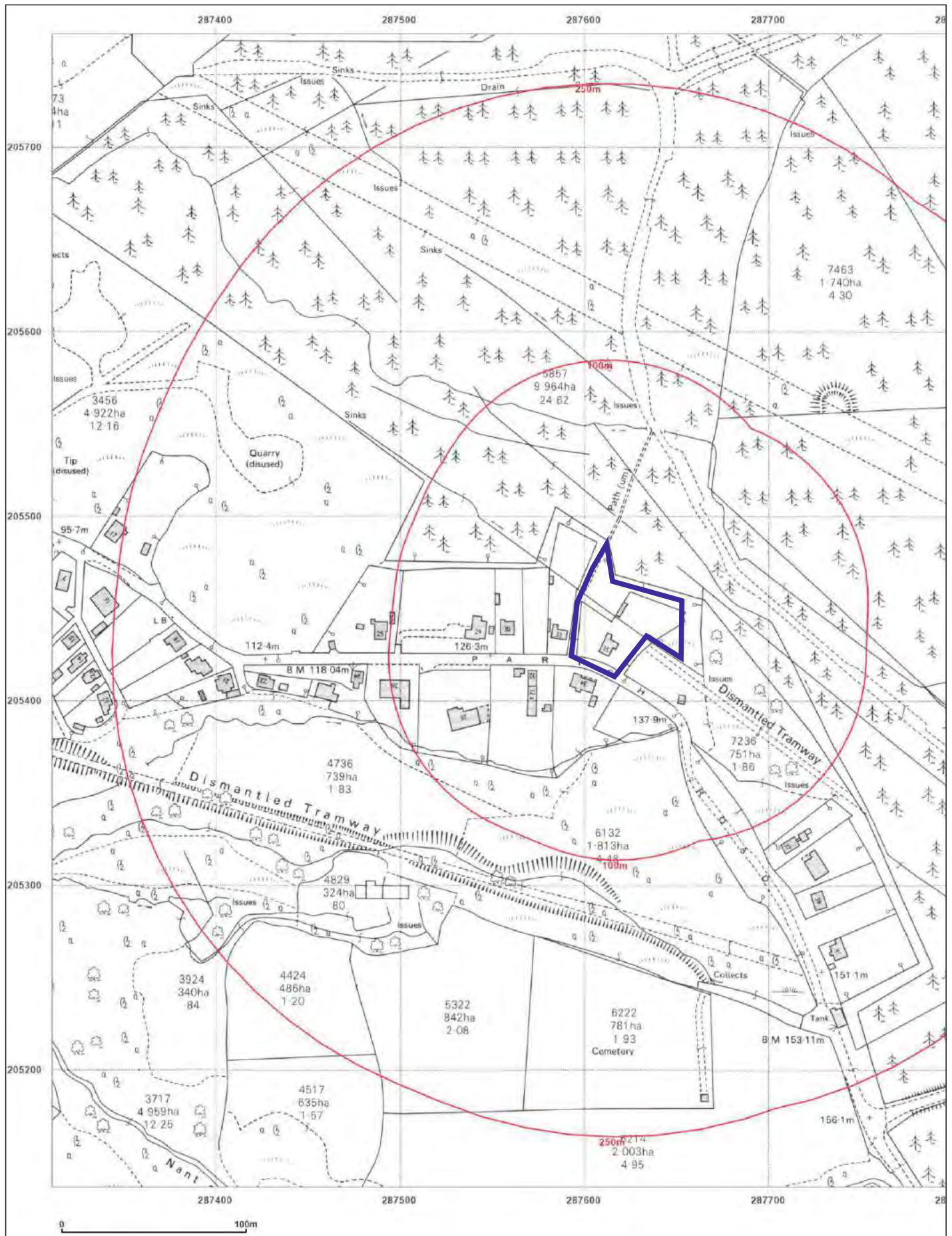


FIGURE 8
THE SITE IN 1984



FIGURE 9
THE SITE IN 2003

5. GEOLOGY

The geology under this (or any other) site can usually be divided into two components. The bedrock and the superficial deposits (including Made Ground) overlying it. For a contaminated land study the superficial deposits are the more important of the two as they are the shallowest. This means they are the most likely to be impacted by contamination, and indeed with Made Ground, can themselves be a source of contamination. The shallowest soils are likely to have a pathway to above-ground receptors. The deeper underlying geology will influence the Hydrogeology and controlled waters. A Geosight report was purchased to obtain geological information for the Phase 1. It is included in full in Appendix A. The author has previously carried out an intrusive site investigation using rotary drilling. A full Validation Report was produced for the Coal Authority. This report drew on archive material from other sources. These included the B.G.S. Geoindex, the Geological Survey map that covers the site (SN 80NE) and the Memoirs of the Geological Survey, South Wales Coalfield, Part V, The Country around Merthyr Tydfil). As a result there is a very good understanding of the site geology

Superficial Deposits (Natural Ground only)

Figure 10 is the 1:50,000 Superficial Deposits map taken from the B.G.S. Geoindex. The broad yellow ribbon north of the site is alluvium. This will be sand and gravel from the reworking of glacial deposits by the River Neath. The orange areas are alluvial fans produced by tributaries of the main river. The blue colour beneath the site is Devensian Diamicton. Formerly known as boulder clay, the material is characteristically a poorly sorted mixture of gravel, cobbles and boulders with a sandy silty clay matrix. It is usually fairly impermeable although this may vary along fissures and coarser lenses. The junctions between the different deposits are shown as sharp lines but they are more likely to be gradational. The fact that Diamicton was present on the site was proved by the drilling. The Diamicton was 9.4m-10.4m thick above rockhead. A thin layer of Made Ground at ground level was noted. This was less than a metre thick. Rotary drilling is not ideal for the precise identification of Made Ground but it appeared to be mainly black granular material, possibly ash or colliery spoil. On a site this small the Made Ground is unlikely to be recorded on mapping. The B.G.S. Geoindex is the basis of the Made Ground map in Figure 11 taken from the Geosight Report. This shows considerable areas of Made Ground surrounding

the site in all directions. These are a mixture of colliery waste and Ironstone mining to the north and west and areas of opencast mining to the southeast.

Solid (Bedrock) Geology:-

Figure 12 is an extract of the six-inch Geological Survey sheet of the area (SN 80NE). The memoirs state that the bedrock beneath the site is of Upper Carboniferous (Coal Measure) age. More specifically the site is underlain by beds of the Lower Coal Measures. These are undivided in South Wales. The Geological Survey sheet is at 1:10,560 scale and shows the geology, and in particular seam outcrops, in detail. Figure 12. shows a seam (Bluers) outcropping southwest of the site and a second (Gnapiog) well to the northwest. A third seam (Rhyd) is shown outcropping in the ravine of the Nant Blaengwrach. If this outcrop was projected parallel to the Bluers it would closely approach the site. Figure 13 is a section of the stratigraphic column from SN 80NE. The approximate level of the site is marked. The Bluers Seam outcrops above the site and can have no influence on it. The site is underlain by the Rhyd, Grey, Lower and Gnapiog, three of which are described as "thin". There is no doubt that the Gnapiog correlates with the Garw of the wider coalfield. The Ironstone veins that were the target of the primitive surface mining seen on the historical O.S. are concentrated above the Gnapiog Seam. The Rhyd is shown as 2' (0.61m) thick, but it should be borne in mind that this is an average covering the entire 25 km² map sheet. In the ravine the survey measured it as 1' (0.3m). This latter figure is approaching the limit of economic underground working.

The superfcials consisted of 10m of Glacial Drift. The solid strata was predominantly argillaceous with some subordinate thin sandstones. This is typical of the Lower Coal Measures. One intact thin (0.4m) coal seam was seen in all four boreholes at depths between 13.4m-17.1m. The argillaceous strata proved by the boreholes is typical of the Lower Coal Measures. These contained extremely productive coal seams over much of the South Wales Coalfield. On the southeast slopes of the Neath Valley, they are relatively barren. It could be speculated that this is due to the nearby large Vale of Neath Disturbance. However, the Middle Coal Measures are unaffected and so the cause is likely to be down to contemporaneous deposition conditions. The coal seam seen in the boreholes was tentatively identified as the Rhyd. The position, dip and seam thickness agree closely with the geological desk study above. There are only thin, unworkable seams below the end borehole depths of BH1 and 2. The Gnapiog was worked to a limited extent from outcrop alongside the Ironstone veins.

These are far below the site both stratigraphically and topographically. The site investigation concluded there is no threat to ground stability from mining legacy issues at the site. The results of gas monitoring during the investigation will be described in the appropriate section.

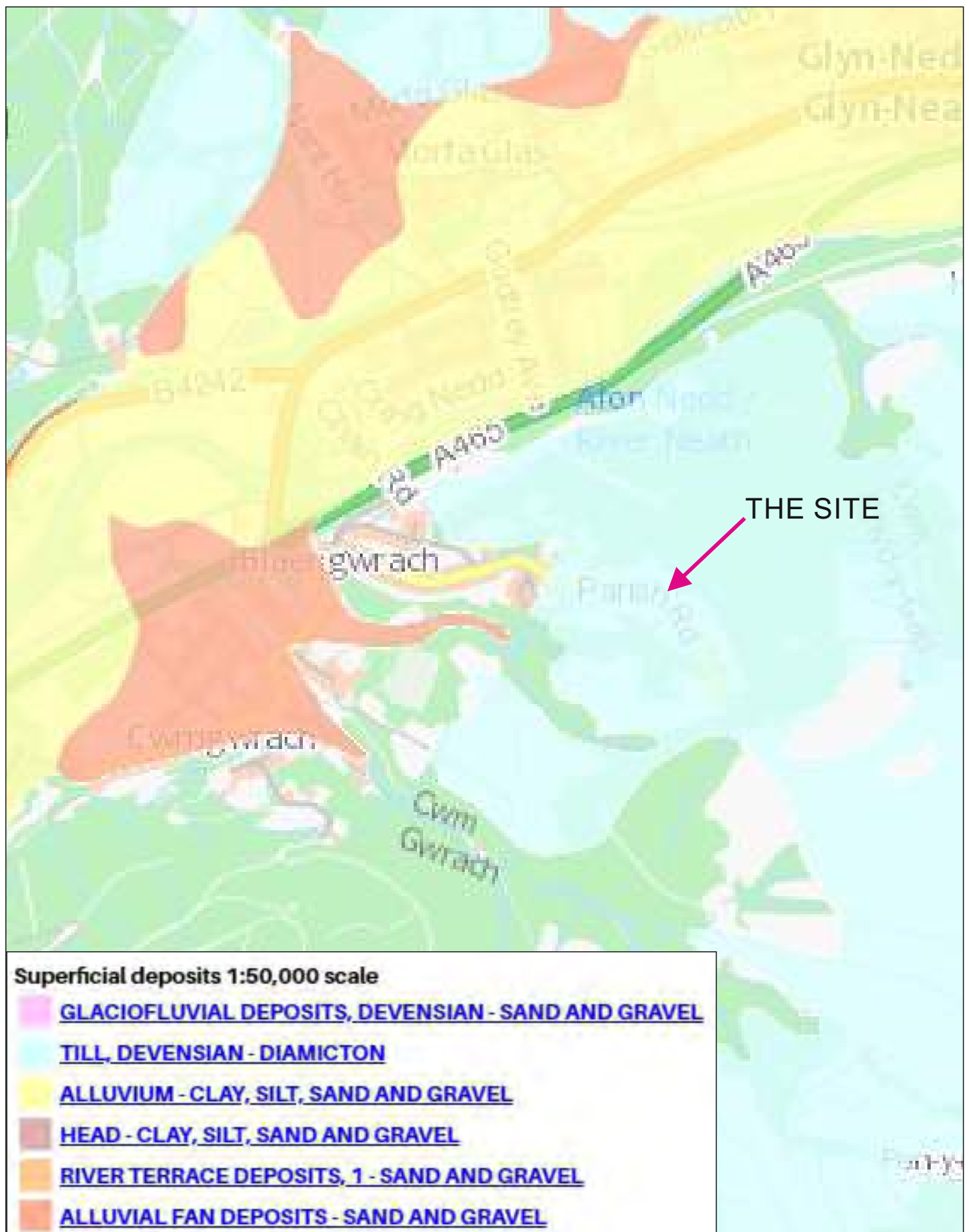


FIGURE 10
B.G.S. GEOINDEX 1:50,000 MAP OF SUPERFICIAL DEPOSITS.

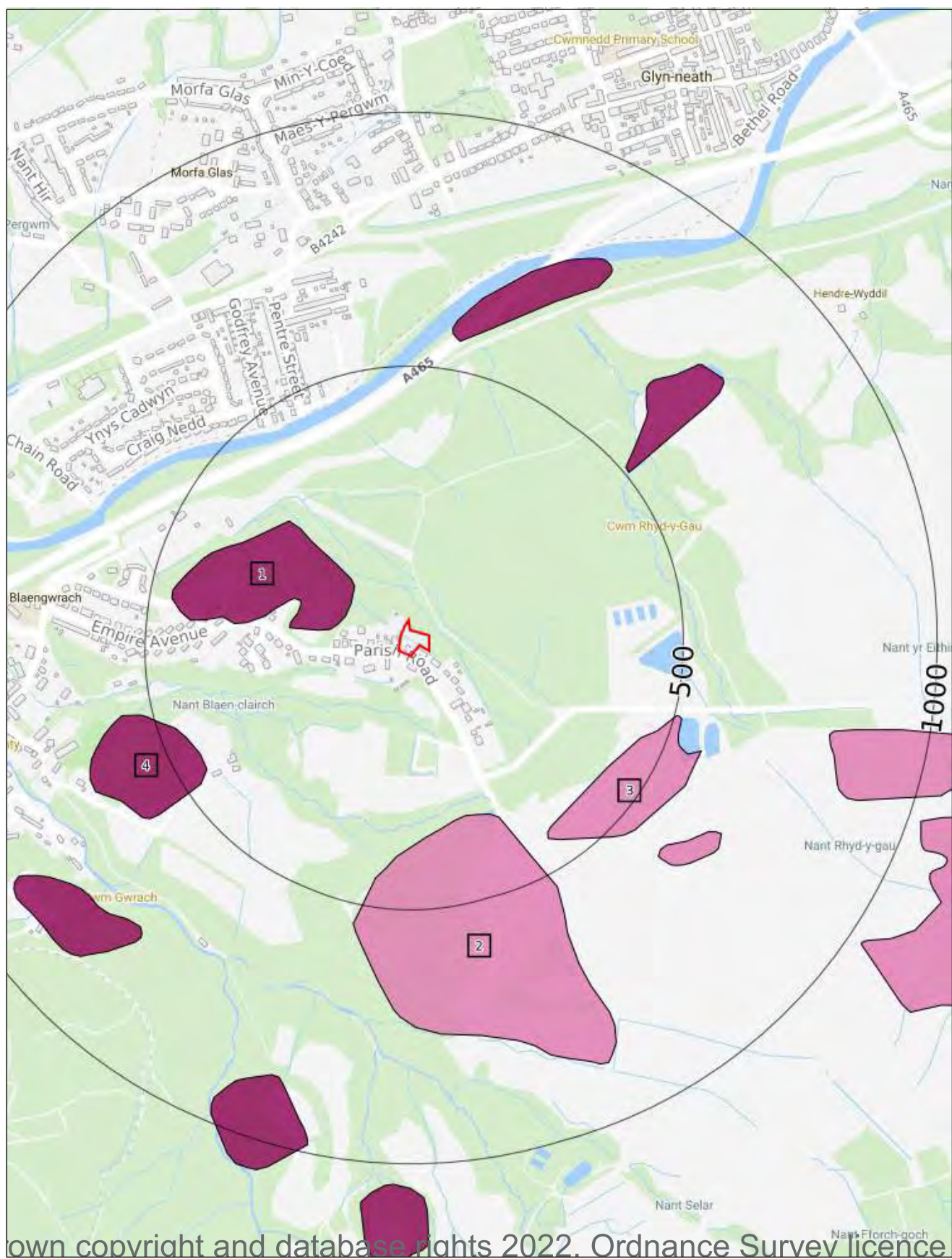
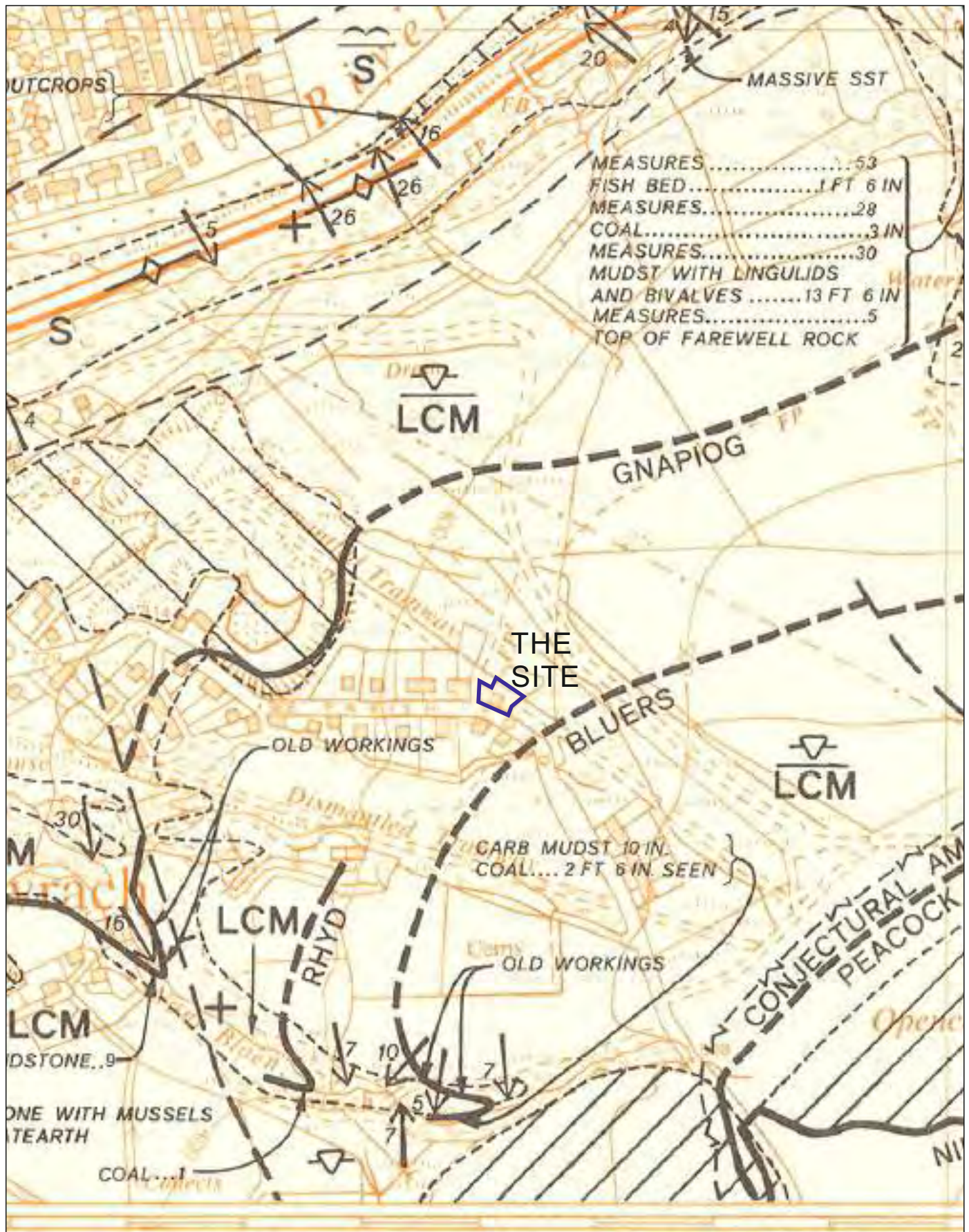


FIGURE 11

MAP OF MADE GROUND FROM THE GEOINSIGHT REPORT.



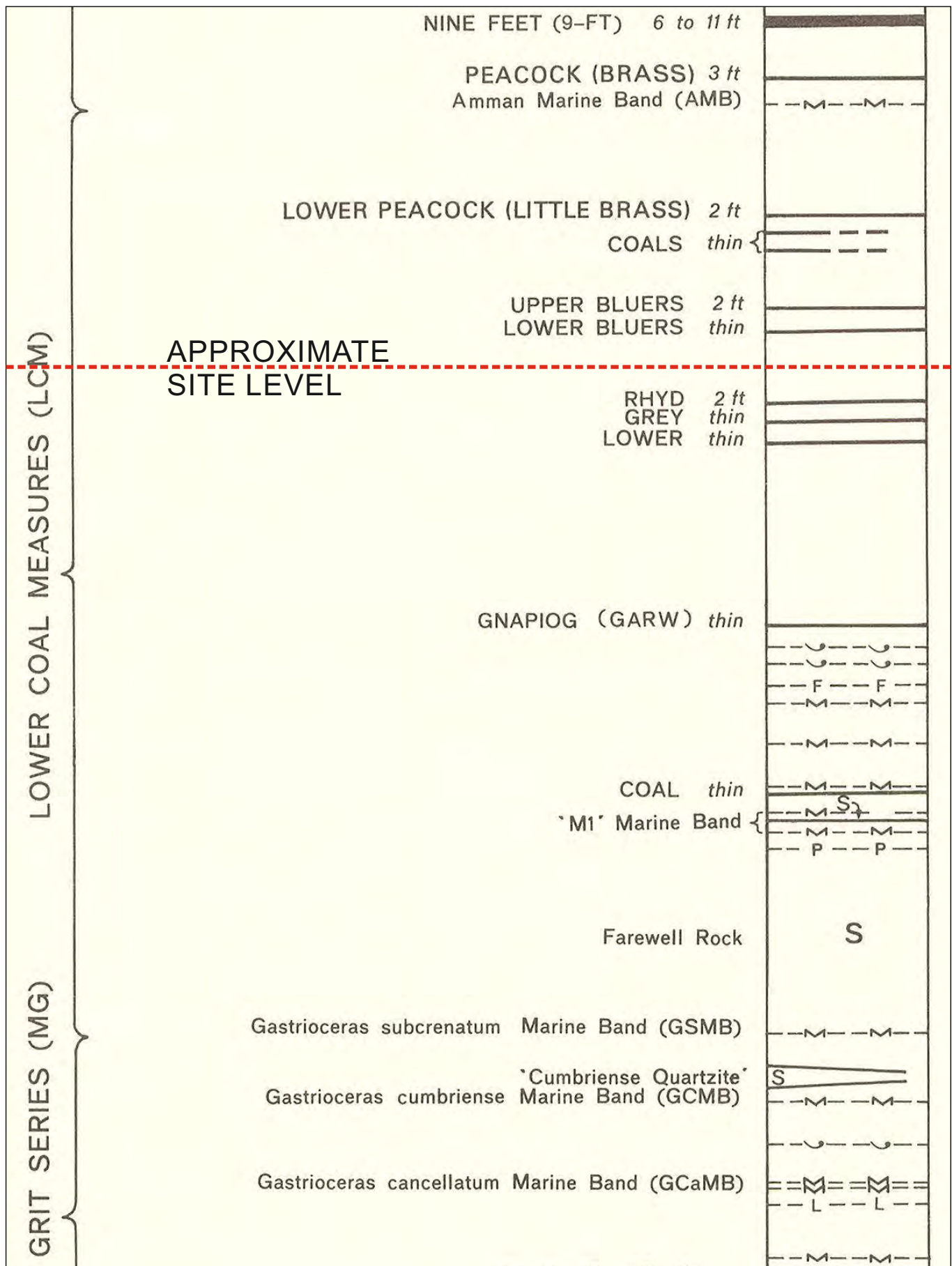


FIGURE 13
SECTION OF THE STRATIGRAPHIC COLUMN FROM SN 80NE.
THE APPROXIMATE SITE LEVEL IS MARKED.

6. HYDROGEOLOGY

In the past when compiling a Part 1 Desk Study the necessary information about Hydrogeology could be obtained from the Environment Agency. In Wales this is no longer the case due to the N.R.W. (to whom the responsibilities of the E.A. have been devolved) failing to publish this information to date. It is now necessary to purchase the information off a private organisation such as Groundsure. This has been done for this report and the full Enviroinsight report is attached as Appendix A. All the information in the following sections has been taken from the report.

The Superficial Aquifer map for the site is on page 33 of the Enviroinsight Report. Figure 14 is taken directly from the report. The aquifer map mimics the superficial deposits map in Figure 10 almost exactly. The Diamicton underlying the site has a Secondary Aquifer-Undifferentiated classification (shown as yellow). This classification is used when it is not possible to assign A or B to a site. Formerly these would have been either Minor or Non-Aquifers. The classification is due to the nature of the underlying Devensian Till/ Diamicton. Formerly known as Boulder Clay, the material is a chaotic, poorly sorted jumble of coarse sediments ranging from sand to boulder size. There is a variable, but fairly high proportion of silt and clay grade material. This makes it generally impermeable, although water does travel through fissures and coarser layers. The Alluvium north of the site in the Neath Valley has a Secondary A classification (coloured red). This means the superficial deposits have permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These were generally formerly classified as Minor Aquifers.

Page 35 of the Enviroinsight Report shows the bedrock aquifer classification. The entire area of the map is Secondary (A). For this reason it is not reproduced here. Formerly known as Minor Aquifers the official definition is:- permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow in rivers. This reflects the nature of the Lower Coal Measures in the area. Although predominantly argillaceous, there are permeable sandstone layers such as the Meadow Sandstone within it. These sandstones have a low porosity but are highly permeable due to the well-developed jointing which allows high flow rates. However, because of the relative abundance of water in South Wales the

only groundwater abstractions tend to be private wells on properties remote from mains supply

7. HYDROLOGY AND WATER QUALITY

The Ordnance Survey Water Network Mastermap is on page 28 of the report. The stream running through the site is wrongly recorded as culverted. There are multiple other small streams within 250m, all running northwest to the River Neath. There are also artificial ditches and ponds connected to the drainage of reinstated opencast mining within 500m of the site. The nearest substantial WFD water body is the River Neath. At its closest to the site it is 437m to the northwest. The site is within the Neath (conf. with Need Fechan and Mellte) Water Body Catchment Area. The Operational Catchment is Neath, and the Management Catchment is Tawe to Cadoxton.

The 2016 classification of the Neath Catchment is Ecological- Good, Chemical rating- Good and overall rating- Good. The nearest monitoring point is unknown.

The Swansea Carboniferous Coal Measures 2017 groundwater rating is Overall- Poor, Chemical rating- Poor and Quantitative rating-good.

8. ABSTRACTIONS

The Enviroinsight report states that there are no current groundwater abstraction licences within 2000m of the site. There are two Surface Water Abstraction Licences 1700 and 1841m west of the site. These were for dust suppression at the Unity Mine. Since the mine is now closed it is highly unlikely they are being used. There are no Potable abstractions within 2000m and no Source Protection Zones, or Source Protection Zones within Confined Aquifer within a 500m radius of the site.

9. POLLUTION INCIDENTS

There has been a single Environment Agency/Natural Resources Wales Recorded Pollution Incident within 500m of the site. This was 458m northwest of the site and was discharge of raw sewage. This will have no bearing on the site. There are no sites designated as Part 2a contaminated land within 500m of the site. There are no COMAH sites within 500m. There are no I.P.C. authorisations, Part A (1) or I.P.P.C. Authorised activities. There are no Red List discharge consents or Dangerous/Radioactive Authorisations within 500m. There are no List 1 or List 2 Dangerous Substance Inventory Sites within 500m of the site. There are no Part A (2) and Part B Activities within 500m of the site.

There are two licensed water company sewage discharge consents within 500m of the site. Given Welsh Water's ongoing improvement program it is unclear if these are still valid. There are also two minewater discharge consents from Sellar Opencast 300m southeast and 495m east of the site. Both have been revoked.

10. LANDFILL

There are no active or recent landfills within 500m of the site. All databases were searched including the B.G.S and E.A./N.R.W. Local Authority and historic mapping records. The report states there were two very minor landfills 365m and 467m northwest of the site. The source of this information is given as 1962 mapping and a check on 1:10,560 map for this date shows this to be correct. The positions are shown as 4 and 5 in Figure 15. This was taken from page 23 of the report. The larger hatched area 120 northwest of the site is not a landfill but refers to the Environmental Permit taken out for the reinstatement of the old Ironstone workings. 2 and 4 (shown as points) are waste exemption licences for using imported soil for construction purposes.

11. FLOOD RISK

Flood risk for the site will be dealt with as a separate matter for the planning application. For a Phase 1 report the risk of flooding of possibly contaminated land needs to be considered. There are no flood risk zones within 50m. there are no historical flood records within 250m. The surface water flooding rating is negligible for the 1 in 1000 year return period. The groundwater flooding map is on page 51 of the Enviroinsight Report. The risk is low or negligible for everywhere within 250m of the site.

12. ECOLOGICAL AND ARCHAEOLOGICAL CONSIDERATIONS

There are no known archaeological considerations. There is an S.S.S.I (Cwm Gwrelych and Nant Llyn Fach) 1684m northeast of the site. There are 147 areas of ancient woodland within 2000m surrounding the site in all directions. The closest is 34m south.

13. PREVIOUS CONTAMINATION STUDIES

None recorded.

14. LPA AND BUILDING CONTROL RECORDS

It is not anticipated that N.P.T. will hold any planning or building control records beyond the current application.

15. CONTAMINANTS OF CONCERN AND SOURCE AREAS

There have been no contaminative past land uses close to the site. A tramway formerly ran through the site on an embankment. This would have been constructed of locally derived Diamicton or colliery waste. Both can be considered inert, although colliery waste often has elevated levels of Arsenic and Lead. This is a natural phenomenon reflecting their naturally high concentrations in Coal Measure bedrock. It is possible there may be ash/clinker present. The earlier drilling work suggested this. Possible contaminants could then include metals and PAH compounds. Petroleum Hydrocarbons are considered highly unlikely to be present. It is possible that Asbestos may be present in the soil at any site. The site itself is very compact. There are no specific areas of contamination that can be differentiated within the site. Table 1 overleaf is a qualitative risk assessment of the site.

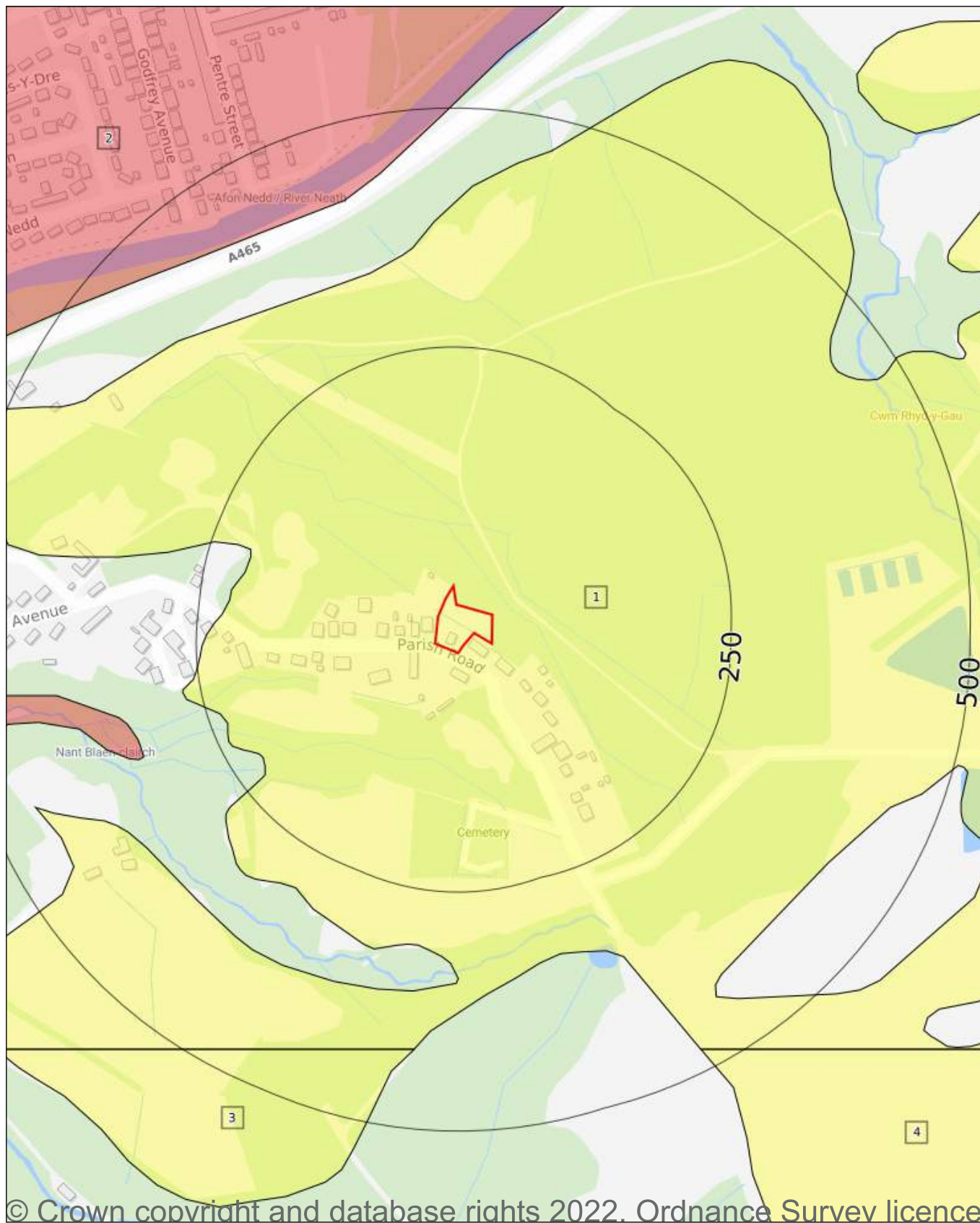


FIGURE 14
1:50,000 MAP OF SUPERFICIAL AQUIFERS
FROM THE ENVIROINSIGHT REPORT.

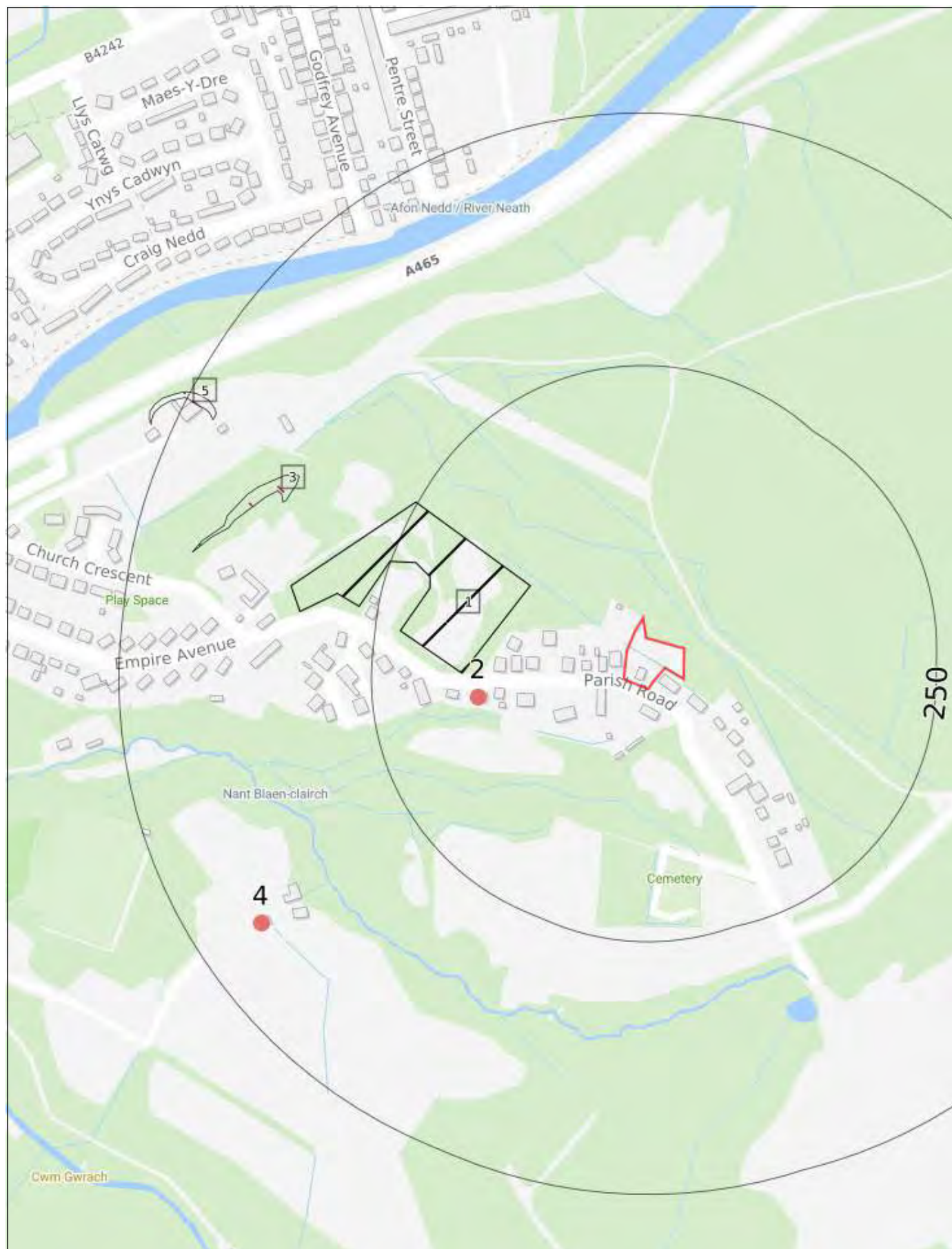


FIGURE 15
LANDFILL MAP FROM THE ENVIROINSIGHT REPORT

TABLE 1						
INITIAL QUALITATIVE HUMAN HEALTH RISK ASSESSMENT AND ENVIRONMENTAL RISK ASSESSMENT AT PARISH ROAD, CWMGWRACH.						
CONTAMINANT SOURCE	PATHWAYS	RECEPTORS	POTENTIAL SEVERITY	PROBABILITY OF RISK	LEVEL OF RISK	FURTHER ACTION REQUIRED
ON SITE: POTENTIAL CONTAMINATION IN SOILS/MADE GROUND. POSSIBLY ELEVATED LEVELS OF METALS AND PAH	INGESTION, DERMAL CONTACT, INHALATION	FUTURE END USERS, VISITORS	MEDIUM	MEDIUM	MEDIUM	THERE IS A POSSIBILITY OF MADE GROUND BEING A SOURCE OF CONTAMINATION ON SITE. PAST USE OF THE SITE AS A TRAMLINE IS ALSO A POSSIBLE SOURCE OF CONTAMINATION. FURTHER QUANTIFICATION REQUIRED VIA AN INTRUSIVE INVESTIGATION
	CONTACT WITH CONTAMINATED GROUNDWATER	FUTURE END USERS, VISITORS AND CONSTRUCTION WORKERS	MEDIUM			
	PERMEATION OF WATER PIPES	FUTURE END USERS AND SITE VISITORS	MEDIUM			
	INGESTION OF HOME GROWN PRODUCE	FUTURE END USERS	N/A			
ON SITE: ASBESTOS AT OR NEAR GROUND SURFACE IN SOILS/MADE GROUND	INHALATION OF FIBRES IN AIRBORNE DUST	FUTURE END USERS AND SITE VISITORS	HIGH	MEDIUM	MEDIUM	POSSIBLE SOURCES OF ASBESTOS ON SITE UNLIKELY BUT FURTHER QUANTIFICATION REQUIRED. INTRUSIVE INVESTIGATION WILL INCLUDE AN ASBESTOS SCREEN.
		CONSTRUCTION WORKERS	HIGH	MEDIUM	MEDIUM	
ON SITE: POTENTIAL CONTAMINATION IN SOILS/MADE GROUND. POSSIBLY ELEVATED LEVELS OF CONTAMINANTS	RUN OFF	SURFACE DRAINAGE	MEDIUM	MEDIUM	MEDIUM	POSSIBILITY OF CONTAMINATION IN MADE GROUND ON SITE MEANS FURTHER QUANTIFICATION OF THE THREAT TO CONTROLLED WATERS/ ENVIRONMENTAL RECEPTORS MAY BE NECESSARY DEPENDING ON SOIL ANALYSIS RESULTS.
	MIGRATION THROUGH SOIL VIA LEACHING	SHALLOW GROUNDWATER				
	ONWARD MIGRATION OF GROUNDWATER	BEDROCK AQUIFER				

16. GROUND GAS POTENTIAL

The updated (2017) WLGA & NRW guidelines on the Development of Land Affected by Contamination state that “Ground gas is a contaminant and should be considered as a potential contaminant source in the preliminary risk assessment on sites where gas generation and /or migration is suspected”.

It is highly unlikely there are organic superficial deposits at the site. It is known there is some Made Ground at the site. The precise thickness, extent and the composition is unknown. It is considered unlikely that the Made Ground contains biodegradable material, or that it is of sufficient thickness to be a credible source of ground gas. However, since an intrusive investigation will be the inevitable conclusion of this Phase 1 the on-site generation of Ground Gas can be quantified during the site investigation. On site generation will not be completely discounted at this stage.

Moving on to the risk of migration from elsewhere, the natural superficial deposits beneath the site are likely to be impermeable and are unlikely to allow gas migration from a viable source, but the possibility needs to be considered. The two most common sources for ground gas migrating onto a site from elsewhere are landfill sites and mines, particularly coal mines.

Landfill sites have been found to be sources of gases, particularly methane, caused by the breakdown of organic material contained within them. There have been instances where migration of these gases has caused explosions or asphyxiation at receptors off site. These occurrences are rare and usually outside Britain in completely unregulated circumstances. In contrast, landfills in Britain have been tightly regulated and managed for many years, and a sense of perspective is necessary when assessing the threat from a landfill close to a site. At the present time “close” is generally being taken to mean 250m, although there are no specific studies that have arrived at this figure. The figure dates to a 2003 E.A. publication “Building on or within 250m of a Landfill”. The document and measurement were subsequently adopted in L.P.A. planning guidance. The original document itself stresses that conditions can vary enormously. In particular, the document acknowledges that there must be viable pathways from any potential source of Landfill gases to a receptor, for there to be any risk. As mentioned in Section 10, there are only inconsequential landfills within 500m of the site. These both date from the 1960s. From the results of many surveys carried out on landfill sites it is apparent there are large differences between pre-1980s refuse tips and more recent landfills. Pre-1980’s tips contained very little organic matter, and

as a result produced very little gas. There were many reasons for this, but chiefly it was a combination of harsher socio-economic conditions and the ubiquitous presence of household coal fires. Little food was thrown away, plastic packaging was rare and much of any waste was burned in the home. As a result the main constituents of the older “ash tips” were precisely that-ash and clinker with smaller amounts of glass and metal. Other characteristics were that they were situated within, or just outside urban areas, had a limited lifespan and seldom had a greater thickness than 3m.-4m. The exception to this would be infilled quarries or clay pits. BS8576:2013 recognises the observations above. In the decision matrix for gas monitoring, landfills dating from 1945-mid 60’s are described as having a low potential for gas generation. The two landfills situated over 250m from the site both fall into the profile described. There is no potential for gas generation. Even if there was, the site is underlain by 10m of impermeable Diamicton and separated from the landfills by considerable distances including residential areas. There is no viable pathway to the site. The migration of Landfill Gas to site can be completely discounted at this stage.

This leaves the risk from Coal Mining. The geological desk study contained in this Phase 1 established that the Lower Coal Measures beneath the site were unusually barren compared to the majority of the coalfield. Unfortunately the original Coal Mining Risk Assessment for the site commissioned by the planning applicant was of poor quality. It was written by persons with very little knowledge of the South Wales Coalfield and concluded that an intrusive site investigation was required. This then became a planning condition and the author was commissioned by the applicant to design and carry out the investigation. The details of the investigation have already been discussed in Section 5. The method of investigation was rotary boreholes. These were done under the Coal Authority permit system. The permit system recognises the risk from mine gases. As a permit condition, the author (as the supervising engineer and site agent) was required to carry out continuous gas monitoring. This was done with a Draeger X8000 portable gas detector. The detector was set up to measure Methane, Carbon Monoxide and Hydrogen Sulphide, the commonest mine gases. In addition, as a safety measure the monitor also measured Oxygen levels. The level of detection for all gases was 1 p.p.m. The drill crew were required to wear personal gas monitors throughout drilling operations. No mine gases were detected throughout the three-day siteworks. Oxygen levels did not vary from normal atmospheric level. (20.9%) The risk from mine gases can be completely discounted at this stage.

Finally the site is within an area where less than 1% of properties are affected by Radon.

A summary of the Ground Gas Risk Assessment of the site is contained in Table 2 overleaf. A summary of the Quantitative Risk Assessment (Table 1) and Ground Gas Risk Assessment of the site are contained in Figure 16. This is an initial Conceptual Site Model (C.S.M.) of the site.

TABLE 2 INITIAL GROUND GAS RISK ASSESSMENT PARISH ROAD, CWMGWRACH					
SOURCE	PATHWAY	RECEPTOR	CONSEQUENCE CLASSIFICATION	RISK	FURTHER ACTION
HAZARDOUS GROUND GAS FROM OFF SITE SOURCE	INHALATION, INJURY FROM EXPLOSION	SITE USERS, VISITORS, CONSTRUCTION WORKERS	SEVERE	LOW. NO POSSIBILITY OF OFF SITE GENERATION OF LANDFILL GASES OR MINE GASES MIGRATING ONTO SITE.	THE RISK REQUIRES NO FURTHER QUANTIFICATION.
HAZARDOUS GROUND GAS FROM OFF SITE SOURCE	DAMAGE FROM EXPLOSION	BUILDINGS	SEVERE		
HAZARDOUS GROUND GAS FROM ON SITE SOURCE	INHALATION, INJURY FROM EXPLOSION	SITE USERS, VISITORS, CONSTRUCTION WORKERS	SEVERE	MEDIUM. SLIGHT POSSIBILITY OF ON SITE GENERATION FROM MADE GROUND.	THE RISK REQUIRES FURTHER QUANTIFICATION DURING THE INTRUSIVE INVESTIGATION
HAZARDOUS GROUND GAS FROM ON SITE SOURCE	DAMAGE FROM EXPLOSION	BUILDINGS	SEVERE		
RADON GAS	LONG TERM HAZARD FROM INHALATION	SITE USERS	SEVERE	LOW <1% LOCAL PROPERTIES ABOVE RADON ACTION LEVEL	NO RADON PROTECTION MEASURES REQUIRED

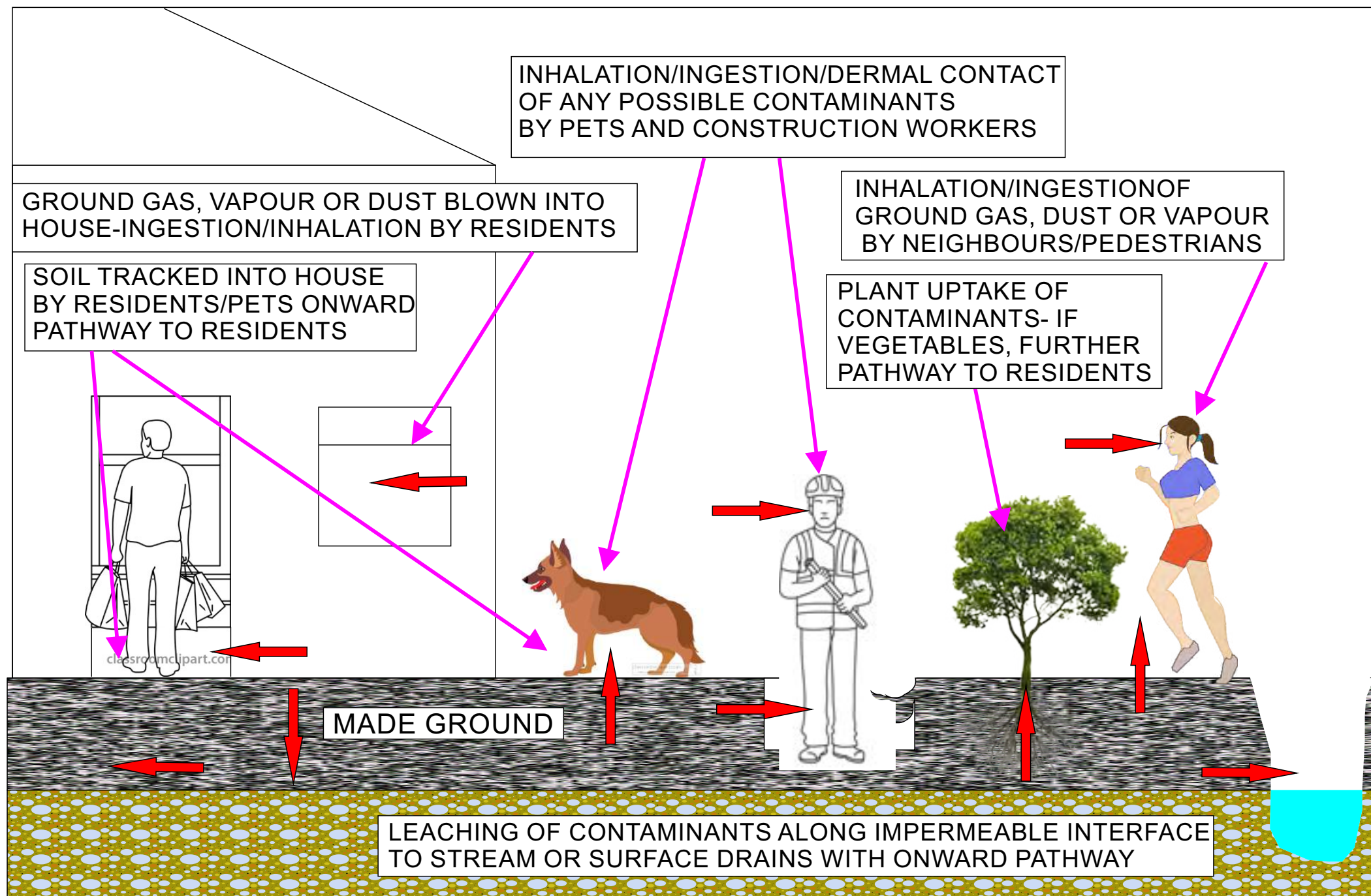


FIGURE 16
INITIAL CONCEPTUAL SITE MODEL SHOWING POSSIBLE SOURCE-PATHWAY-RECEPTORS

17. POTENTIAL POLLUTANT LINKAGES IN THE C.S.M.

POTENTIAL CONTAMINANT-PATHWAY-RECEPTOR LINKAGES FOR RESIDENTIAL PROPERTIES ADJACENT TO, OR BUILT ON CONTAMINATED LAND

PATHWAYS:-

VAPOUR/GROUND GAS-AIR-INHALATION OR ABSORPTION THROUGH OTHER MEMBRANES

SOIL- INHALATION, INGESTION OR DERMAL CONTACT

GROUNDWATER-INHALATION, INGESTION OR DERMAL CONTACT

SURFACE WATER-INHALATION, INGESTION OR DERMAL CONTACT

ALL THE ABOVE ARE CONSIDERED POSSIBLE PATHWAYS TO HUMAN OR ANIMAL RECEPTORS.

GROUNDWATER AND SURFACE WATER ARE RECEPTORS IN THEIR OWN RIGHT (CONTROLLED WATERS) AS ARE PLANTS, ANIMALS AND THE ENVIRONMENT.

HUMAN RECEPTORS ON THE SITE WOULD INCLUDE:-

CONSTRUCTION WORKERS

USERS OF THE COMPLETED AMENITY

NEIGHBOURS

PASSING PEDESTRIANS/ WALKERS

TRESPASSERS

Surface water and groundwater make up the controlled waters considered as possible receptors for this site conceptual model. The reason for this is the possible leaching of contaminants from any Made Ground by rainwater making its way into the watercourse on the site. Onward migration could then also possibly reach surface water such as the River Neath and more permeable aquifers. Surface run-off could also be considered as a possible pathway via entering nearby surface water drains. Following the results of permeability testing on the site, downward migration through the underlying Secondary Undifferentiated Aquifer and into the underlying Secondary (A) Bedrock Aquifer is considered impossible. Ground gas from an on-site source is still being considered an unlikely possibility in the initial C.S.M until Made Ground at the site can be examined in detail.

18. CONCLUSIONS

This Phase 1 desk study has used extensive research to conclude there is an unquantified risk of soil contamination within Made Ground at the site. This requires further investigation. There is also a slight risk from on-site gas production. The latter risk is considered very low but needs to be quantified before it can be completely discounted. The risk of gas migration from elsewhere has been completely discounted. Therefore, although this Phase 1 report should be considered sufficient to ensure the discharge of Condition 4.1 there is little point in doing so at present. It is clear from Tables 1 and 2 and the C.S.M. in Figure 16 that an intrusive investigation (Phase 2) as detailed in Condition 4.2 will need to be carried out. Following an analysis of the results of this a quantitative assessment of any risk to possible receptors will need to be carried out as per condition 4.3. The results of this will then determine what action (if any) will be required to discharge Conditions 4.4 and 5.

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

10/08/2023

APPENDIX A
GROUNDSURE ENVIROINSIGHT
AND GEOINSIGHT REPORT
35 PARISH ROAD
CWMGWRACH

35, PARISH ROAD, BLAENGWRACH, SA11 5SW

Order Details

Date: 09/11/2022
Your ref: CWMGWRACH
Our Ref: GS-9187397

Site Details

Location: 287618 205442
Area: 0.23 ha
Authority: [Castell-nedd Port Talbot - Neath Port Talbot County Borough](#)



Summary of findings

p. 2

Aerial image

p. 8

OS MasterMap site plan

p.13

groundsure.com/insightuserguide

Contact us with any questions at:

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	1.1	<u>Historical industrial land uses</u>	0	0	14	24	-
16	1.2	<u>Historical tanks</u>	0	0	2	1	-
16	1.3	Historical energy features	0	0	0	0	-
17	1.4	Historical petrol stations	0	0	0	0	-
17	1.5	Historical garages	0	0	0	0	-
17	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
18	2.1	<u>Historical industrial land uses</u>	0	0	26	35	-
21	2.2	<u>Historical tanks</u>	0	0	5	2	-
21	2.3	Historical energy features	0	0	0	0	-
22	2.4	Historical petrol stations	0	0	0	0	-
22	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
23	3.1	Active or recent landfill	0	0	0	0	-
23	3.2	Historical landfill (BGS records)	0	0	0	0	-
24	3.3	<u>Historical landfill (LA/mapping records)</u>	0	0	0	2	-
24	3.4	<u>Historical landfill (EA/NRW records)</u>	0	0	1	0	-
24	3.5	Historical waste sites	0	0	0	0	-
25	3.6	Licensed waste sites	0	0	0	0	-
25	3.7	<u>Waste exemptions</u>	0	0	1	1	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
26	4.1	<u>Recent industrial land uses</u>	0	0	2	-	-
27	4.2	Current or recent petrol stations	0	0	0	0	-
27	4.3	Electricity cables	0	0	0	0	-
27	4.4	Gas pipelines	0	0	0	0	-
27	4.5	Sites determined as Contaminated Land	0	0	0	0	-



27	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
28	4.7	Regulated explosive sites	0	0	0	0	-
28	4.8	Hazardous substance storage/usage	0	0	0	0	-
28	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
28	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
28	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
29	4.12	Radioactive Substance Authorisations	0	0	0	0	-
29	4.13	<u>Licensed Discharges to controlled waters</u>	0	0	0	6	-
30	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
30	4.15	Pollutant release to public sewer	0	0	0	0	-
30	4.16	List 1 Dangerous Substances	0	0	0	0	-
30	4.17	List 2 Dangerous Substances	0	0	0	0	-
31	4.18	<u>Pollution Incidents (EA/NRW)</u>	0	0	0	2	-
31	4.19	Pollution inventory substances	0	0	0	0	-
31	4.20	Pollution inventory waste transfers	0	0	0	0	-
32	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
33	5.1	<u>Superficial aquifer</u>	Identified (within 500m)				
35	5.2	<u>Bedrock aquifer</u>	Identified (within 500m)				
37	5.3	<u>Groundwater vulnerability</u>	Identified (within 50m)				
38	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
38	5.5	Groundwater vulnerability- local information	None (within 0m)				
39	5.6	Groundwater abstractions	0	0	0	0	0
40	5.7	<u>Surface water abstractions</u>	0	0	0	0	4
41	5.8	Potable abstractions	0	0	0	0	0
41	5.9	Source Protection Zones	0	0	0	0	-
41	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
42	6.1	<u>Water Network (OS MasterMap)</u>	2	7	19	-	-



45	6.2	<u>Surface water features</u>	1	4	16	-	-
45	6.3	<u>WFD Surface water body catchments</u>	1	-	-	-	-
45	6.4	<u>WFD Surface water bodies</u>	0	0	0	-	-
46	6.5	<u>WFD Groundwater bodies</u>	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
47	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
47	7.2	Historical Flood Events	0	0	0	-	-
47	7.3	Flood Defences	0	0	0	-	-
48	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
48	7.5	Flood Storage Areas	0	0	0	-	-
49	7.6	Flood Zone 2	None (within 50m)				
49	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
50	8.1	Surface water flooding	Negligible (within 50m)				
Page	Section	Groundwater flooding					
51	9.1	<u>Groundwater flooding</u>	Low (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
52	10.1	<u>Sites of Special Scientific Interest (SSSI)</u>	0	0	0	0	1
53	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
53	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
53	10.4	Special Protection Areas (SPA)	0	0	0	0	0
53	10.5	National Nature Reserves (NNR)	0	0	0	0	0
54	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
54	10.7	<u>Designated Ancient Woodland</u>	0	2	1	12	132
59	10.8	Biosphere Reserves	0	0	0	0	0
60	10.9	Forest Parks	0	0	0	0	0
60	10.10	Marine Conservation Zones	0	0	0	0	0
60	10.11	Green Belt	0	0	0	0	0
60	10.12	Proposed Ramsar sites	0	0	0	0	0



60	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
61	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
61	10.15	Nitrate Sensitive Areas	0	0	0	0	0
61	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
62	10.17	SSSI Impact Risk Zones	0	-	-	-	-
62	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
63	11.1	World Heritage Sites	0	0	0	-	-
63	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
63	11.3	National Parks	0	0	0	-	-
63	11.4	Listed Buildings	0	0	0	-	-
64	11.5	Conservation Areas	0	0	0	-	-
64	11.6	Scheduled Ancient Monuments	0	0	0	-	-
64	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
65	12.1	<u>Agricultural Land Classification</u>	Grade 4 (within 250m)				
66	12.2	Open Access Land	0	0	0	-	-
66	12.3	Tree Felling Licences	0	0	0	-	-
66	12.4	Environmental Stewardship Schemes	0	0	0	-	-
67	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
68	13.1	Priority Habitat Inventory	0	0	0	-	-
68	13.2	Habitat Networks	0	0	0	-	-
68	13.3	Open Mosaic Habitat	0	0	0	-	-
68	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
69	14.1	<u>10k Availability</u>	Identified (within 500m)				
70	14.2	Artificial and made ground (10k)	0	0	0	0	-
71	14.3	Superficial geology (10k)	0	0	0	0	-



71	14.4	Landslip (10k)	0	0	0	0	-
72	14.5	Bedrock geology (10k)	0	0	0	0	-
72	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
73	15.1	<u>50k Availability</u>	Identified (within 500m)				
74	15.2	<u>Artificial and made ground (50k)</u>	0	0	1	3	-
75	15.3	Artificial ground permeability (50k)	0	0	-	-	-
76	15.4	<u>Superficial geology (50k)</u>	1	0	0	2	-
77	15.5	<u>Superficial permeability (50k)</u>	Identified (within 50m)				
77	15.6	Landslip (50k)	0	0	0	0	-
77	15.7	Landslip permeability (50k)	None (within 50m)				
78	15.8	<u>Bedrock geology (50k)</u>	1	0	0	2	-
79	15.9	<u>Bedrock permeability (50k)</u>	Identified (within 50m)				
79	15.10	<u>Bedrock faults and other linear features (50k)</u>	0	1	3	10	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
81	16.1	BGS Boreholes	0	0	0	-	-
Page	Section	Natural ground subsidence					
82	17.1	<u>Shrink swell clays</u>	Very low (within 50m)				
83	17.2	<u>Running sands</u>	Very low (within 50m)				
84	17.3	<u>Compressible deposits</u>	Negligible (within 50m)				
85	17.4	<u>Collapsible deposits</u>	Very low (within 50m)				
86	17.5	<u>Landslides</u>	Low (within 50m)				
88	17.6	<u>Ground dissolution of soluble rocks</u>	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
89	18.1	Natural cavities	0	0	0	0	-
90	18.2	<u>BritPits</u>	0	0	1	2	-
90	18.3	<u>Surface ground workings</u>	0	0	28	-	-
92	18.4	<u>Underground workings</u>	0	0	5	4	22
93	18.5	Historical Mineral Planning Areas	0	0	0	0	-



93	18.6	<u>Non-coal mining</u>	1	0	0	1	1
94	18.7	Mining cavities	0	0	0	0	0
94	18.8	JPB mining areas	None (within 0m)				
94	18.9	<u>Coal mining</u>	Identified (within 0m)				
95	18.10	Brine areas	None (within 0m)				
95	18.11	Gypsum areas	None (within 0m)				
95	18.12	Tin mining	None (within 0m)				
95	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
96	19.1	<u>Radon</u>	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
97	20.1	<u>BGS Estimated Background Soil Chemistry</u>	1	1	-	-	-
97	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
97	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
98	21.1	Underground railways (London)	0	0	0	-	-
98	21.2	Underground railways (Non-London)	0	0	0	-	-
98	21.3	Railway tunnels	0	0	0	-	-
98	21.4	Historical railway and tunnel features	0	0	0	-	-
98	21.5	Royal Mail tunnels	0	0	0	-	-
99	21.6	Historical railways	0	0	0	-	-
99	21.7	Railways	0	0	0	-	-
99	21.8	Crossrail 1	0	0	0	0	-
99	21.9	Crossrail 2	0	0	0	0	-
99	21.10	HS2	0	0	0	0	-

Recent aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2022. All Rights Reserved.

Capture Date: 14/04/2020

Site Area: 0.23ha

Recent site history - 2017 aerial photograph



Capture Date: 17/06/2017

Site Area: 0.23ha

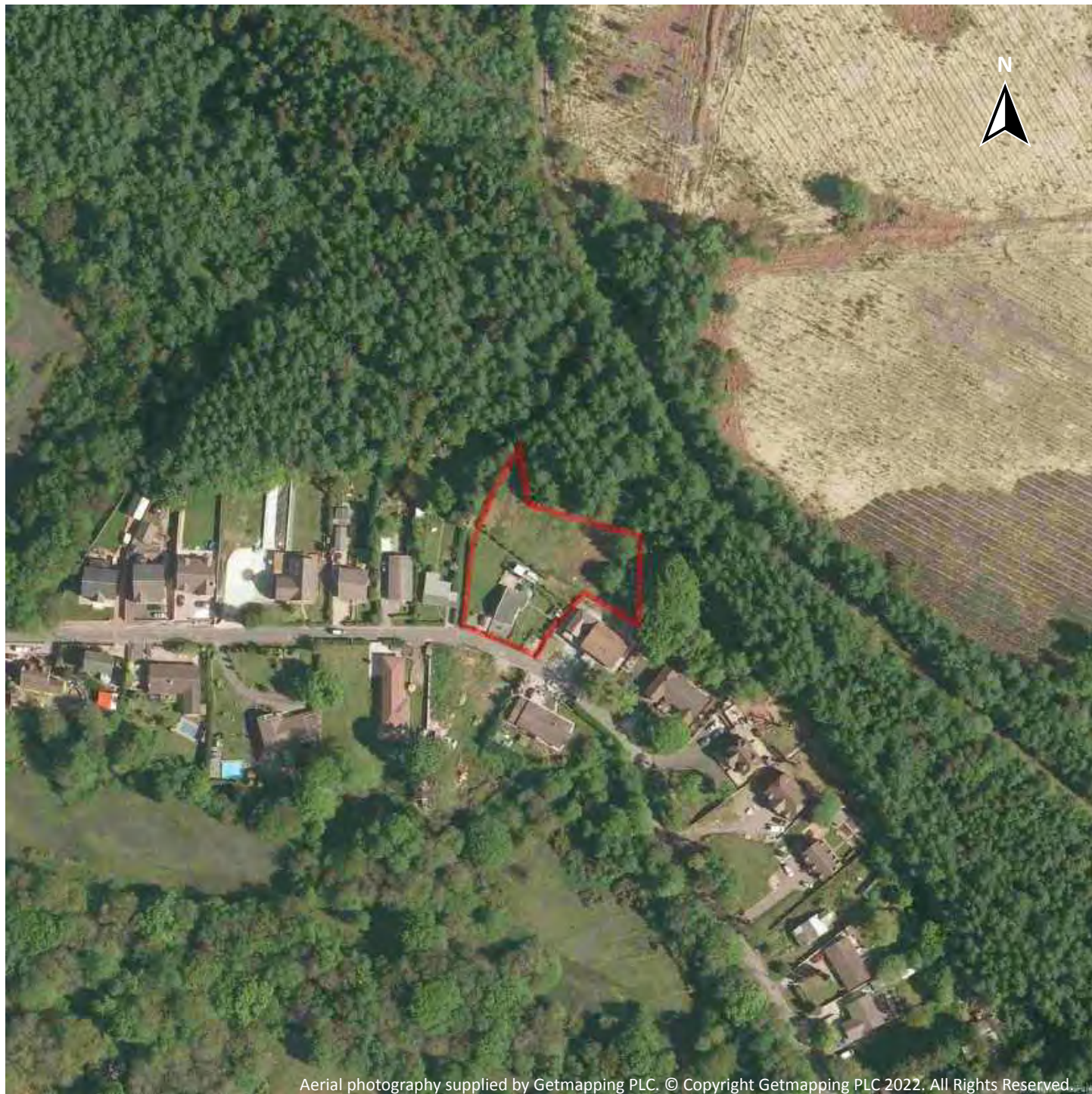
Recent site history - 2014 aerial photograph



Capture Date: 23/07/2014

Site Area: 0.23ha

Recent site history - 2010 aerial photograph



Capture Date: 22/05/2010

Site Area: 0.23ha

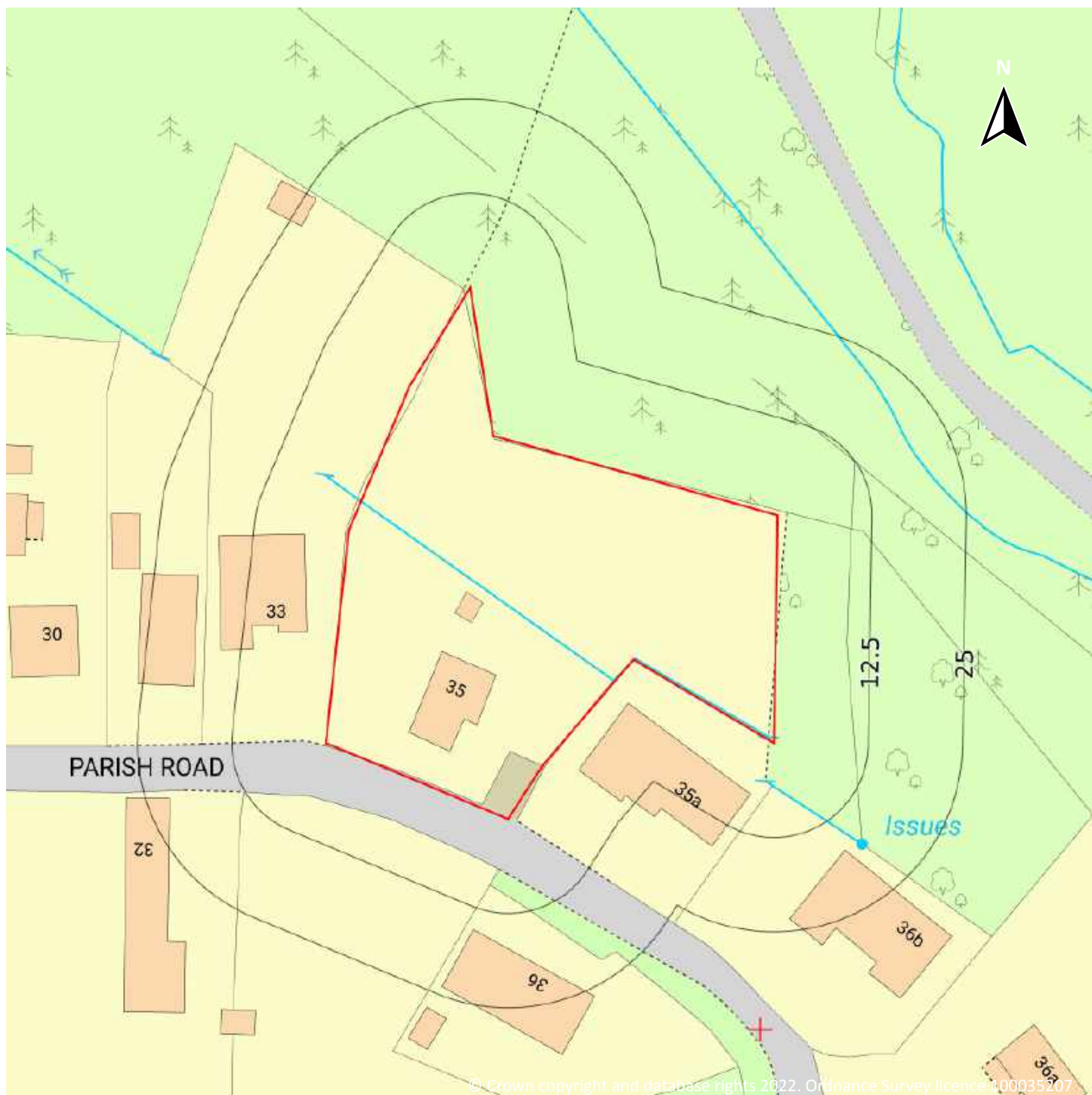
Recent site history - 2000 aerial photograph



Capture Date: 18/06/2000

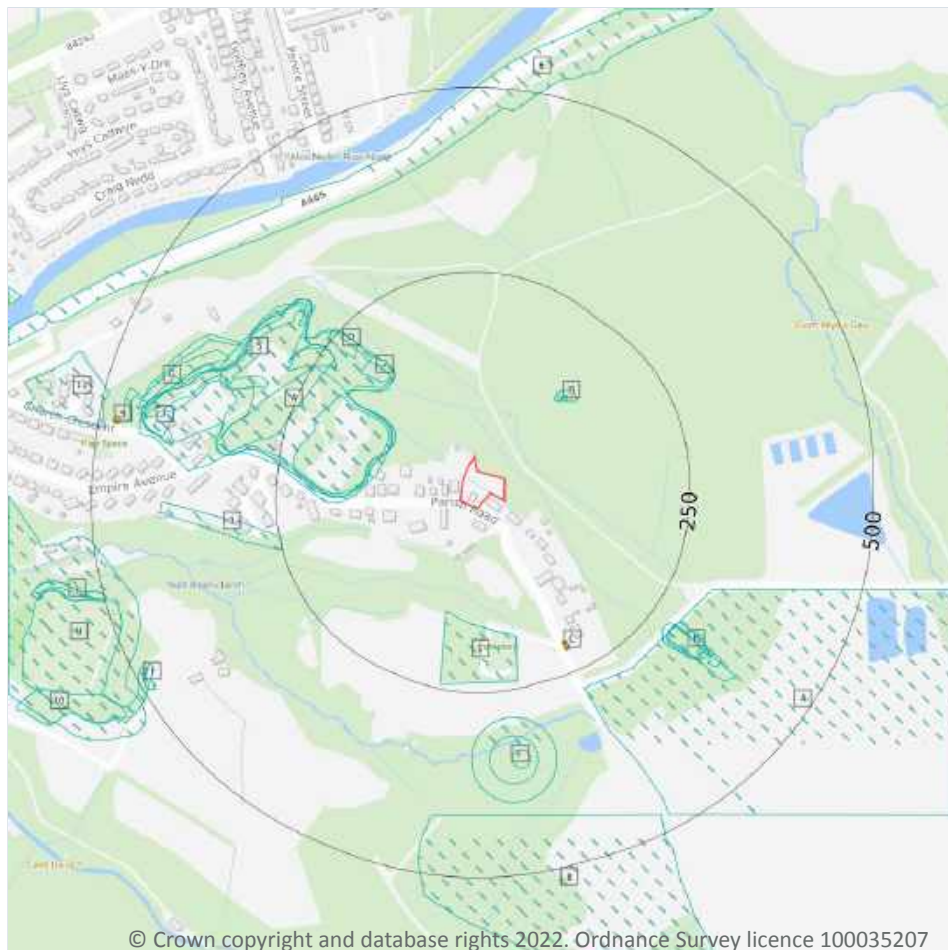
Site Area: 0.23ha

OS MasterMap site plan



Site Area: 0.23ha

1 Past land use



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks

1.1 Historical industrial land uses

Records within 500m

38

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
A	105m NW	Unspecified Old Quarry	1897 - 1914	285117



ID	Location	Land use	Dates present	Group ID
A	105m NW	Unspecified Old Quarry	1948	290152
A	106m NW	Unspecified Old Quarry	1938	297129
A	107m NW	Ironstone Level	1877	265558
A	114m W	Unspecified Disused Quarry	1981	252281
B	126m NE	Unspecified Heap	1964 - 1980	304664
B	129m NE	Old Air Shaft	1897	269522
B	134m NE	Old Air Shaft	1914 - 1948	309709
1	146m S	Cemetery	1964 - 1981	278631
2	154m NW	Unspecified Pit	1938	273020
D	209m NW	Unspecified Heap	1938	298839
D	222m NW	Unspecified Heap	1938	291213
A	231m NW	Unspecified Ground Workings	1964 - 1981	312738
3	248m W	Cuttings	1914 - 1938	306189
4	275m SE	Opencast Workings	1964	255717
E	276m SE	Unspecified Heap	1897	259974
E	283m SE	Coal Drift	1877	253547
E	283m SE	Tramway Sidings	1877	256911
E	285m SE	Old Coal Drift	1914 - 1948	297165
F	287m S	Coal Level	1914	292290
5	293m NW	Unspecified Ground Workings	1938	318047
F	312m S	Coal Level	1948	314281
E	329m SE	Railway Building	1877	256730
F	332m S	Coal Level	1938	307427
G	349m NW	Unspecified Ground Workings	1980	267280
E	350m SE	Old Coal Drift	1897	250908
G	356m NW	Refuse Heap	1964 - 1980	316725
6	384m N	Railway Sidings	1938	296116
7	400m W	Unspecified Heap	1964 - 1981	317611



ID	Location	Land use	Dates present	Group ID
8	416m S	Opencast Workings	1964	255718
H	459m W	Unspecified Mine	1964 - 1980	292441
I	473m SW	Unspecified Ground Workings	1948	271627
I	473m SW	Unspecified Ground Workings	1914	287420
10	480m SW	Unspecified Ground Workings	1897	296812
H	484m W	Unspecified Heap	1964 - 1980	295074
11	490m W	Grave Yard	1877	256022
J	496m W	Unspecified Ground Workings	1938	311463
J	497m W	Unspecified Ground Workings	1948	278325

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

3

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
C	206m SE	Unspecified Tank	1962 - 1998	36788
C	206m SE	Unspecified Tank	1963 - 1983	36399
9	469m W	Unspecified Tank	1962 - 1963	36247

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

0

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or



succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m

0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m

0

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

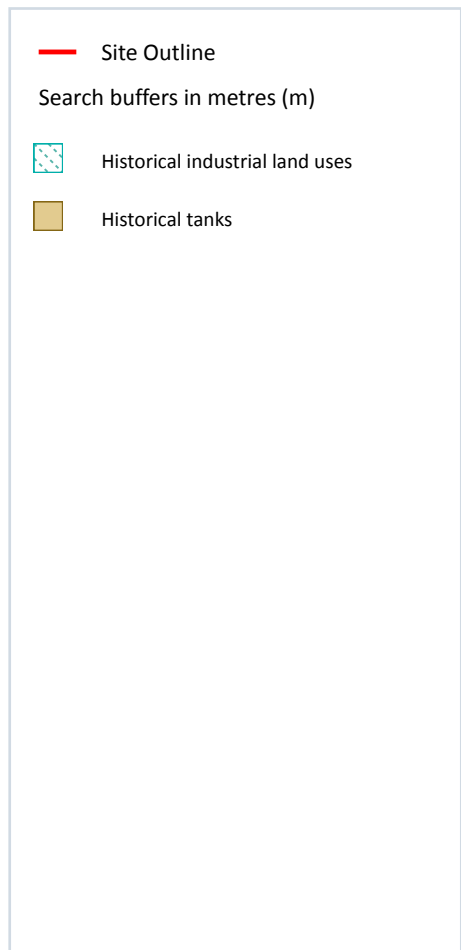
Records within 500m

0

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.

2 Past land use - un-grouped



2.1 Historical industrial land uses

61

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 18**

ID	Location	Land Use	Date	Group ID
A	105m NW	Unspecified Old Quarry	1914	285117
A	105m NW	Unspecified Old Quarry	1948	290152
A	106m NW	Unspecified Old Quarry	1938	297129

ID	Location	Land Use	Date	Group ID
A	107m NW	Ironstone Level	1877	265558
A	114m W	Unspecified Disused Quarry	1981	252281
A	118m NW	Unspecified Old Quarry	1897	285117
B	126m NE	Unspecified Heap	1964	304664
B	126m NE	Unspecified Heap	1980	304664
B	129m NE	Old Air Shaft	1897	269522
B	134m NE	Old Air Shaft	1914	309709
B	134m NE	Old Air Shaft	1948	309709
B	135m NE	Old Air Shaft	1938	309709
C	146m S	Cemetery	1964	278631
C	146m S	Cemetery	1980	278631
C	146m S	Cemetery	1981	278631
D	154m NW	Unspecified Pit	1938	273020
D	154m NW	Unspecified Pit	1938	273020
F	209m NW	Unspecified Heap	1938	298839
F	209m NW	Unspecified Heap	1938	298839
F	222m NW	Unspecified Heap	1938	291213
F	222m NW	Unspecified Heap	1938	291213
A	231m NW	Unspecified Ground Workings	1964	312738
A	231m NW	Unspecified Ground Workings	1980	312738
A	231m NW	Unspecified Ground Workings	1981	312738
G	248m W	Cuttings	1914	306189
G	249m W	Cuttings	1938	306189
1	275m SE	Opencast Workings	1964	255717
H	276m SE	Unspecified Heap	1897	259974
H	283m SE	Coal Drift	1877	253547
H	283m SE	Tramway Sidings	1877	256911
H	285m SE	Old Coal Drift	1948	297165



ID	Location	Land Use	Date	Group ID
H	285m SE	Old Coal Drift	1914	297165
H	286m SE	Old Coal Drift	1938	297165
H	286m SE	Old Coal Drift	1938	297165
I	287m S	Coal Level	1914	292290
J	293m NW	Unspecified Ground Workings	1938	318047
J	293m NW	Unspecified Ground Workings	1938	318047
I	312m S	Coal Level	1948	314281
H	329m SE	Railway Building	1877	256730
I	332m S	Coal Level	1938	307427
I	332m S	Coal Level	1938	307427
K	349m NW	Unspecified Ground Workings	1980	267280
H	350m SE	Old Coal Drift	1897	250908
K	356m NW	Refuse Heap	1964	316725
K	356m NW	Refuse Heap	1980	316725
2	384m N	Railway Sidings	1938	296116
L	400m W	Unspecified Heap	1964	317611
L	400m W	Unspecified Heap	1980	317611
L	400m W	Unspecified Heap	1981	317611
3	416m S	Opencast Workings	1964	255718
M	459m W	Unspecified Mine	1964	292441
M	459m W	Unspecified Mine	1980	292441
O	473m SW	Unspecified Ground Workings	1948	271627
O	473m SW	Unspecified Ground Workings	1914	287420
4	480m SW	Unspecified Ground Workings	1897	296812
M	484m W	Unspecified Heap	1964	295074
M	484m W	Unspecified Heap	1980	295074
5	490m W	Grave Yard	1877	256022
P	496m W	Unspecified Ground Workings	1938	311463



ID	Location	Land Use	Date	Group ID
P	496m W	Unspecified Ground Workings	1938	311463
P	497m W	Unspecified Ground Workings	1948	278325

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

7

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 18**

ID	Location	Land Use	Date	Group ID
E	206m SE	Unspecified Tank	1996	36788
E	206m SE	Unspecified Tank	1998	36788
E	206m SE	Unspecified Tank	1963	36399
E	207m SE	Unspecified Tank	1962	36788
E	208m SE	Unspecified Tank	1983	36399
N	469m W	Unspecified Tank	1963	36247
N	470m W	Unspecified Tank	1962	36247

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

0

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m

0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

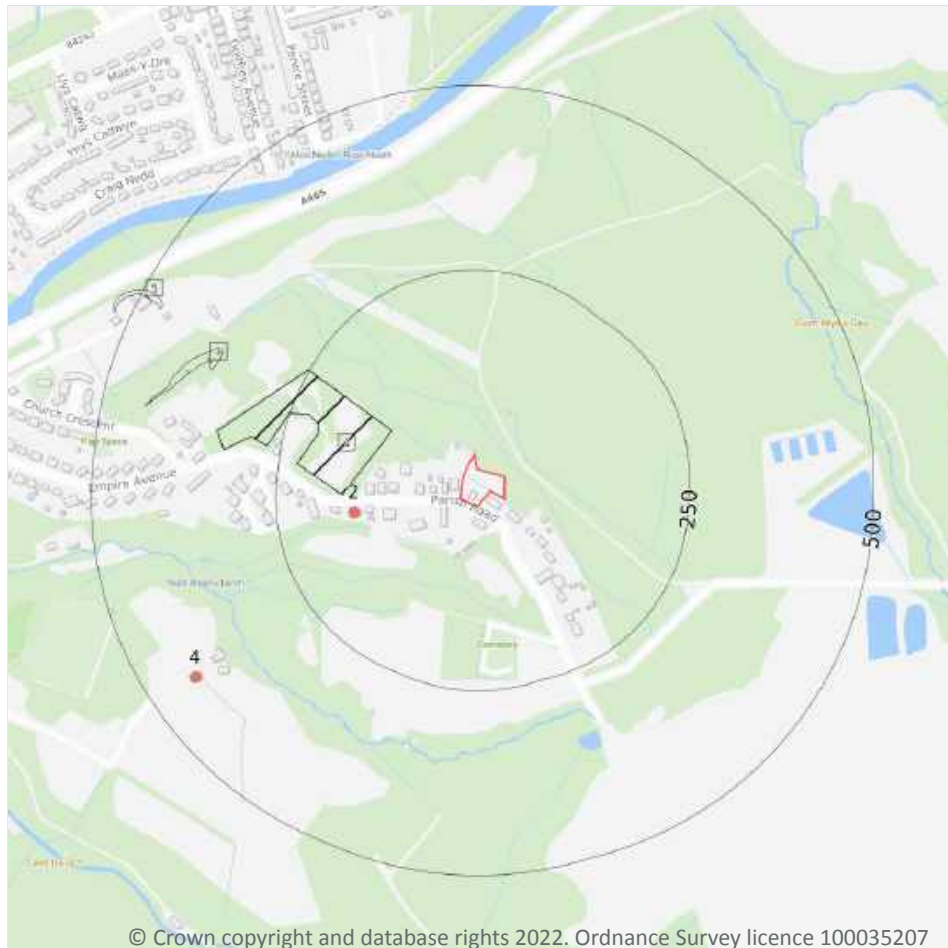
Records within 500m

0

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- / Historical landfill (EA/NRW)
- / Historical landfill (LA/OS)
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m

0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m

2

Landfill sites identified from Local Authority records and high detail historical mapping.

Features are displayed on the Waste and landfill map on **page 23**

ID	Location	Site address	Source	Data type
3	365m NW	Refuse Tip	1962 mapping	Polygon
5	467m NW	Refuse Tips	1962 mapping	Polygon

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m

1

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

Features are displayed on the Waste and landfill map on **page 23**

ID	Location	Details		
1	113m NW	Site Address: Disused Tip and Quarry off Parish Road Licence Holder Address: -	Waste Licence: - Site Reference: - Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: - Licence Holder: - First Recorded - Last Recorded: -

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m

0

Waste site records derived from Local Authority planning records and high detail historical mapping.

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m**0**

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

Records within 500m**2**

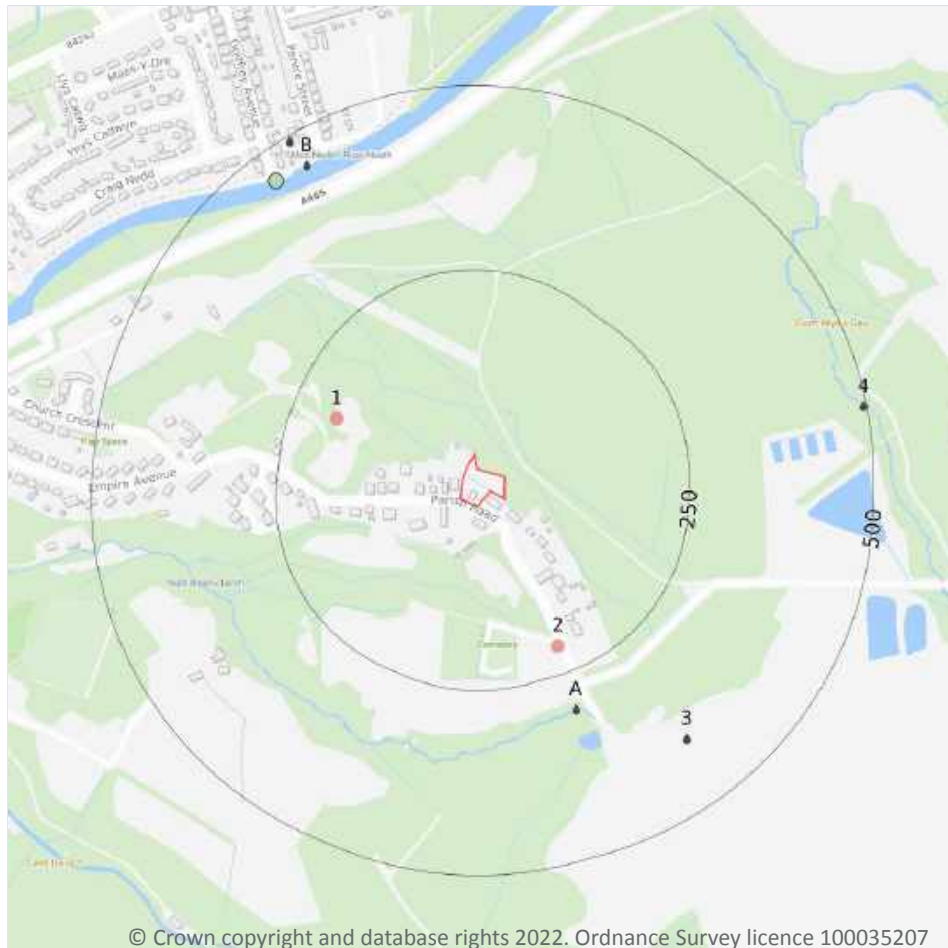
Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on **page 23**

ID	Location	Site	Reference	Category	Sub-Category	Description
2	146m W	26 Parish Road, Cwmgwrach, Neath, Castell-nedd Port Talbot, SA11 5SW	NRW- WME040027	Using waste exemption	Not on a farm	Use of waste in construction
4	434m SW	Blaen Clairch Cwmgwrach Neath Castell-nedd Port Talbot SA115TD	NRW- WME027794	Using waste exemption	Not on a farm	Use of waste in construction

This data is sourced from the Environment Agency and Natural Resources Wales.

4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- Licensed Discharges to controlled waters
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m

2

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 26**

ID	Location	Company	Address	Activity	Category
1	189m NW	Quarry (Disused)	West Glamorgan, SA11	Unspecified Quarries Or Mines	Extractive Industries
2	211m SE	Tank	West Glamorgan, SA11	Tanks (Generic)	Industrial Features

This data is sourced from Ordnance Survey.



4.2 Current or recent petrol stations

Records within 500m**0**

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m**0**

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m**0**

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m**0**

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m**0**

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m

0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m

0

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m

0

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.10 Licensed industrial activities (Part A(1))

Records within 500m

0

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.11 Licensed pollutant release (Part A(2)/B)

Records within 500m

0

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m

0

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.13 Licensed Discharges to controlled waters

Records within 500m

6

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

Features are displayed on the Current industrial land use map on **page 26**

ID	Location	Address	Details	
A	300m SE	SELAR OPENCAST COAL SITE AREA H - S, SELAR OPENCAST COAL SITE AREA H, AREA H - STORM O/FLOW	Effluent Type: UNSPECIFIED Permit Number: BP0260801 Permit Version: 1 Receiving Water: NANT BLAENCLAIRCH	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 29/03/1996 Effective Date: 29/03/1996 Revocation Date: 02/02/1998
A	300m SE	SELAR OPENCAST COAL SITE AREA H - S, SELAR OPENCAST COAL SITE AREA H, AREA H - STORM O/FLOW	Effluent Type: UNSPECIFIED Permit Number: BP0260901 Permit Version: 1 Receiving Water: NANT BLAENCLAIRCH	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 29/03/1996 Effective Date: 29/03/1996 Revocation Date: 02/02/1998
3	407m SE	CWMGWRACH H.LEV RES C/O, C/O	Effluent Type: UNSPECIFIED Permit Number: BP0178801 Permit Version: 1 Receiving Water: TO LAND	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 02/10/1989 Effective Date: 02/10/1989 Revocation Date: 14/03/1994
B	452m NW	REAR GODFREY AVENUE GLYNNEATH NPT, REAR GODFREY AVENUE, GLYNNEATH, NEATH, NEATH PORT TALBOT	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: BP0319301 Permit Version: 2 Receiving Water: RIVER NEATH	Status: Effective Issue date: 07/01/2008 Effective Date: 07/01/2008 Revocation Date: -
B	492m NW	CSO AT REAR GODFREY AVENUE GLYNNEATH NPT, REAR OF GODFREY LANE, Glynneath, NEATH, SA11 5HF	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: BP0319301 Permit Version: 3 Receiving Water: River Neath	Status: Effective Issue date: 17/12/2019 Effective Date: 17/12/2019 Revocation Date: -



ID	Location	Address	Details	
4	495m E	SELAR OPENCAST COAL SITE AREA A - L, SELAR OPENCAST COAL SITE AREA A, AREA A - LAGOON	Effluent Type: MINEWATER Permit Number: BP0259401 Permit Version: 3 Receiving Water: NANT RHYD-Y-GAU, TRIB OF RIVER	Status: Effective Issue date: 23/07/2010 Effective Date: 23/07/2010 Revocation Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

4.14 Pollutant release to surface waters (Red List)

Records within 500m	0
----------------------------	----------

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.15 Pollutant release to public sewer

Records within 500m	0
----------------------------	----------

Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.16 List 1 Dangerous Substances

Records within 500m	0
----------------------------	----------

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.17 List 2 Dangerous Substances

Records within 500m	0
----------------------------	----------

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 Pollution Incidents (EA/NRW)

Records within 500m

2

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

Features are displayed on the Current industrial land use map on **page 26**

ID	Location	Details	
B	458m NW	Incident Date: 01/12/2016 Incident Identification: 1607193 Pollutant: Sewage Material Pollutant Description: Crude Sewage	Water Impact: Category 3 (Minor) Land Impact: No Details Air Impact: No Details
B	458m NW	Incident Date: 01/12/2016 Incident Identification: 1607193 Pollutant: - Pollutant Description: -	Water Impact: Category 3 (Minor) Land Impact: No Details Air Impact: No Details

This data is sourced from the Environment Agency and Natural Resources Wales.

4.19 Pollution inventory substances

Records within 500m

0

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.20 Pollution inventory waste transfers

Records within 500m

0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.21 Pollution inventory radioactive waste

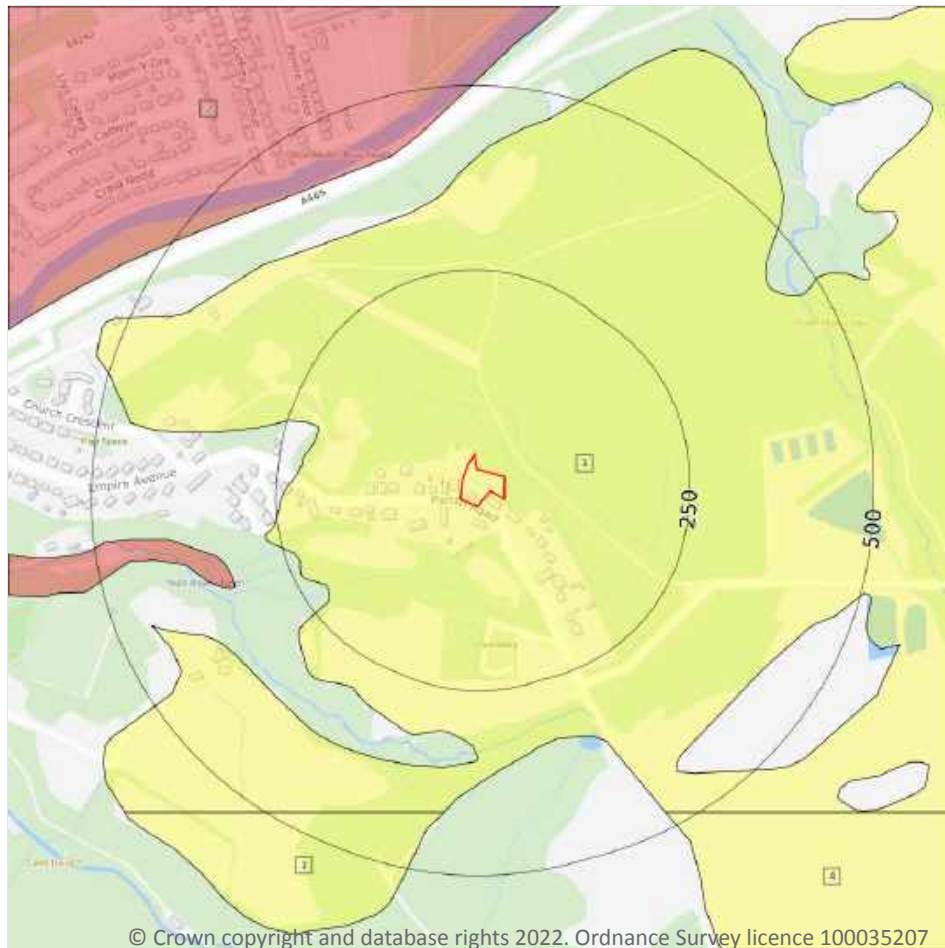
Records within 500m

0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

5 Hydrogeology - Superficial aquifer



- Site Outline
- Search buffers in metres (m)
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive
 - Unknown

5.1 Superficial aquifer

Records within 500m

4

Aquifer status of groundwater held within superficial geology.

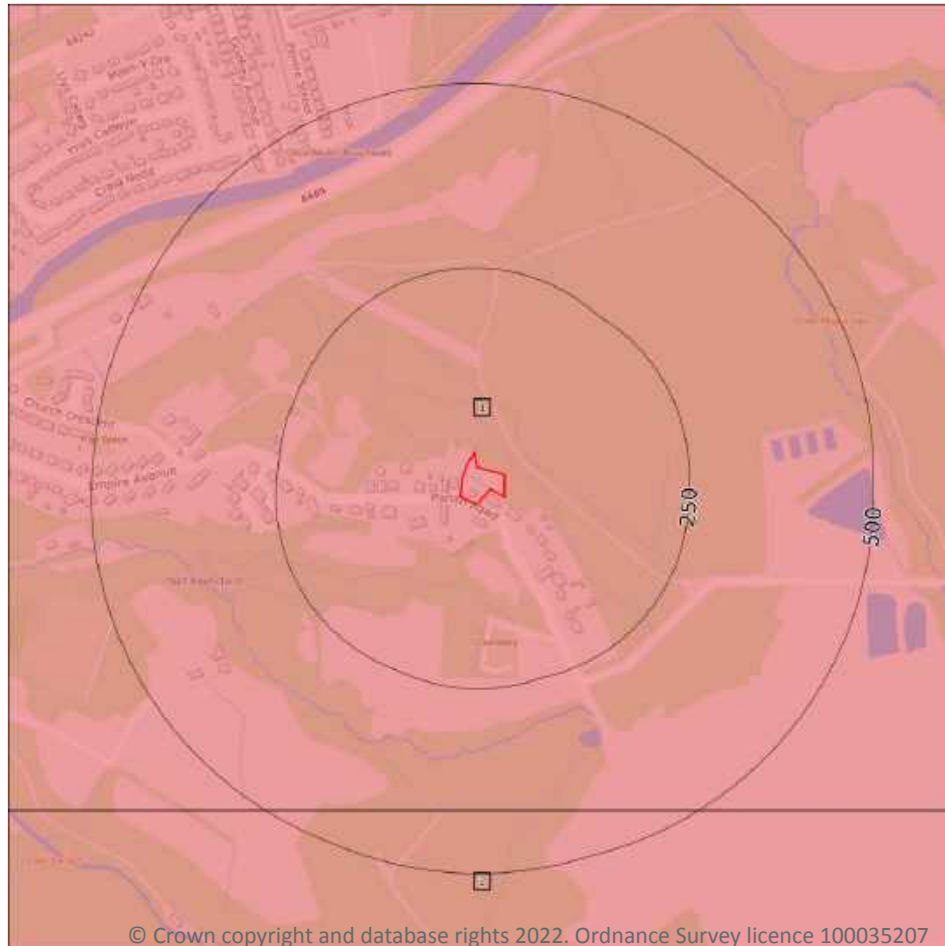
Features are displayed on the Hydrogeology map on **page 33**

ID	Location	Designation	Description
1	On site	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
2	326m W	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

ID	Location	Designation	Description
3	417m S	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
4	478m SE	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

Bedrock aquifer



— Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive

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5.2 Bedrock aquifer

Records within 500m

2

Aquifer status of groundwater held within bedrock geology.

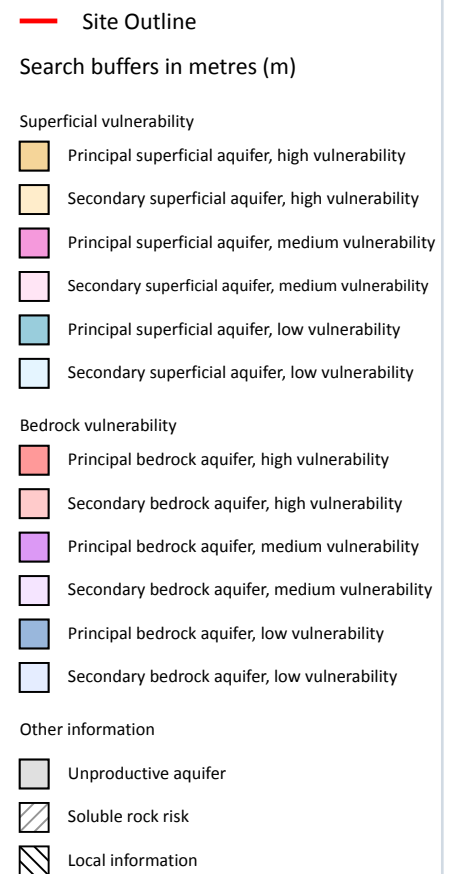
Features are displayed on the Bedrock aquifer map on [page 35](#)

ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	414m S	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

1

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on **page 37**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: >10m Patchiness value: <90% Recharge potential: No Data	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0
------------------------	----------

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

This data is sourced from the British Geological Survey and the Environment Agency.

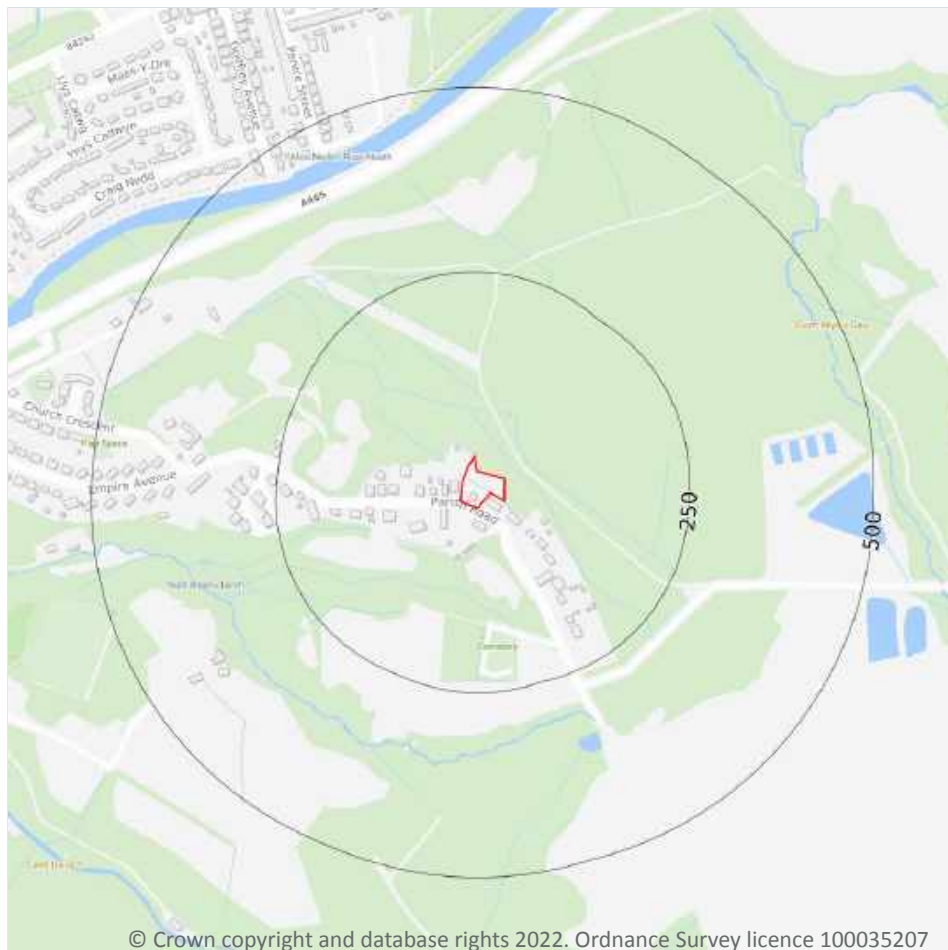
5.5 Groundwater vulnerability- local information

Records on site	0
------------------------	----------

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk.

This data is sourced from the British Geological Survey and the Environment Agency.

Abstractions and Source Protection Zones



- Site Outline
- Search buffers in metres (m)
- Source Protection Zone 1
Inner catchment
- Source Protection Zone 2
Outer catchment
- Source Protection Zone 3
Total catchment
- Source Protection Zone 4
Zone of Special Interest
- Source Protection Zone 1c
Inner catchment - confined aquifer
- Source Protection Zone 2c
Outer catchment - confined aquifer
- Source Protection Zone 3c
Total catchment - confined aquifer
- Drinking water abstraction licences
Polygon features
- Drinking water abstraction licences
Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m

0

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.7 Surface water abstractions

Records within 2000m

4

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 39**

ID	Location	Details	
-	1700m W	Status: Historical Licence No: 21/58/72/0030 Details: Make-Up Or Top Up Water Direct Source: EAW Surface Water Point: TRIBUTARY OF RIVER NEATH AT PENSTAR TIP Data Type: Point Name: Energybuild Limited Easting: 285990 Northing: 206010	Annual Volume (m ³): 43000 Max Daily Volume (m ³): 120 Original Application No: - Original Start Date: 28/01/1991 Expiry Date: - Issue No: 104 Version Start Date: 07/03/2005 Version End Date: -
-	1700m W	Status: Active Licence No: 21/58/72/0030 Details: Make-up or Top-up Water - High Direct Source: - Point: - Data Type: Point Name: - Easting: 285990 Northing: 206010	Annual Volume (m ³): 43,000 Max Daily Volume (m ³): 240 Original Application No: - Original Start Date: Mar 7 2005 12:00AM Expiry Date: - Issue No: - Version Start Date: - Version End Date: -
-	1841m W	Status: Historical Licence No: 21/58/72/0034 Details: Dust Suppression Direct Source: EAW Surface Water Point: RIVER NEATH CWMGWRACH BLAENGWRACH Data Type: Point Name: Unity Mine Limited Easting: 285880 Northing: 204750	Annual Volume (m ³): 18500 Max Daily Volume (m ³): 100 Original Application No: - Original Start Date: 19/09/1995 Expiry Date: - Issue No: 104 Version Start Date: 31/05/2007 Version End Date: -
-	1841m W	Status: Active Licence No: 21/58/72/0034 Details: Dust Suppression - High Direct Source: River Neath at Cwmgrwrach Point: - Data Type: Point Name: - Easting: 285880 Northing: 204750	Annual Volume (m ³): 18,500 Max Daily Volume (m ³): 1,680 Original Application No: - Original Start Date: May 10 2018 12:00AM Expiry Date: - Issue No: - Version Start Date: - Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.



5.8 Potable abstractions

Records within 2000m

0

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.9 Source Protection Zones

Records within 500m

0

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.10 Source Protection Zones (confined aquifer)

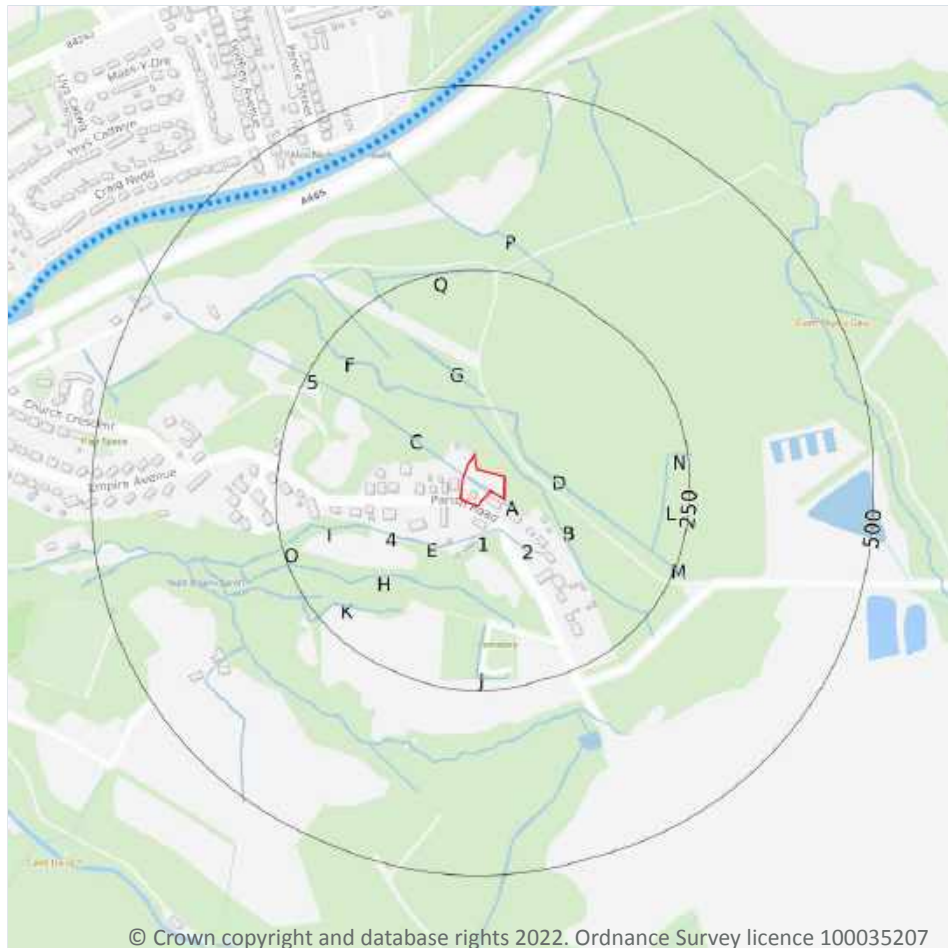
Records within 500m

0

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.

6 Hydrology



- Site Outline
- Search buffers in metres (m)
- Water Network (OS MasterMap)
- Surface water features (wider than 5m)
- Surface water features (narrower than 5m)
- ⋯ WFD River, canal and surface water transfer water bodies
- WFD Lake water bodies
- WFD Transitional and coastal water bodies
- WFD Surface water body catchments boundaries
- WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m

28

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

Features are displayed on the Hydrology map on **page 42**

ID	Location	Type of water feature	Ground level	Permanence	Name
A	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	5m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	5m NW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
B	19m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	31m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	37m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
1	37m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
2	41m SE	Inland river not influenced by normal tidal action.	Not provided	Watercourse contains water year round (in normal circumstances)	-
E	60m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	65m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
G	78m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
4	101m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
H	113m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-



ID	Location	Type of water feature	Ground level	Permanence	Name
I	127m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
5	154m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
J	161m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
K	169m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	174m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
L	211m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
M	211m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
N	222m E	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	224m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
K	228m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
N	233m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
O	243m W	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
P	246m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-



ID	Location	Type of water feature	Ground level	Permanence	Name
Q	246m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	21
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Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

Features are displayed on the Hydrology map on **page 42**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	1
------------------------	----------

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on **page 42**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	On site	River WB catchment	Neath - conf with Nedd Fechan and Mellte to TL	GB110058032430	Neath	Tawe to Cadoxton

This data is sourced from the Environment Agency and Natural Resources Wales.

6.4 WFD Surface water bodies

Records identified	1
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Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site.

Features are displayed on the Hydrology map on **page 42**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
11	437m NW	River	Neath - conf with Nedd Fechan and Mellte to TL	GB110058032430	Good	Good	Good	2016

This data is sourced from the Environment Agency and Natural Resources Wales.

6.5 WFD Groundwater bodies

Records on site

1

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place.

Features are displayed on the Hydrology map on **page 42**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	On site	Swansea Carboniferous Coal Measures	GB41002G201000	Poor	Poor	Good	2017

This data is sourced from the Environment Agency and Natural Resources Wales.



7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m

0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

This data is sourced from the Environment Agency and Natural Resources Wales.

7.2 Historical Flood Events

Records within 250m

0

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.3 Flood Defences

Records within 250m

0

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.4 Areas Benefiting from Flood Defences

Records within 250m

0

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.5 Flood Storage Areas

Records within 250m

0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.

River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0
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Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.7 Flood Zone 3

Records within 50m	0
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Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

8 Surface water flooding

8.1 Surface water flooding

Highest risk on site

Negligible

Highest risk within 50m

Negligible

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

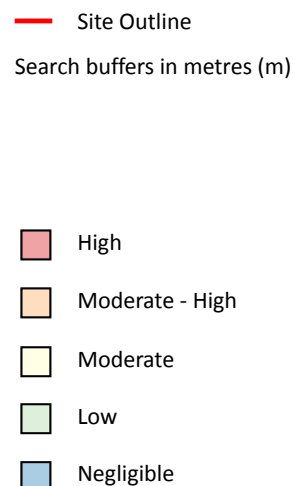
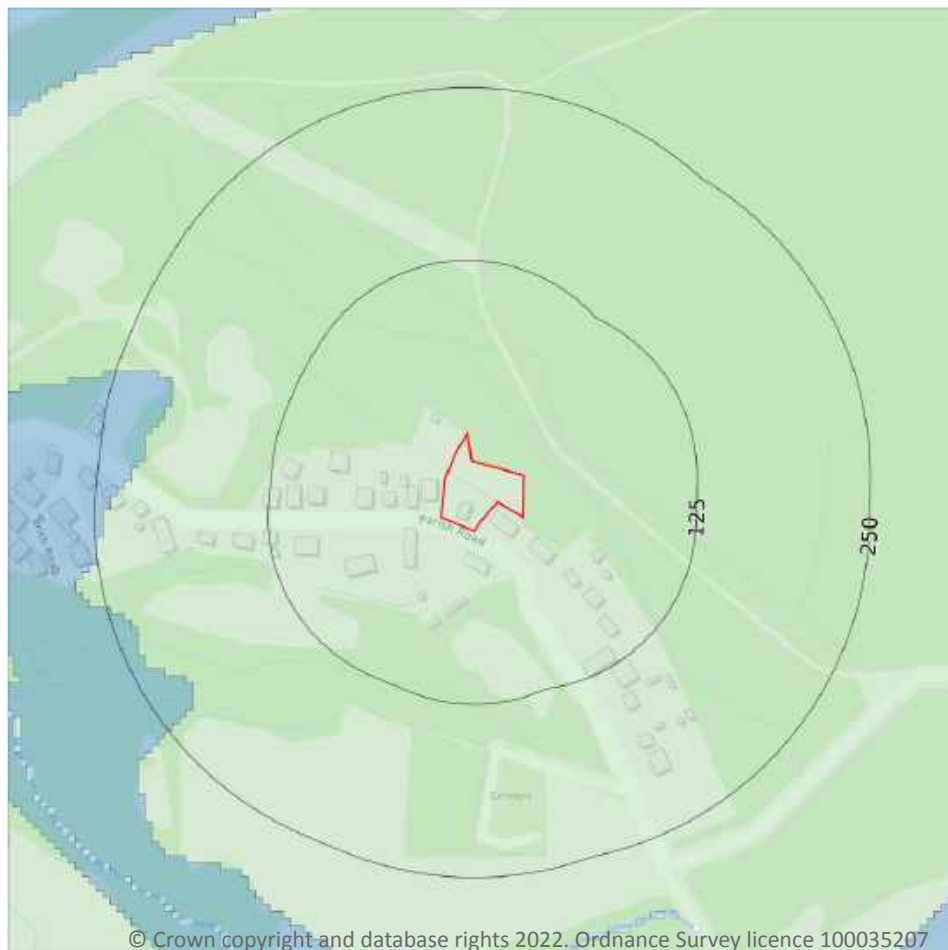
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site. The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

This data is sourced from Ambiental Risk Analytics.



9 Groundwater flooding



9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

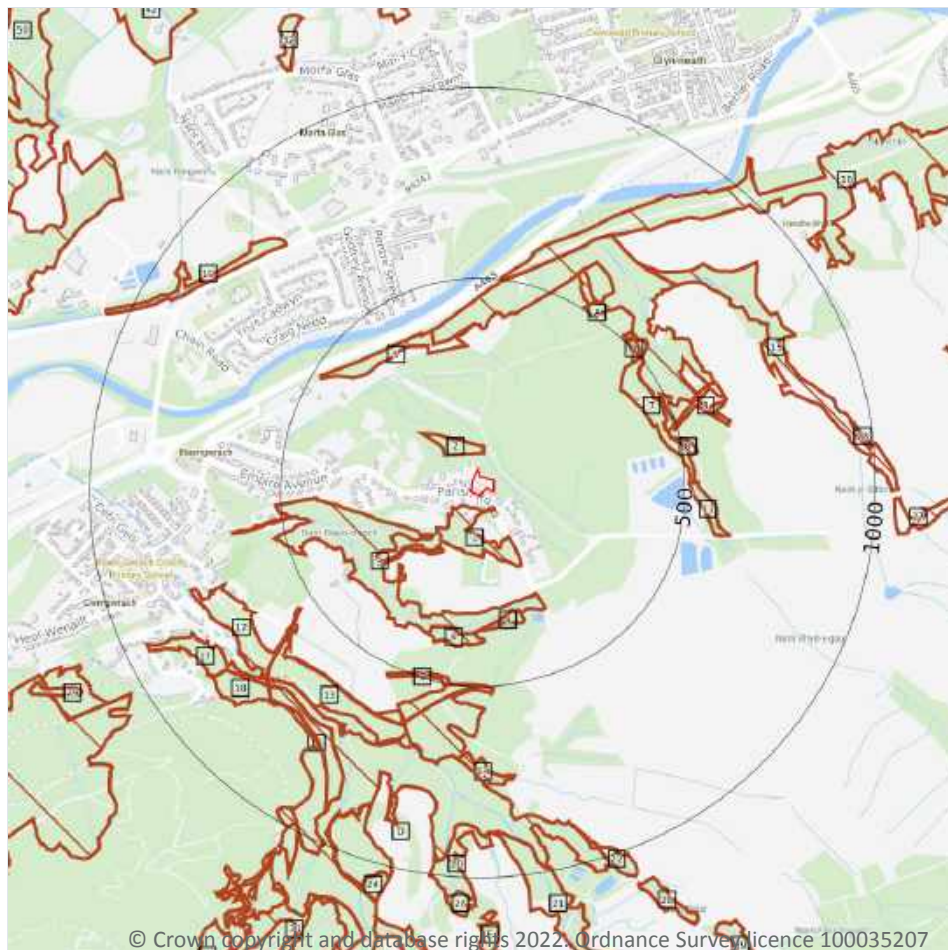
Low

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on **page 51**

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Sites of Special Scientific Interest (SSSI)
- Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

1

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

Features are displayed on the Environmental designations map on **page 52**

ID	Location	Name	Data source
-	1684m NE	CWM GWRELYCH AND NANT LLYN FACH STREAMS	Natural Resources Wales

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m

0

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m

0

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.4 Special Protection Areas (SPA)

Records within 2000m

0

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.5 National Nature Reserves (NNR)

Records within 2000m

0

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.6 Local Nature Reserves (LNR)

Records within 2000m

0

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m

147

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

Features are displayed on the Environmental designations map on **page 52**

ID	Location	Name	Woodland Type
1	34m S	Unknown	Ancient Semi Natural Woodland
2	40m N	Unknown	Plantation on Ancient Woodland Site
3	149m SW	Unknown	Ancient Semi Natural Woodland
4	311m S	Unknown	Plantation on Ancient Woodland Site
5	324m N	Unknown	Ancient Semi Natural Woodland
A	346m N	Unknown	Ancient Semi Natural Woodland
6	353m S	Unknown	Plantation on Ancient Woodland Site
7	407m NE	Unknown	Ancient Semi Natural Woodland
B	475m NE	Unknown	Plantation on Ancient Woodland Site
C	482m S	Unknown	Plantation on Ancient Woodland Site
8	483m E	Unknown	Ancient Semi Natural Woodland
9	490m E	Unknown	Plantation on Ancient Woodland Site
C	495m S	Unknown	Plantation on Ancient Woodland Site
C	497m S	Unknown	Plantation on Ancient Woodland Site
10	498m N	Unknown	Ancient Semi Natural Woodland
B	505m NE	Unknown	Plantation on Ancient Woodland Site



ID	Location	Name	Woodland Type
11	513m E	Unknown	Plantation on Ancient Woodland Site
A	515m NE	Unknown	Plantation on Ancient Woodland Site
12	541m SW	Unknown	Ancient Semi Natural Woodland
C	600m S	Unknown	Restored Ancient Woodland Site
13	611m SW	Unknown	Restored Ancient Woodland Site
C	626m S	Unknown	Ancient Semi Natural Woodland
C	628m S	Unknown	Plantation on Ancient Woodland Site
14	674m S	Unknown	Ancient Semi Natural Woodland
D	676m S	Unknown	Ancient Semi Natural Woodland
15	683m NE	Unknown	Ancient Semi Natural Woodland
16	708m SW	Unknown	Ancient Woodland Site of Unknown Category
17	724m SW	Unknown	Ancient Semi Natural Woodland
18	734m SW	Unknown	Ancient Woodland Site of Unknown Category
D	734m SW	Unknown	Ancient Woodland Site of Unknown Category
19	773m NW	Unknown	Ancient Semi Natural Woodland
D	812m S	Unknown	Ancient Semi Natural Woodland
D	856m S	Unknown	Plantation on Ancient Woodland Site
D	858m S	Unknown	Plantation on Ancient Woodland Site
20	861m S	Unknown	Ancient Semi Natural Woodland
D	866m S	Unknown	Ancient Semi Natural Woodland
D	877m S	Unknown	Plantation on Ancient Woodland Site
21	881m S	Unknown	Ancient Semi Natural Woodland
22	884m S	Unknown	Ancient Semi Natural Woodland
D	891m S	Unknown	Ancient Semi Natural Woodland
D	892m S	Unknown	Plantation on Ancient Woodland Site
D	893m S	Unknown	Ancient Semi Natural Woodland
D	895m S	Unknown	Plantation on Ancient Woodland Site
D	911m SW	Unknown	Ancient Semi Natural Woodland

ID	Location	Name	Woodland Type
D	919m SW	Unknown	Plantation on Ancient Woodland Site
D	919m SW	Unknown	Ancient Semi Natural Woodland
23	948m E	Unknown	Plantation on Ancient Woodland Site
D	952m SW	Unknown	Ancient Woodland Site of Unknown Category
D	983m SW	Unknown	Ancient Semi Natural Woodland
24	1018m S	Unknown	Ancient Semi Natural Woodland
D	1023m S	Unknown	Plantation on Ancient Woodland Site
25	1038m SW	Unknown	Plantation on Ancient Woodland Site
26	1039m S	Unknown	Plantation on Ancient Woodland Site
27	1051m E	Unknown	Ancient Semi Natural Woodland
D	1070m SW	Unknown	Ancient Woodland Site of Unknown Category
D	1074m SW	Unknown	Ancient Woodland Site of Unknown Category
E	1089m S	Unknown	Plantation on Ancient Woodland Site
28	1093m SE	Unknown	Ancient Semi Natural Woodland
29	1100m SW	Unknown	Ancient Semi Natural Woodland
30	1123m S	Unknown	Ancient Woodland Site of Unknown Category
31	1137m S	Unknown	Ancient Semi Natural Woodland
32	1155m NW	Unknown	Ancient Semi Natural Woodland
33	1171m NW	Unknown	Restored Ancient Woodland Site
D	1172m SW	Unknown	Ancient Woodland Site of Unknown Category
34	1190m N	Unknown	Restored Ancient Woodland Site
E	1194m S	Unknown	Ancient Semi Natural Woodland
D	1208m SW	Unknown	Plantation on Ancient Woodland Site
35	1225m E	Unknown	Plantation on Ancient Woodland Site
36	1234m S	Unknown	Ancient Woodland Site of Unknown Category
D	1235m SW	Unknown	Plantation on Ancient Woodland Site
-	1237m N	Unknown	Ancient Semi Natural Woodland
D	1259m SW	Unknown	Ancient Woodland Site of Unknown Category

ID	Location	Name	Woodland Type
-	1262m N	Unknown	Restored Ancient Woodland Site
-	1265m S	Unknown	Ancient Semi Natural Woodland
39	1276m SE	Unknown	Ancient Semi Natural Woodland
-	1284m S	Unknown	Ancient Semi Natural Woodland
-	1285m N	Unknown	Restored Ancient Woodland Site
-	1287m S	Unknown	Ancient Semi Natural Woodland
-	1304m N	Unknown	Ancient Semi Natural Woodland
H	1307m SW	Unknown	Plantation on Ancient Woodland Site
42	1346m NW	Unknown	Restored Ancient Woodland Site
H	1351m SW	Unknown	Plantation on Ancient Woodland Site
-	1356m SW	Unknown	Ancient Semi Natural Woodland
-	1358m S	Unknown	Ancient Woodland Site of Unknown Category
-	1377m E	Unknown	Ancient Semi Natural Woodland
-	1382m E	Unknown	Plantation on Ancient Woodland Site
46	1412m SE	Unknown	Ancient Woodland Site of Unknown Category
-	1421m SW	Unknown	Plantation on Ancient Woodland Site
-	1429m E	Unknown	Plantation on Ancient Woodland Site
-	1429m N	Unknown	Plantation on Ancient Woodland Site
-	1434m N	Unknown	Ancient Semi Natural Woodland
-	1435m S	Unknown	Plantation on Ancient Woodland Site
-	1439m SE	Unknown	Plantation on Ancient Woodland Site
-	1447m E	Unknown	Plantation on Ancient Woodland Site
50	1447m NW	Unknown	Ancient Woodland Site of Unknown Category
-	1470m N	Unknown	Ancient Semi Natural Woodland
-	1490m N	Unknown	Ancient Semi Natural Woodland
-	1528m W	Unknown	Ancient Semi Natural Woodland
-	1536m N	Unknown	Ancient Semi Natural Woodland
-	1560m SE	Unknown	Ancient Woodland Site of Unknown Category

ID	Location	Name	Woodland Type
-	1584m N	Unknown	Plantation on Ancient Woodland Site
-	1589m N	Unknown	Ancient Semi Natural Woodland
-	1639m NW	Unknown	Plantation on Ancient Woodland Site
-	1643m N	Unknown	Plantation on Ancient Woodland Site
-	1668m N	Unknown	Plantation on Ancient Woodland Site
-	1682m N	Unknown	Plantation on Ancient Woodland Site
-	1709m SE	Unknown	Ancient Semi Natural Woodland
-	1721m N	Unknown	Ancient Semi Natural Woodland
-	1724m NE	Unknown	Ancient Semi Natural Woodland
-	1736m SE	Unknown	Ancient Woodland Site of Unknown Category
-	1768m NE	Unknown	Ancient Semi Natural Woodland
-	1792m SE	Unknown	Ancient Woodland Site of Unknown Category
-	1816m E	Unknown	Ancient Semi Natural Woodland
-	1817m N	Unknown	Ancient Semi Natural Woodland
-	1824m SE	Unknown	Ancient Semi Natural Woodland
-	1827m NW	Unknown	Plantation on Ancient Woodland Site
-	1832m NE	Unknown	Ancient Semi Natural Woodland
-	1840m SW	Unknown	Plantation on Ancient Woodland Site
-	1842m NW	Unknown	Ancient Woodland Site of Unknown Category
-	1851m SE	Unknown	Ancient Woodland Site of Unknown Category
-	1858m NE	Unknown	Ancient Semi Natural Woodland
-	1858m N	Unknown	Plantation on Ancient Woodland Site
-	1863m NW	Unknown	Plantation on Ancient Woodland Site
-	1868m N	Unknown	Plantation on Ancient Woodland Site
-	1875m NW	Unknown	Ancient Woodland Site of Unknown Category
-	1880m NW	Unknown	Plantation on Ancient Woodland Site
-	1894m NE	Unknown	Ancient Semi Natural Woodland
-	1898m E	Unknown	Ancient Semi Natural Woodland

ID	Location	Name	Woodland Type
-	1901m NE	Unknown	Ancient Semi Natural Woodland
-	1903m NE	Unknown	Ancient Semi Natural Woodland
-	1903m SW	Unknown	Plantation on Ancient Woodland Site
-	1912m N	Unknown	Ancient Semi Natural Woodland
-	1913m NE	Unknown	Ancient Semi Natural Woodland
-	1915m N	Unknown	Plantation on Ancient Woodland Site
-	1925m NW	Unknown	Ancient Woodland Site of Unknown Category
-	1925m NE	Unknown	Ancient Semi Natural Woodland
-	1926m NE	Unknown	Ancient Semi Natural Woodland
-	1932m W	Unknown	Plantation on Ancient Woodland Site
-	1939m W	Unknown	Plantation on Ancient Woodland Site
-	1949m W	Unknown	Ancient Woodland Site of Unknown Category
-	1966m NW	Unknown	Ancient Woodland Site of Unknown Category
-	1967m E	Unknown	Ancient Semi Natural Woodland
-	1985m N	Unknown	Ancient Semi Natural Woodland
-	1986m W	Unknown	Ancient Woodland Site of Unknown Category
-	1991m W	Unknown	Ancient Woodland Site of Unknown Category
-	1992m SW	Unknown	Ancient Semi Natural Woodland
-	1993m W	Unknown	Ancient Woodland Site of Unknown Category

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.8 Biosphere Reserves

Records within 2000m

0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.



10.9 Forest Parks

Records within 2000m

0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m

0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m

0

Areas designated to prevent urban sprawl by keeping land permanently open.

This data is sourced from the Ministry of Housing, Communities and Local Government.

10.12 Proposed Ramsar sites

Records within 2000m

0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m

0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m

0

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

This data is sourced from Natural England and Natural Resources Wales.

SSSI Impact Zones and Units

10.17 SSSI Impact Risk Zones

Records on site

0

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m

0

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

This data is sourced from Natural England and Natural Resources Wales.

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m

0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m

0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m

0

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.5 Conservation Areas

Records within 250m

0

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.6 Scheduled Ancient Monuments

Records within 250m

0

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.7 Registered Parks and Gardens

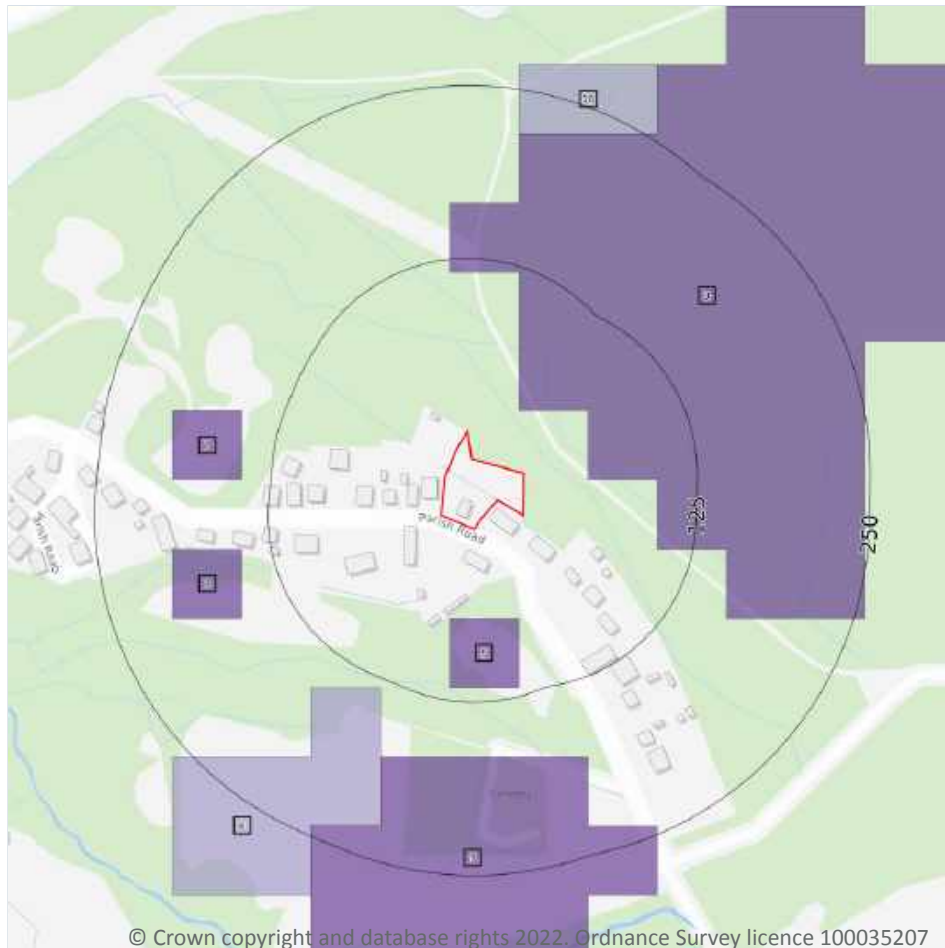
Records within 250m

0

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

12 Agricultural designations



- Site Outline
- Search buffers in metres (m)
- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Timber felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m

7

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on **page 65**

ID	Location	Classification	Description
3	40m NE	Grade 5	Very poor quality agricultural land
5	64m S	Grade 5	Very poor quality agricultural land
6	132m SW	Grade 4	Poor quality agricultural land

ID	Location	Classification	Description
7	146m W	Grade 5	Very poor quality agricultural land
8	146m W	Grade 5	Very poor quality agricultural land
9	164m S	Grade 5	Very poor quality agricultural land
10	218m N	Grade 4	Poor quality agricultural land

This data is sourced from Natural Resources Wales.

12.2 Open Access Land

Records within 250m **0**

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

This data is sourced from Natural England and Natural Resources Wales.

12.3 Tree Felling Licences

Records within 250m **0**

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m **0**

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m

0

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.



13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m

0

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m

0

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m

0

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

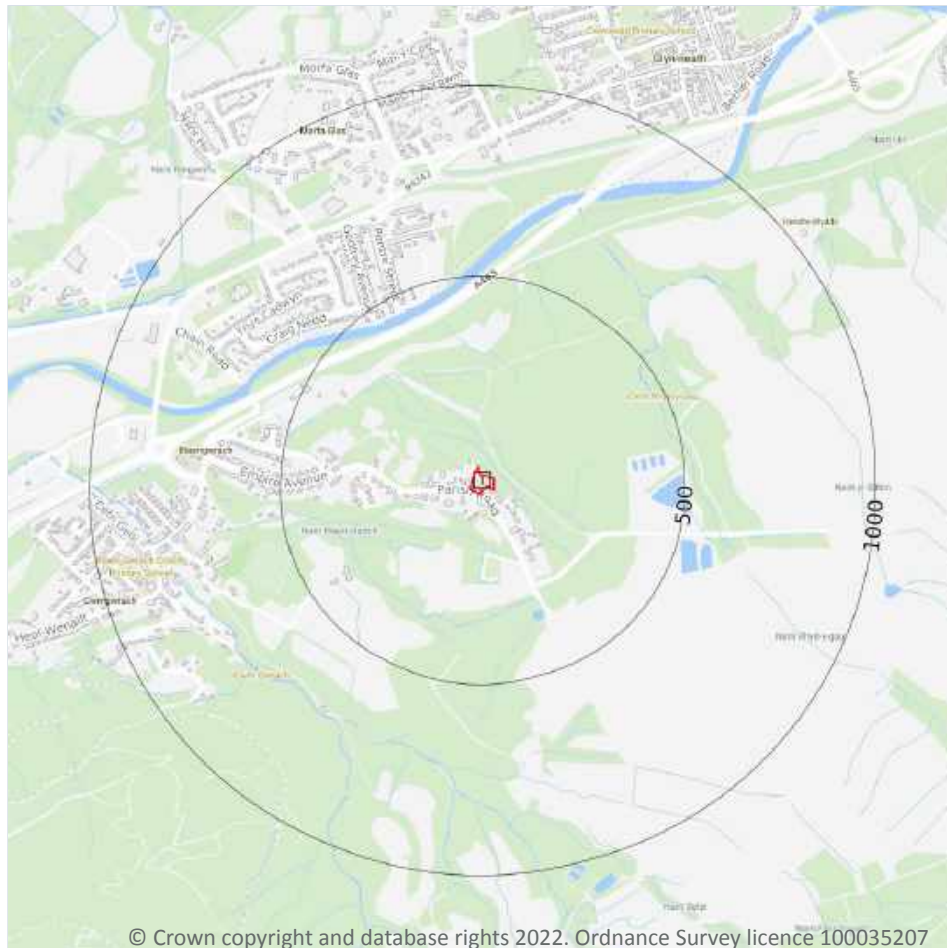
Records within 250m

0

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



- Site Outline
- Search buffers in metres (m)
- Full coverage
 - Partial coverage
 - No coverage

14.1 10k Availability

Records within 500m

1

An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 69**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	No coverage	No coverage	No coverage	NoCov

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Artificial and made ground

14.2 Artificial and made ground (10k)

Records within 500m

0

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial

14.3 Superficial geology (10k)

Records within 500m

0

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

0

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock

14.5 Bedrock geology (10k)

Records within 500m

0

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

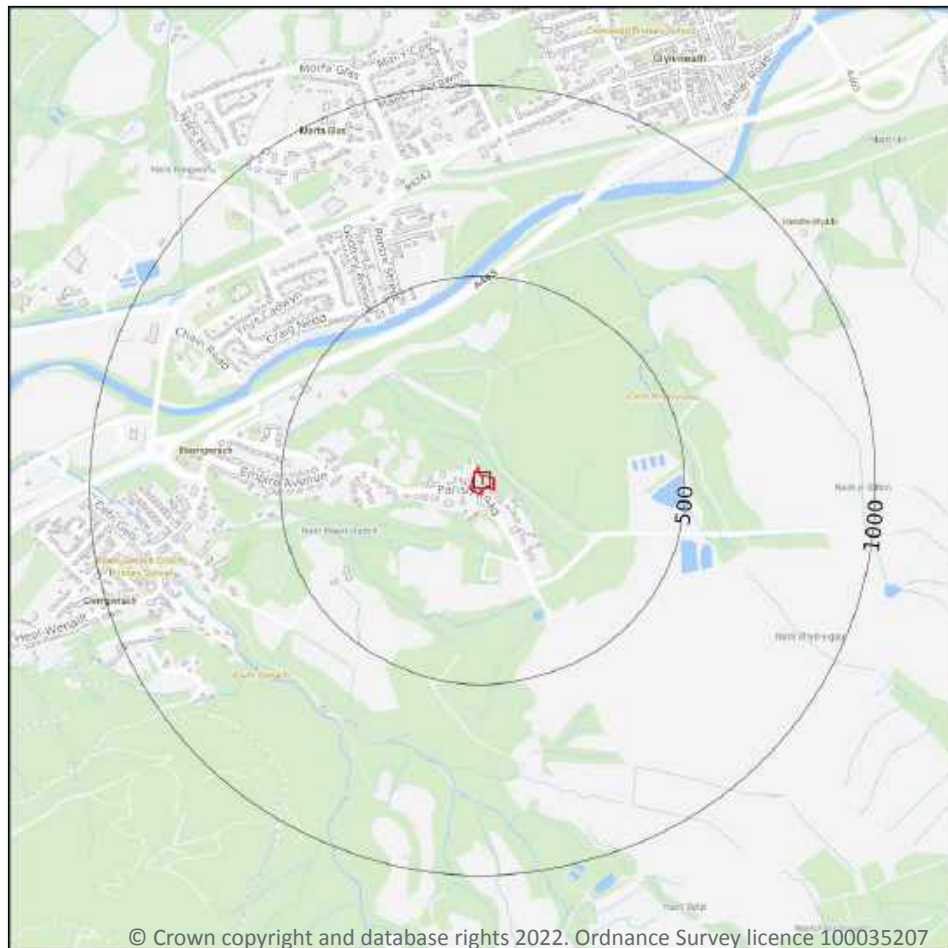
Records within 500m

0

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



- Site Outline
- Search buffers in metres (m)
- ☐ Geological map tile

15.1 50k Availability

Records within 500m

1

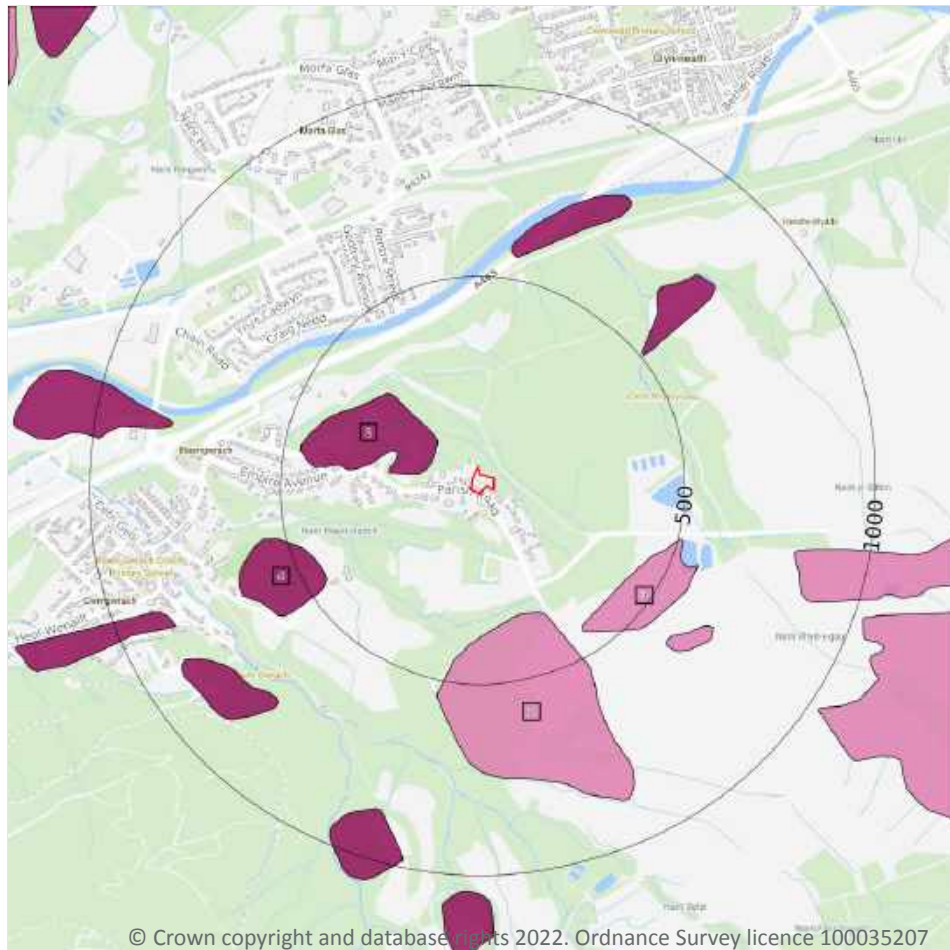
An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme. Where 50k data is not available, this area has been filled in with 625k scale data.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 73**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	EW231_merthyr_v4

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Artificial and made ground



- Site Outline
- Search buffers in metres (m)
- Made ground
 - Worked ground
 - Infilled ground
 - Disturbed ground
 - Landscaped ground

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15.2 Artificial and made ground (50k)

Records within 500m

4

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 74**

ID	Location	LEX Code	Description	Rock description
1	115m NW	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
2	332m S	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
3	413m SE	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
4	441m SW	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m

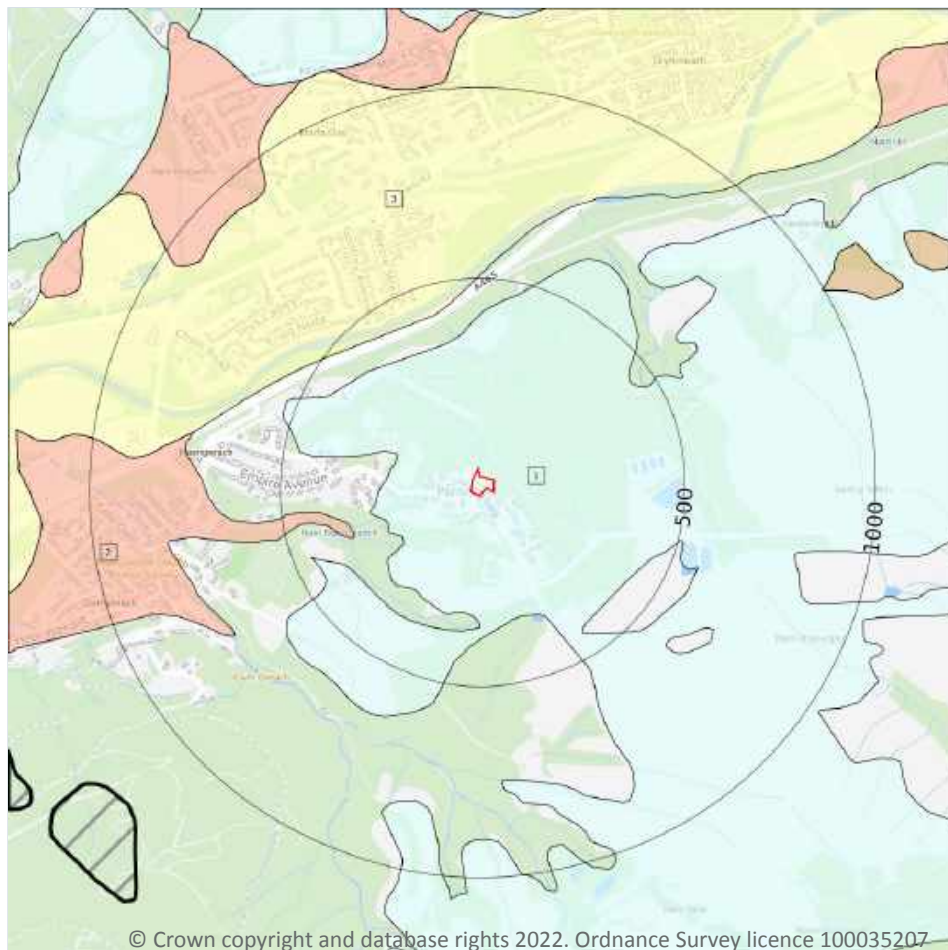
0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



— Site Outline

Search buffers in metres (m)

▨ Landslip (50k)

Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m

3

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 76**

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
2	326m W	ALF-XSV	ALLUVIAL FAN DEPOSITS	SAND AND GRAVEL
3	417m N	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m

1

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Mixed	High	Low

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m

0

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

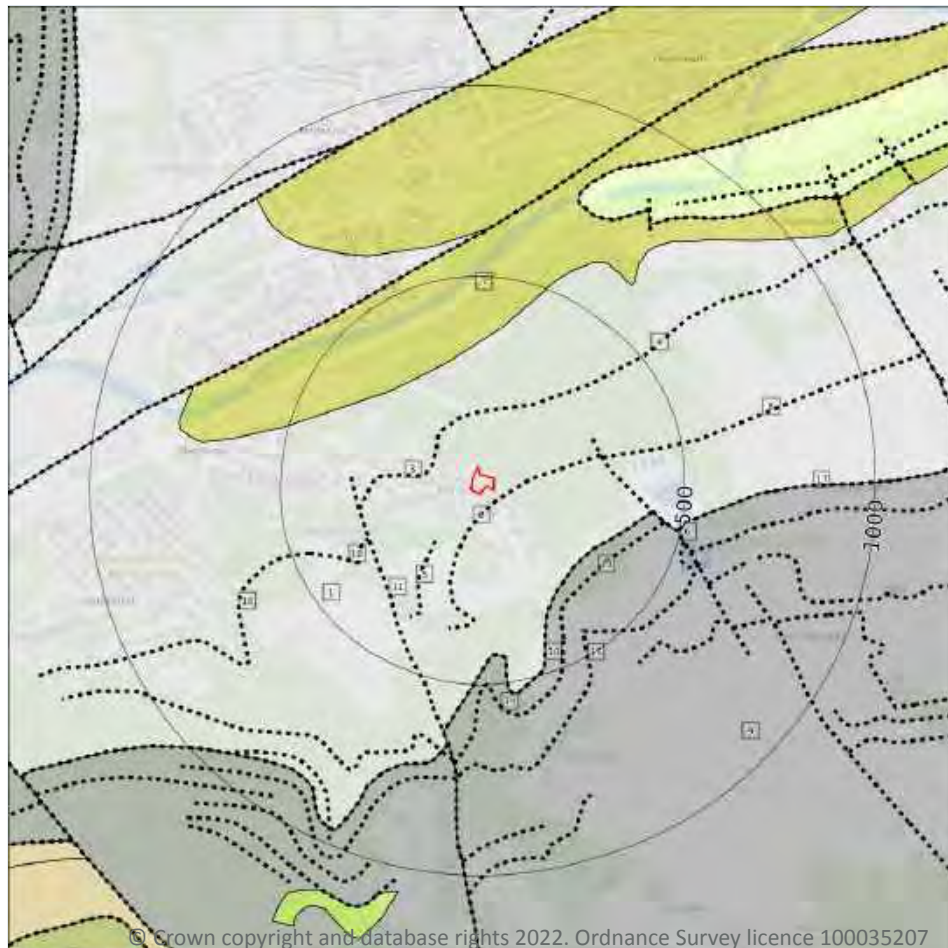
Records within 50m

0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

.... Bedrock faults and other linear features (50k)

Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m

3

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 78**

ID	Location	LEX Code	Description	Rock age
1	On site	SWLCM-MDSS	SOUTH WALES LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
7	281m NW	SWLCM-SDST	SOUTH WALES LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN

ID	Location	LEX Code	Description	Rock age
9	290m SE	SWMCM-MDSS	SOUTH WALES MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	1
---------------------------	----------

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Fracture	Moderate	Low

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	14
----------------------------	-----------

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 78**

ID	Location	Category	Description
2	27m SE	ROCK	Coal seam, inferred
3	110m W	ROCK	Coal seam, observed
4	134m NW	ROCK	Coal seam, inferred
5	162m SW	ROCK	Coal seam, observed
6	279m E	FAULT	Fault, inferred, displacement unknown
8	289m E	ROCK	Coal seam, inferred
10	290m SE	FOSSIL_HORIZON	Marine band
11	294m W	FAULT	Fault, observed, displacement unknown
12	297m SW	ROCK	Coal seam, observed
13	340m SE	ROCK	Coal seam, inferred



ID	Location	Category	Description
14	431m SE	ROCK	Coal seam, observed
15	438m SE	ROCK	Coal seam, observed
16	456m W	ROCK	Coal seam, inferred
17	494m E	FOSSIL_HORIZON	Marine band

This data is sourced from the British Geological Survey.



16 Boreholes

16.1 BGS Boreholes

Records within 250m

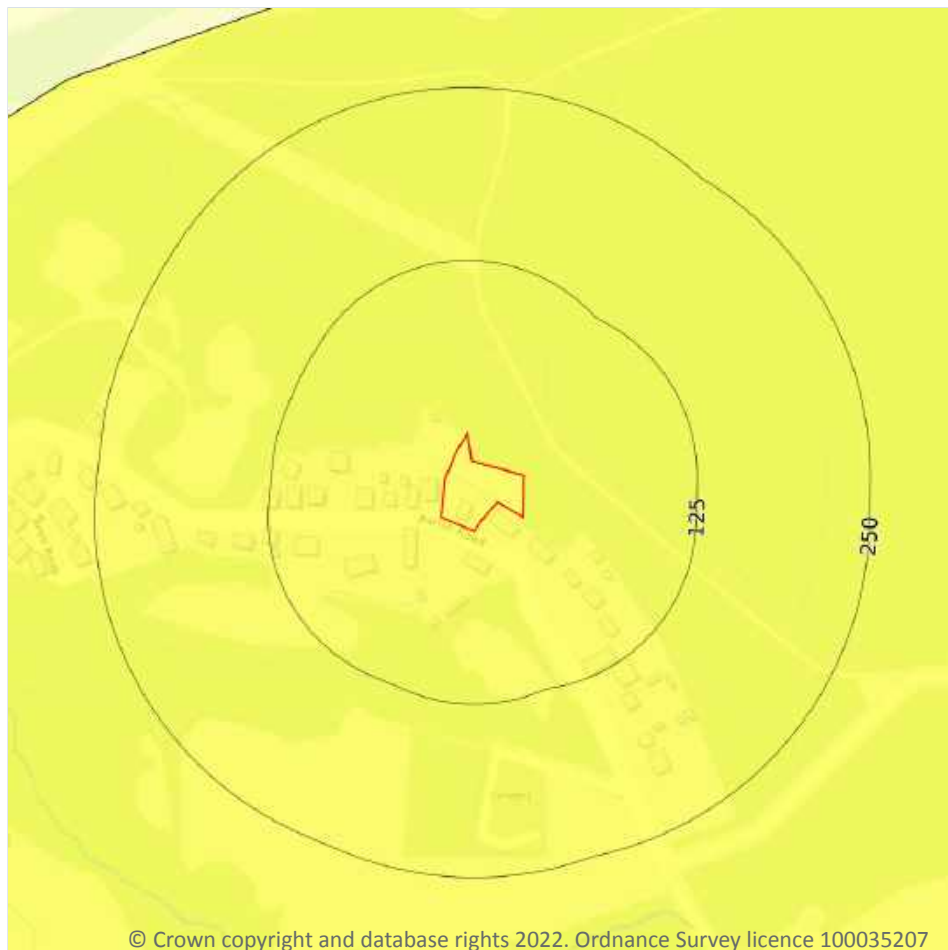
0

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☒ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.1 Shrink swell clays

Records within 50m

1

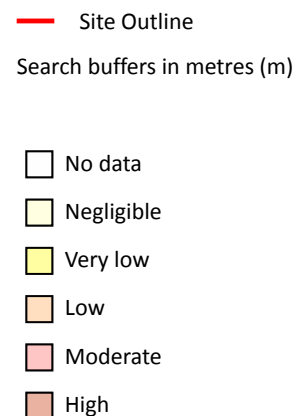
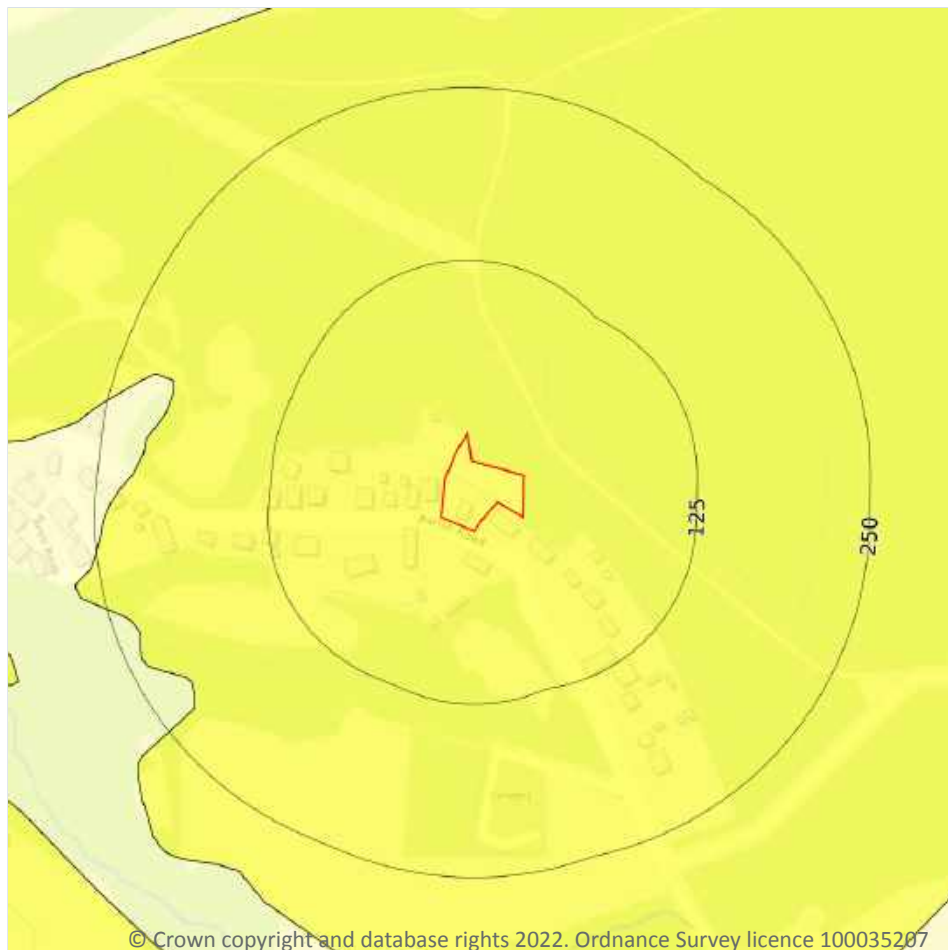
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 82**

Location	Hazard rating	Details
On site	Very low	Ground conditions predominantly low plasticity.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



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17.2 Running sands

Records within 50m

1

The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

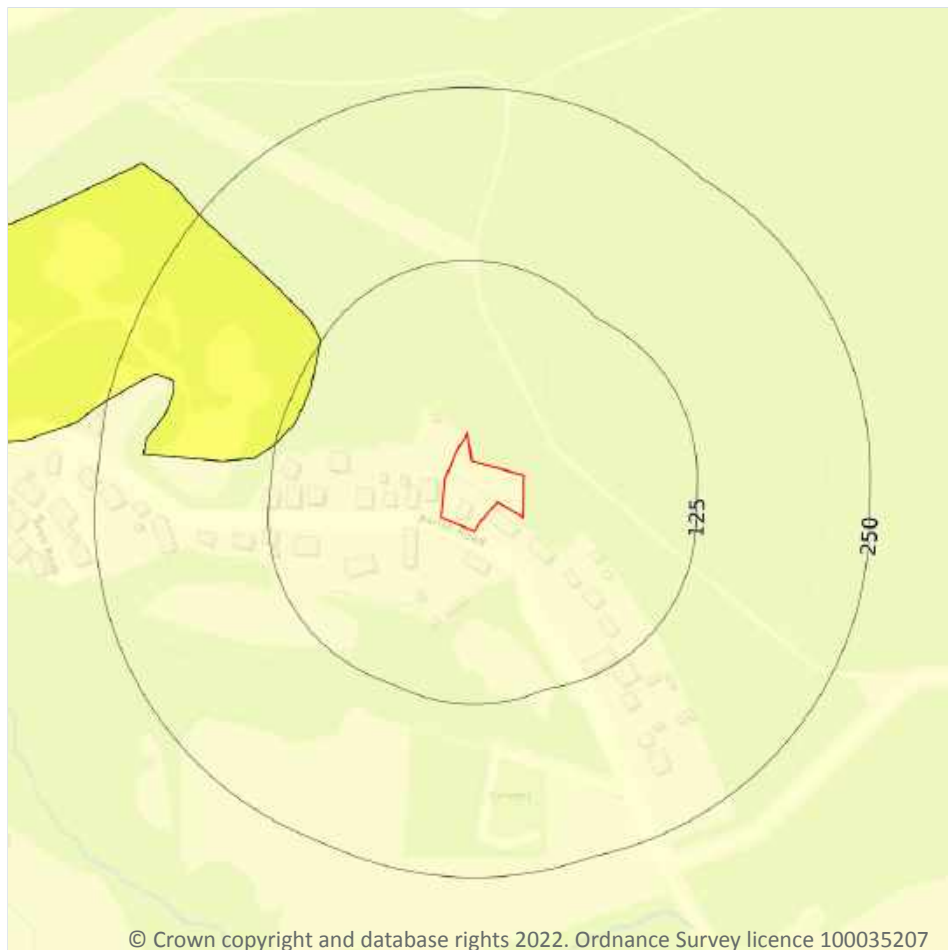
Features are displayed on the Natural ground subsidence - Running sands map on **page 83**

Location	Hazard rating	Details
On site	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.3 Compressible deposits

Records within 50m

1

The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

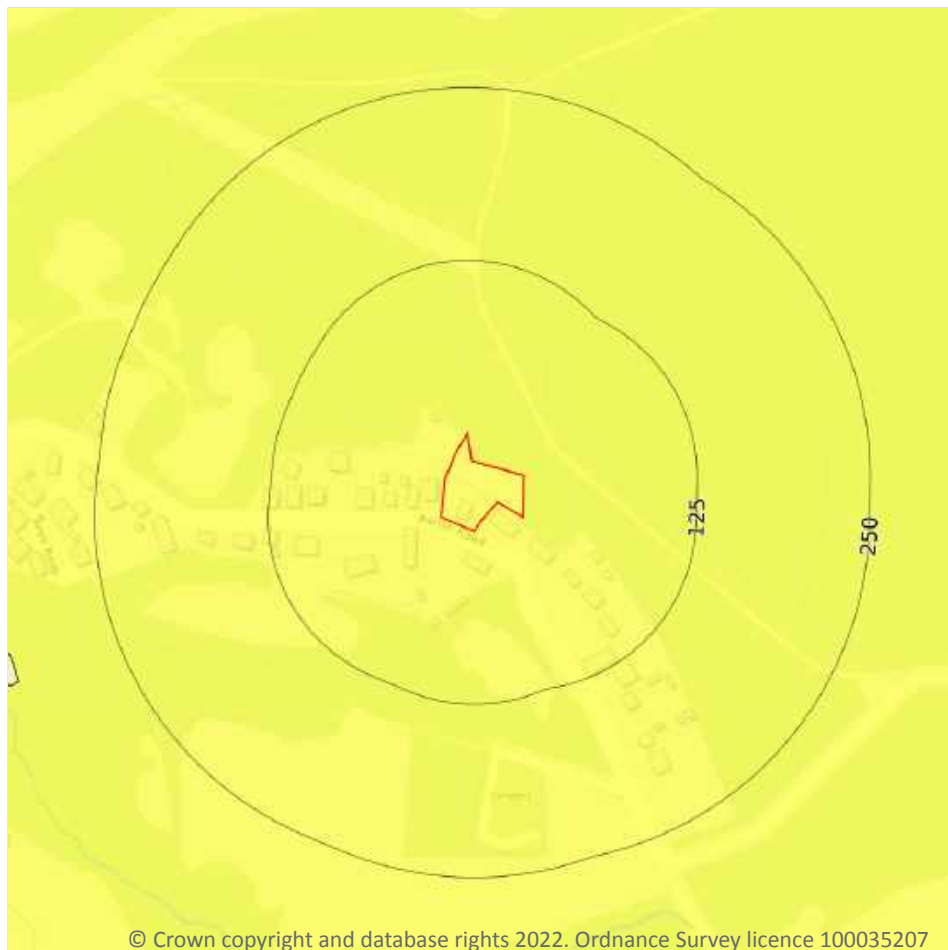
Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 84**

Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☒ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.4 Collapsible deposits

Records within 50m

1

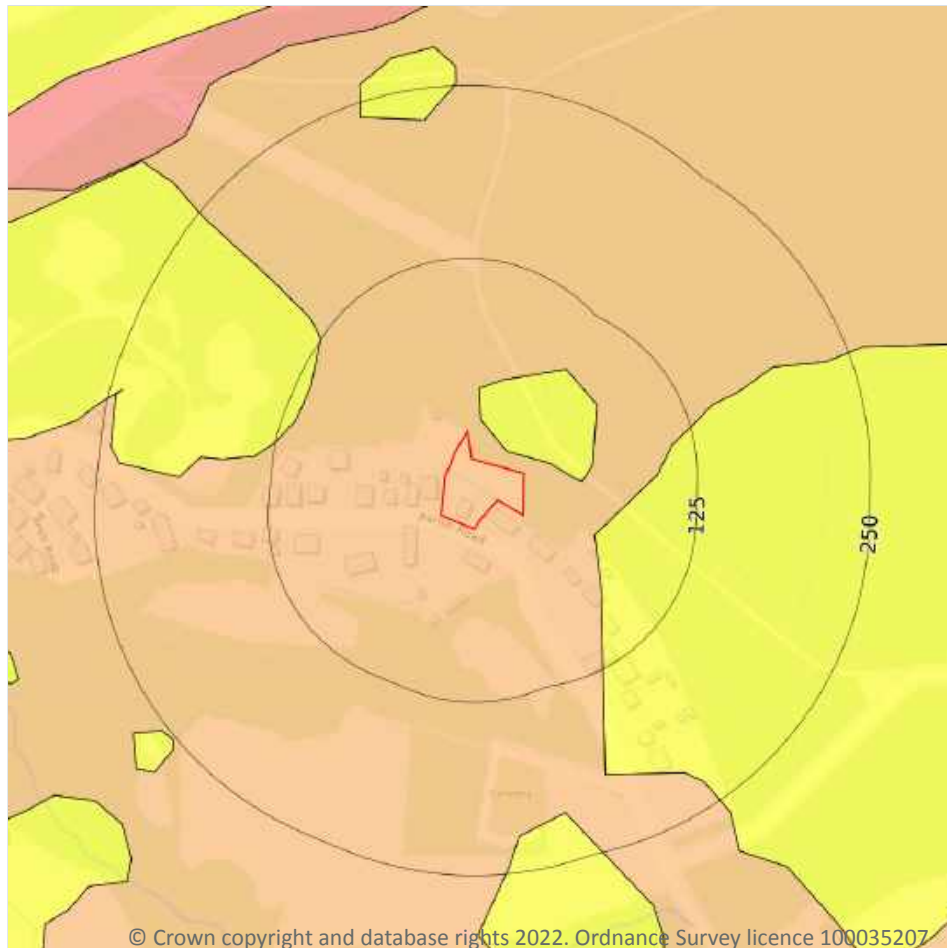
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 85**

Location	Hazard rating	Details
On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

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17.5 Landslides

Records within 50m

2

The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 86**

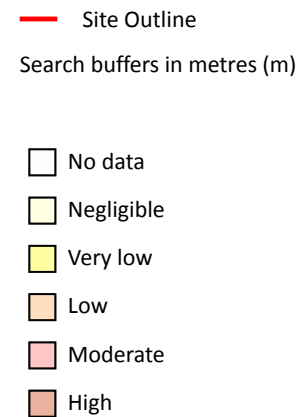
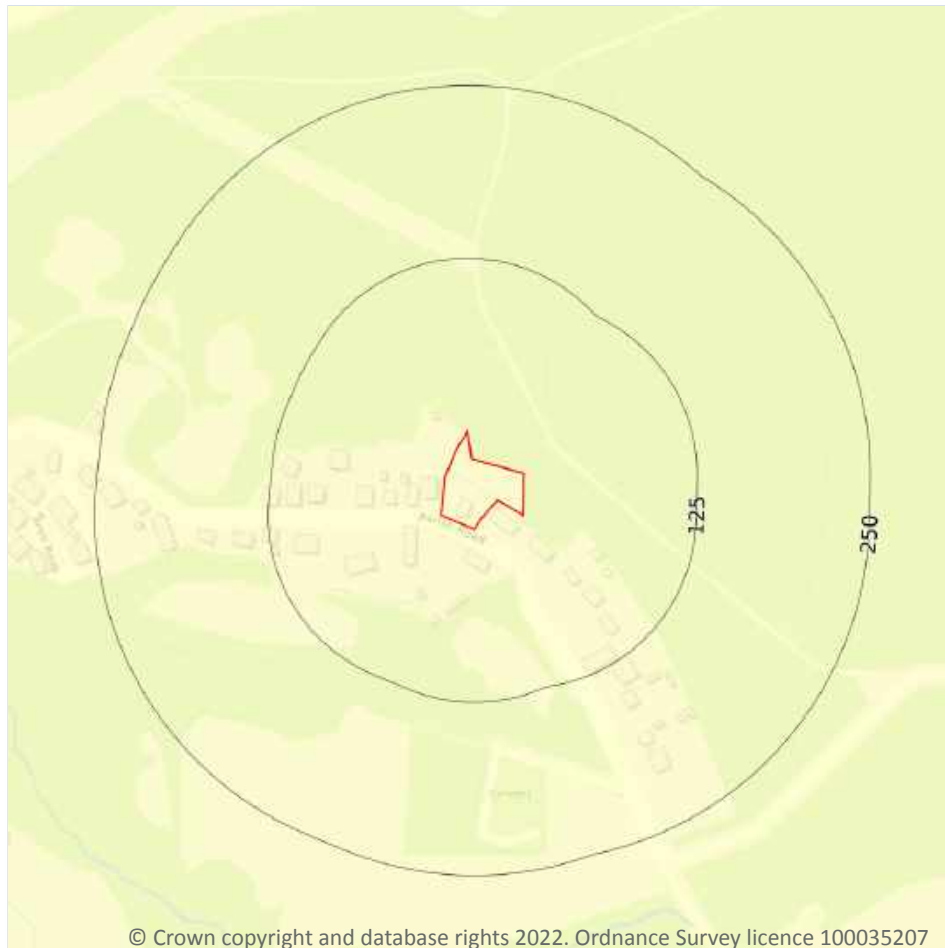
Location	Hazard rating	Details
On site	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.

Location	Hazard rating	Details
12m NE	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



17.6 Ground dissolution of soluble rocks

Records within 50m

1

The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

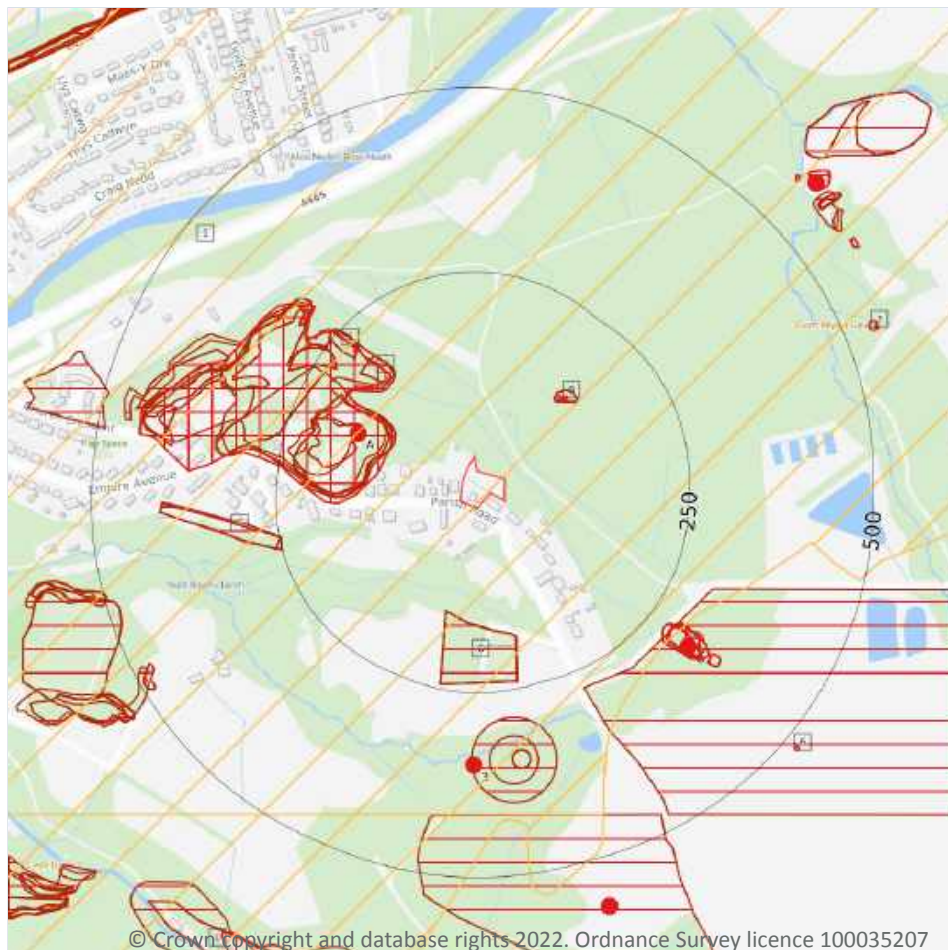
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 88**

Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.

This data is sourced from the British Geological Survey.



18 Mining, ground workings and natural cavities



- Site Outline
- Search buffers in metres (m)
- ▢ Natural cavities (Area)
 - Natural cavities (Point)
 - BritPits
 - ▢ Surface ground workings
 - ▢ Underground workings
 - ▢ Historical Mineral Planning Areas
 - Mining Cavities
- Non Coal Mining
 - ▢ Sporadic underground mining of restricted extent possible
 - ▢ Localised small scale underground mining possible
 - ▢ Small scale mining possible
 - ▢ Underground mining known or likely within or in close proximity
 - ▢ Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m

0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m

3

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

Features are displayed on the Mining, ground workings and natural cavities map on **page 89**

ID	Location	Details	Description
A	154m NW	Name: Blaengwrach Address: Blaengwrach, Glyn-Neath, NEATH, West Glamorgan Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
G	318m SE	Name: Dunraven Adare Colliery Address: Blaengwrach, Glyn-Neath, NEATH, West Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
3	347m S	Name: Blaen-Clairch Address: Blaengwrach, Glyn-Neath, NEATH, West Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m

28

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining, ground workings and natural cavities map on **page 89**



ID	Location	Land Use	Year of mapping	Mapping scale
A	105m NW	Unspecified Old Quarry	1948	1:10560
A	105m NW	Unspecified Old Quarry	1914	1:10560
A	106m NW	Unspecified Old Quarry	1938	1:10560
A	106m NW	Pond	1938	1:10560
A	107m NW	Ironstone Level	1877	1:10560
A	114m W	Pond	1964	1:10560
A	114m W	Pond	1980	1:10560
A	114m W	Unspecified Disused Quarry	1981	1:10000
A	118m NW	Unspecified Old Quarry	1897	1:10560
B	126m NE	Unspecified Heap	1964	1:10560
B	126m NE	Unspecified Heap	1980	1:10560
C	146m S	Cemetery	1964	1:10560
C	146m S	Cemetery	1980	1:10560
C	146m S	Cemetery	1981	1:10000
A	150m W	Pond	1948	1:10560
A	150m W	Pond	1914	1:10560
D	154m NW	Unspecified Pit	1938	1:10560
D	154m NW	Unspecified Pit	1938	1:10560
A	160m W	Pond	1897	1:10560
E	209m NW	Unspecified Heap	1938	1:10560
E	209m NW	Unspecified Heap	1938	1:10560
E	222m NW	Unspecified Heap	1938	1:10560
E	222m NW	Unspecified Heap	1938	1:10560
A	231m NW	Unspecified Ground Workings	1964	1:10560
A	231m NW	Unspecified Ground Workings	1980	1:10560
A	231m NW	Unspecified Ground Workings	1981	1:10000
F	248m W	Cuttings	1914	1:10560
F	249m W	Cuttings	1938	1:10560

This is data is sourced from Ordnance Survey/Groundsure.



18.4 Underground workings

Records within 1000m

31

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

Features are displayed on the Mining, ground workings and natural cavities map on **page 89**

ID	Location	Land Use	Year of mapping	Mapping scale
A	107m NW	Ironstone Level	1877	1:10560
B	129m NE	Old Air Shaft	1897	1:10560
B	132m NE	Air Shaft	1877	1:10560
B	134m NE	Old Air Shaft	1948	1:10560
B	134m NE	Old Air Shaft	1914	1:10560
G	283m SE	Coal Drift	1877	1:10560
G	285m SE	Old Coal Drift	1948	1:10560
G	285m SE	Old Coal Drift	1914	1:10560
G	350m SE	Old Coal Drift	1897	1:10560
6	516m SE	Air Shaft	1877	1:10560
7	535m E	Unspecified Disused Shaft	1981	1:10000
R	562m S	Old Trial Shaft	1948	1:10560
R	562m S	Trial Shaft	1877	1:10560
R	562m S	Old Trial Shaft	1914	1:10560
Q	565m NE	Old Coal Level	1897	1:10560
R	565m S	Old Trial Shaft	1897	1:10560
Q	568m NE	Unspecified Disused Level	1981	1:10000
Q	577m NE	Old Coal Level	1948	1:10560
Q	577m NE	Old Coal Level	1914	1:10560
U	661m SW	Unspecified Mine	1964	1:10000
-	722m S	Air Shaft	1914	1:10560
-	722m S	Air Shaft	1897	1:10560
-	723m S	Air Shaft	1964	1:10000



ID	Location	Land Use	Year of mapping	Mapping scale
-	728m S	Air Shafts	1877	1:10560
-	731m SW	Air Shafts	1877	1:10560
-	784m S	Unspecified Disused Level	1964	1:10000
-	784m S	Unspecified Disused Level	1983	1:10000
-	790m S	Old Coal Level	1914	1:10560
-	973m S	Air Shaft	1877	1:10560
-	973m S	Air Shaft	1914	1:10560
-	973m S	Air Shaft	1897	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m

3

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

Features are displayed on the Mining, ground workings and natural cavities map on **page 89**

ID	Location	Name	Commodity	Class	Likelihood
1	On site	Not available	Iron Ore (Bedded)	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
L	414m S	Not available	Iron Ore (Bedded)	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered



ID	Location	Name	Commodity	Class	Likelihood
-	725m NE	Not available	Vein Mineral	A	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m

0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site

0

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site

1

Areas which could be affected by past, current or future coal mining.

Location	Details
On site	The site is located within a coal mining area as defined by the Coal Authority. A Consultants Coal Mining Report is recommended to further assess coal mining issues at the site. This can be ordered directly through Groundsure or your preferred search provider.

This data is sourced from the Coal Authority.



18.10 Brine areas

Records on site	0
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The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.

18.11 Gypsum areas

Records on site	0
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Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0
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Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

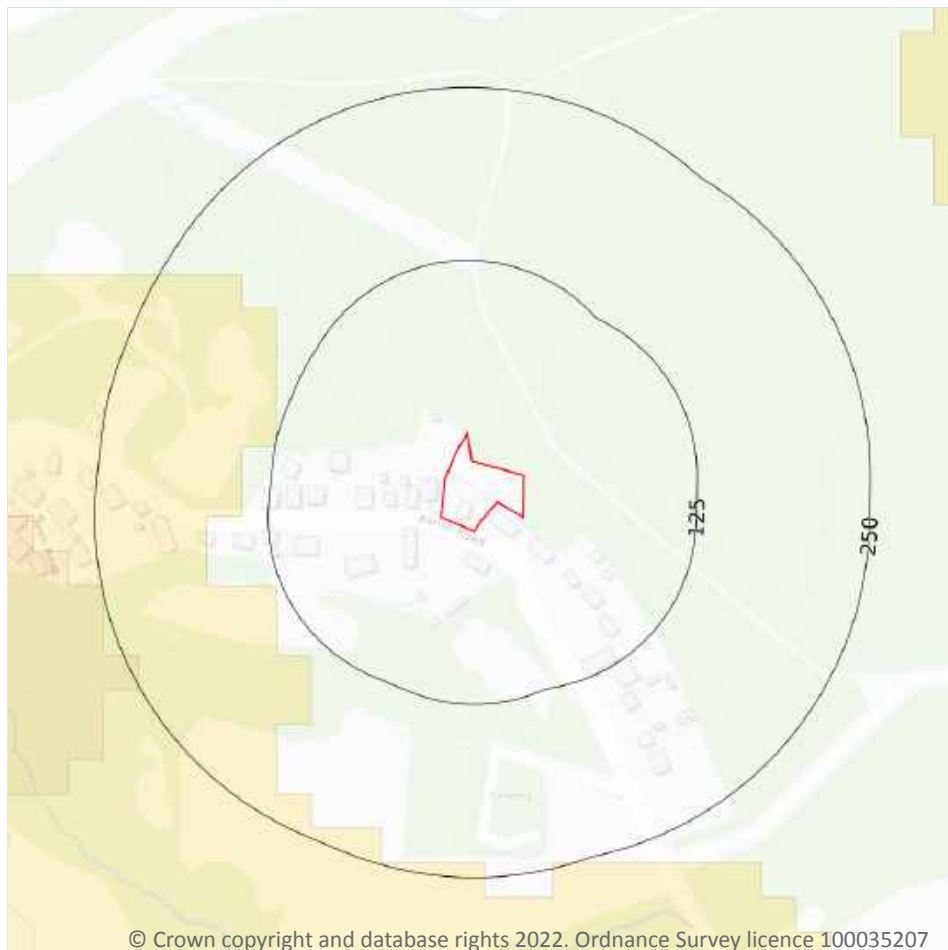
18.13 Clay mining

Records on site	0
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Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).

19 Radon



- Site Outline**
- Search buffers in metres (m)**
- Greater than 30%
 - Between 10% and 30%
 - Between 5% and 10%
 - Between 3% and 5%
 - Between 1% and 3%
 - Less than 1%

19.1 Radon

Records on site

1

Estimated percentage of dwellings exceeding the Radon Action Level. This data is the highest resolution radon dataset available for the UK and is produced to a 75m level of accuracy to allow for geological data accuracy and a 'residential property' buffer. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain. The data was derived from both geological assessments and long term measurements of radon in more than 479,000 households.

Features are displayed on the Radon map on **page 96**

Location	Estimated properties affected	Radon Protection Measures required
On site	Less than 1%	None**

This data is sourced from the British Geological Survey and Public Health England.



20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m

2

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km². In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
15m N	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects

21.1 Underground railways (London)

Records within 250m

0

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m

0

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m

0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m

0

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m

0

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.



This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m

0

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m

0

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m

0

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m

0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m

0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 Ltd.



Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference>.

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