PHASE I GEO-ENVIRONMENTAL ASSESSMENT

C3297 – Barry Waterfront, Barry

July 2020

hsp consulting

CIVIL | STRUCTURAL | GEOTECHNICAL & ENVIRONMENTAL | TRAFFIC AND TRANSPORT

Lawrence House | 6 Meadowbank Way | Nottingham | NG16 3SB

01773 535555 | design@hspconsulting.com | www.hspconsulting.com

Barry Waterfront, Ffordd Y Mileniwm, Barry

Phase I Geo-Environmental Desk Study Report

This report was produced by HSP Consulting Engineers Ltd for Gleeds Management Services Ltd as the Phase I Geo-Environmental Desk Study Report for Barry Waterfront to provide a preliminary assessment of potential ground related development constraints and to support a feasibility study.

This report may not be used by any person other than Gleeds Management Services Ltd and must not be relied upon by any other party without the explicit written permission of HSP Consulting Engineers Ltd. In any event, HSP Consulting Engineers Ltd accepts no liability for any costs, liabilities or losses arising as a result of the use or reliance upon the contents of this report by any person other than Gleeds Management Services Ltd.

All parties to this report do not intend any of the terms of the Contracts (Rights of Third Party Act 1999) to apply to this report. Please note that this report does not purport to provide definitive legal advice.

Issue & Revision History

Revision	Status	Originated	Checked	Approved	Date
-	FINAL	H.Brown B.Sc (Hons) M.I.C.E	Johanne Bridgman BSc (Hons), CGeol, FGS	H.Pratt B.Eng (Hons), C.Eng, F.Cons.E, M.I.C.E, MI Mgt.	16.07.2019
Project Number: C3297				Document Reference: C3297/PI	

This document is also available in hard copy; please contact the author to obtain a copy.

HSP Consulting Engineers Ltd, Lawrence House, 6 Meadowbank Way, Nottingham, NG16 3SB
T 01773 535555 **W** www.hspconsulting.com

Contents

Appendices

Appendix I	-	Site Location Plan and
Appendix II	-	Emapsite™ GeoInsight and EnviroInsight Report
Appendix III	-	Historical Mapping
Appendix IV	-	Photographic Record
Appendix V	-	Basis for Contaminated Land Qualitative Risk Assessment
Appendix VI	-	Local Authority Correspondence

Executive Summary

HSP Consulting has been commissioned by Gleeds Management Services Ltd to provide a geo-environmental desk study (Phase I) providing information on likely constraints to the development of the site. The purpose of the report is to collate background historical and geo-environmental data to address where possible land contamination within Planning Policy Guidance and geo-environmental constraints for development.

The site is located off Ffordd Y Mileniwm, approximately 0.30 km south east of Barry town centre. The approximate National Grid Reference for the centre of the site is (NGR) 311115, 167399.

The site is currently a temporary compound with car park, offices and storage area for construction work being undertaken to the north of the site. The carpark is a mixture of concrete hardstanding weathered tarmacadam surface. The area to the south of the fenced construction compound comprises undulating scrubland, with several stockpiles of a topsoil like material and construction debris remnant from the nearby current construction works.

The site is shown from earliest mapping (1878) to be part of tidal flats of the Cadoxton River estuary with a small tributary present in the north east of the site. From 1898 the river, tributary and tidal flats are no longer shown, presumed reclaimed/infilled and the site forms part of the docks with associated rail sidings, tanks and coal yards until the late 1990's early 2000's when the site and a wider area are shown as unused, prior to more recent redevelopment of the dock area. The surrounding land use is recorded as predominantly, industrial and residential. The town of Barry is located to the east of the site, with Barry Island directly south.

Superficial deposits comprising Tidal Flats with bedrock geology of the Penarth Group and St Mary's Well Bay Member are expected on site. Made Ground materials are expected across the site area as BGS mapping indicates the site and surrounding area as Infilled Land

The Preliminary Conceptual Site Model indicates a Low to Moderate possibility that harm could arise to a designated receptor from identified hazards. An intrusive ground investigation is recommended to clarify the risks.

Sources of ground gas have been identified within a 250m radius of the site, which relate to the potential for infilled and made ground upon the site. At this stage ground gas monitoring is recommended upon the site due to the sensitive nature of the proposed end use.

The executive summary contains an overview of key findings and conclusions. However, no reliance should be placed on the executive summary until the whole of the report has been read. Other sections of the report may contain information which puts into context the findings noted within the executive summary.

1. Introduction

1.1 Background

Gleeds Management Services Ltd have been commissioned to undertake a feasibility study for the provision of a new build sixth form campus with associated hardstanding and soft landscaping.

1.2 Scope and Limitations

HSP Consulting has been commissioned by Gleeds Management Services Ltd to provide technical studies to inform the feasibility study. The geo-environmental desk study (Phase I) is one of a series of studies providing information on likely constraints to the development of the site. The purpose of the report is to collate background historical and geo-environmental data to address where possible land contamination and stability matters within Planning Policy Guidance.

The recommendations made in this report are based on the assessment of the published information and information provided by the Client.

1.3 Report Objectives

The objectives of this report are to:

- Establish the geological and hydrogeological conditions using existing available/published information;
- Summarise available information and identify site specific geotechnical and environmental hazards which may place a constraint upon the proposed site use;
- Produce a Conceptual Site Model and preliminary qualitative environmental risk assessment identifying potential pollution linkages between sources of contamination, pathways and receptors;
- Provide recommendations for Phase II Ground Investigation and any other assessments required.

1.4 Sources of Information

The following sources of information were used during the preparation of this report.

- Emapsite™ GeoInsight and EnviroInsight Ref: EMS_608209_812590 (Appendix II)
- Emapsite™ Historical Mapping Ref: EMS_608209_812590 10000&2500 (Appendix III)
- British Geological Survey. Onshore Geoindex. www.bgs.ac.uk
- DEFRA Magic Map: http://defra.gov.uk/magicmap.aspx
- Department of the Environment. Industry Profiles.

A walkover was undertaken by HSP Consulting on the 21st May 2020. The purpose of the walkover was to record the current land use, topography and principal physical features and to identify, where possible, visual and olfactory indicators of contamination.

2. Site Setting

2.1 The Site

2.1.1 Location

The site is located off Ffordd Y Mileniwm, approximately 0.30 km south east of Barry town centre. The approximate National Grid Reference for the centre of the site is (NGR) 311115, 167399. A Site Location Plan and Photographic Record is included in Appendix I and Appendix IV respectively.

2.1.2 Description

The site is irregular in shape and is approximately 1.15Ha in area. The site is accessed via a gated Road off Ffordd Y Mileniwm to the south of the site.

The majority of the site is currently occupied by a temporary construction compounds for developments to the north of the site. The compounds include a temporary car park in the west, construction offices and storage area in the north east and north of the site respectively. The carpark area is a mixture of concrete hardstanding and weathered tarmacadam surface. Directly south of the fenced temporary compound is an area of undulating scrubland which has been used for stockpiling topsoil like materials and construction debris..

The site is bounded by a mixture of Heras and Palisade fencing with the temporary site compound in the east of the site bounded by further Heras Fencing. The sites topography is generally level in the west, centre and north east of the site. With the eastern scrubland at a higher elevation, approximately 1.5m compared to the rest of the site.

2.1.3 Surrounding Land Use

The main features of interest identified are:

North:	Mixed use, heritage rail line and station, commercial, retail and leisure use with residential properties beyond.
East:	Barry Docks.
South:	Supermarket and residential properties.
West:	Railway Lines and residential properties beyond.

2.1.4 Proposed End Use

Gleeds Management Services Ltd have been commissioned to undertake a feasibility study for a new sixth form campus with associated hardstanding and soft landscaping. Preferred development options were not available at the time of writing.

2.2 Geology

2.2.1 Made Ground

The BGS mapping indicates that Made Ground (Undivided) is present across the site, this is described as an area where the land surface (natural or artificial) has been extensively remodelled, but where it is impractical or impossible to delineate separate zones of made ground, worked ground or disturbed ground of variable composition.

2.2.2 Superficial Deposits

The BGS mapping indicates the site is underlain by superficial deposits of Tidal Flats in the centre and east of the site, which comprise sands, gravels, silts and clays. Described by the BGS as '*Tidal flat deposits, including mud flat and sand flat deposits, are deposited on extensive nearly horizontal marshy land in the intertidal zone that is alternately covered and uncovered by the rise and fall of the tide. They consist of unconsolidated sediment, mainly mud and/or sand. They may form the top surface of a deltaic deposit. Normally a consolidated soft silty clay, with layers of sand, gravel and peat. Characteristically low relief*.' Superficial deposits are not expected in the west of the site.

2.2.3 Bedrock Geology

BGS bedrock mapping indicates the majority of the site is underlain by mudstone and interbedded limestones of the Penarth Group Mudstone and Limestone, Interbedded of the Triassic Period, described by the BGS as '*Grey to black mudstones with subordinate limestones and sandstones; predominantly marine in origin.'*

With the St Mary's Well Bay Member – Limestone and Mudstone, Interbedded of the Triassic and Jurassic Periods indicated in the extreme west of the site. A detailed description of this unit is not available from the BGS.

2.2.4 Structural Geology

A single observed fault with unknown displacement has been identified 236m south east of the site boundary.

2.2.5 Historical Boreholes

There are nine BGS borehole records within 250m of the site. Two of the records are marked as confidential and are not able to be accessed at the time of writing. A summary of the most relevant borehole records is provided in Table: 2.1 below:

Table 2.1 - Summary of Historical BGS Borehole Information

BGS Reference		Summary of Ground Conditions	
ST16NW377 83m North	Drilled by: British Geological Survey Date: December 2005 Method: Trial Pit	0.00m – 1.00m	MADE GROUND – Scrub over black sandy GRAVEL. Gravel is fine to coarse subangular to angular quartzite, sandstone and occasional coal. Occasional cobbles and boulders of sandstone, limestone and brick.

BGS Reference		Summary of Ground Conditions	
ST16NW379 Approximately 87m N	Drilled by: British Geological Survey. Date: December 2005 Method: Trial Pit	0.00m – 0.40m 0.40m – 0.90m 0.90m – 1.50m 1.80m – 2.10m 2.10m – 2.20m	MADE GROUND – Scrub over dark brown-black sandy GRAVEL. Gravel is fine to coarse subangular to angular, clinker, slag, mudstone and coal. Occasional red-brown pockets. MADE GROUND – Strong grey flaggy LIMESTONE and weak mudstone in a matrix of brown-grey clay. MADE GROUND – Firm to stiff brown-grey mottled red and white slightly sandy slightly gravelly CLAY with decomposing red tree roots. Gravel is fine to coarse sandstone, mudstone, chalk, brick and slag. Occasional cobbles and boulders. Strong grey flaggy LIMESTONE in matrix of soft grey brown clay. Strong grey LIMESTONE with clay filled fissures.
ST16NW375 94m N	Drilled by: British Geological Survey. Date: December 2005 Method: Cable Percussion	0.00m – 2.00m 2.00m – 4.00m 4.00m – 4.20m 4.20m – 4.30m	MADE GROUND – Medium dense to dense black slightly clayey to clayey sandy GRAVEL with occasional cobbles and boulders. Gravel is fine to coarse subangular to angular slag, clinker, sandstone and coal. Firm to stiff light grey-brown gravelly CLAY with some cobbles and boulders. Gravel is fine to coarse subangular to angular limestone. Very stiff grey-brown sandy CLAY. Strong grey LIMESTONE.
ST16NW378 95m N	Drilled by: British Geological Survey. Date: December 2005 Method: Cable Percussion	0.00m – 1.00m 1.00m – 1.05m	MADE GROUND – Scrub over black sandy GRAVEL. Gravel is fine to coarse subangular to angular quartzite, sandstone and occasional coal. Occasional cobbles and boulders of sandstone, limestone and brick. Many large concrete boulders. Strong grey LIMESTONE with some fossils.
ST16NW380 106m N	Drilled by: British Geological Survey. Date: December 2005 Method: Trial Pit	0.00m – 0.90m 0.90m – 1.10m 1.10m – 1.40m 1.40m – 2.00m 2.00m – 2.05m	MADE GROUND – Scrub over black sandy GRAVEL. Gravel is fine to coarse subangular to angular quartzite, sandstone and occasional coal. Occasional cobbles and bounders of sandstone limestone and brick. MADE GROUND – Concrete. Strong grey flaggy LIMESTONE in clay matrix. Firm to stiff grey-brown fissured CLAY. Strong grey LIMESTONE with some fossils.

2.2.6 Geological Hazard Ratings

The Emapsite™ Datasheet provides ground stability data for the site and surrounding area, a summary is provided in Table 2.2 below:

Table 2.2 - Summary of BGS Hazard Ratings

Hazard	Located	Direction	Hazard Potential
Potential for Collapsible Ground Stability Hazards	On-site	-	Negligible to Very Low
Potential for Landslide Ground Stability Hazards	On-site	-	Very Low
Potential for Ground Dissolution Stability Hazards	On-site	-	Negligible
Potential for Compressible Ground Stability Hazards	On-Site	-	Very Low
Potential for Running Sand Ground Stability Hazards	On-site	-	Very Low
Potential for Shrinking or Swelling Clay Ground Stability Hazards	On-site	-	Negligible to Low

2.3 Mining

2.3.1 BGS Mineral Sites

No records of mineral extraction have been identified within a 250m radius of the site.

2.3.2 Brine Extraction

No Brine Extraction Areas have been identified within a 250m radius of the site.

2.3.3 Coal Mining

The site is not located within a Coal Authority standing advice or reporting area.

2.4 Hydrogeology

2.4.1 Aquifer Units

The superficial deposits of the Tidal Flats located in the east of the site is classified as Secondary (Undifferentiated) Aquifer.

The Penarth Group bedrock deposits are classified as a Secondary B Aquifer the Environment Agency defines this as *"predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers.."*

With the St Mary's Well Bay Member classified as a Secondary A Aquifer *"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."*

2.4.2 Groundwater Vulnerability

The site is not located within a Source Protection Zone.

The soils on site are classified as being of high combined vulnerability with a high potential leaching class through well connected fractures in the bedrock.

2.4.3 Groundwater Abstractions

There are two records of groundwater abstraction licences within 1000m of the site. These relate to a single borehole location 854m south east of the site for general use.

2.5 Hydrology

2.5.1 Nearest Surface Water Course

No inland surface water feature has been identified within 250m of the site. However, there is a record of a surface water relating to a dock approximately 150m east of the site.

2.5.2 Surface Water Quality

No Environment Agency River Quality Records have been identified within a 250m radius of the site.

2.5.3 Surface Water Abstractions

No licensed surface water abstractions are recorded within a 250m radius of the site.

2.5.4 Surface Water Discharge Consents

There are two historic discharge consents for surface water within 250m of the site. These records belong to a single location 196m south east of the site and relate to Saline Water Effluent, the latest permit was revoked in May 1994.

2.6 Flood Risk

The site does not lie within an Environment Agency floodplain, an area benefitting from flood defences or within an area used for flood storage.

The site lies within an area with the potential for groundwater flooding of property situated below ground level and within an area where there is potential for groundwater flooding to occur at surface within the south and south west of the site. The risk of groundwater flooding on site is recorded to be Moderate in the centre and east of the site, with a negligible risk in the west.

The maximum risk for surface water flooding on site is recorded to be within a 1 in 30 year with a flood range between 0.30m and 1.0m depth.

Although the report provides information on flood risk this does not constitute a flood risk assessment for the site. The flood risk information provided only relates to flooding from Rivers or Seas and does not account for flooding from other sources such as groundwater, blockages in drainage systems, artificial water features and overland flow. A separate Flood Risk Assessment may be required for the site.

2.7 Radon

The east of the site is not recorded to be within a Radon Affected Area as between 1% and 3% of the properties are above the Action Level, therefore within this area of the site radon protective measures are not required. However, the west of the site is located within a Radon Affected Area, between 5% and 10% of the properties are above the Action Level. Therefore, basic radon protective measures are necessary in the west of the site.

2.8 Sensitive Land Uses, Ecological and Statutory Designations

No records of sensitive land use (SSSI, SAC, Nature Reserves, Nitrate Vulnerable Zone, Environmentally Sensitive Areas, etc) have been identified within a 250m radius of the site.

3. Site History

The following section details the historical development of the site, with reference to historical Ordnance Survey maps. All distances are approximate and given from the site boundary. Descriptions in italics are as identified on the historical plans. For a complete list of maps consulted refer to the Emapsite™ Historical Mapping presented in Appendix III.

Table 3.1 - Summary of Historical Maps

Published Map Date & Scale	Land Use on Site	Surrounding Land Use
Date : 1878 – 1881 Scale: 1:2,500 1:10,560 County Series	The majority of the site is part of tidal flats of the *Cadoxton River* with foreshore and farmland in the north western quadrant. The main river channel present in the south along the southern boundary, with a stream and confluence with the river present in the east.	*Limekilns* and a *quarry* are noted approximately 110m to the north of the site. A *Quarry* 100m to the west, with further *Old Limekiln* and *Quarry* noted approximately 160m east. The Village of *East Barry* is noted approximately 120m west of the site. *Barry Island* is approximately 400m to the south.
Date : 1898 - 1900 Scale: 1:2,500 1:10,560 County Series	The mapping indicates the area is as part of the Barry Docks, (land reclaimed from the sea) and the Cadoxton River diverted away to the east. The north east of the site is occupied by railway sidings, with a small building in the south and the west of the site occupied by marshland and open water bounded by the masonry edge of the dock with a track running north west to south at the crest of the dock.	Significant land reclamation and industrial development is recorded in the surrounded area including the formation of Barry Docks with *Barry Railway*, numerous railway sidings and *Coal Tips* (coal unloading areas from rail to ship) approximately 75m to 750m to the east of the site with open water (known as West Pond, unnamed on the mapping) immediately to the south of the site. A *Goods Shed* and sidings are shown approx.. 10m to the north. A *Locomotive Repairing Works* and associated, sheds and tracks are shown approximately 50m to the north of the site. Significant expansion of residential housing is shown in *East Barry* now shown as *Barry* approximately 120m north and west of the site.
Date : 1915 - 1921 Scale: 1:2,500 1:10,560 County Series	An additional building and sidings are noted in the south of the site.	Expansion of the goods shed approximately 10m to the north of the site is noted from 1920.
Date : 1936 – 1956 Scale: 1:2,500 1:10,000 County Series National Grid	Two further buildings and *Tanks* are noted in the south of the site. Additional buildings are noted along the trackway in the west of the site from 1954.	West Pond to the south of the site appears to have been infilled from 1936 onwards with the addition of buildings and sidings in this area. Barry Railway is now recorded as the *Great Western Railway* from 1936.
Date : 1965 – 1982 Scale: 1:1,250 1:10,000 Provisional National Grid	A *Coal Yard* inclusive of enclosures is noted in the north of the site from 1972. Railway sidings are no longer shown in this area. The buildings and tanks in the south of the site are no longer shown. An additional roadway is noted from 1972 in the west with crossroads in the south of the site.	The *Goods Shed* to the north of the site is noted as *'disused'* from 1971. The Locomotive Repair Works is no longer present to the north from 1971 with a *Pump House* noted approximately 100m to the north. A *Panel Beating Works* is shown approximately 125m to the north east. An *Oil Storage Terminal* and associated large storage tanks are locate 50m to the south east of the site. A *laboratory* is shown immediately to the south of the site from 1972. Further residential development within the town of *Barry* to the west of the site.

Published Map Date & Scale	Land Use on Site	Surrounding Land Use
Date : 1990 - 2010 Scale: 1:1,250 1:10,000 National Grid	Railway Sidings and the Coal Yard are no longer shown from 1990. The cross roads in the south of the site are no longer present from 2003 and replaced by an access road extending northwards to the former goods shed adjacent to the north of the site. Former coal yard enclosures are no longer noted on site from 2003.	The Oil Storage Terminal is no longer present from 2003, with a reduction in the number of Tanks noted on the 1993 mapping. A roundabout is present immediately to the east of the site from 2003. *The Vale of Glamorgan Steam Railway* is noted immediately to the west of the site from 2010.
Date : 2020 Scale: 1:10,000 National Grid	No significant change.	Commercial and residential development is noted in the surrounding area, with residential and retail (supermarket) development to the south of the site and a business park to the north beyond Hood Road. The *Hood Road Station* (part of the heritage railway) is shown immediately adjacent to the northern boundary.

4. Environmental Data

4.1 Polluting Activity

4.1.1 Pollution Incidents to Controlled Water

No Environment Agency Recorded Pollution Incidents to Controlled Water have been recorded within a 250m radius of the site.

4.2 Licensed Industrial Activity

4.2.1 Licensed Sites

There are no records of single Environment Agency Integrated Pollution Prevention and Control within 250m of the site.

There is a single record of Registered Radioactive Substance Authorisations recorded within 250m of the site. This relates to a record of Disposal of Radioactive Waste for an operator approximately 145m south east of the site, the licensed is recorded to have been revoked in January 2015.

No Part A (2) Activities have been identified within a 250m radius of the site. However there are two records of Licensed pollutant release Part B within 250m of the site, these relate to a Dry Cleaning process 170m west and a Petrol Vapour Recovery process 214m west.

4.2.2 Industrial Activities

Current Industrial Activities

There are 17No. records of current industrial activities recorded within a 250m radius of the site. The closest of which relates to an electrical substation (electrical feature) 29m south east. The remaining records relate to instances of Distribution and Haulage 83m north west, an activity relating to signage 83m north west, Electrical Features 94m south west, 121m north and 122m east, a Telecommunication Feature 110m west, Moorings and Unloading Facilities 114m south east and 218m east, Vehicle Breakdown and Recovery Services 150m north west, Clothing Components and Accessories 184m north west, Petrol and Fuel Stations 191m south, Giftware 227m north west, Industrial Repairs and Servicing 230m north east, General Supplies 242m north west and Furniture 244m north of the site.

Historical Industrial Activities

There are 101No. historical industrial activities within a 250m radius of the site. With 16 records on site relating to eight records of Railway Sidings recorded from 1898 to 1991, six records of Docks recorded from 1898 to 1991 and 2 records of Locomotive Repair Works recorded from 1898 to 1921. Other pertinent records within a 100m radius of the site relate to Unspecified Ground Workings, Goods Sheds, Unspecified works, Docks, Pumping House, Unspecified Tanks, Chimneys and a Coal Tip.

4.2.3 Fuel Stations & Tanks

A single fuel station entry has been identified within a 250m radius of the site. Relating to an Active Fuel Station 38m south east of the site (Asda Supermarket).

No historical tanks have been identified within a 250m radius of the site on the Envirocheck Datasheet. However, historical mapping records a minimum of six tanks present on site. At the time of writing HSP are in correspondence with the Vale of Glamorgan Council regarding the availability of records relating to any tanks on or within close proximity to the site.

There are no records of high pressure underground pipelines (oil and gas) within 250m of the site.

4.3 Waste and Material Storage Locations

4.3.1 Landfill

There is a single record of EA Historical registered landfill site recorded within a 250m radius of the site. This relates to a Unknown Operator 4m south with a last recorded use of December 1955.

4.3.2 Licensed Waste Management Facilities

There are no records of Licensed Waste Management Facilities recorded within a 250m radius of the site.

4.3.3 Waste Transfer & Waste Treatment or Disposal Sites

There are no records of Waste Transfer & Waste Treatment or Disposal Sites within a 250m radius of the site. However, there are eight records of Waste Exemptions within 250m of the site, these records belong to two locations and relate to the sorting and de-naturing of controlled drugs for disposal situated 83m north west and 236m north west of the site.

4.4 Local Authority Correspondence

At the time of writing, no correspondence has been received from the Vale of Glamorgan Borough Council, the initial Contaminated Land Enquiry was made on the 15th June 2020.

4.5 Summary

Based on the information collated for the desk study, the geo-environmental setting of the site is summarised as follows:

- The site is shown from earliest mapping (1878) to be part of tidal flats of *the Cadoxton River*. The site and surrounding area is shown as reclaimed from the 1898 mapping forming part of the Barry Docks, a large industrial area with associated railways, tracks, tanks and coal yards until the late 1990's where the site is disused.
- The surrounding land use is recorded as predominantly, industrial and residential. The town of Barry is located to the east of the site. Rapid industrial development in the early 1900s reaching its peak towards the 1970s, with a steady decline to present day. Recent developments include residential and commercial development to the north and south of the site.
- Superficial deposits comprising Tidal Flats with bedrock geology of the Penarth Group and St Mary's Well Bay Member are expected on site.

- Made Ground materials are expected across the site area as the site and surrounding area are recorded on the BGS mapping as Infilled Land
- The superficial geology of the Tidal Flats is designated as Secondary Undifferentiated with bedrock geologies of the Penarth Group and St Mary's Well Bay Member are designated as a Secondary (B) Aquifer and Secondary (A) Aquifer respectively.

Based on the above, the environmental sensitivity of the site can be considered to be Moderate at this stage.

5. Preliminary Conceptual Site Model (PCSM)

5.1 Introduction

The UK approach to risk assessment for both 'Contaminated Land' as defined by Part 2A of the Environmental Protection Act 1990 (EPA 1990) and for 'land affected by contamination' as defined in National Planning Policy Framework Planning Practice Guidance follows a risk-based tiered framework published by Defra and the Environment Agency in their guidance document *'CLR11 Model Procedures for the Management of Land Contamination'*.

The basis of CLR11 is the development of the conceptual site model (CSM) which is the representation of the source-pathway-receptor (pollutant) linkages upon which the assessment of risk can be based.

5.2 Risk Assessment Approach

The approach to the human health risk assessment reported here follows the principals given in CLR 11, i.e. application of the following assessment hierarchy:

- Tier 1 risk screening by establishment of potential pollutant linkages, i.e. the preliminary conceptual site model (PCSM), or
- Tier 2 generic quantitative assessment using generic assessment criteria (GACs) that represent 'acceptably low' risk, or
- Tier 3 quantitative risk assessment using site specific assessment criteria (SSACs) that represent 'unacceptable risk', or where generic assessment criteria are not available, or they are not applicable to the CSM.

At this stage there is no site-specific data available. The potential sources of contamination based on historical and current land uses were identified using the Emapsite™ Reports (Appendix II & III) and Department of the Environment Industry Profiles. In the absence of a standard exposure scenario for a school environment, a conservative standard exposure scenario of residential without home-grown produce has been used to identify potential exposure pathways for human health receptors. Controlled water, flora and fauna and property receptors have also been included within the PCSM. We believe this to be appropriate at this stage based on the precautionary principle advocated by the CLR guidance.

5.3 Preliminary Conceptual Site Model

The PCSM was produced by undertaking a Source-Pathway-Receptor analysis of the site:

Sources (**S**) are potential or known contaminant sources, e.g. a former land use:
Pathways (**P**) are environmental systems through which a contaminant could migrate, e.g. air, groundwater;
Receptors (**R**) are sensitive environmental receptors that could be adversely affected by a contaminant, e.g. Site Occupiers, groundwater resources.

5.3.1 For a pollutant linkage to exist between a contaminant source and a receptor, a pathway must be present.

5.3.2 Sources

The potential sources of contamination within 250m of the site and associated groups of potentially contaminative substances are outlined below. The list of potential contaminants was derived from the Department of the Environment Industry Profiles. The activities and substances listed below should not be considered exhaustive and provides a guide to the likely range of contaminants which may be present.

On Site

S1: Historical and Contemporary land use: Railway – tracks/sidings, Coal Yard, Unknown Tanks, Made Ground (Infilled Land).
Inorganic and organic contaminants including heavy metals, metalloids, acids/alkalis, TPH, PAHs, sulphate, asbestos and ground gases.

Off Site

S2: Historical & Contemporary Land Use: Barry Docks, Locomotive Repair Works, Railway – lines/ sidings, historic Landfill, Coal Handling/Yard and Oil Storage Terminal.
Inorganic and organic contaminants including heavy metals, metalloids, acids/alkalis, TPH, PAHs, sulphate, asbestos and ground gases.

5.3.3 Pathways

The site is underlain by Secondary A Aquifer, Secondary B Aquifer and a Secondary (Undifferentiated) Aquifer.

P1: Human uptake;
- Dermal contact with soils and dust
- Ingestion of soils and dust
- Inhalation of soils, dust and vapour

P2: Horizontal and vertical migration of contaminants through potentially permeable soils and rocks

P3: Migration along preferential pathways via underground services and drainage runs (pipes, manholes and granular material)

P4: Overland flow / surface runoff

P5: Vertical and lateral migration of ground gases and/or vapour

P6: Root uptake

5.3.4 Receptors

R1: End Users: Staff and students of the Educational Facilities

R2: Construction and maintenance workers

R3: Controlled Water, Secondary A Aquifer, Secondary B Aquifer and a Secondary (Undifferentiated) Aquifer.

R4: Controlled Water, Surface Water.

R5: Property: Services (e.g. drinking water supply pipes) and structures/buildings (concrete used in foundations)
R6: Adjacent residential and commercial properties
R7: Proposed flora and fauna

5.3.5 Preliminary Qualitative Risk Assessment

For each potential pollutant linkage identified within the PCSM, the potential risk has been assessed on the probability of a pollution event and the severity it may have on the identified receptors. The results are presented in Table 5.1 below. The methodology for the assessment is presented in Appendix V.

Table 5.1 Preliminary Conceptual Site Model and Qualitative Risk Assessment

Source	Pathway	Receptor	Consequence	Probability	Risk	Comments
On site **S1:** Historical and Contemporary land use: Railway – track/sidings, Coal Yard, Unknown Tanks, Made Ground (Infilled Land).	**P1:** Human uptake pathways	**R1:** End Users **R2:** Construction and maintenance workers	Mild	Likely	Moderate	It is possible that end users / construction workers will come into contact with the soils across the site, given the potential for contamination, the risk is considered to be MODERATE
	P2: Horizontal and vertical migration of contaminants through potentially permeable soils and rocks. **P3:** Migration of contaminants along preferential pathways (man- made). **P4:** Surface runoff.	**R3:** Controlled Water: Groundwater & Surface Water	Mild	Likely	Moderate	The superficial geology is classified as a Secondary undifferentiated aquifer. The bedrock geology is classified as a Secondary A aquifer and Secondary B Aquifers. Based on the historic sources onsite and the potential for contamination, the risk to surface water receptor (Barry Docks) located 100m from the site boundary and groundwater is considered to be MODERATE.
Off Site (within 250m) **S2:** Historical & Contemporary Land Use: Barry Docks, Locomotive Repair Works, Steel Railway – lines/ sidings, historic Landfill, Coal Handling/Yard and Oil Storage Terminal	**P2:** Horizontal and vertical migration of contaminants through potentially permeable soils and rocks. **P3:** Migration of contaminants along preferential pathways (man- made). **P4:** Surface runoff.	**R1:** End Users **R2:** Construction and maintenance workers	Mild	Likely	Moderate	Due to the relative close proximity of potential off-site historical and current sources, in the surrounding area and the potential for contaminant migration the risk is considered to be MODERATE.
	P5: Vertical and lateral migration of ground gases and/or vapour.	**R1:** End Users	Mild	Likely	Moderate	Potential sources of ground gas generation have been identified at the site associated with Made Ground. The underlying superficial deposits are a potential pathway so therefore the risk is considered to be MODERATE at this stage.
	P2: Horizontal and vertical migration of contaminants through potentially permeable soils and rocks. **P3:** Migration of contaminants along preferential pathways (man- made). **P4:** Surface runoff. **P5:** Vertical and lateral migration of ground gases and/or vapour.	**R4:** Property, services and substructures **R5:** Adjacent Residential Properties	Mild	Likely	Moderate	Shallow Made Ground and natural deposits may be aggressive to concrete and underground utilities. Until the potential has been investigated further, the risk is considered to be MODERATE.
	P6: Root uptake.	**R6:** Proposed Flora and fauna	Mild	Unlikely	Low	Limited planting is proposed. It is considered that any topsoil on site will be unlikely suitable for reuse and therefore would be imported. The risk at this stage of uptake to proposed flora and fauna is LOW.

6. Preliminary Engineering Constraints and Recommendations

Gleeds Management Services Ltd are preparing a feasibility study for a new build sixth form campus with associated hardstanding and soft landscaping.

6.1 Geotechnical Constraints

The site is currently a mixture of broken hardstanding and overgrown vegetation. Several phases of historical development have taken place across the site area. Made Ground materials of various composition and strength are anticipated below the site due to the historical land reclamation. Buried foundations/obstructions may be encountered including former breakwater/dock walls in the south west of the site and railway sidings in the east.

BGS mapping indicates the site is underlain by the Penarth Group and St Mary's Well Formation. With superficial deposits of the Tidal Flats are expected to be encountered upon the site. This has the potential to result is variable ground condition across the site which may lead to differential settlement of the foundations and should be accounted for during detailed design.

The groundwater regime on site is unknown and should be assessed further.

6.2 Environmental Constraints

Any Made Ground on site may contain elevated concentrations of potentially harmful contaminants which may present a risk to the receptors identified in the PCSM including end users, adjacent residential/commercial properties, construction workers or controlled waters.

The site is shown from earliest mapping (1878) to be part of tidal flats of the Cadoxton River. The site is reclaimed and forms part of the docks from 1898 with associated railways, tracks, tanks (including oil storage) and coal yards until the late 1990's when the site becomes disused. The risk from contamination is currently considered to be moderate. At this stage it is recommended that an environmental intrusive site investigation is undertaken on the site, the main objectives of this report will be to collect a number of soil samples to be tested for a suite of potential contaminants.

Sources of ground gas have been identified within a 250m radius of the site, which relate to the potential for made ground upon the site. At this stage ground gas monitoring is recommended due to the sensitive nature of the proposed end use.

The Preliminary Conceptual Site Model indicates a moderate possibility that harm could arise to a designated receptor from identified hazards.

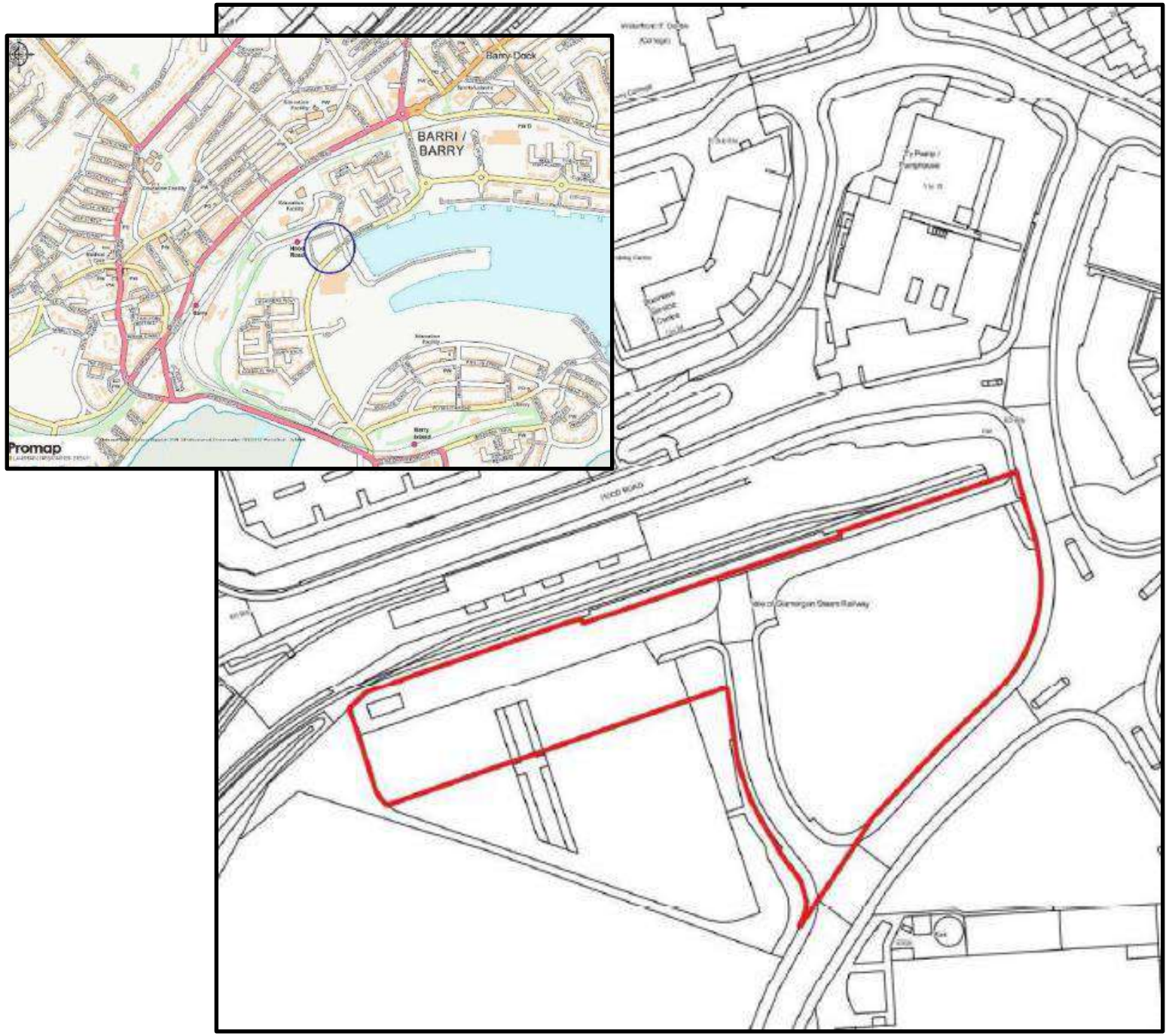
6.3 Recommendations

HSP would recommend that an intrusive geo-environmental investigation be undertaken across the site to confirm the recommendations outlined above.

The objectives of the investigation should be as follows:

- To establish the ground conditions laterally and vertically across the site, including the presence, distribution and composition of any Made Ground.
- To obtain soil samples for contamination analysis, in order to refine the PCSM and undertake generic quantitative risk assessment.
- To obtain data on the ground gas and groundwater regime.
- To obtain geotechnical design parameters for the proposed building including in-situ and laboratory testing.
- To assess if the soils and groundwater on site are likely to be aggressive to buried/surface concrete and proposed utilities.
- Buried obstructions (foundations) may be encountered based on the past historical use of the site.

Appendix I



DO NOT SCALE

NOTES:

- Approximate Red Line Boundary

hsp consulting
Lawrence House, Meadowbank Way,
Eastwood, Nottingham, NG16 3SB
Tel: 01773 535 555 Fax: 0870 600 6091
www.hspconsulting.com

CLIENT:
Gleeds Management Services Ltd

PROJECT:
Southern IQ Development, Barry Waterfront

TITLE:
Site Location Plan

SCALE@SIZE :	ISSUE:
NTS	FINAL
DESIGN/DRAWN :	DATE:
DRS	July 2020
PROJECT No:	DRAWING No:
C3297	501

Appendix II

Groundsure LOCATION INTELLIGENCE

Enviro+Geo Insight

Barry Waterfront, Barry , CF62 5QN,

Order Details

Date: 05/05/2020

Your ref: EMS_608209_812590

Our Ref: EMS-608209_812590

Client: emapsite

Site Details

Location: 311115 167399

Area: 1.15 ha

Authority: Bro Morgannwg - Vale of Glamorgan Council

Contact us with any questions at:
info@groundsure.com
08444 159 000

Summary of findings

56	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	2	-
56	4.7	Regulated explosive sites	0	0	0	0	-
56	4.8	Hazardous substance storage/usage	0	0	0	1	-
57	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
57	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
57	4.11	Licensed pollutant release (Part A(2)/B)	0	0	2	0	-
57	4.12	Radioactive Substance Authorisations	0	0	1	0	-
58	4.13	Licensed Discharges to controlled waters	0	0	2	15	-
60	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
61	4.15	Pollutant release to public sewer	0	0	0	0	-
61	4.16	List 1 Dangerous Substances	0	0	0	0	-
61	4.17	List 2 Dangerous Substances	0	0	0	1	-
61	4.18	Pollution Incidents (EA/NRW)	0	0	0	1	-
62	4.19	Pollution inventory substances	0	0	0	0	-
62	4.20	Pollution inventory waste transfers	0	0	0	0	-
62	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
63	5.1	Superficial aquifer	Identified (within 500m)				
64	5.2	Bedrock aquifer	Identified (within 500m)				
66	5.3	Groundwater vulnerability	Identified (within 50m)				
68	5.4	Groundwater vulnerability- soluble rock risk	Identified (within 0m)				
68	5.5	Groundwater vulnerability- local information	None (within 0m)				
69	5.6	Groundwater abstractions	0	0	0	0	2
70	5.7	Surface water abstractions	0	0	0	0	3
71	5.8	Potable abstractions	0	0	0	0	0
71	5.9	Source Protection Zones	0	0	0	0	-
72	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
73	6.1	Water Network (OS MasterMap)	0	0	0	-	-

73	6.2	Surface water features	0	0	1	-	-
74	6.3	WFD Surface water body catchments	1	-	-	-	-
74	6.4	WFD Surface water bodies	0	0	0	-	-
74	6.5	WFD Groundwater bodies	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
76	7.1	Risk of Flooding from Rivers and Sea (RoFRaS)	Medium (within 50m)				
77	7.2	Historical Flood Events	0	0	0	-	-
77	7.3	Flood Defences	0	0	0	-	-
77	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
77	7.5	Flood Storage Areas	0	0	0	-	-
78	7.6	Flood Zone 2	Identified (within 50m)				
79	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
80	8.1	Surface water flooding	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding					
82	9.1	Groundwater flooding	Moderate (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
83	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	6
84	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
84	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
84	10.4	Special Protection Areas (SPA)	0	0	0	0	0
85	10.5	National Nature Reserves (NNR)	0	0	0	0	0
85	10.6	Local Nature Reserves (LNR)	0	0	0	0	5
85	10.7	Designated Ancient Woodland	0	0	0	0	14
86	10.8	Biosphere Reserves	0	0	0	0	0
86	10.9	Forest Parks	0	0	0	0	0
87	10.10	Marine Conservation Zones	0	0	0	0	0
87	10.11	Green Belt	0	0	0	0	0
87	10.12	Proposed Ramsar sites	0	0	0	0	0

87	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
87	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
88	10.15	Nitrate Sensitive Areas	0	0	0	0	0
88	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
89	10.17	SSSI Impact Risk Zones	0	-	-	-	-
89	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
90	11.1	World Heritage Sites	0	0	0	-	-
91	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
91	11.3	National Parks	0	0	0	-	-
91	**11.4**	**Listed Buildings**	0	0	1	-	-
92	11.5	Conservation Areas	0	0	0	-	-
92	11.6	Scheduled Ancient Monuments	0	0	0	-	-
92	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
93	**12.1**	**Agricultural Land Classification**	Grade 3b (within 250m)				
94	12.2	Open Access Land	0	0	0	-	-
94	12.3	Tree Felling Licences	0	0	0	-	-
94	12.4	Environmental Stewardship Schemes	0	0	0	-	-
94	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
95	13.1	Priority Habitat Inventory	0	0	0	-	-
95	13.2	Habitat Networks	0	0	0	-	-
95	13.3	Open Mosaic Habitat	0	0	0	-	-
95	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
96	**14.1**	**10k Availability**	Identified (within 500m)				
97	14.2	Artificial and made ground (10k)	0	0	0	0	-
98	14.3	Superficial geology (10k)	0	0	0	0	-

98	14.4	Landslip (10k)	0	0	0	0	-
99	14.5	Bedrock geology (10k)	0	0	0	0	-
99	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
100	15.1	50k Availability	Identified (within 500m)				
101	15.2	Artificial and made ground (50k)	1	0	0	1	-
102	15.3	Artificial ground permeability (50k)	1	0	-	-	-
103	15.4	Superficial geology (50k)	1	0	0	0	-
104	15.5	Superficial permeability (50k)	Identified (within 50m)				
104	15.6	Landslip (50k)	0	0	0	0	-
104	15.7	Landslip permeability (50k)	None (within 50m)				
105	15.8	Bedrock geology (50k)	2	0	1	10	-
106	15.9	Bedrock permeability (50k)	Identified (within 50m)				
106	15.10	Bedrock faults and other linear features (50k)	0	0	1	3	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
108	16.1	BGS Boreholes	0	0	9	-	-
Page	Section	Natural ground subsidence					
110	17.1	Shrink swell clays	Low (within 50m)				
112	17.2	Running sands	Very low (within 50m)				
113	17.3	Compressible deposits	Very low (within 50m)				
114	17.4	Collapsible deposits	Very low (within 50m)				
115	17.5	Landslides	Very low (within 50m)				
116	17.6	Ground dissolution of soluble rocks	Very low (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
118	18.1	Natural cavities	0	0	0	0	-
119	18.2	BritPits	0	0	0	0	-
119	18.3	Surface ground workings	12	4	13	-	-
120	18.4	Underground workings	0	0	0	0	9
121	18.5	Historical Mineral Planning Areas	0	0	0	0	-

121	**18.6**	**Non-coal mining**	0	0	0	0	2
121	**18.7**	**Mining cavities**	0	0	0	1	0
122	18.8	JPB mining areas	None (within 0m)				
122	18.9	Coal mining	None (within 0m)				
122	18.10	Brine areas	None (within 0m)				
122	18.11	Gypsum areas	None (within 0m)				
123	18.12	Tin mining	None (within 0m)				
123	18.13	Clay mining	None (within 0m)				

Page	Section	Radon	
124	**19.1**	**Radon**	Between 5% and 10% (within 0m)

Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
126	**20.1**	**BGS Estimated Background Soil Chemistry**	5	5	-	-	-
127	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
127	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
128	21.1	Underground railways (London)	0	0	0	-	-
128	21.2	Underground railways (Non-London)	0	0	0	-	-
129	21.3	Railway tunnels	0	0	0	-	-
129	**21.4**	**Historical railway and tunnel features**	15	7	25	-	-
131	21.5	Royal Mail tunnels	0	0	0	-	-
131	**21.6**	**Historical railways**	0	2	1	-	-
131	**21.7**	**Railways**	0	4	49	-	-
134	21.8	Crossrail 1	0	0	0	0	-
134	21.9	Crossrail 2	0	0	0	0	-
134	21.10	HS2	0	0	0	0	-

Recent aerial photograph

Capture Date: 18/09/2019

Site Area: 1.15ha

Recent site history - 2016 aerial photograph

Capture Date: 19/07/2016

Site Area: 1.15ha

Recent site history - 2013 aerial photograph

Capture Date: 14/07/2013

Site Area: 1.15ha

Recent site history - 2009 aerial photograph

Capture Date: 17/09/2009

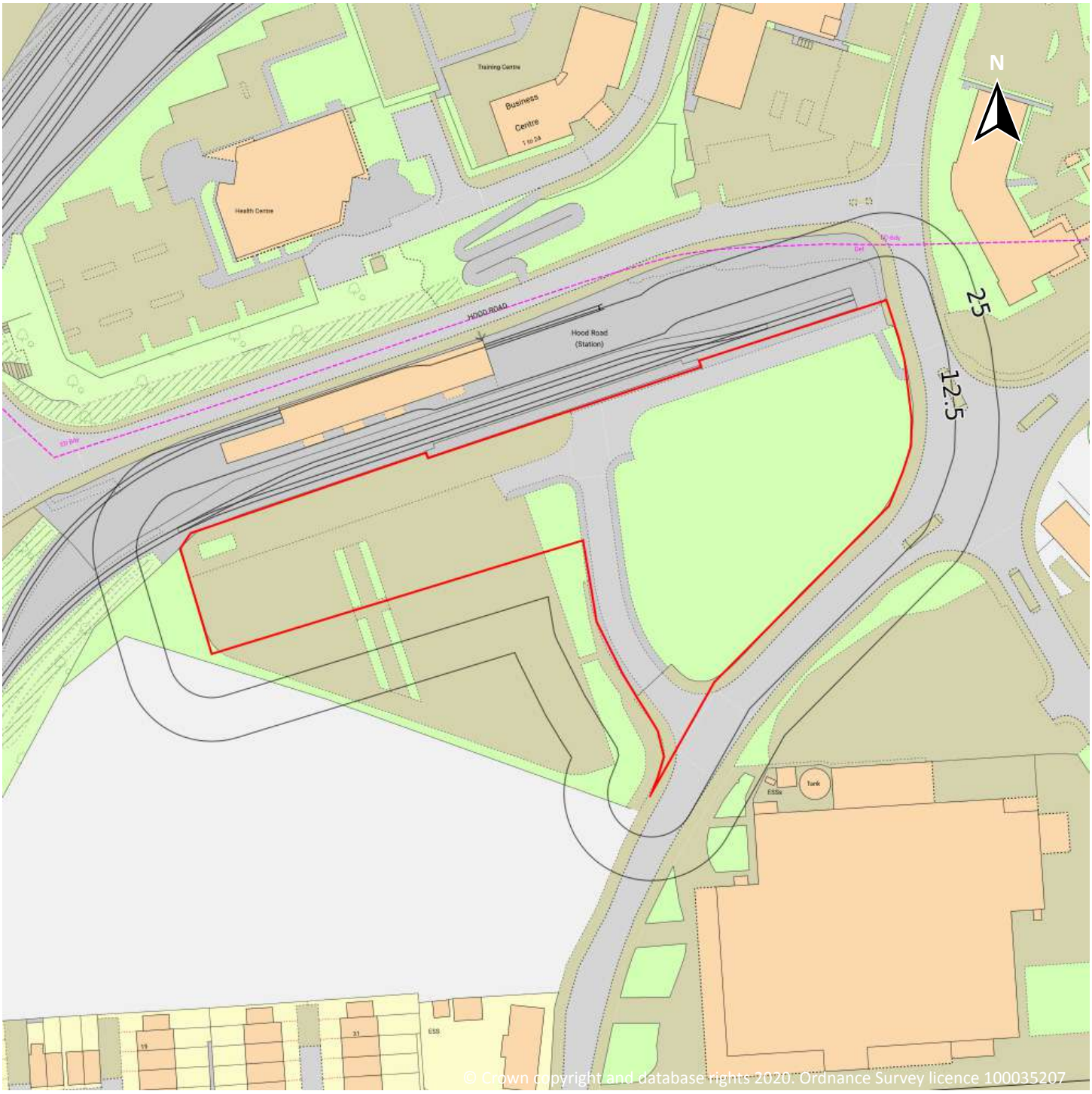
Site Area: 1.15ha

Recent site history - 2000 aerial photograph

Capture Date: 21/07/2000

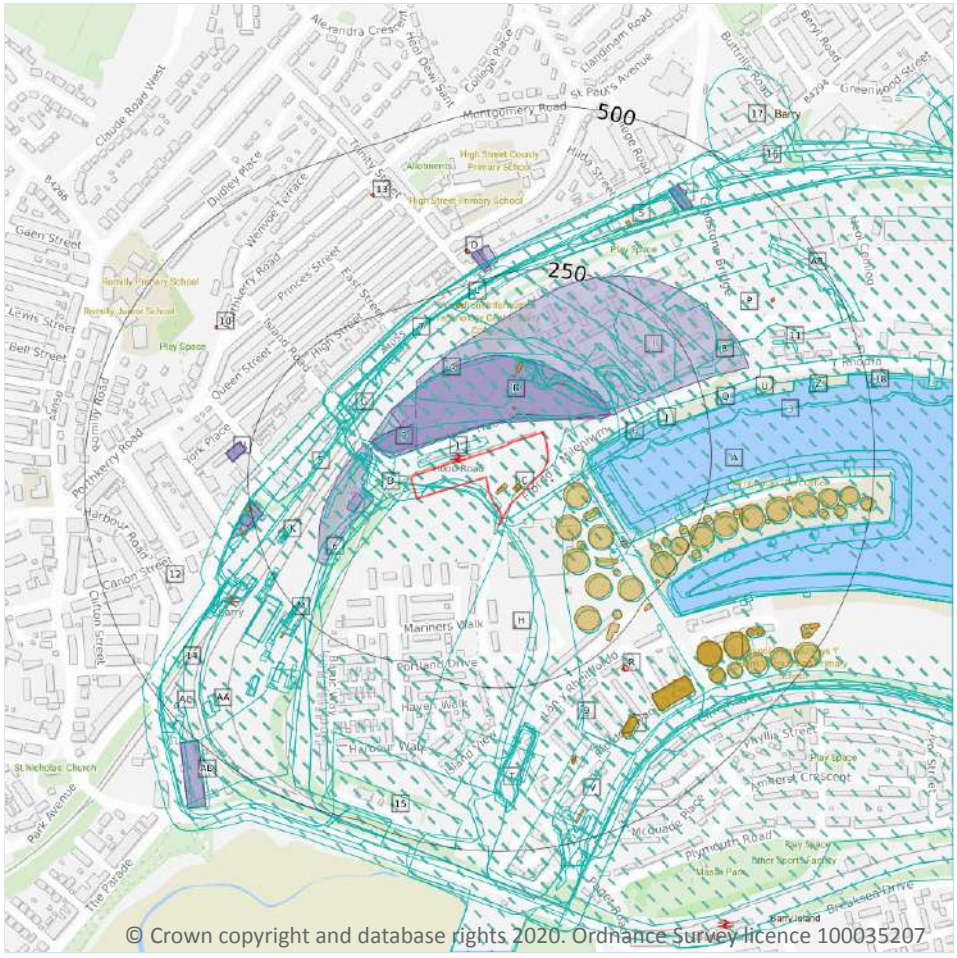
Site Area: 1.15ha

OS MasterMap site plan



Site Area: 1.15ha

1 Past land use



1.1 Historical industrial land uses

Records within 500m	230

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	**On site**	**Railway Sidings**	**1898**	**1192580**

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Railway Sidings**	**1947**	**1202873**
A	**On site**	**Docks**	**1947**	**1209462**
A	**On site**	**Railway Sidings**	**1982**	**1218824**
A	**On site**	**Docks**	**1936 - 1947**	**1219597**
A	**On site**	**Docks**	**1973**	**1221054**
A	**On site**	**Docks**	**1991**	**1225643**
A	**On site**	**Docks**	**1915 - 1921**	**1226662**
A	**On site**	**Railway Sidings**	**1915 - 1921**	**1232374**
A	**On site**	**Railway Sidings**	**1936 - 1947**	**1246589**
A	**On site**	**Railway Sidings**	**1991**	**1260395**
A	**On site**	**Docks**	**1898**	**1269860**
A	**On site**	**Railway Sidings**	**1973**	**1270580**
B	**On site**	**Locomotive Repairing Works**	**1898**	**1210103**
B	**On site**	**Locomotive Repairing Works**	**1915 - 1921**	**1215486**
B	**On site**	**Railway Sidings**	**1915**	**1261219**
D	4m W	Unspecified Ground Workings	1947	1202174
1	5m N	Goods Shed	1915 - 1921	1208536
B	24m N	Unspecified Works	1947	1178844
E	38m E	Docks	1982	1229886
D	45m W	Unspecified Ground Workings	1936 - 1938	1221365
A	49m SE	Unspecified Tank	1982 - 1991	1197663
A	49m SE	Unspecified Tank	1973	1261450
D	53m W	Unspecified Ground Workings	1921	1205536
3	61m E	Dock	1921	1171116
B	66m N	Unspecified Ground Workings	1921	1203866
B	68m N	Pumping House	1991	1182930
B	71m N	Unspecified Ground Workings	1982 - 1991	1221571
B	71m N	Unspecified Ground Workings	1947	1238999

ID	Location	Land use	Dates present	Group ID
B	71m N	Unspecified Ground Workings	1973	1262596
A	73m SE	Unspecified Tank	1973	1200744
A	73m SE	Unspecified Tank	1982 - 1991	1261733
D	75m NW	Railway Building	1898	1239156
D	77m NW	Railway Buildings	1915 - 1921	1227842
D	78m NW	Railway Building	1921 - 1938	1246610
B	80m N	Chimney	1947	1182780
A	92m SE	Unspecified Tank	1991	1175657
A	95m SE	Unspecified Tanks	1982	1217258
A	95m SE	Unspecified Tanks	1973	1249389
A	97m SE	Unspecified Tank	1991	1175656
A	100m E	Coal Tips	1921	1189250
A	116m SE	Unspecified Tank	1973	1224855
A	116m SE	Unspecified Tank	1982 - 1991	1242156
A	118m SE	Unspecified Tank	1982 - 1991	1218879
A	118m SE	Unspecified Tank	1973	1264676
A	120m SE	Unspecified Tank	1973	1248263
A	120m SE	Unspecified Tank	1982 - 1991	1250647
F	120m E	Coal Tips	1915	1189256
F	120m E	Coal Hoists	1936 - 1938	1211084
B	121m NE	Unspecified Ground Workings	1921	1242116
G	125m NW	Railway Building	1898	1171661
4	128m N	Lime Kilns	1878	1164001
G	131m NW	Railway Buildings	1921	1181710
6	152m SW	Railway Building	1936 - 1938	1259817
G	158m NW	Railway Building	1898	1171664
A	158m SE	Unspecified Tanks	1973	1213491
A	158m SE	Unspecified Tanks	1982 - 1991	1262313

ID	Location	Land use	Dates present	Group ID
A	162m SE	Railway Buildings	1921	1181667
A	165m SE	Unspecified Tank	1973	1199338
A	165m SE	Unspecified Tank	1982 - 1991	1232017
I	170m NE	Unspecified Depot	1973	1212424
I	170m NE	Unspecified Depot	1982 - 1991	1230998
J	174m E	Coal Tips	1915	1189257
J	174m E	Coal Hoists	1936 - 1938	1200187
A	184m SE	Unspecified Tank	1973	1263548
A	184m SE	Unspecified Tank	1982 - 1991	1270341
A	186m SE	Unspecified Tank	1982	1193042
A	186m SE	Unspecified Tank	1973	1202770
K	194m W	Railway Building	1936 - 1938	1230335
K	194m W	Railway Building	1898 - 1915	1216396
7	199m N	Railway Building	1898	1171665
K	205m W	Railway Building	1921	1257393
K	205m W	Railway Building	1982	1217713
A	205m SE	Unspecified Tank	1973	1216570
A	205m SE	Unspecified Tank	1982 - 1991	1269671
A	206m E	Coal Tips	1921	1235495
A	207m SE	Unspecified Tank	1982 - 1991	1236203
A	207m SE	Unspecified Tank	1973	1260063
A	210m E	Coal Tips	1915	1267916
A	213m SE	Unspecified Tank	1973	1271779
A	213m SE	Unspecified Tank	1982	1221252
A	219m SE	Unspecified Tank	1973	1222169
A	219m SE	Unspecified Tank	1982	1231208
A	219m SE	Unspecified Tank	1991	1175651
A	223m SE	Unspecified Tank	1982	1206485

ID	Location	Land use	Dates present	Group ID
K	226m W	Railway Buildings	1915 - 1921	1224029
L	228m N	Railway Building	1898	1171666
A	230m SE	Unspecified Tank	1973	1196967
A	230m SE	Unspecified Tank	1982 - 1991	1205357
M	231m SW	Railway Building	1936 - 1938	1260673
M	237m SW	Railway Building	1898	1214776
M	239m SW	Railway Building	1915	1209064
M	240m SW	Railway Building	1982	1270288
M	244m SW	Railway Building	1982	1242440
M	244m SW	Railway Buildings	1936 - 1938	1246061
A	246m SE	Unspecified Tank	1973	1213399
A	246m SE	Unspecified Tank	1982	1267136
K	246m W	Railway Building	1936 - 1938	1261482
M	247m SW	Railway Building	1915 - 1921	1255475
M	247m SW	Railway Buildings	1921	1181665
M	250m SW	Railway Building	1898	1246920
8	255m E	Unspecified Pit	1973	1185358
A	259m E	Unspecified Tank	1973	1233565
A	259m E	Unspecified Tank	1982 - 1991	1241077
M	260m SW	Railway Building	1936 - 1938	1227956
M	261m SW	Railway Building	1936 - 1938	1250543
M	261m SW	Railway Building	1898 - 1915	1262719
M	261m SW	Railway Building	1982	1212595
A	264m SE	Unspecified Tank	1982 - 1991	1193293
A	264m SE	Unspecified Tank	1973	1253655
P	267m NE	Metal Yard	1982 - 1991	1198949
P	267m NE	Metal Yard	1973	1208154
Q	267m E	Coal Tips	1915	1189259

ID	Location	Land use	Dates present	Group ID
Q	267m E	Coal Hoists	1936 - 1938	1270877
M	268m SW	Railway Building	1915	1233205
M	271m SW	Engine Shed	1921	1171125
K	272m W	Railway Buildings	1921	1181663
A	273m E	Unspecified Tank	1982	1199810
A	273m E	Unspecified Tank	1973	1215155
K	274m SW	Railway Station	1936 - 1938	1196932
K	274m SW	Railway Station	1915	1251993
A	274m SE	Coal Tips	1921	1189249
K	275m SW	Railway Station	1973	1205152
M	276m SW	Engine Shed	1915	1171126
A	278m E	Coal Tips	1915 - 1921	1260411
K	284m SW	Railway Station	1921	1218675
A	288m SE	Railway Building	1921	1171706
S	296m N	Unspecified Depot	1982 - 1991	1262290
S	296m N	Unspecified Depot	1973	1262938
K	296m SW	Railway Station	1982 - 1991	1254878
A	297m E	Unspecified Tank	1982	1209582
A	297m E	Unspecified Tank	1973	1235872
9	305m SE	Railway Buildings	1921	1181668
T	305m S	Unspecified Ground Workings	1915	1210506
A	306m SE	Coal Tips	1915 - 1921	1215590
T	309m S	Unspecified Ground Workings	1947	1211856
A	309m E	Unspecified Tank	1973	1209091
A	309m E	Unspecified Tank	1982	1209314
T	309m S	Unspecified Heap	1982	1228084
K	310m SW	Railway Station	1898	1251198
T	311m S	Unspecified Heap	1973	1261156

ID	Location	Land use	Dates present	Group ID
M	314m SW	Railway Building	1915	1227194
T	315m S	Unspecified Ground Workings	1921	1269998
M	320m SW	Railway Building	1936 - 1938	1241305
T	322m S	Unspecified Heap	1936 - 1938	1228284
M	324m SW	Railway Building	1915	1235015
M	324m SW	Railway Building	1936 - 1938	1270001
M	325m SW	Railway Building	1915	1171653
M	325m SW	Railway Buildings	1921	1181666
S	325m N	Unspecified Depot	1947	1240844
U	330m E	Coal Tips	1915	1189258
U	330m E	Coal Hoists	1936 - 1938	1216305
M	331m SW	Railway Building	1915	1217468
V	345m SE	Unspecified Warehouse	1973	1207981
K	345m SW	Railway Building	1921	1171652
A	345m E	Unspecified Tank	1982	1237459
A	345m E	Unspecified Tank	1973	1261316
W	354m SE	Unspecified Tanks	1973	1196785
W	354m SE	Unspecified Tanks	1982 - 1991	1246702
X	359m SE	Unspecified Tanks	1982 - 1991	1199846
X	359m SE	Unspecified Tanks	1973	1200583
E	360m SE	Coal Tips	1915 - 1921	1242310
A	360m E	Coal Tips	1921	1213323
A	362m E	Coal Tips	1915	1264835
E	362m SE	Unspecified Tank	1973	1257566
E	362m SE	Unspecified Tank	1982 - 1991	1266492
E	362m SE	Coal Hoists	1936 - 1938	1249375
V	364m SE	Unspecified Warehouse	1982 - 1991	1262477
M	365m SW	Railway Buildings	1938	1181664

ID	Location	Land use	Dates present	Group ID
M	365m SW	Railway Building	1936	1263008
M	366m SW	Railway Building	1982	1243967
A	368m E	Coal Tips	1915	1189255
11	377m E	Unspecified Ground Workings	1921	1160086
E	384m SE	Unspecified Tank	1973	1194900
E	384m SE	Unspecified Tank	1982 - 1991	1254846
A	385m E	Unspecified Tank	1973	1217064
A	385m E	Unspecified Tank	1982 - 1991	1229416
E	398m SE	Unspecified Tank	1973	1201673
E	398m SE	Unspecified Tank	1982 - 1991	1258611
E	399m SE	Unspecified Tanks	1973	1210810
E	399m SE	Unspecified Tanks	1982 - 1991	1262541
V	407m S	Engine Shed	1915 - 1921	1208717
Z	409m E	Coal Tips	1915 - 1921	1237622
E	414m SE	Unspecified Tank	1973	1191134
E	414m SE	Unspecified Tank	1982	1210229
A	418m E	Coal Tips	1921	1270291
A	418m E	Coal Tips	1915	1194911
Z	418m E	Coal Hoists	1936 - 1938	1192621
A	422m E	Unspecified Tank	1973	1222763
A	422m E	Unspecified Tank	1982 - 1991	1238796
14	425m SW	Railway Building	1915 - 1921	1228321
E	427m SE	Unspecified Tank	1973	1201541
E	427m SE	Unspecified Tank	1982 - 1991	1253167
A	428m E	Unspecified Tank	1973	1235851
A	428m E	Unspecified Tank	1982 - 1991	1267519
AA	431m SW	Railway Building	1936 - 1938	1229164
AA	431m SW	Railway Building	1915	1227010

ID	Location	Land use	Dates present	Group ID
15	433m S	Sewage Works	1991	1167445
E	439m SE	Coal Tips	1915	1189251
E	439m SE	Coal Hoists	1936 - 1938	1207678
AB	440m NE	Cuttings	1947	1225852
AA	443m SW	Railway Building	1921	1212071
V	443m S	Unspecified Ground Workings	1915	1249994
AB	448m NE	Cuttings	1973	1234273
AB	448m NE	Cuttings	1982 - 1991	1269637
V	448m S	Unspecified Pit	1921	1185357
A	449m E	Unspecified Tank	1973	1241201
A	449m E	Unspecified Tank	1982 - 1991	1245683
E	450m SE	Unspecified Tank	1973	1211057
E	450m SE	Unspecified Tank	1982 - 1991	1242316
A	453m E	Unspecified Tank	1973	1219706
A	453m E	Unspecified Tank	1982 - 1991	1272417
A	454m E	Coal Tips	1915 - 1921	1210868
E	461m SE	Unspecified Tank	1982	1235016
V	465m S	Unspecified Ground Workings	1936 - 1938	1203152
V	466m S	Unspecified Ground Workings	1921	1244750
E	466m SE	Unspecified Tank	1973	1243643
V	471m S	Unspecified Ground Workings	1921	1228765
16	472m NE	Unspecified Depot	1991	1171250
E	477m SE	Unspecified Tank	1973	1235172
E	477m SE	Unspecified Tank	1982 - 1991	1245831
A	478m E	Coal Tips	1915 - 1921	1212013
AC	480m SW	Railway Building	1921	1171642
A	485m E	Unspecified Tank	1982	1201025
A	485m E	Unspecified Tank	1973	1251052

ID	Location	Land use	Dates present	Group ID
AC	489m SW	Railway Building	1915	1171641
17	494m NE	Brewery	1898	1174576
AC	495m SW	Railway Buildings	1921	1181661
AD	495m SW	Engine Shed	1898	1171124
18	498m E	Coal Tips	1915 - 1921	1262260

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**91**

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 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
C	**On site**	**Tanks**	**1954**	**190772**
C	**On site**	**Tanks**	**1936**	**169034**
C	**On site**	**Unspecified Tank**	**1936**	**185437**
C	**On site**	**Tanks**	**1936**	**186831**
C	**On site**	**Unspecified Tank**	**1954**	**192142**
C	**On site**	**Tanks**	**1954**	**193173**
A	19m SE	Unspecified Tank	1954 - 1971	187199
A	43m SE	Unspecified Tank	1971 - 1990	186451
B	46m N	Unspecified Tank	1971 - 1999	184921
A	69m SE	Unspecified Tank	1971 - 1990	181997
B	78m N	Unspecified Tank	1954	188414
B	78m N	Unspecified Tank	1954	182531
B	78m N	Unspecified Tank	1990	187855

ID	Location	Land use	Dates present	Group ID
B	79m NE	Unspecified Tank	1972	190157
A	90m SE	Tanks	1971 - 1990	190206
B	94m N	Unspecified Tank	1954	186763
B	99m N	Unspecified Tank	1972 - 1990	180632
A	111m SE	Unspecified Tank	1971 - 1990	181839
A	114m SE	Unspecified Tank	1971 - 1990	178526
A	114m SE	Unspecified Tank	1971 - 1990	185340
A	143m SE	Unspecified Tank	1990	190335
A	144m SE	Unspecified Tank	1971	192067
A	153m SE	Tanks	1971 - 1990	190941
H	156m S	Unspecified Tank	1990	185328
H	157m S	Unspecified Tank	1971	178773
A	159m SE	Unspecified Tank	1971 - 1990	185968
A	178m SE	Unspecified Tank	1971 - 1990	187631
A	182m SE	Unspecified Tank	1971	172200
A	201m SE	Unspecified Tank	1971 - 1990	178645
A	202m SE	Unspecified Tank	1971 - 1990	191238
A	210m SE	Unspecified Tank	1971	172205
A	213m SE	Unspecified Tank	1971	172201
K	214m W	Unspecified Tank	1920	172198
A	221m SE	Tanks	1990	169039
L	222m N	Unspecified Tank	1936	172196
A	225m SE	Unspecified Tank	1971	172203
A	226m SE	Unspecified Tank	1971 - 1990	189886
A	228m SE	Tanks	1990	169037
A	240m SE	Unspecified Tank	1990	172202
A	243m E	Unspecified Tank	1971	172204
K	248m W	Unspecified Tank	1954	189837

ID	Location	Land use	Dates present	Group ID
A	255m E	Unspecified Tank	1971 - 1990	184728
A	257m SE	Tanks	1900	169038
A	259m SE	Unspecified Tank	1971 - 1990	179696
K	265m W	Unspecified Tank	1920	172197
K	270m W	Unspecified Tank	1954	193867
A	271m E	Unspecified Tank	1971	172209
M	291m SW	Unspecified Tank	1971 - 1990	189691
A	295m E	Tanks	1971	169035
A	308m E	Unspecified Tank	1971	172206
S	342m N	Tanks	1972 - 1999	189945
A	342m E	Unspecified Tank	1971	172207
A	346m E	Unspecified Tank	1971	172208
W	350m SE	Tanks	1990	192973
W	350m SE	Tanks	1999	188564
W	351m SE	Tanks	1971	187456
X	356m SE	Tanks	1990	183004
X	356m SE	Tanks	1999	193099
X	357m SE	Tanks	1971	190022
E	357m SE	Unspecified Tank	1990	189669
E	358m SE	Unspecified Tank	1971	185195
E	359m SE	Unspecified Tank	1999	190126
X	370m SE	Unspecified Tank	1971 - 1990	186621
X	370m SE	Unspecified Tank	1996	186617
V	371m S	Unspecified Tank	1954 - 1971	183779
A	371m E	Unspecified Tank	1971 - 1990	189674
V	374m S	Unspecified Tank	1920	190928
V	376m S	Unspecified Tank	1936	179872
E	378m SE	Unspecified Tank	1990 - 1999	193386

ID	Location	Land use	Dates present	Group ID
E	379m SE	Unspecified Tank	1971	189908
A	381m E	Unspecified Tank	1971 - 1990	184420
E	393m SE	Unspecified Tank	1990	186521
E	393m SE	Unspecified Tank	1971 - 1999	179325
E	394m SE	Unspecified Tank	1990	193665
E	396m SE	Tanks	1971	181230
E	396m SE	Tanks	1990	179988
12	403m W	Unspecified Tank	1881	172199
E	406m SE	Tanks	1971	185999
E	411m SE	Unspecified Tank	1971	172224
A	419m E	Unspecified Tank	1971 - 1990	182350
E	422m SE	Unspecified Tank	1971 - 1990	192868
A	423m E	Unspecified Tank	1971 - 1990	181652
A	445m E	Unspecified Tank	1971 - 1990	191230
E	446m SE	Unspecified Tank	1971 - 1990	187633
A	450m E	Unspecified Tank	1971 - 1990	187583
V	454m S	Tanks	1990 - 1996	183903
E	461m SE	Tanks	1971	185954
E	470m SE	Tanks	1990	190918
E	471m SE	Tanks	1990	192652
E	472m SE	Unspecified Tank	1971 - 1990	188702
A	483m E	Unspecified Tank	1971	172210

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	9

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 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
5	147m W	Electricity Substation	1971	97089
A	161m SE	Electricity Substation	1971 - 1999	112305
R	289m SE	Electricity Substation	1971 - 1999	108447
R	292m SE	Electricity Substation	1990	109724
O	297m N	Electricity Substation	1972 - 1999	104383
K	311m W	Gas Governor	1990	99401
10	375m NW	Electricity Substation	1954 - 1990	105782
P	403m NE	Electricity Substation	1984	97090
13	423m N	Electricity Substation	1971 - 1990	106408

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 un-grouped 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	22

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 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
B	18m N	Locomotive Repairing Works	1900	34284
B	21m N	Locomotive Repairing Works	1954	35100
B	26m N	Locomotive Repairing Works	1920 - 1936	35182
2	38m N	Locomotive Repair Works	1954	32473
D	63m W	Auto Body Repair Works	1990	33909
D	78m W	Auto Body Repair Works	1971	32909
K	232m W	Garage	1954	33885
K	233m W	Garage	1971	33667
K	249m W	Garage	1954	32538
N	256m W	Garage	1990	34157
N	256m W	Garage	1954	34285
N	257m W	Garage	1954 - 1971	36223
O	260m N	Garage	1990	32582
O	265m N	Garage	1954	33959
O	265m N	Garage	1999	34170
O	265m N	Garage	1954 - 1972	35395
Y	402m NE	Garage	1990	33350
Y	403m NE	Garage	1999	33429
Y	404m NE	Garage	1954 - 1972	36825
Y	404m NE	Garage	1954	32714
AD	500m SW	Carriage Shed	1954	33859
AD	500m SW	Carriage Shed	1954	33182

This data is sourced from Ordnance Survey / Groundsure.

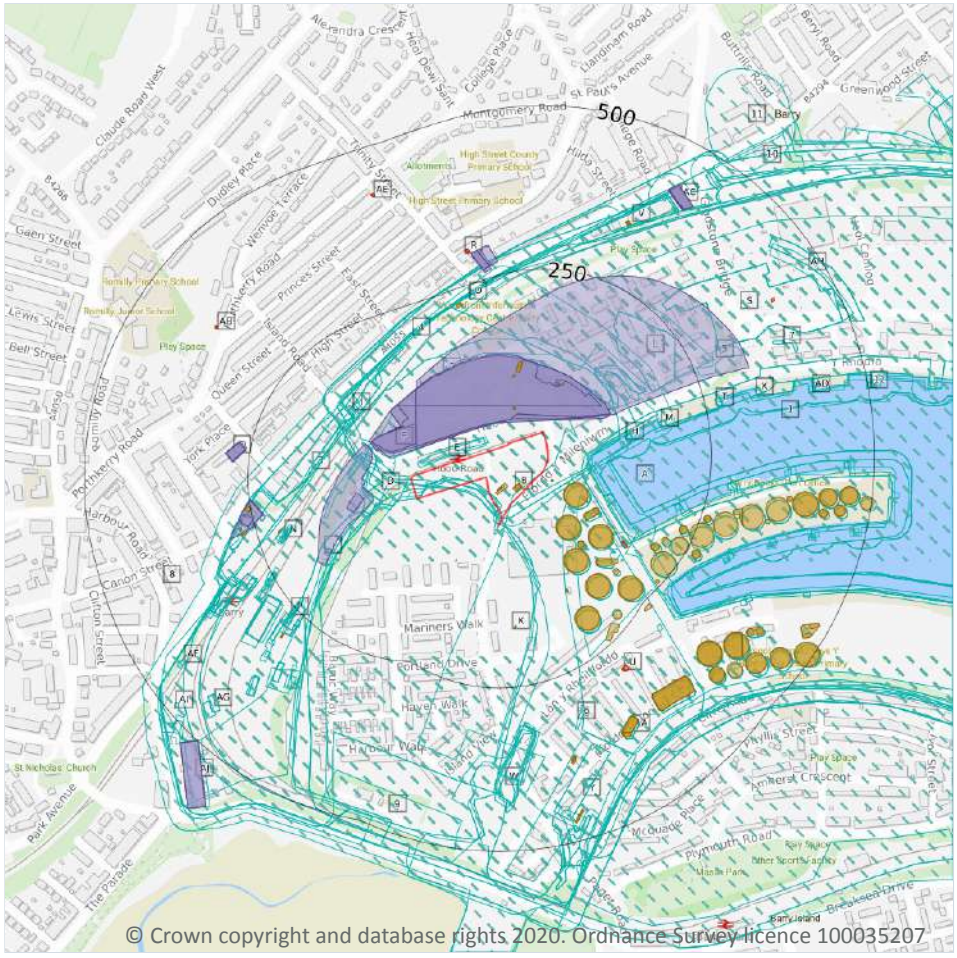
1.6 Historical military land

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

Records within 500m	310

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 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 29**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Docks**	**1915**	**1226662**
A	**On site**	**Railway Sidings**	**1938**	**1246589**
A	**On site**	**Railway Sidings**	**1936**	**1246589**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Railway Sidings**	**1915**	**1232374**
A	**On site**	**Railway Sidings**	**1898**	**1192580**
A	**On site**	**Railway Sidings**	**1921**	**1232374**
A	**On site**	**Railway Sidings**	**1982**	**1218824**
A	**On site**	**Railway Sidings**	**1991**	**1260395**
A	**On site**	**Railway Sidings**	**1973**	**1270580**
A	**On site**	**Railway Sidings**	**1947**	**1202873**
A	**On site**	**Docks**	**1938**	**1219597**
A	**On site**	**Docks**	**1936**	**1219597**
A	**On site**	**Docks**	**1898**	**1269860**
A	**On site**	**Docks**	**1991**	**1225643**
A	**On site**	**Docks**	**1973**	**1221054**
A	**On site**	**Docks**	**1947**	**1209462**
C	**On site**	**Locomotive Repairing Works**	**1921**	**1215486**
C	**On site**	**Railway Sidings**	**1915**	**1261219**
C	**On site**	**Locomotive Repairing Works**	**1915**	**1215486**
C	**On site**	**Locomotive Repairing Works**	**1898**	**1210103**
D	4m W	Unspecified Ground Workings	1947	1202174
E	5m N	Goods Shed	1921	1208536
E	9m N	Goods Shed	1915	1208536
C	24m N	Unspecified Works	1947	1178844
G	38m E	Docks	1982	1229886
D	45m W	Unspecified Ground Workings	1938	1221365
D	45m W	Unspecified Ground Workings	1936	1221365
A	49m SE	Unspecified Tank	1982	1197663
A	49m SE	Unspecified Tank	1991	1197663
A	49m SE	Unspecified Tank	1973	1261450
D	53m W	Unspecified Ground Workings	1921	1205536

ID	Location	Land Use	Date	Group ID
1	61m E	Dock	1921	1171116
C	66m N	Unspecified Ground Workings	1921	1203866
C	68m N	Pumping House	1991	1182930
C	71m N	Unspecified Ground Workings	1982	1221571
C	71m N	Unspecified Ground Workings	1991	1221571
C	71m N	Unspecified Ground Workings	1973	1262596
C	71m N	Unspecified Ground Workings	1947	1238999
A	73m SE	Unspecified Tank	1982	1261733
A	73m SE	Unspecified Tank	1991	1261733
A	73m SE	Unspecified Tank	1973	1200744
D	75m NW	Railway Building	1898	1239156
D	77m NW	Railway Buildings	1915	1227842
D	78m NW	Railway Building	1921	1246610
C	80m N	Chimney	1947	1182780
D	81m W	Railway Building	1938	1246610
D	81m W	Railway Building	1936	1246610
D	87m W	Railway Buildings	1921	1227842
A	92m SE	Unspecified Tank	1991	1175657
A	95m SE	Unspecified Tanks	1982	1217258
A	95m SE	Unspecified Tanks	1973	1249389
A	97m SE	Unspecified Tank	1991	1175656
A	100m E	Coal Tips	1921	1189250
A	116m SE	Unspecified Tank	1982	1242156
A	116m SE	Unspecified Tank	1991	1242156
A	116m SE	Unspecified Tank	1973	1224855
A	118m SE	Unspecified Tank	1982	1218879
A	118m SE	Unspecified Tank	1991	1218879
A	118m SE	Unspecified Tank	1973	1264676

ID	Location	Land Use	Date	Group ID
A	120m SE	Unspecified Tank	1982	1250647
A	120m SE	Unspecified Tank	1991	1250647
A	120m SE	Unspecified Tank	1973	1248263
H	120m E	Coal Tips	1915	1189256
H	120m E	Coal Hoists	1938	1211084
C	121m NE	Unspecified Ground Workings	1921	1242116
H	121m E	Coal Hoists	1936	1211084
I	125m NW	Railway Building	1898	1171661
2	128m N	Lime Kilns	1878	1164001
I	131m NW	Railway Buildings	1921	1181710
J	152m SW	Railway Building	1938	1259817
J	152m SW	Railway Building	1936	1259817
I	158m NW	Railway Building	1898	1171664
A	158m SE	Unspecified Tanks	1982	1262313
A	158m SE	Unspecified Tanks	1991	1262313
A	158m SE	Unspecified Tanks	1973	1213491
A	162m SE	Railway Buildings	1921	1181667
A	165m SE	Unspecified Tank	1982	1232017
A	165m SE	Unspecified Tank	1991	1232017
A	165m SE	Unspecified Tank	1973	1199338
L	170m NE	Unspecified Depot	1982	1230998
L	170m NE	Unspecified Depot	1991	1230998
L	170m NE	Unspecified Depot	1973	1212424
M	174m E	Coal Tips	1915	1189257
M	174m E	Coal Hoists	1938	1200187
M	174m E	Coal Hoists	1936	1200187
A	184m SE	Unspecified Tank	1982	1270341
A	184m SE	Unspecified Tank	1991	1270341

ID	Location	Land Use	Date	Group ID
A	184m SE	Unspecified Tank	1973	1263548
A	184m SE	Unspecified Tank	1973	1263548
A	186m SE	Unspecified Tank	1982	1193042
A	186m SE	Unspecified Tank	1973	1202770
N	194m W	Railway Building	1938	1230335
N	194m W	Railway Building	1936	1230335
N	194m W	Railway Building	1898	1216396
4	199m N	Railway Building	1898	1171665
N	199m W	Railway Building	1915	1216396
N	205m W	Railway Building	1921	1257393
N	205m W	Railway Building	1982	1217713
A	205m SE	Unspecified Tank	1982	1269671
A	205m SE	Unspecified Tank	1991	1269671
A	205m SE	Unspecified Tank	1973	1216570
A	206m E	Coal Tips	1921	1235495
A	207m SE	Unspecified Tank	1982	1236203
A	207m SE	Unspecified Tank	1991	1236203
A	207m SE	Unspecified Tank	1973	1260063
A	210m E	Coal Tips	1915	1267916
A	213m SE	Unspecified Tank	1982	1221252
A	213m SE	Unspecified Tank	1973	1271779
A	219m SE	Unspecified Tank	1982	1231208
A	219m SE	Unspecified Tank	1973	1222169
A	219m SE	Unspecified Tank	1991	1175651
A	223m SE	Unspecified Tank	1982	1206485
N	226m W	Railway Buildings	1915	1224029
O	228m N	Railway Building	1898	1171666
A	230m SE	Unspecified Tank	1982	1205357

ID	Location	Land Use	Date	Group ID
A	230m SE	Unspecified Tank	1991	1205357
A	230m SE	Unspecified Tank	1973	1196967
N	231m W	Railway Buildings	1921	1224029
P	231m SW	Railway Building	1938	1260673
P	231m SW	Railway Building	1936	1260673
P	237m SW	Railway Building	1898	1214776
P	239m SW	Railway Building	1915	1209064
P	240m SW	Railway Building	1982	1270288
P	244m SW	Railway Building	1982	1242440
P	244m SW	Railway Buildings	1938	1246061
P	244m SW	Railway Buildings	1936	1246061
A	246m SE	Unspecified Tank	1982	1267136
A	246m SE	Unspecified Tank	1973	1213399
N	246m W	Railway Building	1938	1261482
N	246m W	Railway Building	1936	1261482
P	247m SW	Railway Building	1915	1255475
P	247m SW	Railway Buildings	1921	1181665
P	250m SW	Railway Building	1898	1246920
5	255m E	Unspecified Pit	1973	1185358
P	255m SW	Railway Building	1921	1255475
A	259m E	Unspecified Tank	1982	1241077
A	259m E	Unspecified Tank	1991	1241077
A	259m E	Unspecified Tank	1973	1233565
P	260m SW	Railway Building	1938	1227956
P	260m SW	Railway Building	1936	1227956
P	261m SW	Railway Building	1938	1250543
P	261m SW	Railway Building	1936	1250543
P	261m SW	Railway Building	1915	1262719

ID	Location	Land Use	Date	Group ID
P	261m SW	Railway Building	1898	1262719
P	261m SW	Railway Building	1982	1212595
A	264m SE	Unspecified Tank	1982	1193293
A	264m SE	Unspecified Tank	1991	1193293
A	264m SE	Unspecified Tank	1973	1253655
A	264m SE	Unspecified Tank	1973	1253655
S	267m NE	Metal Yard	1982	1198949
S	267m NE	Metal Yard	1991	1198949
S	267m NE	Metal Yard	1973	1208154
T	267m E	Coal Tips	1915	1189259
T	267m E	Coal Hoists	1938	1270877
T	267m E	Coal Hoists	1936	1270877
P	268m SW	Railway Building	1915	1233205
P	271m SW	Engine Shed	1921	1171125
N	272m W	Railway Buildings	1921	1181663
A	273m E	Unspecified Tank	1982	1199810
A	273m E	Unspecified Tank	1973	1215155
N	274m SW	Railway Station	1938	1196932
N	274m SW	Railway Station	1936	1196932
N	274m SW	Railway Station	1915	1251993
A	274m SE	Coal Tips	1921	1189249
N	275m SW	Railway Station	1973	1205152
P	276m SW	Engine Shed	1915	1171126
A	278m E	Coal Tips	1921	1260411
A	281m E	Coal Tips	1915	1260411
N	284m SW	Railway Station	1921	1218675
A	288m SE	Railway Building	1921	1171706
V	296m N	Unspecified Depot	1982	1262290

ID	Location	Land Use	Date	Group ID
V	296m N	Unspecified Depot	1991	1262290
V	296m N	Unspecified Depot	1973	1262938
N	296m SW	Railway Station	1991	1254878
A	297m E	Unspecified Tank	1982	1209582
A	297m E	Unspecified Tank	1973	1235872
N	300m SW	Railway Station	1982	1254878
6	305m SE	Railway Buildings	1921	1181668
W	305m S	Unspecified Ground Workings	1915	1210506
A	306m SE	Coal Tips	1915	1215590
A	307m SE	Coal Tips	1921	1215590
W	309m S	Unspecified Ground Workings	1947	1211856
A	309m E	Unspecified Tank	1982	1209314
A	309m E	Unspecified Tank	1973	1209091
W	309m S	Unspecified Heap	1982	1228084
N	310m SW	Railway Station	1898	1251198
W	311m S	Unspecified Heap	1973	1261156
P	314m SW	Railway Building	1915	1227194
W	315m S	Unspecified Ground Workings	1921	1269998
P	320m SW	Railway Building	1938	1241305
P	320m SW	Railway Building	1936	1241305
W	322m S	Unspecified Heap	1938	1228284
W	322m S	Unspecified Heap	1936	1228284
P	324m SW	Railway Building	1938	1270001
P	324m SW	Railway Building	1936	1270001
P	324m SW	Railway Building	1915	1235015
P	325m SW	Railway Building	1915	1171653
P	325m SW	Railway Buildings	1921	1181666
V	325m N	Unspecified Depot	1947	1240844

ID	Location	Land Use	Date	Group ID
X	330m E	Coal Tips	1915	1189258
X	330m E	Coal Hoists	1938	1216305
X	330m E	Coal Hoists	1936	1216305
P	331m SW	Railway Building	1915	1217468
Y	345m SE	Unspecified Warehouse	1973	1207981
N	345m SW	Railway Building	1921	1171652
A	345m E	Unspecified Tank	1982	1237459
A	345m E	Unspecified Tank	1973	1261316
A	345m E	Unspecified Tank	1973	1261316
Z	354m SE	Unspecified Tanks	1982	1246702
Z	354m SE	Unspecified Tanks	1991	1246702
Z	354m SE	Unspecified Tanks	1973	1196785
AA	359m SE	Unspecified Tanks	1982	1199846
AA	359m SE	Unspecified Tanks	1991	1199846
AA	359m SE	Unspecified Tanks	1973	1200583
G	360m SE	Coal Tips	1921	1242310
A	360m E	Coal Tips	1921	1213323
A	362m E	Coal Tips	1915	1264835
G	362m SE	Unspecified Tank	1982	1266492
G	362m SE	Unspecified Tank	1991	1266492
G	362m SE	Unspecified Tank	1973	1257566
G	362m SE	Coal Tips	1915	1242310
G	362m SE	Coal Hoists	1938	1249375
G	362m SE	Coal Hoists	1936	1249375
Y	364m SE	Unspecified Warehouse	1982	1262477
Y	364m SE	Unspecified Warehouse	1991	1262477
P	365m SW	Railway Buildings	1938	1181664
P	365m SW	Railway Building	1936	1263008

ID	Location	Land Use	Date	Group ID
P	366m SW	Railway Building	1982	1243967
A	368m E	Coal Tips	1915	1189255
7	377m E	Unspecified Ground Workings	1921	1160086
G	384m SE	Unspecified Tank	1982	1254846
G	384m SE	Unspecified Tank	1991	1254846
G	384m SE	Unspecified Tank	1973	1194900
G	384m SE	Unspecified Tank	1973	1194900
A	385m E	Unspecified Tank	1982	1229416
A	385m E	Unspecified Tank	1991	1229416
A	385m E	Unspecified Tank	1973	1217064
G	398m SE	Unspecified Tank	1982	1258611
G	398m SE	Unspecified Tank	1991	1258611
G	398m SE	Unspecified Tank	1973	1201673
G	399m SE	Unspecified Tanks	1982	1262541
G	399m SE	Unspecified Tanks	1991	1262541
G	399m SE	Unspecified Tanks	1973	1210810
Y	407m S	Engine Shed	1915	1208717
AD	409m E	Coal Tips	1921	1237622
Y	412m S	Engine Shed	1921	1208717
G	414m SE	Unspecified Tank	1982	1210229
G	414m SE	Unspecified Tank	1973	1191134
A	418m E	Coal Tips	1921	1270291
A	418m E	Coal Tips	1915	1194911
AD	418m E	Coal Tips	1915	1237622
AD	418m E	Coal Hoists	1938	1192621
AD	418m E	Coal Hoists	1936	1192621
A	422m E	Unspecified Tank	1982	1238796
A	422m E	Unspecified Tank	1991	1238796

ID	Location	Land Use	Date	Group ID
A	422m E	Unspecified Tank	1973	1222763
AF	425m SW	Railway Building	1915	1228321
G	427m SE	Unspecified Tank	1982	1253167
G	427m SE	Unspecified Tank	1991	1253167
G	427m SE	Unspecified Tank	1973	1201541
A	428m E	Unspecified Tank	1982	1267519
A	428m E	Unspecified Tank	1991	1267519
A	428m E	Unspecified Tank	1973	1235851
AG	431m SW	Railway Building	1938	1229164
AG	431m SW	Railway Building	1936	1229164
AG	431m SW	Railway Building	1915	1227010
AF	433m SW	Railway Building	1921	1228321
9	433m S	Sewage Works	1991	1167445
G	439m SE	Coal Tips	1915	1189251
G	439m SE	Coal Hoists	1938	1207678
G	439m SE	Coal Hoists	1936	1207678
AH	440m NE	Cuttings	1947	1225852
AG	443m SW	Railway Building	1921	1212071
Y	443m S	Unspecified Ground Workings	1915	1249994
AH	448m NE	Cuttings	1982	1269637
AH	448m NE	Cuttings	1991	1269637
AH	448m NE	Cuttings	1973	1234273
Y	448m S	Unspecified Pit	1921	1185357
A	449m E	Unspecified Tank	1982	1245683
A	449m E	Unspecified Tank	1991	1245683
A	449m E	Unspecified Tank	1973	1241201
G	450m SE	Unspecified Tank	1982	1242316
G	450m SE	Unspecified Tank	1991	1242316

ID	Location	Land Use	Date	Group ID
G	450m SE	Unspecified Tank	1973	1211057
A	453m E	Unspecified Tank	1982	1272417
A	453m E	Unspecified Tank	1991	1272417
A	453m E	Unspecified Tank	1973	1219706
A	453m E	Unspecified Tank	1973	1219706
A	454m E	Coal Tips	1921	1210868
A	459m E	Coal Tips	1915	1210868
G	461m SE	Unspecified Tank	1982	1235016
Y	465m S	Unspecified Ground Workings	1938	1203152
Y	465m S	Unspecified Ground Workings	1936	1203152
Y	466m S	Unspecified Ground Workings	1921	1244750
G	466m SE	Unspecified Tank	1973	1243643
Y	471m S	Unspecified Ground Workings	1921	1228765
10	472m NE	Unspecified Depot	1991	1171250
G	477m SE	Unspecified Tank	1982	1245831
G	477m SE	Unspecified Tank	1991	1245831
G	477m SE	Unspecified Tank	1973	1235172
A	478m E	Coal Tips	1915	1212013
A	480m E	Coal Tips	1921	1212013
AI	480m SW	Railway Building	1921	1171642
A	485m E	Unspecified Tank	1982	1201025
A	485m E	Unspecified Tank	1973	1251052
AI	489m SW	Railway Building	1915	1171641
11	494m NE	Brewery	1898	1174576
AI	495m SW	Railway Buildings	1921	1181661
AJ	495m SW	Engine Shed	1898	1171124
12	498m E	Coal Tips	1921	1262260

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**133**

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 29**

ID	Location	Land Use	Date	Group ID
B	**On site**	**Tanks**	**1954**	**193173**
B	**On site**	**Unspecified Tank**	**1954**	**192142**
B	**On site**	**Unspecified Tank**	**1954**	**192142**
B	**On site**	**Tanks**	**1954**	**190772**
B	**On site**	**Unspecified Tank**	**1936**	**185437**
B	**On site**	**Tanks**	**1936**	**186831**
B	**On site**	**Tanks**	**1936**	**169034**
A	19m SE	Unspecified Tank	1954	187199
A	19m SE	Unspecified Tank	1971	187199
A	19m SE	Unspecified Tank	1954	187199
A	43m SE	Unspecified Tank	1990	186451
A	44m SE	Unspecified Tank	1971	186451
C	46m N	Unspecified Tank	1971	184921
C	47m N	Unspecified Tank	1999	184921
C	47m N	Unspecified Tank	1990	184921
A	69m SE	Unspecified Tank	1990	181997
A	70m SE	Unspecified Tank	1971	181997
C	78m N	Unspecified Tank	1954	188414
C	78m N	Unspecified Tank	1954	182531
C	78m N	Unspecified Tank	1990	187855
C	79m NE	Unspecified Tank	1972	190157
A	90m SE	Tanks	1990	190206
A	92m SE	Tanks	1971	190206

ID	Location	Land Use	Date	Group ID
C	94m N	Unspecified Tank	1954	186763
C	95m N	Unspecified Tank	1954	186763
C	99m N	Unspecified Tank	1972	180632
C	99m N	Unspecified Tank	1990	180632
A	111m SE	Unspecified Tank	1990	181839
A	112m SE	Unspecified Tank	1971	181839
A	114m SE	Unspecified Tank	1990	178526
A	114m SE	Unspecified Tank	1990	185340
A	115m SE	Unspecified Tank	1971	178526
A	115m SE	Unspecified Tank	1971	185340
A	143m SE	Unspecified Tank	1990	190335
A	144m SE	Unspecified Tank	1971	192067
A	153m SE	Tanks	1990	190941
A	154m SE	Tanks	1971	190941
K	156m S	Unspecified Tank	1990	185328
K	157m S	Unspecified Tank	1971	178773
A	159m SE	Unspecified Tank	1990	185968
A	161m SE	Unspecified Tank	1971	185968
A	178m SE	Unspecified Tank	1990	187631
A	179m SE	Unspecified Tank	1971	187631
A	182m SE	Unspecified Tank	1971	172200
A	201m SE	Unspecified Tank	1990	178645
A	201m SE	Unspecified Tank	1971	178645
A	202m SE	Unspecified Tank	1990	191238
A	203m SE	Unspecified Tank	1971	191238
A	210m SE	Unspecified Tank	1971	172205
A	213m SE	Unspecified Tank	1971	172201
N	214m W	Unspecified Tank	1920	172198

ID	Location	Land Use	Date	Group ID
A	221m SE	Tanks	1990	169039
O	222m N	Unspecified Tank	1936	172196
A	225m SE	Unspecified Tank	1971	172203
A	226m SE	Unspecified Tank	1990	189886
A	227m SE	Unspecified Tank	1971	189886
A	228m SE	Tanks	1990	169037
A	240m SE	Unspecified Tank	1990	172202
A	243m E	Unspecified Tank	1971	172204
N	248m W	Unspecified Tank	1954	189837
N	248m W	Unspecified Tank	1954	189837
A	255m E	Unspecified Tank	1990	184728
A	256m E	Unspecified Tank	1971	184728
A	257m SE	Tanks	1900	169038
A	259m SE	Unspecified Tank	1990	179696
A	260m SE	Unspecified Tank	1971	179696
N	265m W	Unspecified Tank	1920	172197
N	270m W	Unspecified Tank	1954	193867
N	270m W	Unspecified Tank	1954	193867
A	271m E	Unspecified Tank	1971	172209
P	291m SW	Unspecified Tank	1971	189691
P	292m SW	Unspecified Tank	1990	189691
A	295m E	Tanks	1971	169035
A	308m E	Unspecified Tank	1971	172206
V	342m N	Tanks	1990	189945
A	342m E	Unspecified Tank	1971	172207
V	342m N	Tanks	1972	189945
V	343m N	Tanks	1999	189945
A	346m E	Unspecified Tank	1971	172208

ID	Location	Land Use	Date	Group ID
Z	350m SE	Tanks	1990	192973
Z	350m SE	Tanks	1999	188564
Z	351m SE	Tanks	1971	187456
AA	356m SE	Tanks	1990	183004
AA	356m SE	Tanks	1999	193099
AA	357m SE	Tanks	1971	190022
G	357m SE	Unspecified Tank	1990	189669
G	358m SE	Unspecified Tank	1971	185195
G	359m SE	Unspecified Tank	1999	190126
AA	370m SE	Unspecified Tank	1990	186621
AA	370m SE	Unspecified Tank	1996	186617
AA	370m SE	Unspecified Tank	1971	186621
Y	371m S	Unspecified Tank	1954	183779
Y	371m S	Unspecified Tank	1971	183779
A	371m E	Unspecified Tank	1990	189674
A	371m E	Unspecified Tank	1971	189674
Y	372m S	Unspecified Tank	1954	183779
Y	374m S	Unspecified Tank	1920	190928
Y	376m S	Unspecified Tank	1936	179872
G	378m SE	Unspecified Tank	1990	193386
G	379m SE	Unspecified Tank	1971	189908
G	380m SE	Unspecified Tank	1999	193386
A	381m E	Unspecified Tank	1990	184420
A	382m E	Unspecified Tank	1971	184420
G	393m SE	Unspecified Tank	1990	186521
G	393m SE	Unspecified Tank	1999	179325
G	393m SE	Unspecified Tank	1971	189908
G	394m SE	Unspecified Tank	1971	179325

ID	Location	Land Use	Date	Group ID
G	394m SE	Unspecified Tank	1990	193665
G	396m SE	Tanks	1971	181230
G	396m SE	Tanks	1990	179988
8	403m W	Unspecified Tank	1881	172199
G	406m SE	Tanks	1971	185999
G	411m SE	Unspecified Tank	1971	172224
A	419m E	Unspecified Tank	1990	182350
A	420m E	Unspecified Tank	1971	182350
G	422m SE	Unspecified Tank	1971	192868
G	423m SE	Unspecified Tank	1990	192868
A	423m E	Unspecified Tank	1990	181652
A	424m E	Unspecified Tank	1971	181652
A	445m E	Unspecified Tank	1990	191230
A	446m E	Unspecified Tank	1971	191230
G	446m SE	Unspecified Tank	1971	187633
G	446m SE	Unspecified Tank	1990	187633
A	450m E	Unspecified Tank	1990	187583
A	451m E	Unspecified Tank	1971	187583
Y	454m S	Tanks	1996	183903
Y	455m S	Tanks	1990	183903
G	461m SE	Tanks	1971	185954
G	470m SE	Tanks	1990	190918
G	471m SE	Tanks	1990	192652
G	472m SE	Unspecified Tank	1990	188702
G	473m SE	Unspecified Tank	1971	188702
A	483m E	Unspecified Tank	1971	172210

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	**18**

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'.

Features are displayed on the Past land use - un-grouped map on **page 29**

ID	Location	Land Use	Date	Group ID
3	147m W	Electricity Substation	1971	97089
A	161m SE	Electricity Substation	1990	112305
A	163m SE	Electricity Substation	1971	112305
A	163m SE	Electricity Substation	1999	112305
U	289m SE	Electricity Substation	1999	108447
U	289m SE	Electricity Substation	1971	108447
U	292m SE	Electricity Substation	1990	109724
R	297m N	Electricity Substation	1990	104383
R	297m N	Electricity Substation	1972	104383
R	297m N	Electricity Substation	1999	104383
N	311m W	Gas Governor	1990	99401
AB	375m NW	Electricity Substation	1954	105782
AB	376m NW	Electricity Substation	1954	105782
AB	376m NW	Electricity Substation	1971	105782
AB	376m NW	Electricity Substation	1990	105782
S	403m NE	Electricity Substation	1984	97090
AE	423m N	Electricity Substation	1971	106408
AE	424m N	Electricity Substation	1990	106408

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	29

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'.

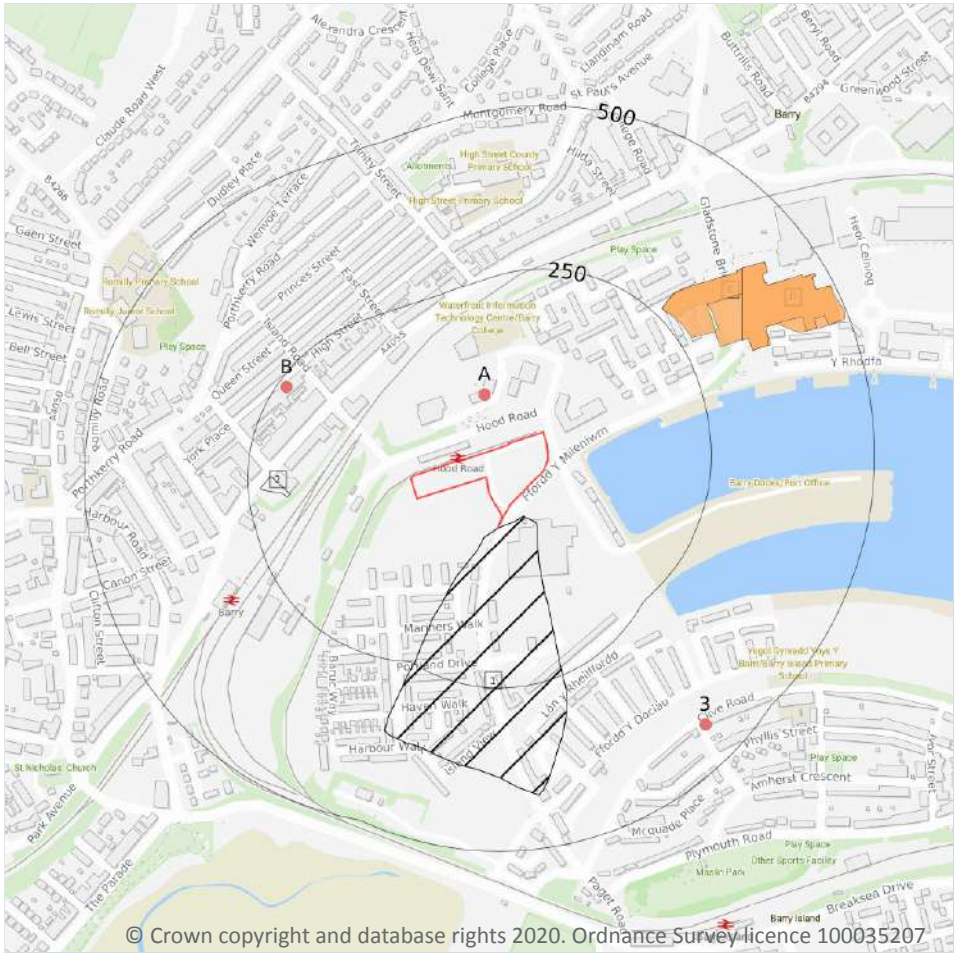
Features are displayed on the Past land use - un-grouped map on **page 29**

ID	Location	Land Use	Date	Group ID
C	18m N	Locomotive Repairing Works	1900	34284
C	21m N	Locomotive Repairing Works	1954	35100
C	21m N	Locomotive Repairing Works	1954	35100
C	26m N	Locomotive Repairing Works	1936	35182
C	26m N	Locomotive Repairing Works	1920	35182
F	38m N	Locomotive Repair Works	1954	32473
C	40m N	Locomotive Repairing Works	1954	35100
F	45m N	Locomotive Repairing Works	1954	35100
D	63m W	Auto Body Repair Works	1990	33909
D	78m W	Auto Body Repair Works	1971	32909
N	232m W	Garage	1954	33885
N	233m W	Garage	1971	33667
N	249m W	Garage	1954	32538
Q	256m W	Garage	1990	34157
Q	256m W	Garage	1954	34285
Q	257m W	Garage	1954	36223

ID	Location	Land Use	Date	Group ID
Q	257m W	Garage	1971	36223
R	260m N	Garage	1990	32582
R	265m N	Garage	1954	33959
R	265m N	Garage	1999	34170
R	265m N	Garage	1954	35395
R	265m N	Garage	1972	35395
AC	402m NE	Garage	1990	33350
AC	403m NE	Garage	1999	33429
AC	404m NE	Garage	1954	36825
AC	404m NE	Garage	1972	36825
AC	404m NE	Garage	1954	32714
AJ	500m SW	Carriage Shed	1954	33859
AJ	500m SW	Carriage Shed	1954	33182

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)

Historical waste sites

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	1

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

Features are displayed on the Waste and landfill map on **page 49**

ID	Location	Site address	Source	Data type
2	186m W	Refuse Tip	1970 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 49**

ID	Location	Details		
1	4m S	Site Address: West Pond Licence Holder Address: -	Waste Licence: - Site Reference: - Waste Type: Inert, Industrial, Commercial, Household, Special Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: - Licence Holder: - First Recorded 31/12/1945 Last Recorded: 31/12/1955

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

3.5 Historical waste sites

Records within 500m	4

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

Features are displayed on the Waste and landfill map on **page 49**

ID	Location	Address	Further Details	Date
C	262m NE	Site Address: N/A	Type of Site: Scrap Metal Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1990
C	263m NE	Site Address: N/A	Type of Site: Scrap Metal Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1971
D	335m NE	Site Address: N/A	Type of Site: Scrap Metal Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1971
D	336m NE	Site Address: N/A	Type of Site: Scrap Metal Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1983

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	**9**

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.

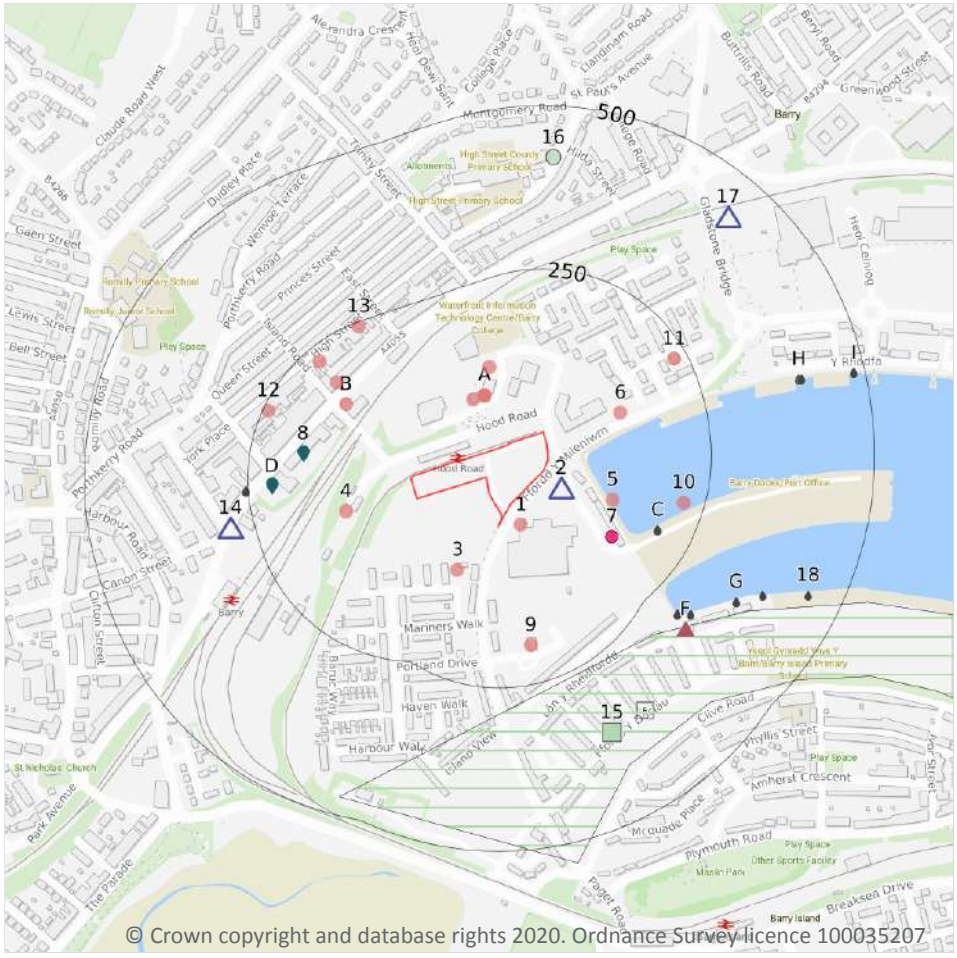
Features are displayed on the Waste and landfill map on **page 49**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	83m NW	Aneurin Evans Chemists, West Quay Medical Centre, Hood Road, Barry, Vale of Glamorgan, CF625QN	NRW-WME000667	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal

ID	Location	Site	Reference	Category	Sub-Category	Description
A	83m NW	West Quay Medical Centre, Dr S J Matthews & Partners, West Quay Medical Centre, Hood Road, Docks, Y Barri, CF625QN	NRW-WME022743	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
A	83m NW	Magawell LTD, Aneurin Evans Chemists Ltd, West Quay Medical Centre, Hood Road, Barry, Vale of Glamorgan, CF625QN	NRW-WME024652	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
A	83m NW	Rodericks Wales Limited, West Quay Dental Practice, Hood Rd, Docks, Barry, CF625QN	NRW-WME025985	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
A	83m NW	West Quay MEdical Centre, Doctors Surgery, West Quay Medical Centre, Hood Road, Barry, Vale of Glamorgan, CF625QN	NRW-WME028894	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
A	83m NW	West Quay Medical Centre, Hood Road, Barry, Vale of Glamorgan, CF62 5QN	NRW-WME000667	Treating waste exemption	Waste Exemption - Non-Agricultural	Sorting and de-naturing of controlled drugs for disposal
B	236m NW	Judith M Evans, Judith M Evans Pharmacy, 88 High Street, Y Barri, CF627DX	NRW-WME013663	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
B	236m NW	High Street Pharmacy , 88 High street, Barry, Y Barri, Vale of Glamorgan, CF627DX	NRW-WME017754	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
3	439m SE	Cuddy Remediation Ltd, Barry Waterfront South Quay, Off Former Charles Darwin Way, Barry, Vale of Glamorgan, CF625UZ	NRW-WME021439	Disposing of waste exemption	Not on a farm	Burning waste in the open

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
- Current or recent petrol stations
- Control of Major Accident Hazards
- Hazardous substance storage/usage
- Licensed pollutant release (Part A(2)/B)
- Radioactive Substance Authorisations
- Licensed Discharges to controlled waters
- List 2 Dangerous Substances
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	**17**

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 53**

ID	Location	Company	Address	Activity	Category
1	29m SE	Electricity Sub Stations	South Glamorgan, CF62	Electrical Features	Infrastructure and Facilities
A	83m NW	Tigers Global Logistics	Business Service Centre, Hood Road, Docks, Barry, South Glamorgan, CF62 5QN	Distribution and Haulage	Transport, Storage and Delivery

ID	Location	Company	Address	Activity	Category
A	83m NW	Ask Frank Ltd	Unit 8 Bsc Innovation Quarter, Hood Road, Docks, Barry, South Glamorgan, CF62 5QN	Signs	Industrial Products
A	83m N	Business Centre	South Glamorgan, CF62	Business Parks and Industrial Estates	Industrial Features
3	94m SW	Electricity Sub Station	South Glamorgan, CF62	Electrical Features	Infrastructure and Facilities
4	110m W	Mast	South Glamorgan, CF62	Telecommunications Features	Infrastructure and Facilities
5	114m SE	Jetty	South Glamorgan, CF62	Moorings and Unloading Facilities	Water
A	121m N	Electricity Sub Station	South Glamorgan, CF62	Electrical Features	Infrastructure and Facilities
6	122m E	Electricity Sub Station	South Glamorgan, CF62	Electrical Features	Infrastructure and Facilities
B	150m NW	Griff's Garage Ltd	Broad Street, Barry, South Glamorgan, CF62 7AD	Vehicle Breakdown and Recovery Services	Personal, Consumer and Other Services
B	184m NW	Vinylize Printing & Embroidery	21-22, Broad Street, Barry, South Glamorgan, CF62 7AD	Clothing, Components and Accessories	Consumer Products
9	191m S	Asda Petrol	Ffordd Y Mileniwm, Barry, South Glamorgan, CF62 5AT	Petrol and Fuel Stations	Road and Rail
10	218m E	Jetty	South Glamorgan, CF62	Moorings and Unloading Facilities	Water
B	227m NW	Doctor Bob Balloons Unlimited	91, High Street, Barry, South Glamorgan, CF62 7DY	Giftware	Consumer Products
11	230m NE	C & G Energy Ltd	1, Rhodfa Sweldon, Barry, South Glamorgan, CF62 5AD	Industrial Repairs and Servicing	Repair and Servicing
12	242m NW	O'Donovans Hardware	76, High Street, Barry, South Glamorgan, CF62 7DW	General Construction Supplies	Industrial Products
13	244m N	Aspirations UK	104, High Street, Barry, South Glamorgan, CF62 7DS	Furniture	Consumer Products

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	3

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on **page 53**

ID	Location	Company	Address	LPG	Status
2	38m SE	ASDA	Fford Y Mileniwm, Barry, The Vale Of Glamorgan, CF62 5AT	No	Open
14	287m W	UNBRANDED	Broad Street, Barry, The Vale Of Glamorgan, CF62 7AA	Not Applicable	Obsolete
17	434m NE	OBSOLETE	Broad Street, Barry, The Vale Of Glamorgan, CF62 7AH	Not Applicable	Obsolete

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	2

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.

Features are displayed on the Current industrial land use map on **page 53**

ID	Location	Company	Address	Operational status	Tier
E	258m SE	Van Ommeren Tank Terminals Ltd	Van Ommeren Tank Terminals Ltd, No 1 Dock, Barry,CF62 5XX	Historical NIHHS Site	-
E	258m SE	Powell Duffryn	Powell Duffryn, Dock 1, Barry, CF62 5XX	Historical COMAH Site	-

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	1

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.

Features are displayed on the Current industrial land use map on **page 53**

ID	Location	Details	
F	324m SE	Application reference number: 1999/01002/HAZ Application status: Historical Consent Application date: 16/09/1999 Address: No. 1 Dock, Barry, Vale of Glamorgan, CF63 4RT	Details: Bulk storage and handling by ship, road vehicle of mineral oils and chemicals Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

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	2

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.

Features are displayed on the Current industrial land use map on **page 53**

ID	Location	Address	Details	
8	170m W	Freye Dry Cleaning, 13 The Parade, Broad Street, Barry, CF62 7AN	Process: Dry Cleaning Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
D	214m W	Coppins Motors, Broad Street, Barry, CF62 7AE	Process: Petrol Vapour Recovery Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	1

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

Features are displayed on the Current industrial land use map on **page 53**

ID	Location	Address	Details	
7	145m SE	Research Vessel Services, N E R C, No 1 Dock, Barry, South Glamorgan, CF6 6UZ	Operator: Research Vessel Services Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AF0814 Date of approval: 31/03/1991	Effective from: 31/03/1991 Last date of update: 01/01/2015 Status: Revoked/cancelled

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

4.13 Licensed Discharges to controlled waters

Records within 500m **17**

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 53**

ID	Location	Address	Details	
C	196m SE	NO 1 DOCK A SITE BARRY , BARRY	Effluent Type: UNSPECIFIED Permit Number: AN0033221 Permit Version: 1 Receiving Water: BARRY NO.1 DOCK	Status: REVOKED - UNSPECIFIED Issue date: 10/09/1987 Effective Date: 10/09/1987 Revocation Date: 09/10/1992
C	196m SE	NO 1 DOCK A SITE BARRY , BARRY	Effluent Type: SALINE WATER - COASTAL SITES - NON BATHING/SHELLFISH Permit Number: AN0033221 Permit Version: 2 Receiving Water: BARRY NO.1 DOCK	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 10/10/1992 Effective Date: 10/10/1992 Revocation Date: 06/05/1994
D	253m W	BARRY - BROAD STREET	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: AN0104401 Permit Version: 4 Receiving Water: OLD HARBOUR	Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV Issue date: 28/02/2009 Effective Date: 31/03/2010 Revocation Date: 10/06/2009
D	253m W	BARRY - BROAD STREET	Effluent Type: UNSPECIFIED Permit Number: AN0104401 Permit Version: 1 Receiving Water: OLD HARBOUR	Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 20/10/1989 Effective Date: 20/10/1989 Revocation Date: 30/03/2007

ID	Location	Address	Details	
D	253m W	BARRY - BROAD STREET	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: AN0104401 Permit Version: 2 Receiving Water: OLD HARBOUR	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 18/03/2005 Effective Date: 27/03/2007 Revocation Date: 28/03/2007
D	253m W	BARRY - BROAD STREET	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: AN0104401 Permit Version: 3 Receiving Water: OLD HARBOUR	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 29/03/2007 Effective Date: 29/03/2007 Revocation Date: 30/03/2010
F	300m SE	NO 1 DOCK 'B' WEST AREA BARRY , NO 1 DOCK 'B' WEST AREA BARRY, BARRY	Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: AN0033222 Permit Version: 2 Receiving Water: BARRY NO.1 DOCK	Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV Issue date: 10/07/1992 Effective Date: 10/10/1992 Revocation Date: 06/05/2003
F	300m SE	NO 1 DOCK 'B' WEST AREA BARRY , NO 1 DOCK 'B' WEST AREA BARRY, BARRY	Effluent Type: UNSPECIFIED Permit Number: AN0033222 Permit Version: 1 Receiving Water: BARRY NO.1 DOCK	Status: REVOKED - UNSPECIFIED Issue date: 10/09/1987 Effective Date: 10/09/1987 Revocation Date: 09/10/1992
F	314m SE	NO 1 DOCK B E AREA BARRY, BARRY	Effluent Type: UNSPECIFIED Permit Number: AN0033223 Permit Version: 1 Receiving Water: SEVERN ESTUARY	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 10/09/1987 Effective Date: 10/09/1987 Revocation Date: 31/03/1995
G	356m SE	NO 1 DOCK B E AREA BARRY, BARRY	Effluent Type: UNSPECIFIED Permit Number: AN0033224 Permit Version: 1 Receiving Water: SEVERN ESTUARY	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 10/09/1987 Effective Date: 10/09/1987 Revocation Date: 31/03/1995
G	385m SE	NO 1 DOCK B E AREA BARRY, BARRY	Effluent Type: UNSPECIFIED Permit Number: AN0033225 Permit Version: 1 Receiving Water: SEVERN ESTUARY	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 10/09/1987 Effective Date: 10/09/1987 Revocation Date: 31/03/1995
H	398m E	HOLTON ROAD CSO HOLTON ROAD, HOLTON ROAD CSO, HOLTON ROAD, BARRY, VALE OF GLAMORGAN	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: AN0392601 Permit Version: 1 Receiving Water: BARRY DOCK NO 1	Status: Effective Issue date: 20/12/2005 Effective Date: 31/12/2005 Revocation Date: -

ID	Location	Address	Details	
H	398m E	HOLTON ROAD CSO HOLTON ROAD, HOLTON ROAD CSO, HOLTON ROAD, BARRY, VALE OF GLAMORGAN	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: AN0392601 Permit Version: 1 Receiving Water: BARRY DOCK NO 1	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 20/12/2005 Effective Date: 31/12/2005 Revocation Date: -
H	402m E	BARRY DOCKS NORTHSIDE NO 1 DOCK ROA, BARRY DOCKS NORTHSIDE NO 1 DOCK, NORTHSIDE NO 1 DOCK ROAD ., DOCK ROAD	Effluent Type: UNSPECIFIED Permit Number: AN0033220 Permit Version: 1 Receiving Water: SEVERN ESTUARY	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 10/09/1987 Effective Date: 10/09/1987 Revocation Date: 16/01/1995
18	447m SE	NO 1 DOCK B E AREA BARRY, BARRY	Effluent Type: UNSPECIFIED Permit Number: AN0033226 Permit Version: 1 Receiving Water: SEVERN ESTUARY	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 10/09/1987 Effective Date: 10/09/1987 Revocation Date: 31/03/1995
I	482m E	OVERFLOW AT HOLTON ROAD BARRY , OVERFLOW AT HOLTON ROAD BARRY, BARRY	Effluent Type: UNSPECIFIED Permit Number: AN0033219 Permit Version: 1 Receiving Water: SEVERN ESTUARY	Status: REVOKED - UNSPECIFIED Issue date: 10/09/1987 Effective Date: 10/09/1987 Revocation Date: 21/03/1994
I	482m E	OVERFLOW AT HOLTON ROAD BARRY , OVERFLOW AT HOLTON ROAD BARRY, BARRY	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: AN0033219 Permit Version: 2 Receiving Water: SEVERN ESTUARY	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 22/12/1993 Effective Date: 22/12/1993 Revocation Date: 18/02/1994

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	1

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.

Features are displayed on the Current industrial land use map on **page 53**

ID	Location	Name	Status	Receiving Water	Authorised Substances
15	362m SE	Barry Tankwash, Holts Building, Powell Way, No1 Dock	Not Active	-	Chromium, Copper, Lead, Nickel, Zinc, Xylene

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	1

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 53**

ID	Location	Details	
16	420m N	Incident Date: 26/09/2003 Incident Identification: 192755 Pollutant: Oils and Fuel Pollutant Description: Petrol	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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.

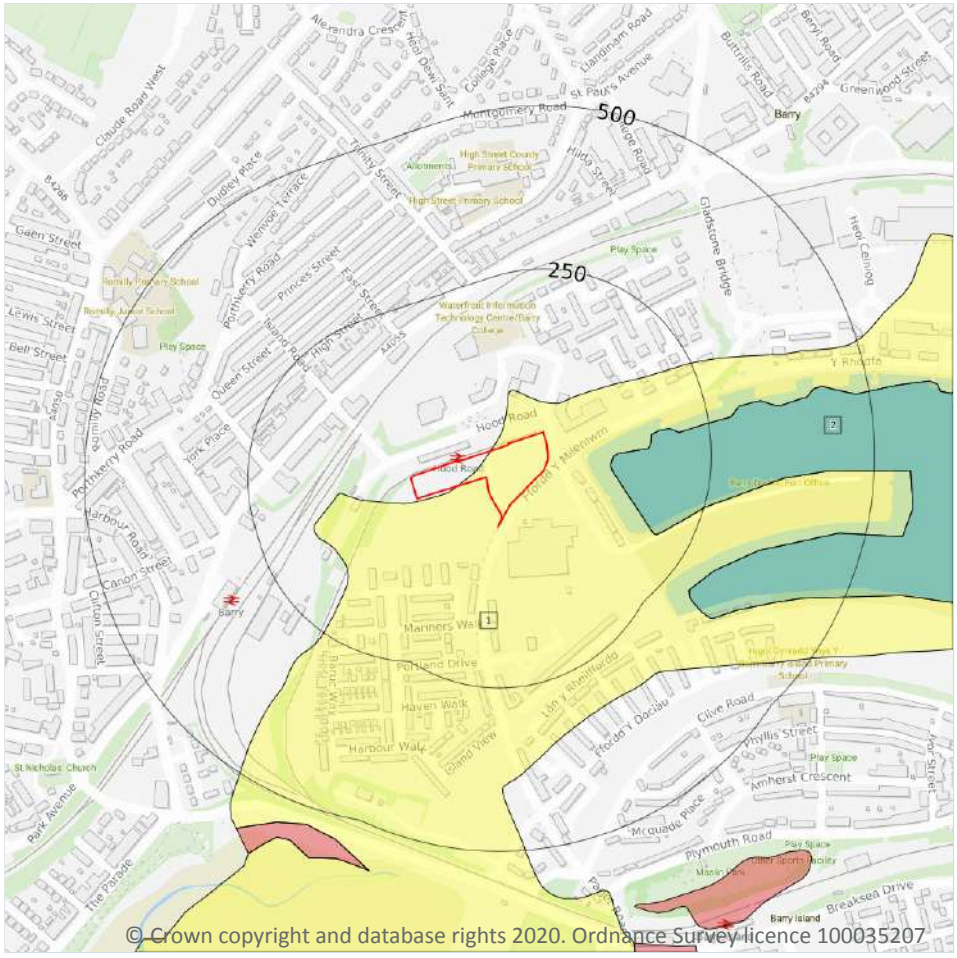
4.21 Pollution inventory radioactive waste

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	2

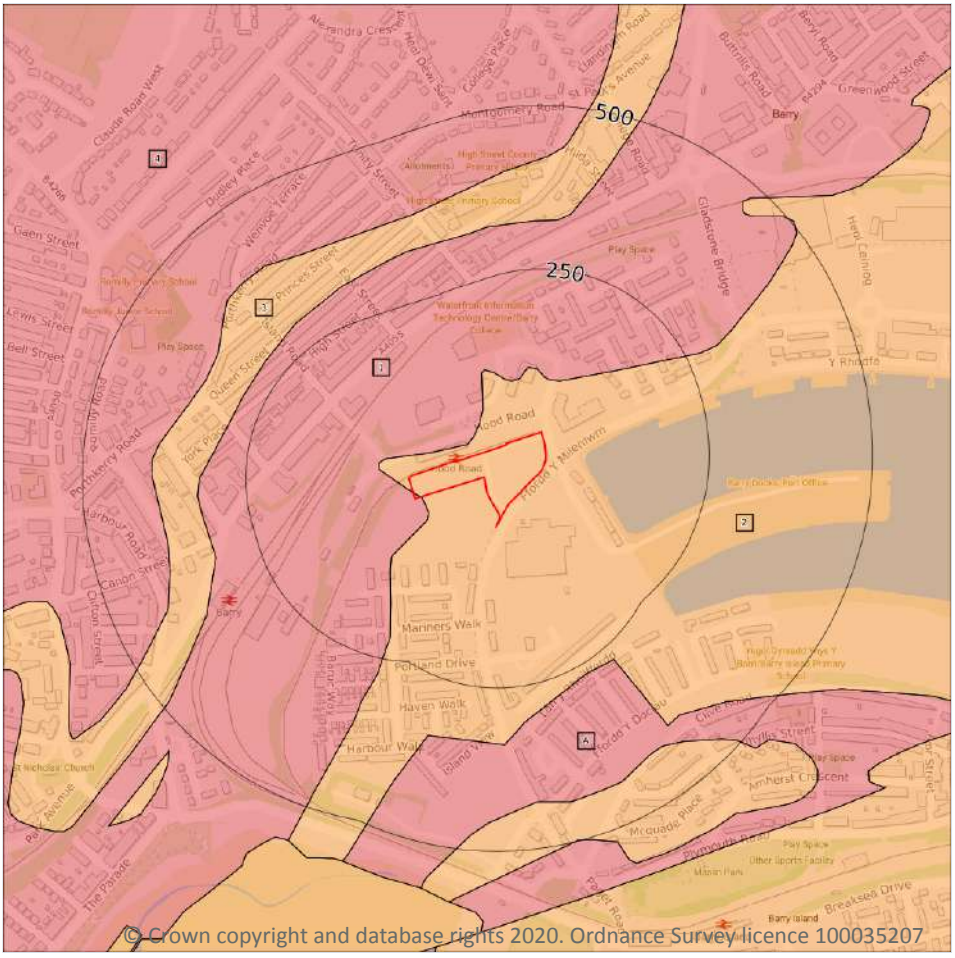
Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 63**

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	97m E	Unknown	Unknown

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

Bedrock aquifer



5.2 Bedrock aquifer

Records within 500m	6

Aquifer status of groundwater held within bedrock geology.

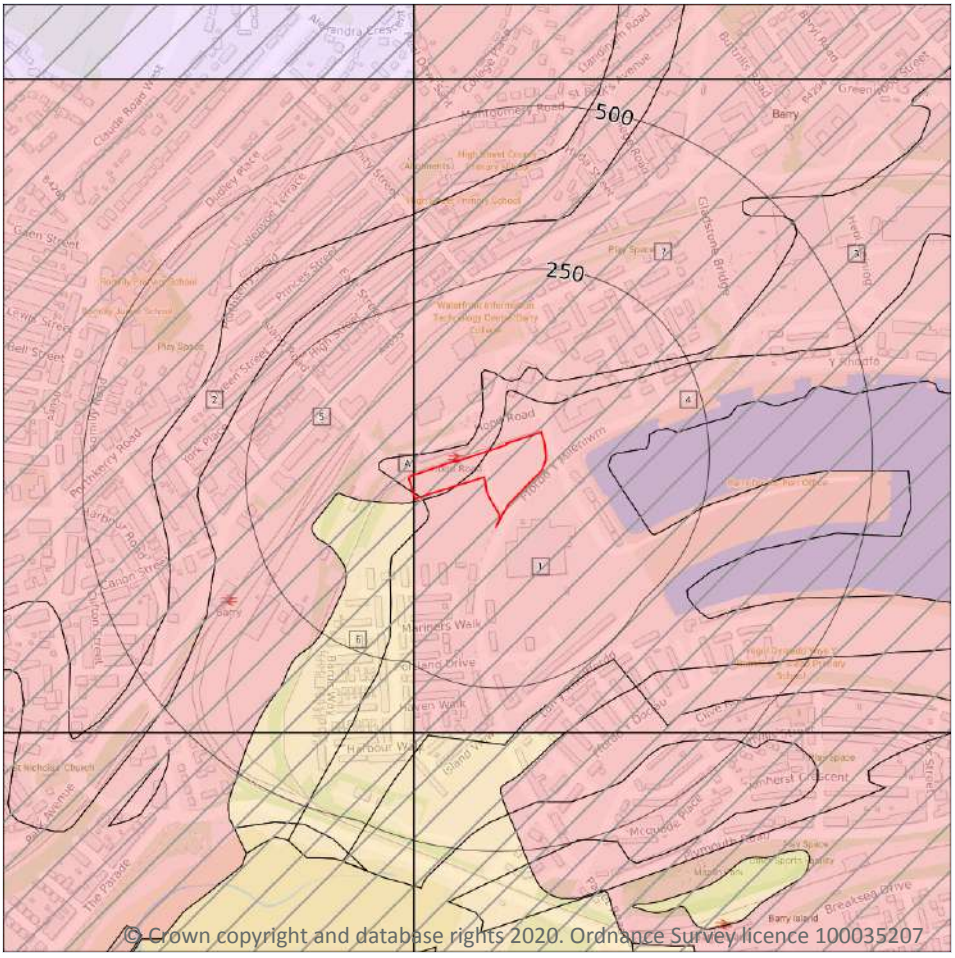
Features are displayed on the Bedrock aquifer map on **page 64**

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	On site	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers

ID	Location	Designation	Description
A	266m SE	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
3	282m NW	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers
4	346m NW	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
A	423m SE	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers

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

Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability
- Principal superficial aquifer, high vulnerability
- Secondary superficial aquifer, high vulnerability
- Principal superficial aquifer, medium vulnerability
- Secondary superficial aquifer, medium vulnerability
- Principal superficial aquifer, low vulnerability
- Secondary superficial aquifer, low vulnerability

Bedrock vulnerability
- Principal bedrock aquifer, high vulnerability
- Secondary bedrock aquifer, high vulnerability
- Principal bedrock aquifer, medium vulnerability
- Secondary bedrock aquifer, medium vulnerability
- Principal bedrock aquifer, low vulnerability
- Secondary bedrock aquifer, low vulnerability

Other information
- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	8

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 66**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	**On site**	**Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: High Infiltration value: <40% Dilution value: 300-550mm/year**	**Vulnerability: Medium Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: No Data**	**Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures**
3	**On site**	**Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer**	**Leaching class: High Infiltration value: <40% Dilution value: 300-550mm/year**	**Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data**	**Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures**
5	**On site**	**Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer**	**Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year**	**Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data**	**Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures**
A	**On site**	**Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer**	**Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year**	**Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data**	**Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures**
A	**On site**	**Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer**	**Leaching class: High Infiltration value: <40% Dilution value: 300-550mm/year**	**Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data**	**Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures**
A	4m S	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
6	5m S	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
7	19m N	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High 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	**2**

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

ID	Maximum soluble risk category	Percentage of grid square covered by maximum risk
2	**Significant soluble rocks are likely to be present. Problems unlikely except with considerable surface or subsurface water flow.**	**81.0%**
4	**Significant soluble rocks are likely to be present. Problems unlikely except with considerable surface or subsurface water flow.**	**28.000000000000004%**

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

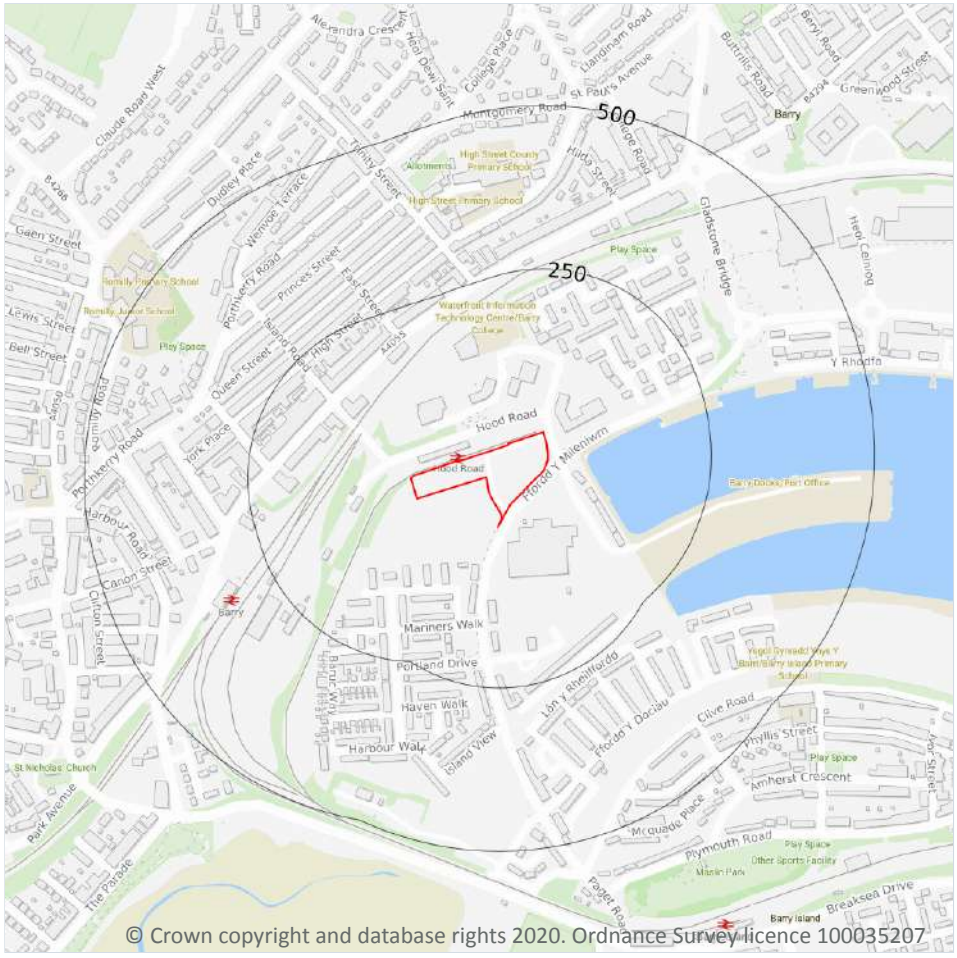
5.5 Groundwater vulnerability- local information

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
- 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	2

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.

Features are displayed on the Abstractions and Source Protection Zones map on **page 69**

ID	Location	Details	
-	854m SE	Status: Historical Licence No: 21/58/31/0030 Details: General use relating to Secondary Category (Medium Loss) Direct Source: EAW Groundwater Point: BOREHOLE AT BARRY ISLAND PLEASURE PARK Data Type: Point Name: Hyper Value Holdings Limited Easting: 311620 Northing: 166620	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 21/03/1997 Expiry Date: 21/03/2002 Issue No: 100 Version Start Date: 21/03/1997 Version End Date: -
-	854m SE	Status: Historical Licence No: 21/58/31/0031 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: EAW Groundwater Point: BOREHOLE AT BARRY ISLAND PLEASURE PARK Data Type: Point Name: Hyper Value Holdings Limited Easting: 311620 Northing: 166620	Annual Volume (m^3): 41172 Max Daily Volume (m^3): 112.8 Original Application No: - Original Start Date: 31/05/2002 Expiry Date: 31/03/2018 Issue No: 1 Version Start Date: 21/05/2004 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	**3**

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 69**

ID	Location	Details	
-	1922m NE	Status: Active Licence No: WA/058/0011/003 Details: Unknown (Impounding) - Direct Source: - Point: - Data Type: Line Name: - Easting: 312057 Northing: 169178	Annual Volume (m^3): 0 Max Daily Volume (m^3): - Original Application No: - Original Start Date: Oct 27 2014 12:00AM Expiry Date: - Issue No: - Version Start Date: - Version End Date: -

ID	Location	Details	
-	1955m N	Status: Historical Licence No: WA/058/0011/004 Details: Transfer Between Sources (Pre Water Act 2003) Direct Source: EAW Surface Water Point: UN-NAMED TRIBUTARY OF THE COLD BROOK Data Type: Point Name: The Vale of Glamorgan Council Easting: 311931 Northing: 169271	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 27/10/2014 Expiry Date: 31/03/2030 Issue No: 1 Version Start Date: 27/10/2014 Version End Date: -
-	1955m N	Status: Active Licence No: WA/058/0011/004 Details: Transfer between Sources (Pre Water Act 2003) - Very Low Direct Source: - Point: - Data Type: Point Name: - Easting: 311931 Northing: 169271	Annual Volume (m^3): 0 Max Daily Volume (m^3): - Original Application No: - Original Start Date: Oct 27 2014 12:00AM Expiry Date: Mar 31 2030 12:00AM 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.

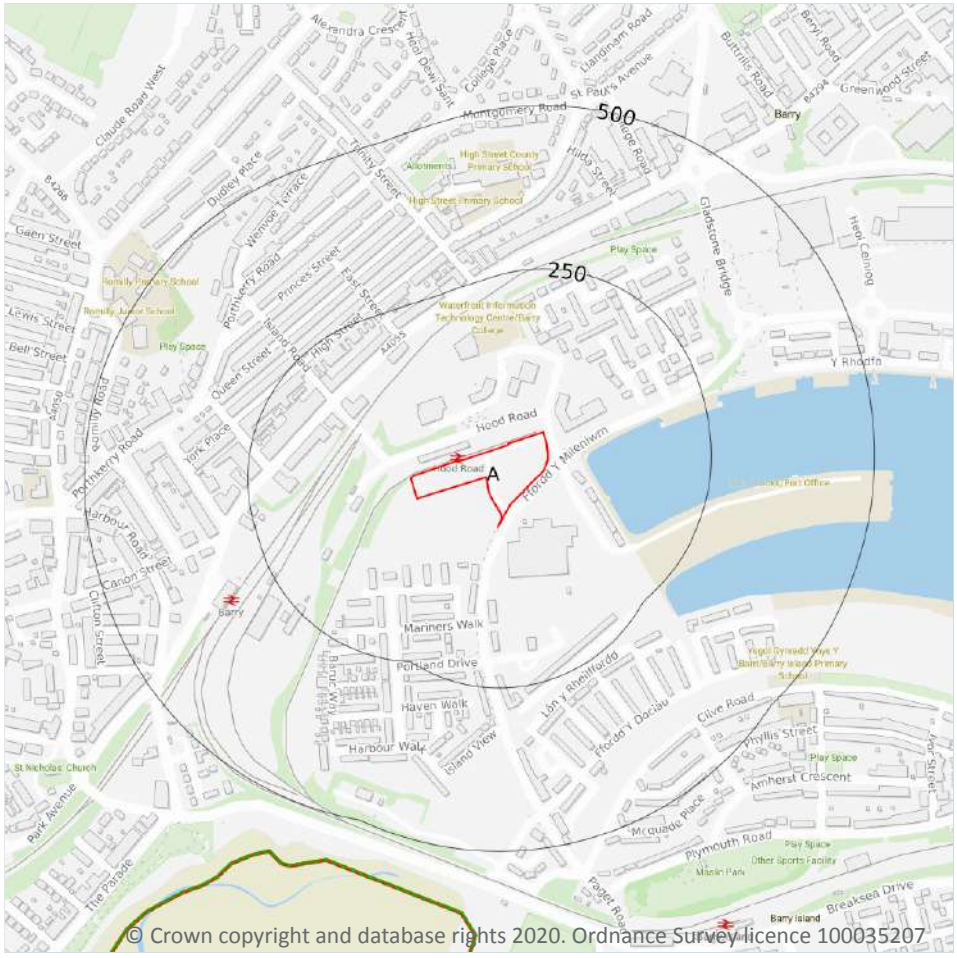
5.10 Source Protection Zones (confined aquifer)

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	0

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

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	1

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 73**

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 73**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	**On site**	**Coastal catchment**	**Not part of a river WB catchment**	**333**	**Thaw and Cadoxton**	**Tawe to Cadoxton**

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

6.4 WFD Surface water bodies

Records identified	0

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.

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

6.5 WFD Groundwater bodies

Records on site	1

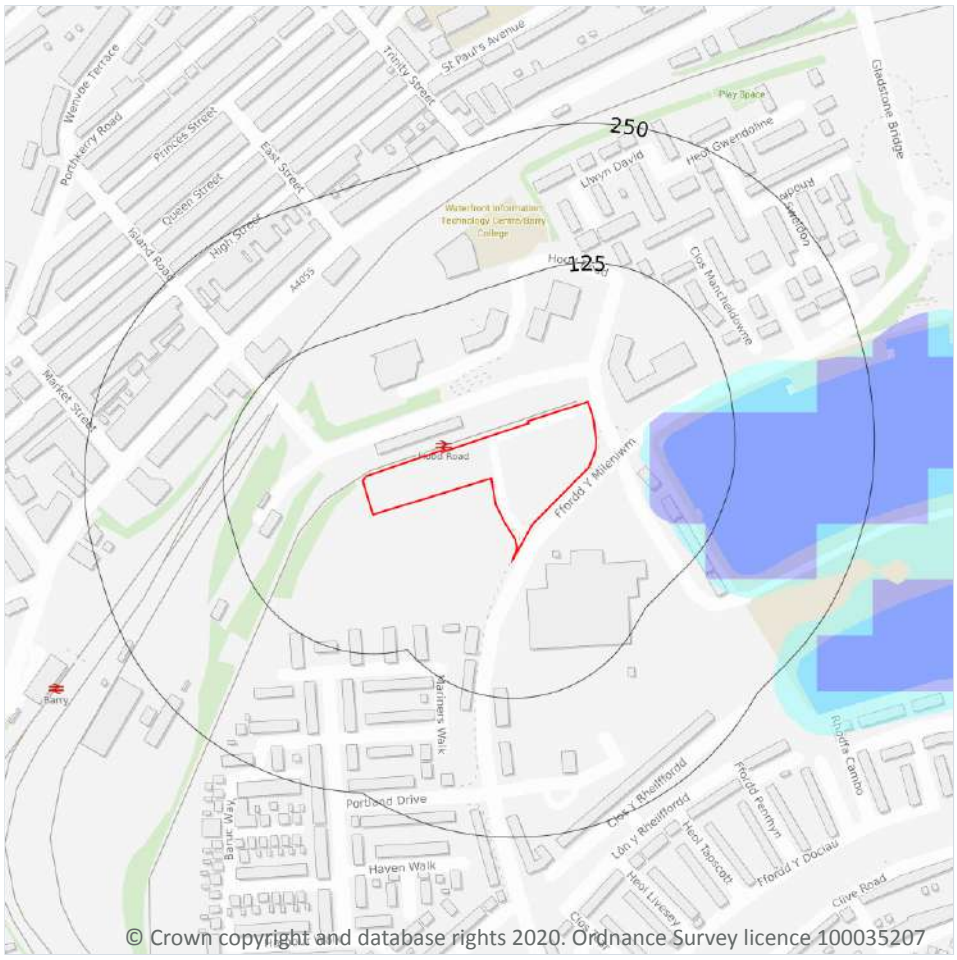
Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place.

Features are displayed on the Hydrology map on **page 73**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	**On site**	**Thaw & Cadoxtan Jurassic Lias**	**GB41002G201400**	**Good**	**Good**	**Good**	**2016**

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 Sea (RoFRaS)

Records within 50m	2

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition; 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).

Features are displayed on the River and coastal flooding map on **page 76**

Distance	RoFRaS flood risk
On site	**N/A**
0 - 50m	Medium

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	1

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.

Features are displayed on the River and coastal flooding map on **page 76**

Location	Type
38m E	Zone 2 - (Fluvial /Tidal Models)

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

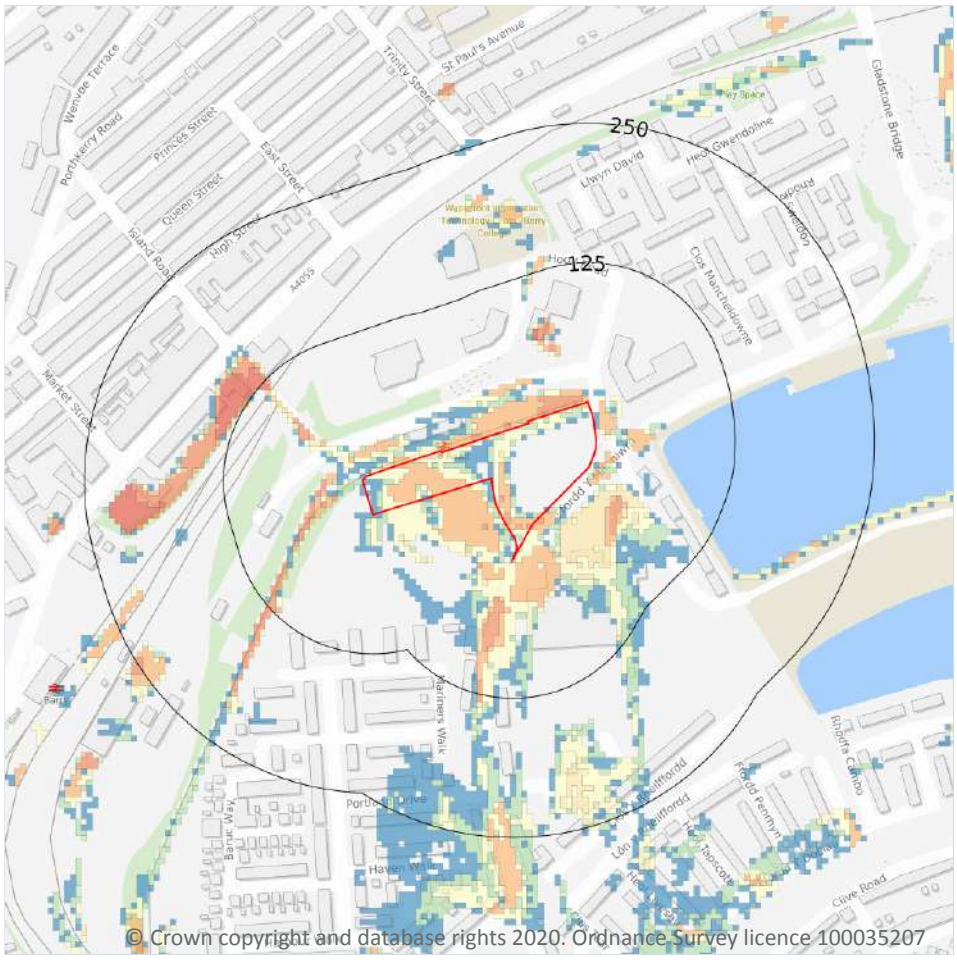
7.7 Flood Zone 3

Records within 50m	0

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	**1 in 30 year, 0.3m - 1.0m**
Highest risk within 50m	**1 in 30 year, 0.3m - 1.0m**

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.

Features are displayed on the Surface water flooding map on **page 80**

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	Between 0.3m and 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.3m and 1.0m
1 in 30 year	Between 0.3m and 1.0m

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding

9.1 Groundwater flooding

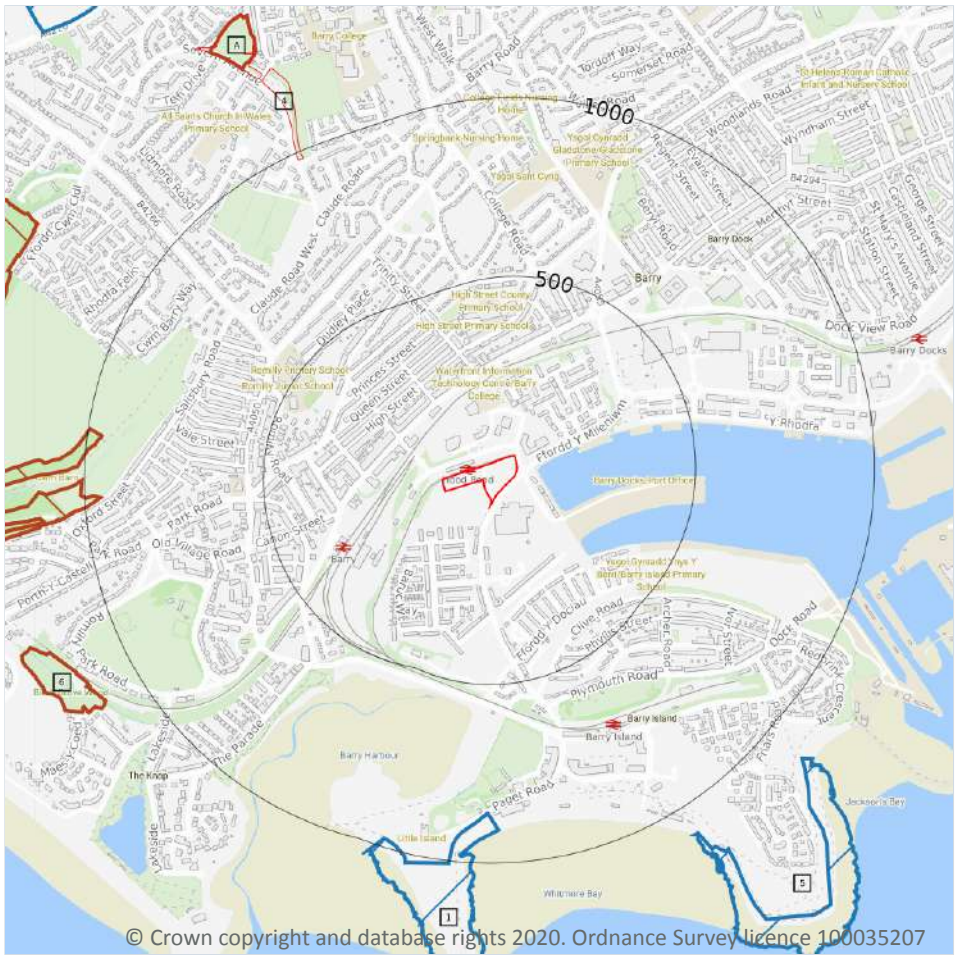
Highest risk on site	**Moderate**
Highest risk within 50m	**Moderate**

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 82**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



Site Outline

Search buffers in metres (m)

Sites of Special Scientific Interest (SSSI)

Local Nature Reserves (LNR)

Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	6

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 83**

ID	Location	Name	Data source
1	862m S	Barry Island	Natural Resources Wales

ID	Location	Name	Data source
5	1084m SE	Barry Island	Natural Resources Wales
-	1528m W	Cliff Wood - Golden Stairs	Natural Resources Wales
10	1641m NW	Fferm Walters	Natural Resources Wales
-	1754m E	Hayes Point To Bendrick Rock	Natural Resources Wales
-	1960m E	Hayes Point To Bendrick Rock	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	5

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.

Features are displayed on the Environmental designations map on **page 83**

ID	Location	Name	Data source
4	978m NW	CWM TALWG WOODLANDS	Natural Resources Wales
A	1232m NW	CWM TALWG WOODLANDS	Natural Resources Wales
-	1512m NW	CWM TALWG WOODLANDS	Natural Resources Wales
-	1528m W	CLIFF WOOD - GOLDEN STAIRS	Natural Resources Wales
-	1571m NW	CWM TALWG WOODLANDS	Natural Resources Wales

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

10.7 Designated Ancient Woodland

Records within 2000m	14

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 83**

ID	Location	Name	Woodland Type
2	957m W	Unknown	Ancient Semi Natural Woodland
3	959m W	Unknown	Ancient Semi Natural Woodland

ID	Location	Name	Woodland Type
6	1115m SW	Unknown	Restored Ancient Woodland Site
7	1119m W	Unknown	Restored Ancient Woodland Site
A	1276m NW	Unknown	Ancient Semi Natural Woodland
-	1326m W	Unknown	Ancient Semi Natural Woodland
-	1532m W	Unknown	Ancient Semi Natural Woodland
-	1579m NW	Unknown	Ancient Semi Natural Woodland
-	1595m W	Unknown	Restored Ancient Woodland Site
-	1809m NW	Unknown	Ancient Woodland Site of Unknown Category
-	1871m W	Unknown	Restored Ancient Woodland Site
-	1910m W	Unknown	Restored Ancient Woodland Site
-	1913m W	Unknown	Restored Ancient Woodland Site
-	1924m W	Unknown	Restored Ancient Woodland Site

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	1

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.

Features are displayed on the Visual and cultural designations map on **page 90**

ID	Location	Name	Grade	Reference Number	Listed date
1	95m N	North Hydraulic Pumping House, At NW Corner Of No 1 Dock, Set Back From The Dock Side	II	13468	20/08/1992

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

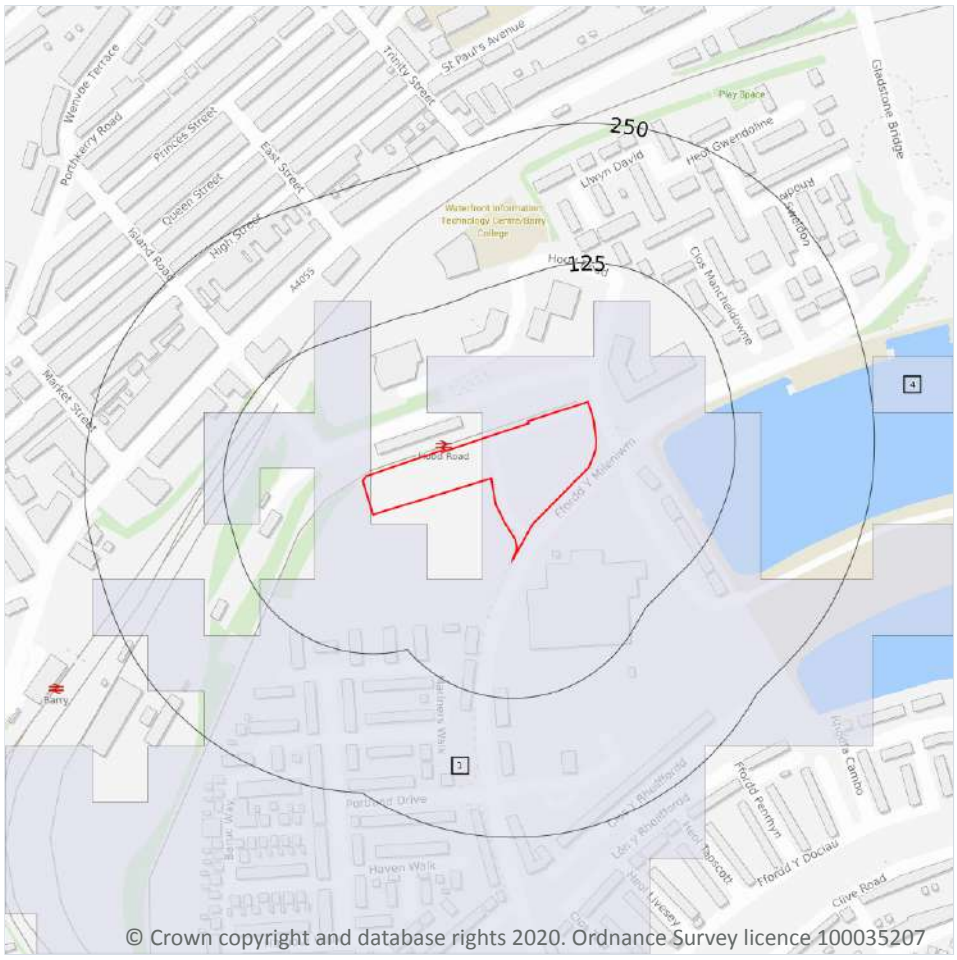
11.7 Registered Parks and Gardens

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 English Heritage, Cadw and Historic Environment Scotland.

12 Agricultural designations



12.1 Agricultural Land Classification

Records within 250m	2

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 93**

ID	Location	Classification	Description
1	**On site**	**Grade 3b**	**Moderate quality agricultural land**
4	249m E	Grade 3b	Moderate 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.

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.

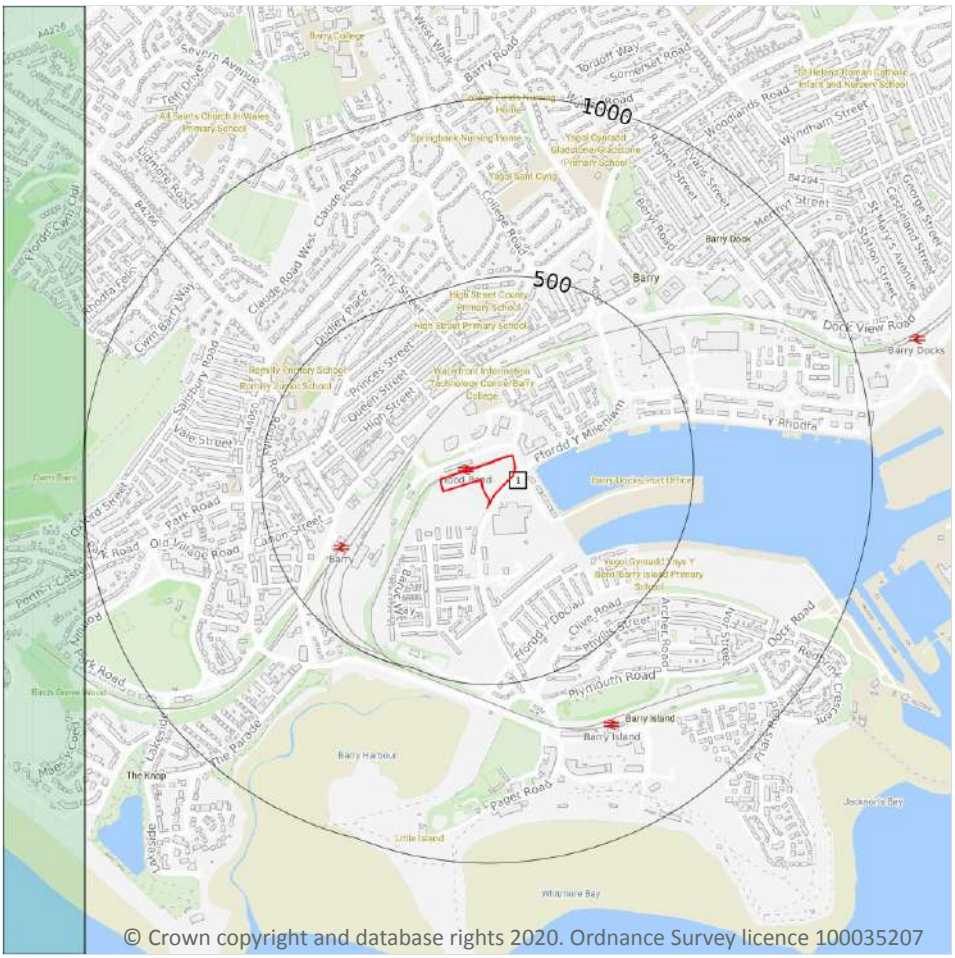
13.4 Limestone Pavement Orders

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 96**

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.

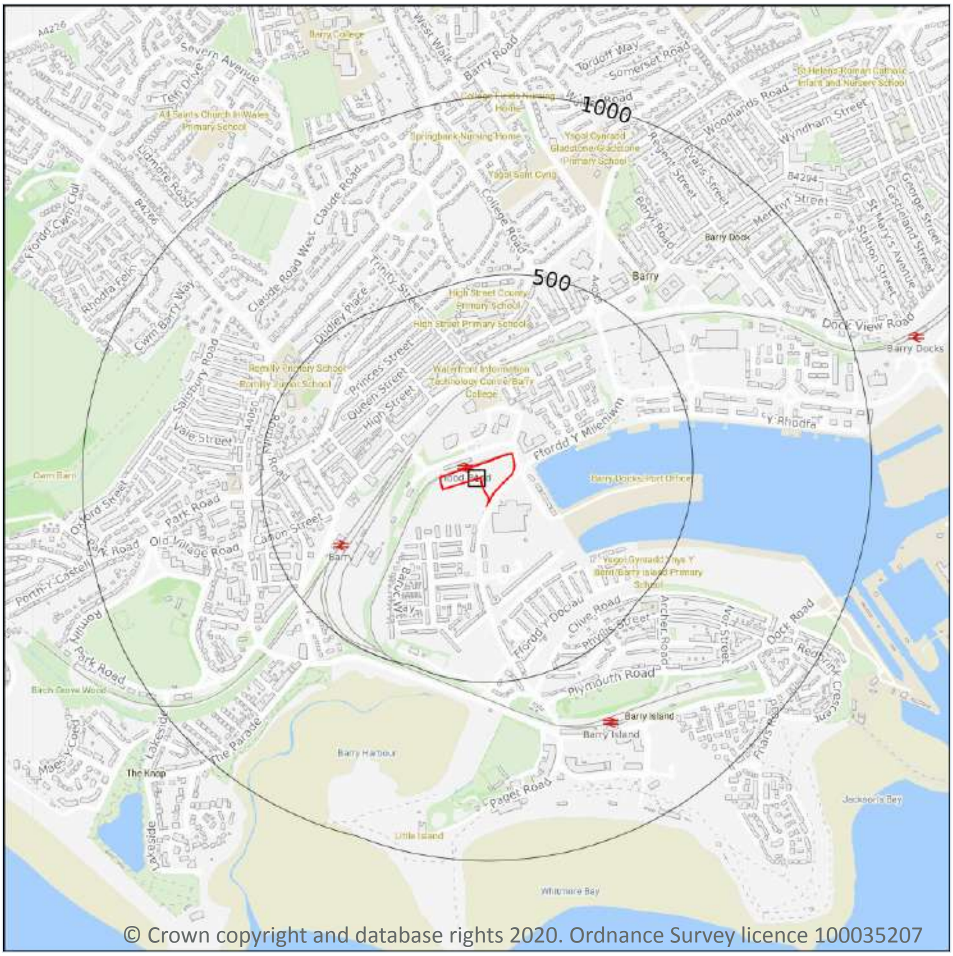
14.6 Bedrock faults and other linear features (10k)

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

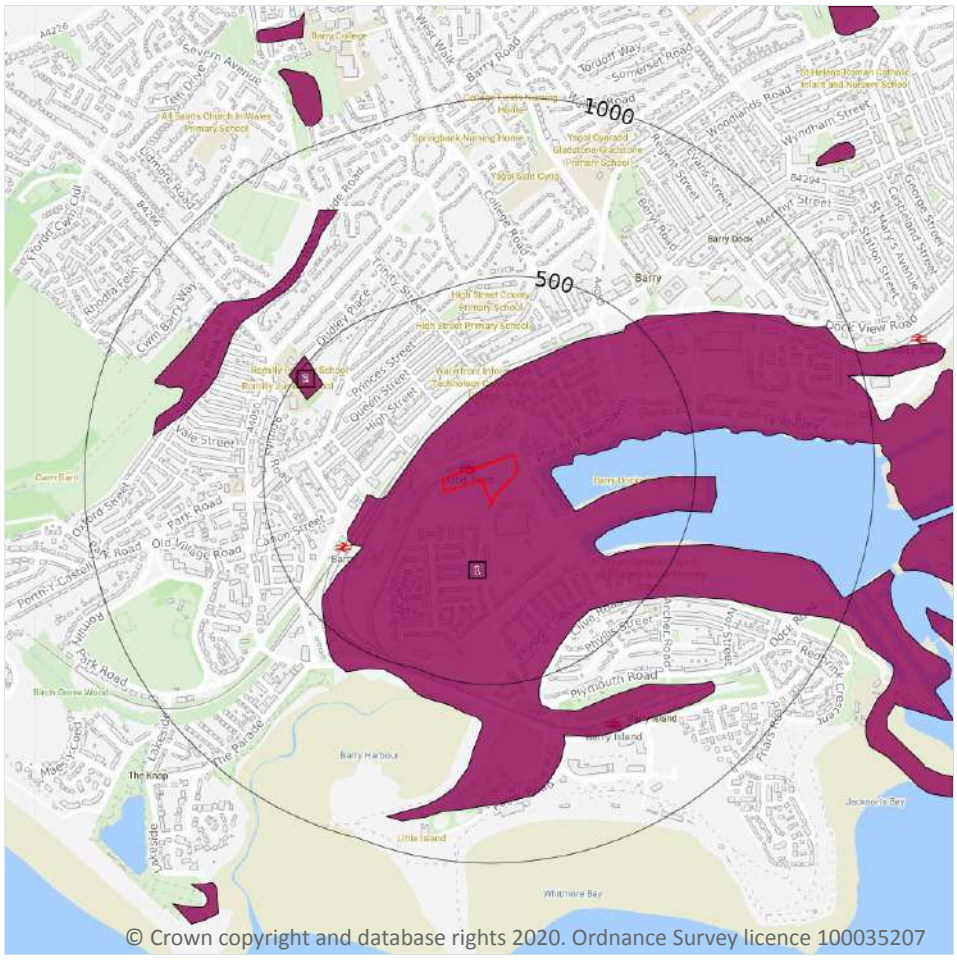
An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme. Where 50k data is not available, this area has been filled in with 625k scale data.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 100**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**EW263_cardiff_v4**

This data is sourced from the British Geological Survey.

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



© Crown copyright and database rights 2020. Ordnance Survey licence 100035207

Site Outline

Search buffers in metres (m)

- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

15.2 Artificial and made ground (50k)

Records within 500m	2

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 101**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**MGR-ARTDP**	**MADE GROUND (UNDIVIDED)**	**ARTIFICIAL DEPOSIT**
2	427m NW	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

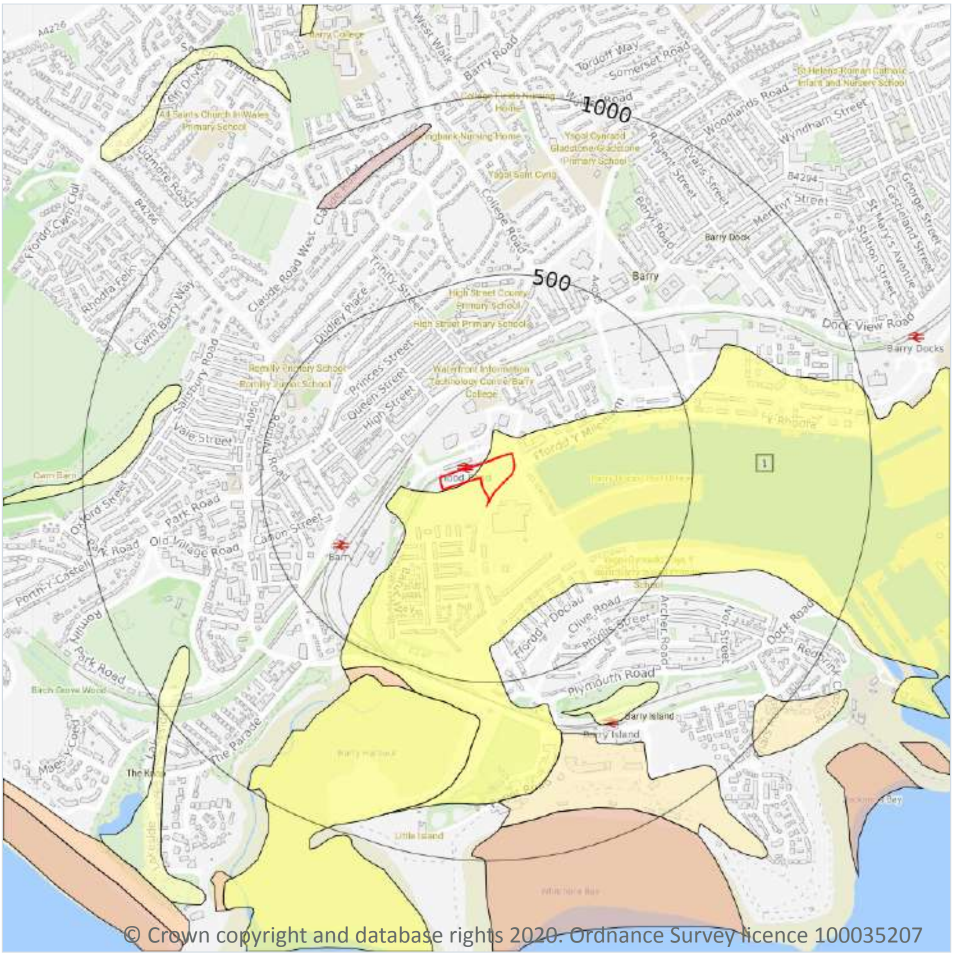
Records within 50m	1

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).

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

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	1

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 103**

ID	Location	LEX Code	Description	Rock description
1	On site	TFD-XCZS	TIDAL FLAT DEPOSITS	CLAY, SILT AND SAND

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	**Intergranular**	**Moderate**	**Very 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.

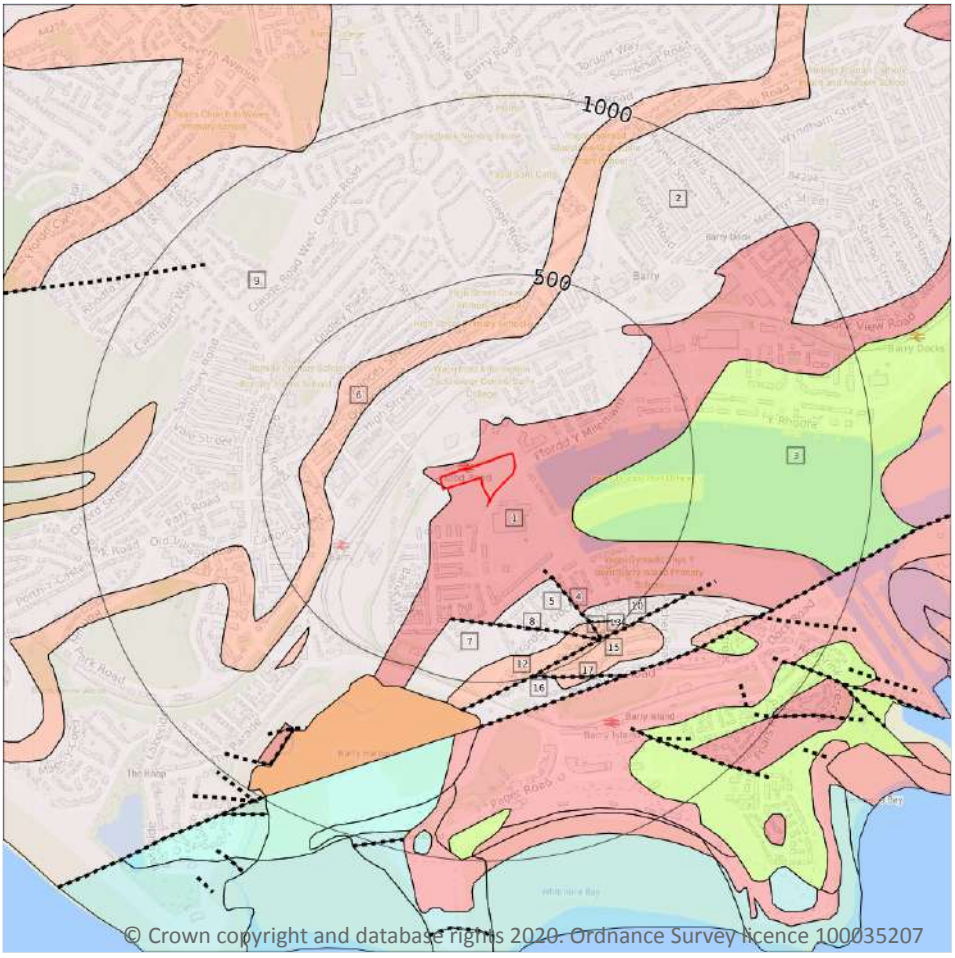
15.7 Landslip permeability (50k)

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 **13**

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 105**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**PNG-MDLM**	**PENARTH GROUP - MUDSTONE AND LIMESTONE, INTERBEDDED**	**RHAETIAN**
2	**On site**	**STM-LSMD**	**ST MARY'S WELL BAY MEMBER - LIMESTONE AND MUDSTONE, INTERBEDDED**	**RHAETIAN**
3	193m SE	BAN-MDST	BLUE ANCHOR FORMATION - MUDSTONE	NORIAN

ID	Location	LEX Code	Description	Rock age
5	266m SE	STM-LSMD	ST MARY'S WELL BAY MEMBER - LIMESTONE AND MUDSTONE, INTERBEDDED	RHAETIAN
6	282m NW	LVN-MDST	LAVERNOCK SHALES MEMBER - MUDSTONE	HETTANGIAN
7	333m S	STM-LSMD	ST MARY'S WELL BAY MEMBER - LIMESTONE AND MUDSTONE, INTERBEDDED	RHAETIAN
9	346m NW	PO-LSMD	PORTHKERRY MEMBER - LIMESTONE AND MUDSTONE, INTERBEDDED	HETTANGIAN
10	403m SE	STM-LSMD	ST MARY'S WELL BAY MEMBER - LIMESTONE AND MUDSTONE, INTERBEDDED	RHAETIAN
11	423m SE	LVN-MDST	LAVERNOCK SHALES MEMBER - MUDSTONE	HETTANGIAN
12	426m SE	LVN-MDST	LAVERNOCK SHALES MEMBER - MUDSTONE	HETTANGIAN
13	438m SE	LVN-MDST	LAVERNOCK SHALES MEMBER - MUDSTONE	HETTANGIAN
15	482m SE	LVN-MDST	LAVERNOCK SHALES MEMBER - MUDSTONE	HETTANGIAN
16	499m S	STM-LSMD	ST MARY'S WELL BAY MEMBER - LIMESTONE AND MUDSTONE, INTERBEDDED	RHAETIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m **2**

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**
On site	**Fracture**	**Very High**	**Low**

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m **4**

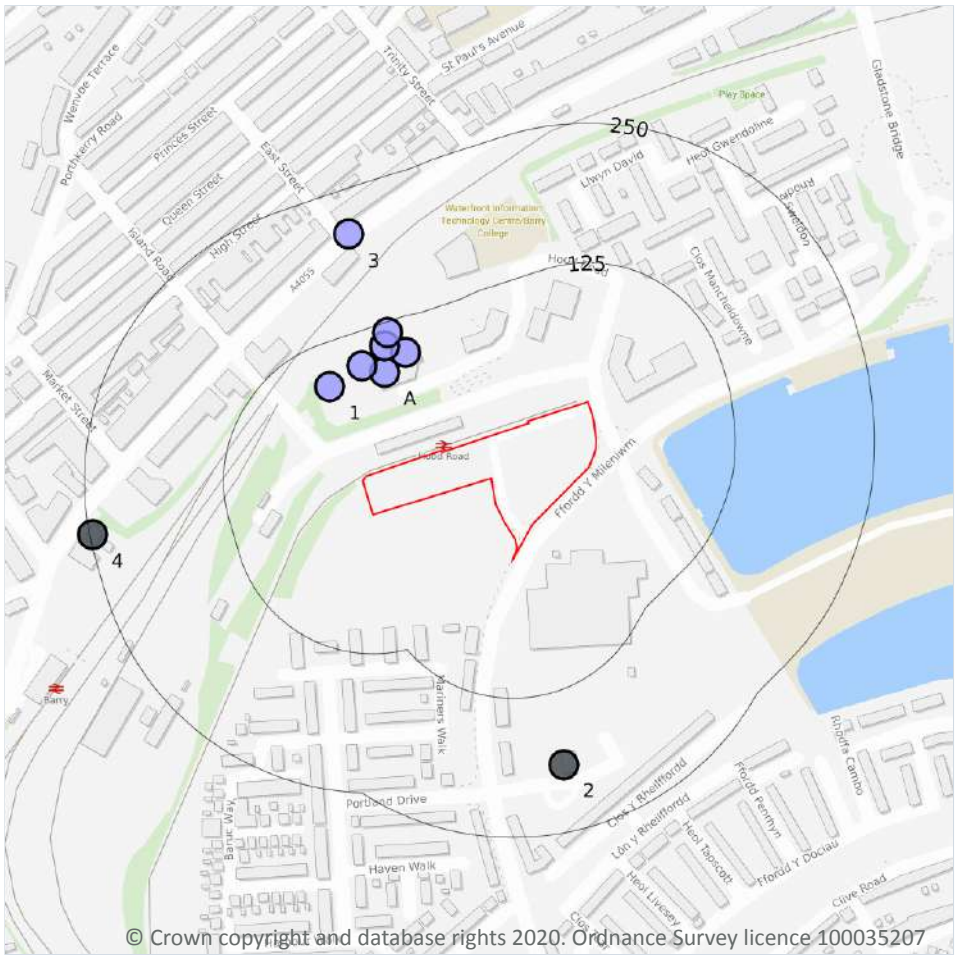
Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 105**

ID	Location	Category	Description
4	236m SE	FAULT	Fault, observed
8	333m S	FAULT	Fault, inferred
14	482m SE	FAULT	Fault, inferred
17	499m S	FAULT	Fault, observed, displacement unknown

This data is sourced from the British Geological Survey.

16 Boreholes



16.1 BGS Boreholes

Records within 250m **9**

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.

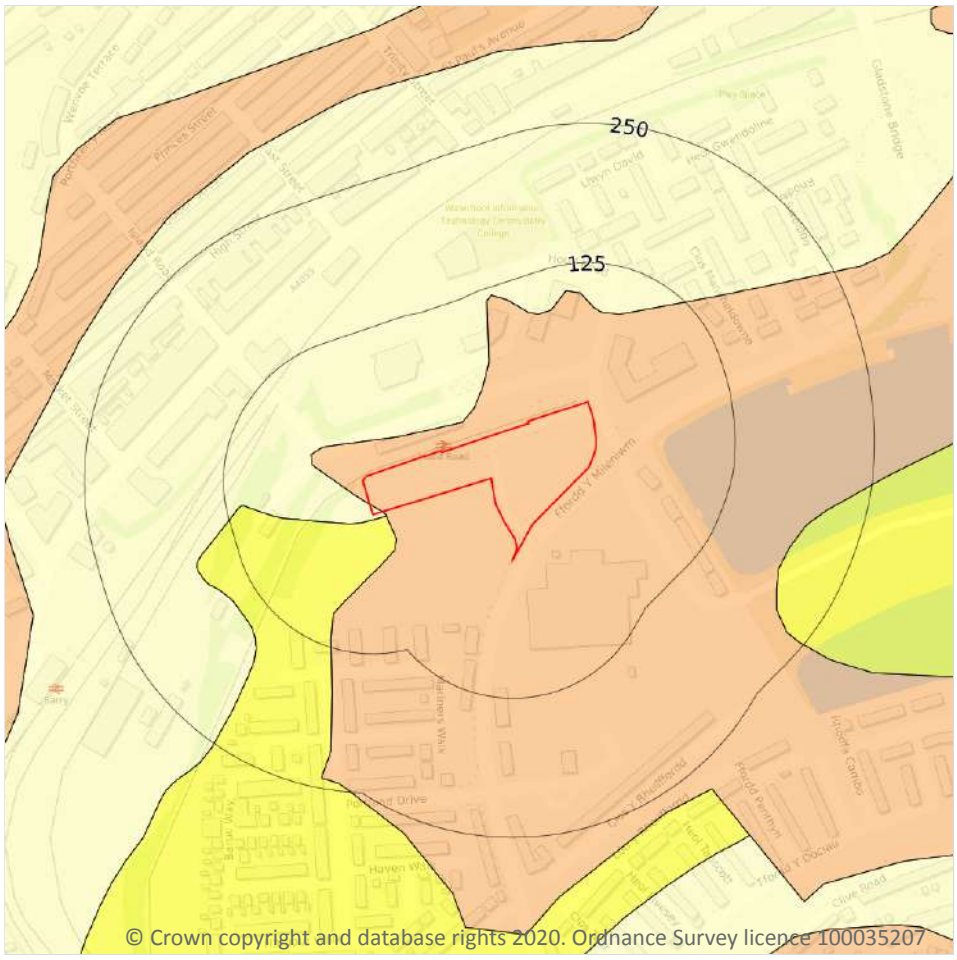
Features are displayed on the Boreholes map on **page 108**

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	83m N	311012 167486	LAND ADJACENT TO NEW SPINE ROAD WATERFRONT BARRY TP1	1.0	N	15987766
1	87m N	310963 167473	LAND ADJACENT TO NEW SPINE ROAD WATERFRONT BARRY TP3	2.2	N	15987769

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	94m N	311031 167504	LAND ADJACENT TO NEW SPINE ROAD WATERFRONT BARRY 1	4.3	N	15987764
A	95m N	310992 167492	LAND ADJACENT TO NEW SPINE ROAD WATERFRONT BARRY TP2	1.05	N	15987767
A	106m N	311012 167510	LAND ADJACENT TO NEW SPINE ROAD WATERFRONT BARRY TP4	2.05	N	15987770
A	116m N	311015 167522	LAND ADJACENT TO NEW SPINE ROAD WATERFRONT BARRY 2	1.5	N	15987765
2	190m S	311173 167134	Surcharge Embankment, Barry Docks BH1	-	Y	N/A
3	211m N	310980 167610	BARRY 6	1.0	N	378115
4	248m W	310750 167340	BOWTOX GARAGE, BROAD STREET	-	Y	N/A

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	3

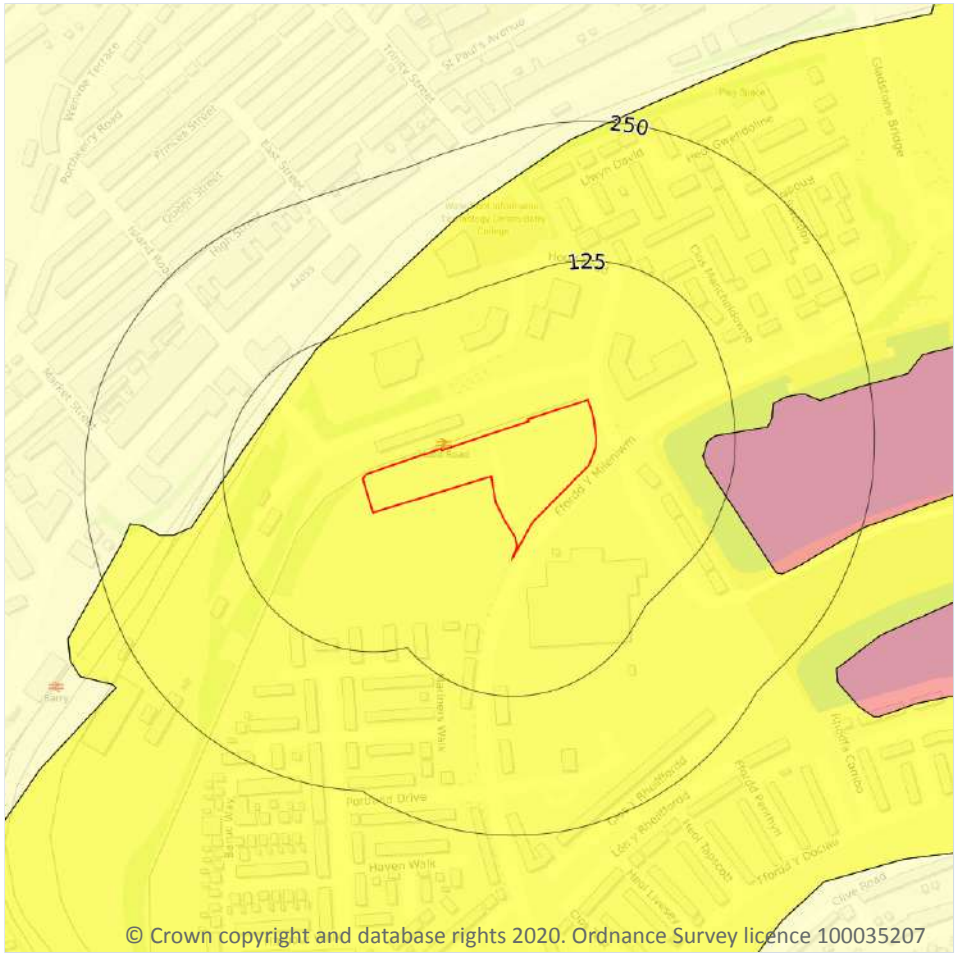
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 110**

Location	Hazard rating	Details
On site	**Negligible**	**Ground conditions predominantly non-plastic.**
On site	**Low**	**Ground conditions predominantly medium plasticity.**
5m S	Very low	Ground conditions predominantly low plasticity.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.2 Running sands

Records within 50m	1

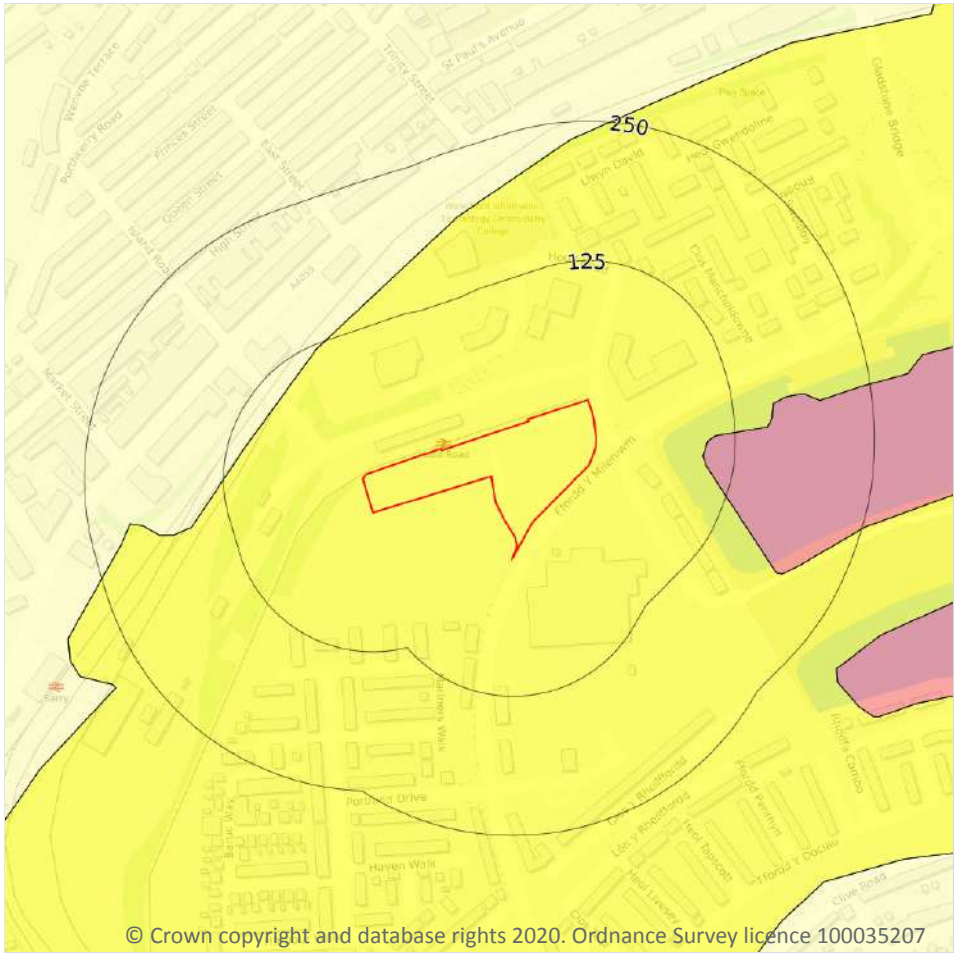
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 112**

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

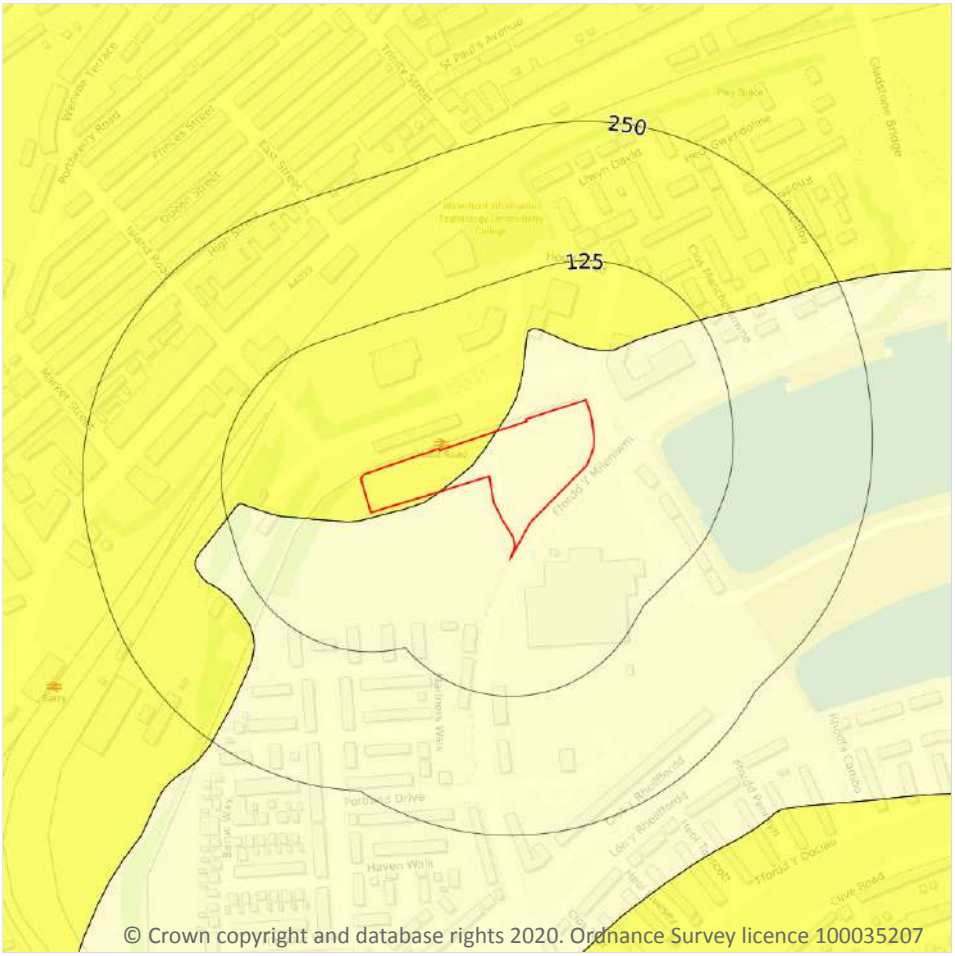
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 113**

Location	Hazard rating	Details
On site	**Very low**	**Compressibility and uneven settlement problems are not likely to be significant on the site for most land uses.**

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	2

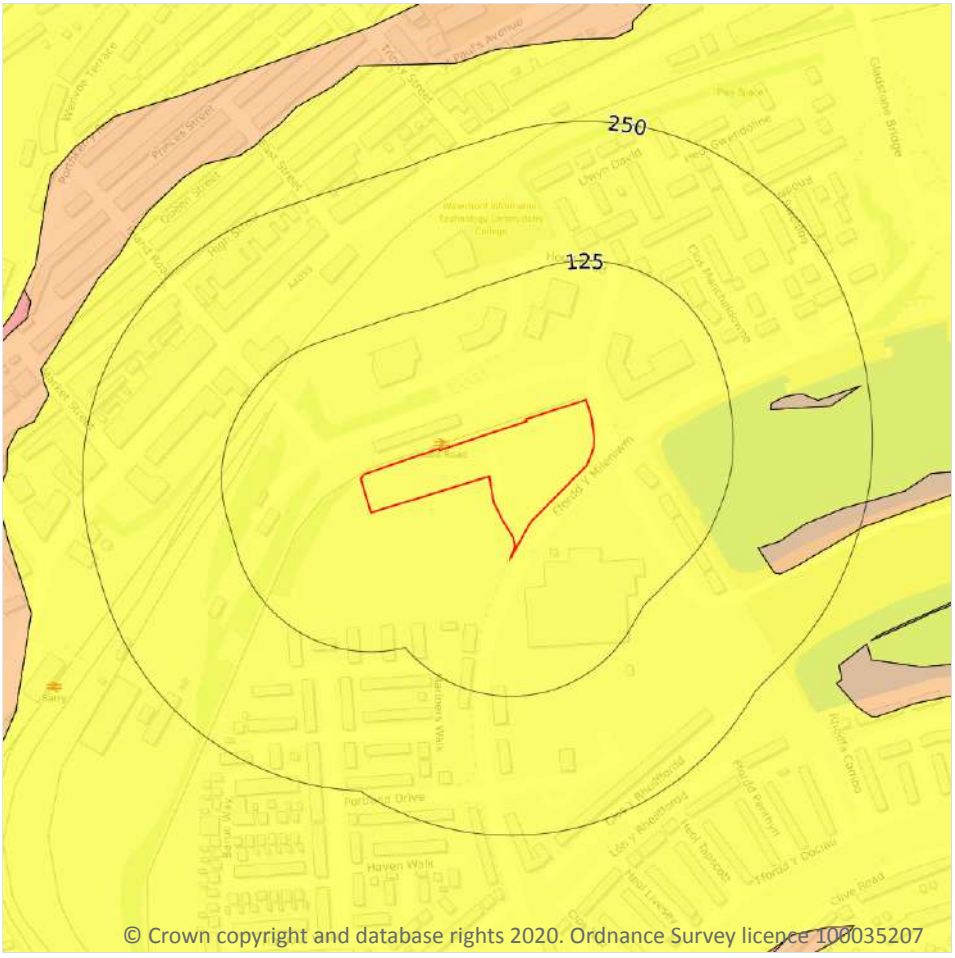
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 114**

Location	Hazard rating	Details
On site	**Negligible**	**Deposits with potential to collapse when loaded and saturated are believed not to be present.**
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

17.5 Landslides

Records within 50m	1

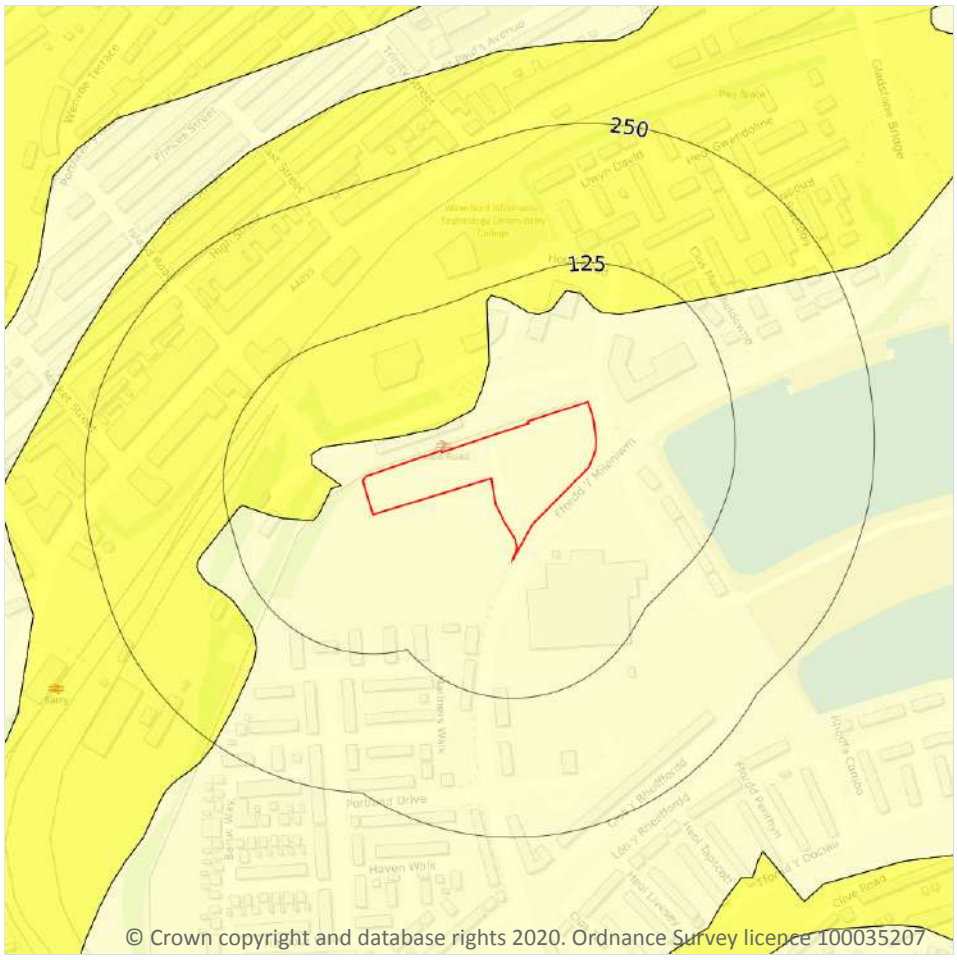
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 115**

Location	Hazard rating	Details
On site	**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



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.6 Ground dissolution of soluble rocks

Records within 50m	2

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 116**

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.**

Location	Hazard rating	Details
20m W	Very low	Soluble rocks are present within the ground. Few dissolution features are likely to be present. Potential for difficult ground conditions or localised subsidence are at a level where they need not be considered.

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 Peter Brett Associates (PBA).

18.2 BritPits

Records within 500m	0

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.

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	29

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 118**

ID	Location	Land Use	Year of mapping	Mapping scale
1	**On site**	**Docks**	**1965**	**1:10560**
A	**On site**	**Docks**	**1915**	**1:10560**
A	**On site**	**Docks**	**1938**	**1:10560**
A	**On site**	**Docks**	**1936**	**1:10560**
A	**On site**	**Docks**	**1898**	**1:10560**
A	**On site**	**Docks**	**1991**	**1:10000**
A	**On site**	**Docks**	**1973**	**1:10000**
B	**On site**	**Pond**	**1938**	**1:10560**
B	**On site**	**Pond**	**1936**	**1:10560**
B	**On site**	**Pond**	**1915**	**1:10560**
B	**On site**	**Pond**	**1898**	**1:10560**
B	**On site**	**Water Body**	**1921**	**1:10560**
C	4m W	Unspecified Ground Workings	1965	1:10560
D	38m E	Docks	1982	1:10000
C	45m W	Unspecified Ground Workings	1938	1:10560
C	45m W	Unspecified Ground Workings	1936	1:10560
C	53m W	Unspecified Ground Workings	1921	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
2	61m E	Dock	1921	1:10560
E	66m N	Unspecified Ground Workings	1921	1:10560
E	71m N	Unspecified Ground Workings	1982	1:10000
E	71m N	Unspecified Ground Workings	1991	1:10000
E	71m N	Unspecified Ground Workings	1973	1:10000
E	71m N	Unspecified Ground Workings	1965	1:10560
A	100m E	Coal Tips	1921	1:10560
3	120m E	Coal Tips	1915	1:10560
E	121m NE	Unspecified Ground Workings	1921	1:10560
4	174m E	Coal Tips	1915	1:10560
F	206m E	Coal Tips	1921	1:10560
F	210m E	Coal Tips	1915	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	**9**

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 118**

ID	Location	Land Use	Year of mapping	Mapping scale
-	895m SE	Tunnel	1982	1:10000
-	895m SE	Tunnel	1991	1:10000
-	895m SE	Tunnel	1973	1:10000
-	895m SE	Tunnel	1947	1:10560
-	897m SE	Tunnel	1921	1:10560
-	914m SE	Tunnel	1938	1:10560
-	914m SE	Tunnel	1936	1:10560
-	914m SE	Tunnel	1915	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
-	914m SE	Tunnel	1898	1:10560

This is 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	2

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 118**

ID	Location	Name	Commodity	Class	Likelihood
19	653m S	Not available	Vein Mineral	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
-	930m S	Not available	Vein Mineral	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

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	1

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.

Features are displayed on the Mining, ground workings and natural cavities map on **page 118**

ID	Location	Mine Address	Mineral	Data source	Publisher
13	490m SE	Barry Island, South Glamorgan	-	THE GEOLOGY OF THE SOUTH WALES COALFIELD PART III, THE COUNTRY AROUND CARDIFF	HMSO

This data is sourced from Peter Brett Associates (PBA).

18.8 JPB mining areas

Records on site	0

Areas which could be affected by former coal 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	0

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

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	0

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

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Mining Searches UK.

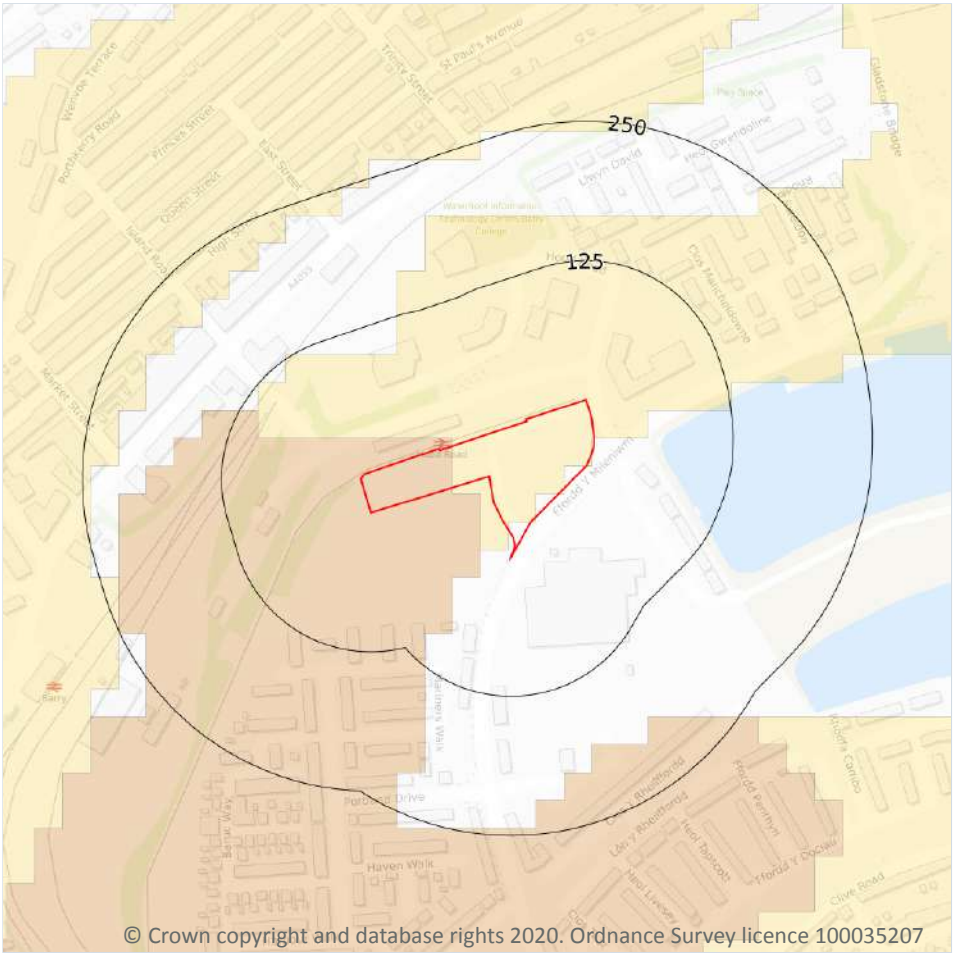
18.13 Clay mining

Records on site	0

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	3

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 124**

Location	Estimated properties affected	Radon Protection Measures required
On site	**Between 1% and 3%**	**None**
On site	**Between 5% and 10%**	**Basic**

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	10

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 km^2. 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 km^2; 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	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**40 - 60 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**40 - 60 mg/kg**	**30 - 45 mg/kg**
4m SW	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
5m SW	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
20m NW	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	30 - 45 mg/kg
41m NE	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
46m NE	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 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 km^2).

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 km^2.

This data is sourced from the British Geological Survey.